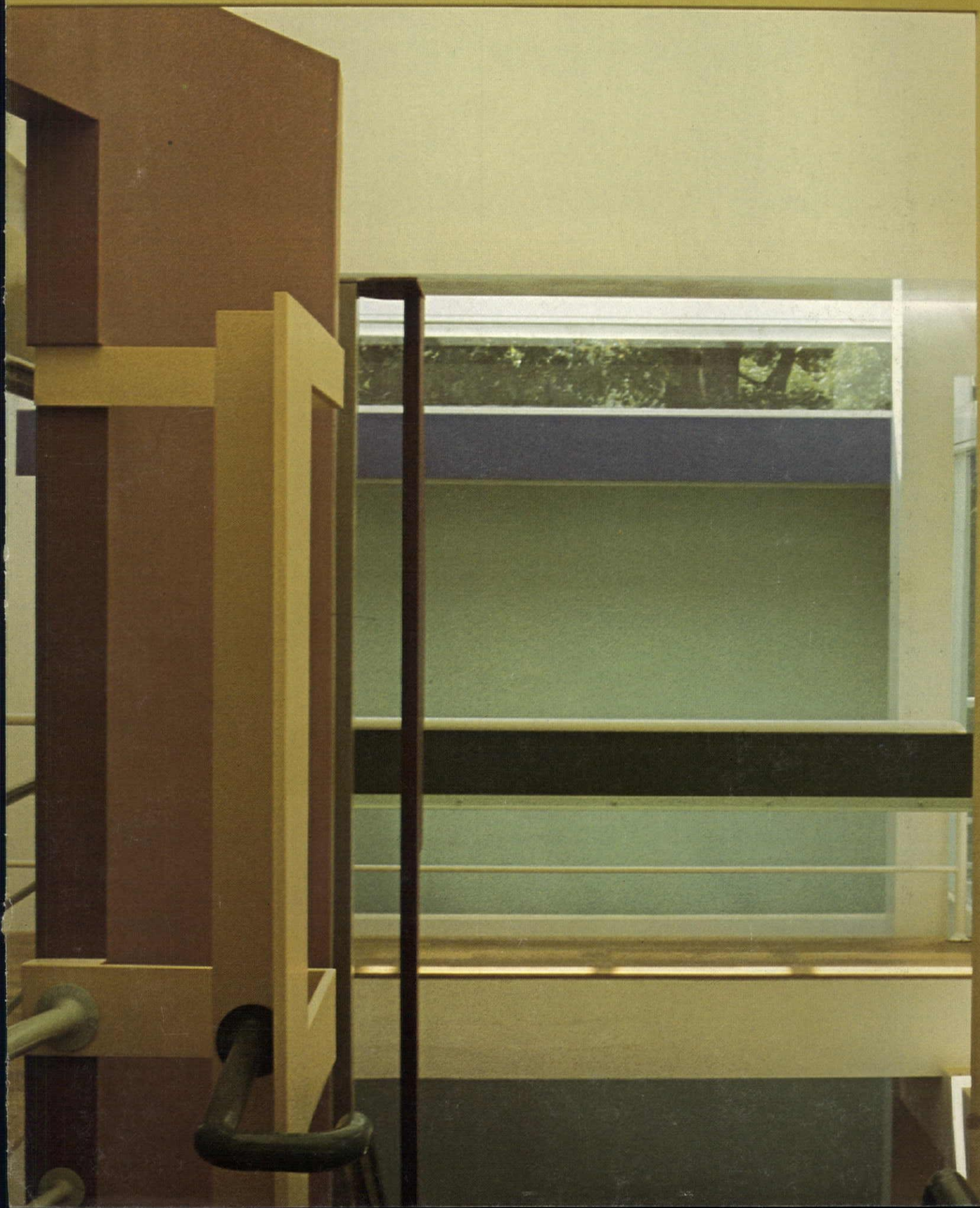
Progressive Architecture

March 1978 A Penton/IPC Reinhold Publication



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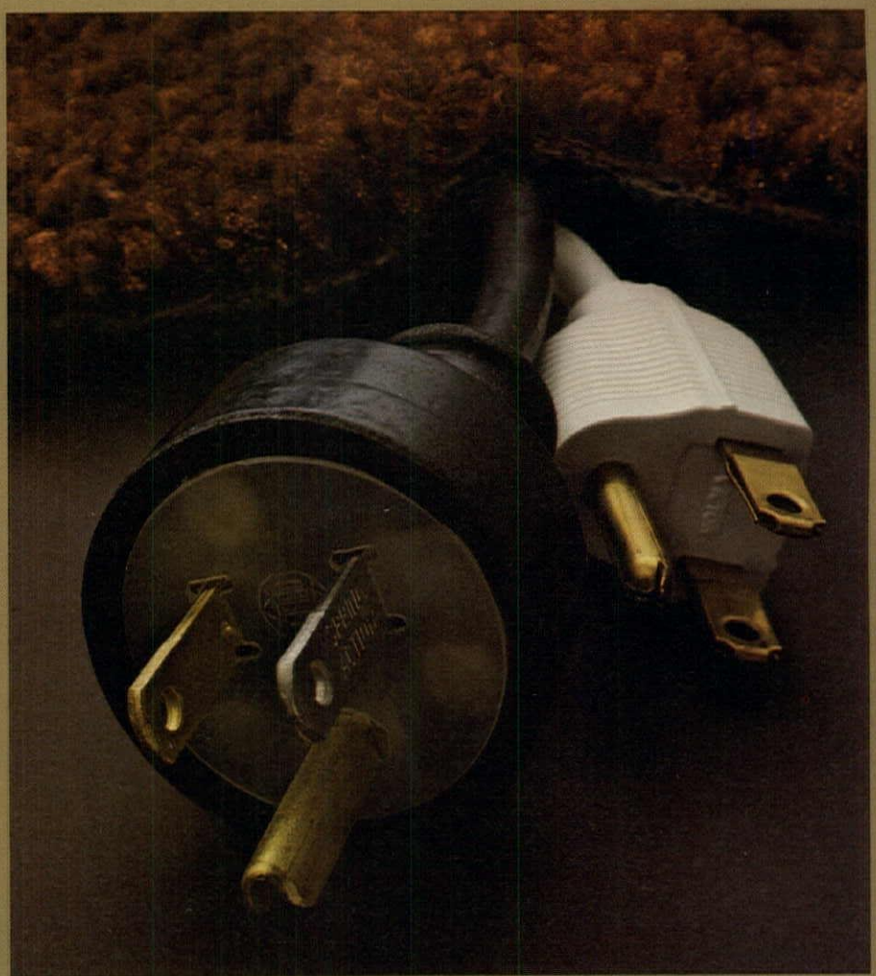

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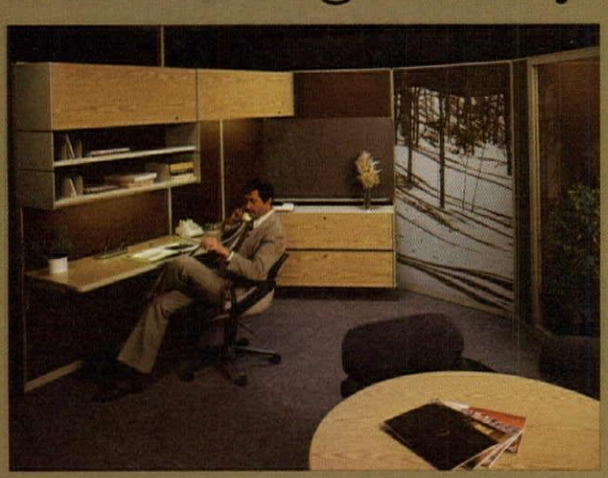

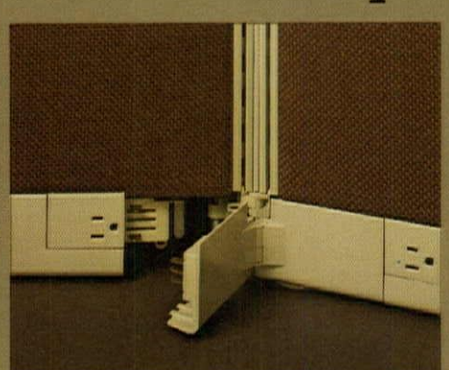

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March 1978

Progressive Architecture

Cover: View from the top of the stairs, Michael Graves's Snyderman House, Fort Wayne, In, (p. 80). Photo: Courtesy of the architects.

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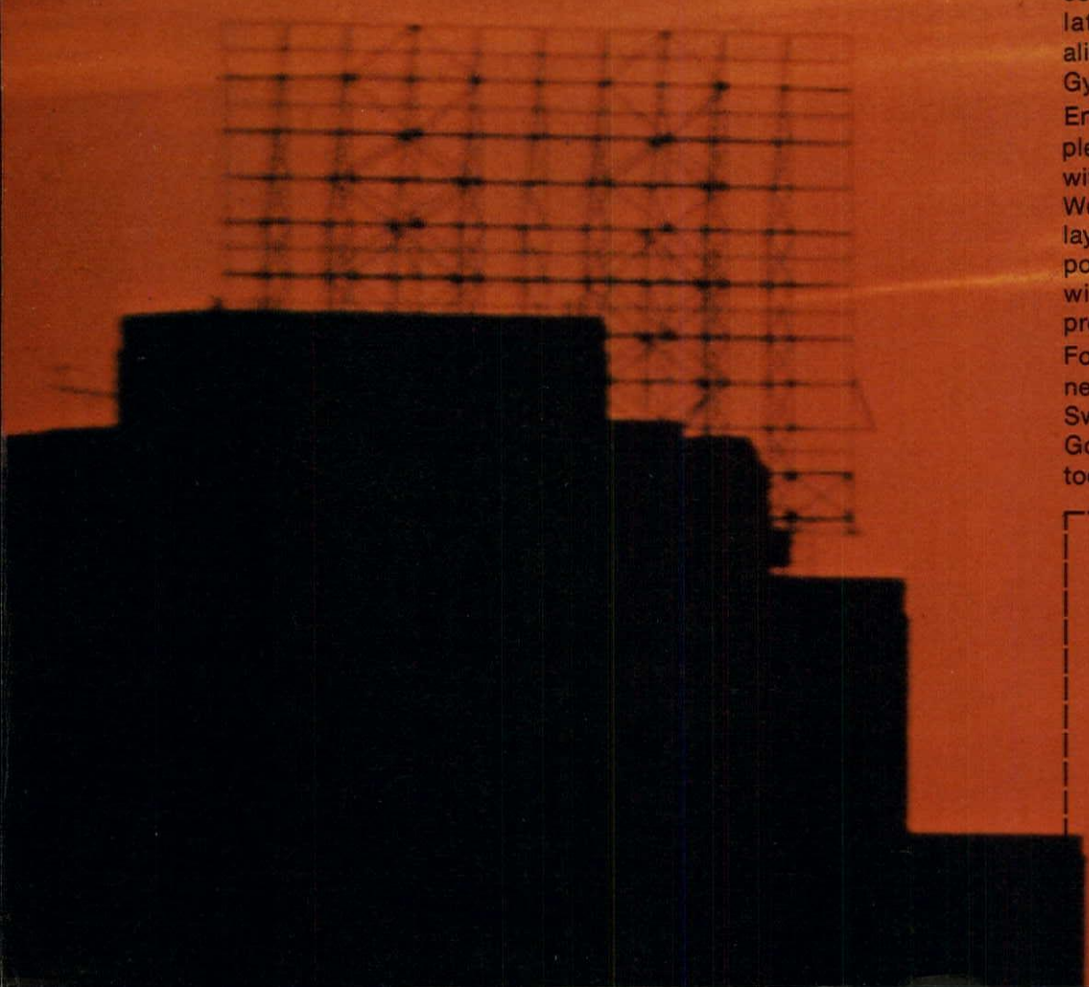

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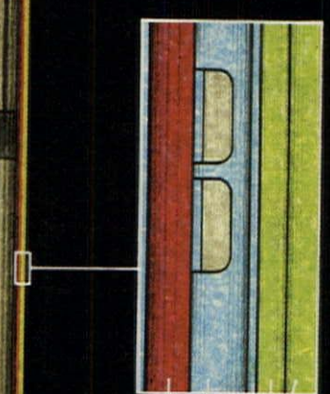

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Awards aftershocks

March 1978

Consternation over P/A Award winners is nothing new; every year, some readers protest the selections, and this year is no exception. P/A juries, after all, choose to look for work that exceeds, in some way, current expectations, and inevitably there is something among the winners to disturb a portion of our audience. We like to give ample space to these reader reactions, as part of the process (see Views, p. 8).

This year's selection of Edward Mills's "Pink House" for the First Award in architectural design seems to have been particularly provocative. It was highly controversial even during the judging; two jurors, in fact, asked to go on record as opposing it.

P/A's editors, as a matter of principle, take no position during the judging. We leave that to the professionals on the jury—people who have earned our respect and recognition throughout the profession for their own achievements, people who contribute their time and intensive effort to the profession through P/A. Our role is to record the results and summarize the discussion behind them to the best of our abilities.

Nor can P/A's editors repudiate any of the decisions of our juries—much as we may have wished to on occasion. The exceptional qualities most of our jurors saw in that Pink House are, frankly, not appreciated by our editors as a group. But—aside from questions of diplomacy, gratitude to the jury, and fairness to the winner—we feel that the collective decision of these illustrious jurors carries more weight than ours. That is what makes this annual program a genuine competition—an event above and beyond *editorial* selection, which stresses other qualities such as instructive value and pertinence to readers' current concerns.

We get our chance to exercise this kind of judgment on the other 11 issues of P/A each year. The several works featured in this issue, for instance, are not chosen for their sheer greatness or perfection; all of them have significant flaws—as well as design lessons that we consider significant.

One of the works subject to critical evaluation in this issue, the Snyderman house by Michael Graves, obviously invites comparison with the Pink House. An award-winner in a previous P/A competition, this Graves house seems to embody many of the same formal attitudes and devices that Mills assimilated into his recent house design. It would be all to easy to see these two houses simply as two manifestations of the same attitude toward architecture, but that would not be fair to either architect. It would be easy, too, to see these works as representing a direction that P/A is endorsing. We do feel it is an approach worth examining, but only one of many instructive ones in this period of search. We see comparable promise—to refer back to the January awards issue—in the eclectic contextualism of Barton Myers' townhouses, in the high-tech order of buildings by C.F. Murphy and Perkins & Will, in the tempered minimalism of Silvetti, and in other serious design explorations. So, obviously, did our jury.

We have considered, at times, revising our jury procedure so that nothing that raised vehement objections could win a top award—so that one or two out of eight jurors could veto. But that would yield only *safe* choices—works that aroused the least opposition, rather than the most enthusiasm—and we wouldn't want that. Our awards program and our choices for the rest of the year have been united by the intention to recognize design that is either challenging in its ideas—even if flawed—or extraordinarily refined in its application of more familiar principles. Many quite predictable buildings serve their users well, but either a jury's selection or an editor's selection should—we believe—have more to tell you than that.

Letters from readers

Views

For P/A's response to some of the questions raised in these columns regarding the January P/A Awards issue, see Editorial, page 7.

Awards rejudged

The winners of your 25th Annual P/A Awards are just too cute for words.

We are in your and Spiro Agnew's debt. He popularized the word "effete" and you have accepted its pursuit as a part of P/A's own special vernacular. Your verisimilitudinous jury, the extracts of their comments and most of their selections are deliciously portentous—but fun. I just can't wait for next year.

Charles Colbert
Architect/Planner
Metairie, La

I've followed the P/A Awards for the past 25 years. For most of that time, these awards have given recognition to ideas and projects worthy of the attention. The 25th P/A Awards issue, and particularly the First Award is the most extraordinary and perhaps the least redeeming of all.

Perhaps you meant this entire issue to be a "cartoon" or—better yet—a spoof. It doesn't even succeed in that regard. How *can* you bestow the First Award to a most ridiculous one-family residence? And how can you seriously print the dialogue between de Blois and Moore? Better luck next year!

Arthur Rosenblatt
Vice President, Architecture and Planning
The Metropolitan Museum of Art
New York, NY

The P/A First Award project of Edward Mills is so sensationally dreadful that my hopes for the progress of architecture are not bright, despite juror de Blois's assurance that this is the terminal project signaling the end of an era.

Having combined a bit of each of the trademark forms of the New York Five into one fatal project, Mills does undeservedly malevolent flattery to the original talents of these architects, managing to obscure and misrepresent the thinking behind the lovingly purloined forms. This could be a new trend. Next year he can plagiarize a different group—perhaps the entire Yale/Penn axis in one blow. Having already cudgeled New York, can the demise of Philadelphia be far behind?

So exciting is it that the designer has thought—although not very hard—about symbolic content, which makes a failed attempt in the appearance of the "symbolic gate." But what is symbolic about a gate which is, in fact, only a gate? Such a cultural connection as symbolism is, of course, anathemical to the acultural and acontextual constructs behind Eisenman's House III which appears here intact and without footnote. The issue of metaphor and of elements yielding cultural interpretations beyond the direct, ordinary reading is so promising a possibility; but, alas, the symbolic content only fleetingly hinted at must, too, have been stolen from some (unknown) source.

Similar sycophantic flourishes have been behind the Columbian eclecticism of 1892 which was, in its day, no less heralded—and which, despite its prettiness, was no less dishonest, nor any less anti-progressive. Such "Decadence of Style," roundly damned by Viollet le Duc, has never left us and persists in producing projects so stylish, yet so out of step with the ideas behind the stolen forms. If Mills continues to develop what he does not understand he may yet end up on a P/A jury.

C.B. Wayne
Chicago, Il

I was extremely disappointed in this year's design awards. My feelings echo Mrs. de Blois's comments on "the pink house." I hope this 25th Awards program marks the end of an era, not the beginning of a new one.

Syd Harrison, AIA
Denver, Co

If the only reason for publishing some of your award winners was to provoke comment, you have succeeded. All the comments heard at our office were negative.

The editors of P/A will have some difficulty justifying that they are not responsible for some of these aberrations, as they tried to do on page 65 in the awards issue. The editors should have dismissed the jury and brought out a serious awards issue later in the year, and thus kept their credibility. You can't cop out on us for giving awards to some of these architectural farces. You, the magazine staff and editors, are responsible.

F.L. Wong, AIA
Houston, Tx

Woman's place on the jury

I found Ms. de Blois's remarks on many of the design awards entries entirely appropriate, but Oink! Oink! Her incisive criticism of the "Pink House" by Edward Mills missed the mark when she chose to identify the scatalogical design with the work of a woman. This *faux pas* compiled with the superficial rhetoric of the other jurists smacked of pig.

Heidi Douden,
Pittsburgh, Pa

[We regret that Natalie de Blois's observation that the design might be by a woman was misinterpreted. She was merely reminding Moore that the "he" he referred to could as well be a "she." By printing this incidental exchange, we did not mean to imply any more than that.—Editors]

Your January issue arrived early. Looks like the boys didn't let the lady in on the joke until late, but she eventually caught on.

The unfortunate thing about this kind of joke is that the magazine might fall into the hands of the naïve and impressionable who would not recognize black humor even in its grossest form.

C.H. Jordan, AIA
Architecture/Urban Design
Baton Rouge, La

Awards and resources

After noting some of the major winners of the 25th Annual P/A Awards, I am convinced that the architects and critics presented are another breed of dinosaur. There is a new awareness stirring which tells us (is trying to tell us) that the award winners should be those who produced biologically centered buildings—buildings that concentrate on energy use and not misuse.

Kenneth Babits
Architect
Smithtown, NY

For several years I have looked at P/A design awards for indications of how the architectural profession was growing and helping our world to achieve some of its dreams. The 25th Annual Design Awards issue is changing my mind about the significance of these awards.

Scarcely any of the Architectural award winners attempts to provide "progressive architecture" in terms of leading us to energy-conserving architectural design. The jurors for the awards can't seem to find an environment or energy handle to judge the solutions.

Some comments along this line on certain "winners":

Maison Truc may be cute to some, but in relation to our city of once-beautiful vistas of the Rockies, and now a city with dangerous pollution pallor created by excess auto and truck miles traveled, its image of highway/suburb worship is gross and ugly. One can only hope that its designer really felt this way and was attempting satire.

The Goebel Collectors' Club is such a flat violation of basic solar orientation that every architect should be astounded to see the north arrow in its present position. I don't care how much money the owners are willing to spend to cool this building; its architects shouldn't be rewarded for designing it. To tell me that the massive south-facing glass is "solar acrylic" and "insulating solar glass" doesn't persuade me that it is a responsible solution, especially in an energy-short eastern U.S. location.

But I think the top award for irrelevance should go to Edward Mills for the Pink House. This is a second house for a client who could clearly have afforded all that cliché complexity and still have money left over for some really neat solutions to energy conservation. Thanks to Natalie de Blois for pointing out that this house is the end of an era, not the beginning of one.

P/A is, to many people, the expression of our profession's goals and aspirations. Awarding prestigious prizes to buildings designed without a hint of energy conservation is telling them that we haven't sought out and really aren't very interested in designs that attempt to offer alternatives to consuming increasing amounts of our dwindling fuel resources. We are saying in

[continued on page 14]

THE PINK STUFF.

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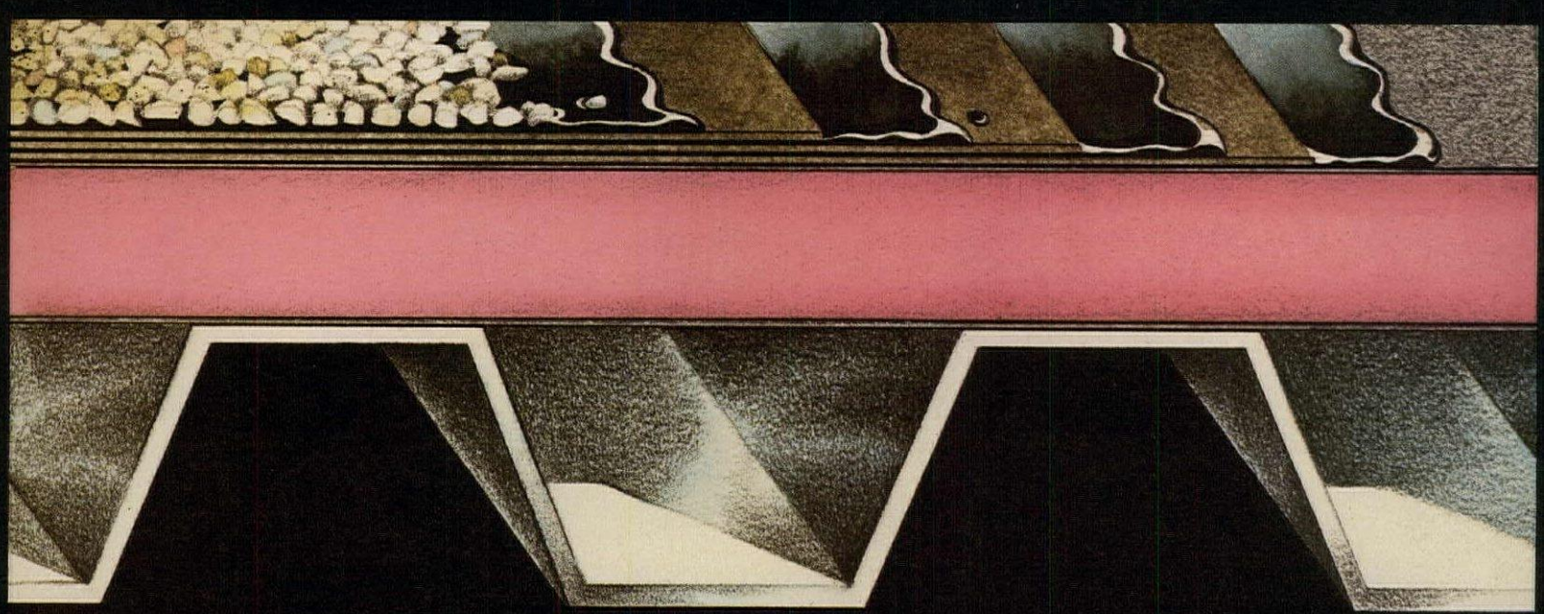

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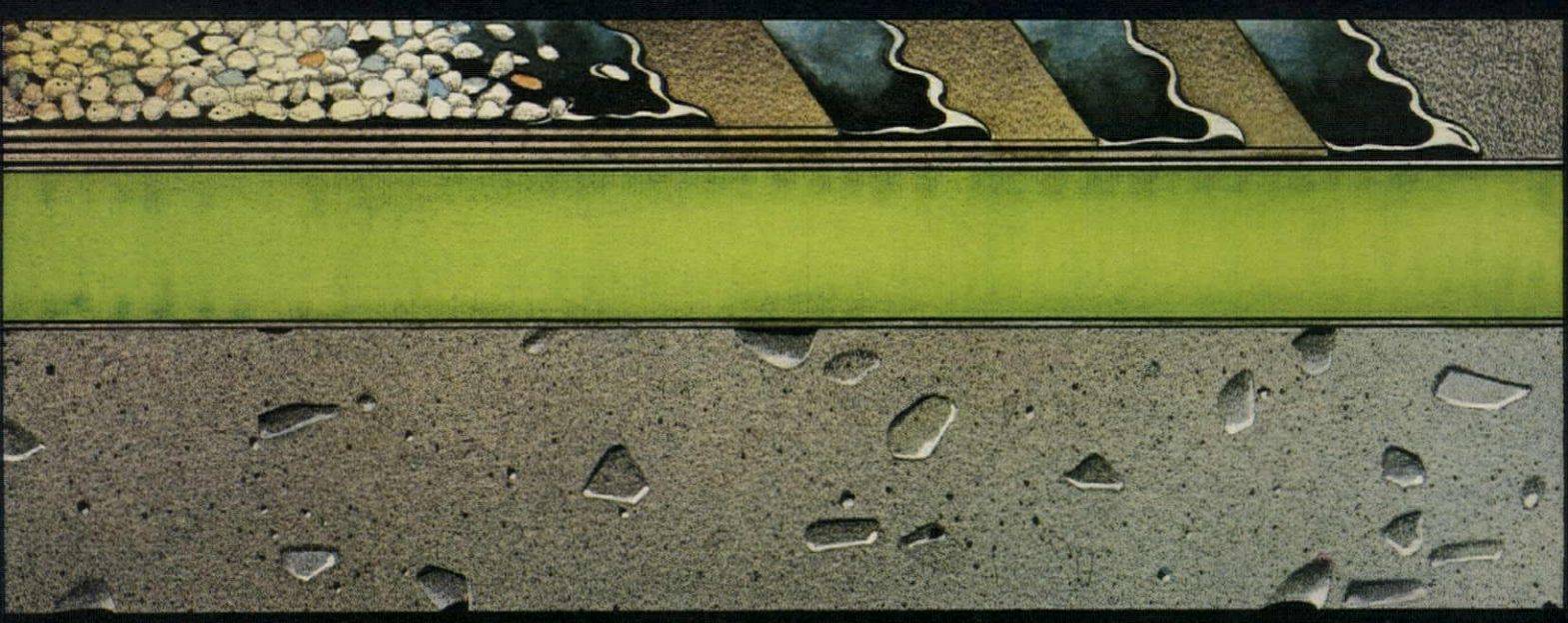
10.0	1.4″	1.4″	1.9″	2-1/4″	4″*
11.1	1.6″	1.6″		2-7/16″	
12.5	1.8″		2.2″		
14.3	2.0″	2.0″	2.5″		
16.7	2.3″	2.3″	2.8″		
20.0		2.8″	3.2″		
25.0		3.0″			

*In two layers.

†NOTE: Under normal use, Thermax and Tempchek Roof Insulations will retain an average of 80% of their thermal resistance (R factor) values.

Another surprise on the next page. The most effective way to use the most efficient roofing insulation on the market. From Celotex.



This is the Upside-Down Roof. From Celotex. It's the most effective way to use the most efficient roofing insulation on the market.

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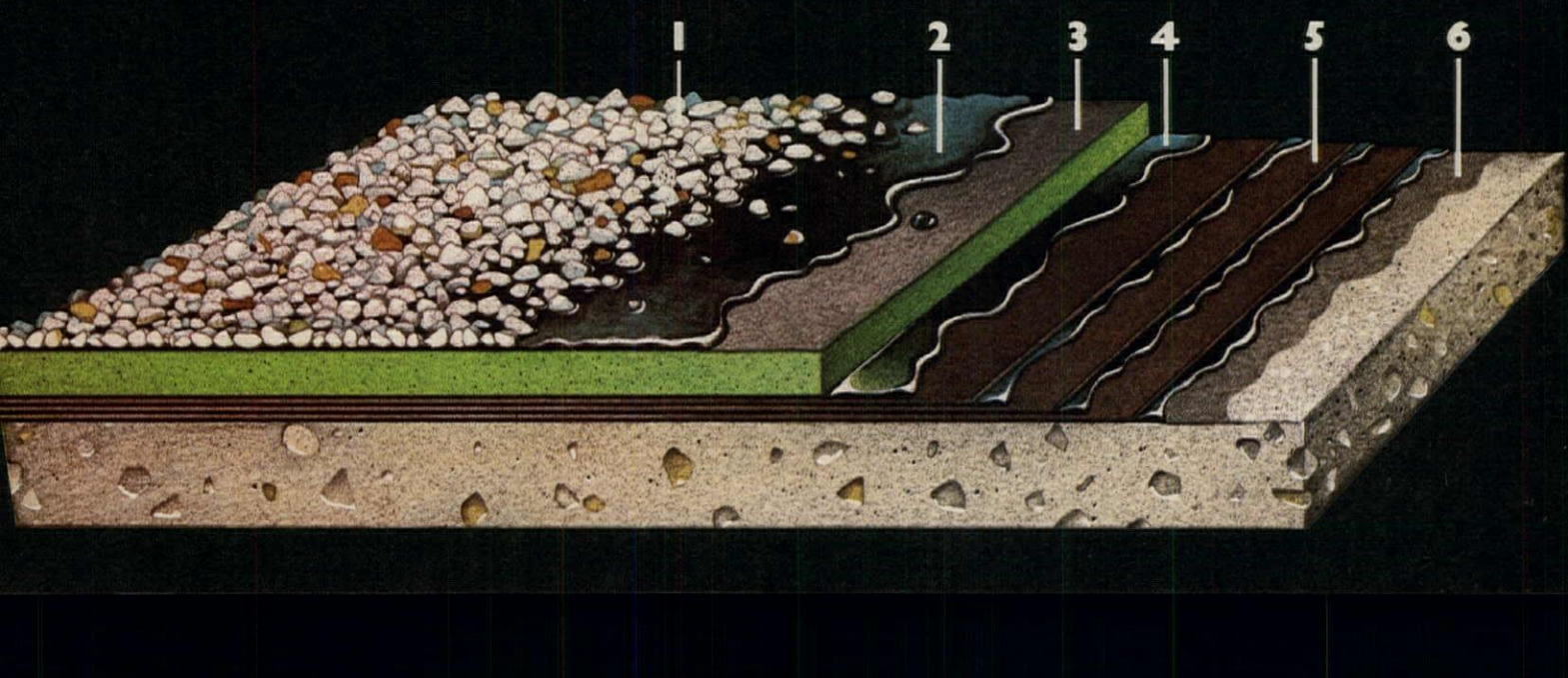

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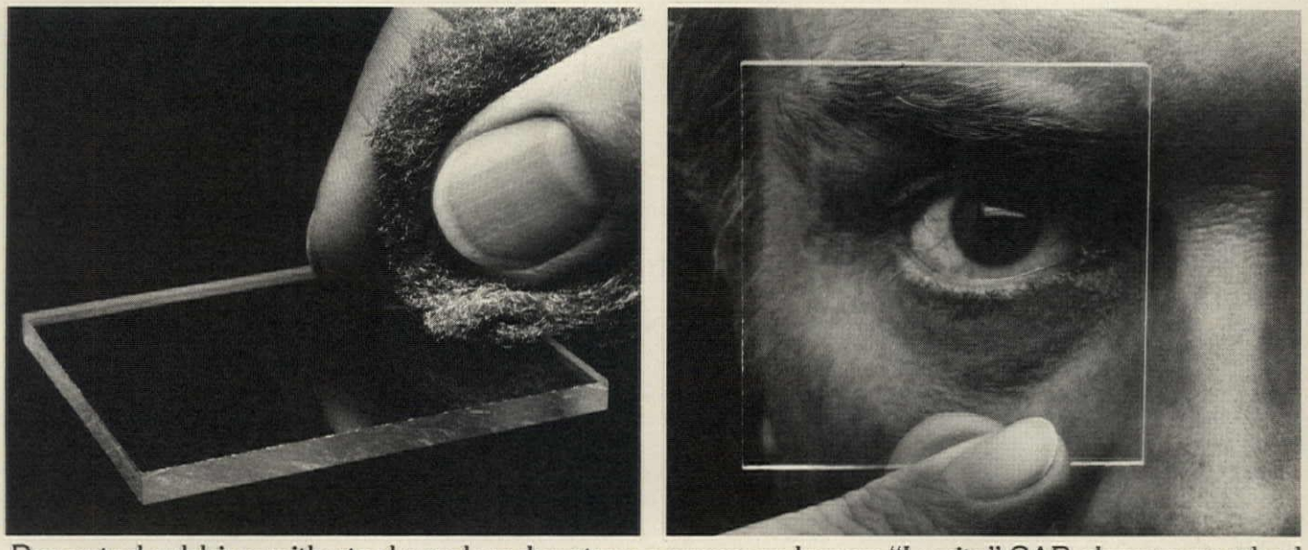

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Views continued from page 8

these awards that the best architecture of 1977–78 is not leading people into a future; it is only reflecting the interest of a society's individuals in their own perfection, whatever the social cost.

This, to me, is a serious indictment, and I hope that next year we can do better.

Patric B. Dawe
Architect
Denver, Co

Solar observations

The article in your Dec. 1977 issue concerning solar heating and cooling was comprehensive and for the most part accurate. I enjoyed it and hope you continue to cover this relatively new field.

There was, however, an error in your reference to the ASHRAE Standard 93–77 which covers methods of rating collectors for thermal performance. At the top of the third column on page 76 you state that the ASHRAE Standard specifies a minimum level of insolation and minimum angle of incidence of the sun on the collector. You then state that the standard may not yield a meaningful comparison of performance when collectors are used in less than optimal conditions.

In fact, ASHRAE 93–77 is able to show how to test collectors in any location and provide thermal performance for any given collector in any other location. The Hottel-Whillier plot which is the output of the ASHRAE test has been recognized as giving this type of information for the last 30 years or so.

The main test under 93–77 is at normal incidence angles. The only reason for limiting the insolation to be above the prescribed minimum is to preserve instrumentation accuracy. The information can be extended to low levels of insolation more accurately than it could be measured at the low levels.

Additional tests are made at incident angles up to 60 degrees from normal, so that performance at early morning and late afternoon hours can be predicted. These extra tests also allow the prediction of changes in performance between winter and summer or intervening times. They do not limit the results.

The test method permits calculation of day-long performance for any location from tests made in any other location. The information in the ASHRAE GRP–170 provides expanded data for worldwide locations.

Perhaps you would like to correct the impression made by your reference cited above.

Alvin B. Newton
York, Pa

I would like to thank you for covering the White House Retrofit Project (News report, Dec. 1977). The image presented, having both historical precedent and current technical acceptance, serves well to remind us that contemporary problems can often be approached with insights from the past.

As a matter of policy, I would like to clarify the background of and credits for the project. At the request of Friends of the Earth, Richard Fernau agreed to develop a solar image of the White House. After researching the architectural history of the building, he discussed solar options with me and the Berkeley Solar Group. He synthesized these possibilities into a coherent and very "real" image.

We were not able, on short notice, to acquire any information that would translate into space conditioning requirements for a White House solar system. The performance figures cited, for which I am responsible, are based on a first-order estimate of what a rigorous energy conservation/solar program might achieve, and are simply educated guesses as to what might be possible. Should an opportunity arise to pursue the problem with the necessary information, we will be able to see how good our guesses are.

Bruce A. Corson
Berkeley, Ca

Correction

We appreciate your printing a small article on a project of ours in the December 1977 issue (re: "Solar student units at $22 per sq ft") however, the article did contain numerous misstatements and factual errors (see below in *italics*):

Cost of apartments was $22 per sq ft *excluding land acquisition and fees.*

Environmental Consulting Services *is the solar mechanical engineer.*

The solar system will provide *70 percent (seventy)* of the total heating and hot water requirements.

We would appreciate your correction of these errors *in print,* as they are very misleading to your readers.

Thank you for your consideration!

Phillip J. Tabb
Joint Venture Inc.
Boulder, Co

Quincy School: Two-stage achievement

Especially good in your splendid December 1977 issue is the *kind* of story about Boston's Josiah Quincy School. Here we have architect Hermann Field (lent by Tufts New England Medical Center), first, as "concept plan architect," followed by The Architects Collaborative, as "building architect," both superb.

For those "concept" models, which are never carried forward in any completeness to the end, are mighty hard to do, especially in *enlisting* and then *holding* and getting *participation* by a brace of different clients, consanguinous but diverse—this time it took Field eight years to carry off, and he a veteran at that. To use a military simile, this is the Eisenhower part in a Normandy landing, getting it organized and going and landed, so that the Pattons and Montgomerys can win their later spectacular victories which they would otherwise never have been able to begin to start to commence. No bottom listing for the Ikes!

What is especially beautiful about this instance is that *after* the rough concept model had been submitted, further important changes in program [were] necessitated, which were now up to TAC. And bless their hearts if their project architect was not Martin Sokoloff, a former lieutenant of Hermann Field, at Tufts, hence trained and able to carry client cooperation forward the rest of the way. Result: Probably the best execution that a Field concept might have had; with its Field "concept" under it, plus its own readaptations and innovations, far the most interesting TAC school design I can recall ever having seen. Cheers to both!

Douglas Haskell, FAIA
New York, NY

The criticism of the failure

P/A's review of my book (Nov. 1977, p. 106), was recently brought to my attention. I hope you will give me the opportunity to respond, in print, to a few of the reviewer's inaccuracies.

Mr. Filler notes my observation that the Modern Movement declared traditional architectural styles null and void. Then, he says: "End of Brolin's discussion." In fact, 11 pages later I have a six-page discussion of this subject.

He challenges my idea that Ebenezer Howard held a simplistic view of the effect of physical form on social behavior. Yet the introduction to "Garden Cities" says that these planning ideas will cure, among other things, drunkenness and poverty. Admirable hopes, to be sure, but also touchingly naïve and unrealistic about the power of physical design.

The reviewer complains when I say the apartment house in the park was an "outgrowth" of Howard's Garden City idea, and then goes on to say that Le Corbusier's Radiant City "transmogrified" Howard's idea. That's just a fancy way of saying the same thing I did.

Mr. Filler says that, from my "distorted interpretation, one could infer that such a notion (anti-ornament) was generally held (by architects), not merely by one architectural theorist (Loos) and his followers." I do indeed say that modernists opposed traditional ornament, and would be interested to see where Le Corbusier, Gropius, or any other early modernist came out in favor of it, in word or deed.

Finally, Mr. Filler claims that all great art movements were elitist, implying that the common people could not appreciate them. This is a favorite myth among modernists. Is he aware of the thousands of Michelangelo's contemporaries who gaped in awe at his work. Or the young and old and poor and rich who stood in line to see Leonardo's Madonnas? I do not believe great art was always inaccessible to the public at large.

I cannot fault his eagerness to defend a movement in which he apparently believes. I do, however, find his sloppy reading of my book unprofessional and his spotty knowledge unfortunate for someone whose writing reaches a relatively large audience.

Brent C. Brolin
New York, NY

[Brolin's assertion that the reviewer is a defender of the Modern Movement is all too characteristic of the kind of extrapolation to be found in his book; it is as if to say that anyone who faults his analysis cannot share with him—and innumerable others—the realization that the Movement has failed in many important respects. His observation on Michelangelo cannot go unchallenged: the public response to his work was, we maintain, based on their symbolic role in society, not on public appreciation of his aesthetic concerns, the same thing when today's public admires, say, Kennedy Center in Washington. As for the ever-ambiguous ornament controversy, if he can cite Gropius and Corbu, we can cite Wright and Aalto; and how does one classify Saarinen, Rudolph, Sert, and others?—Editors]

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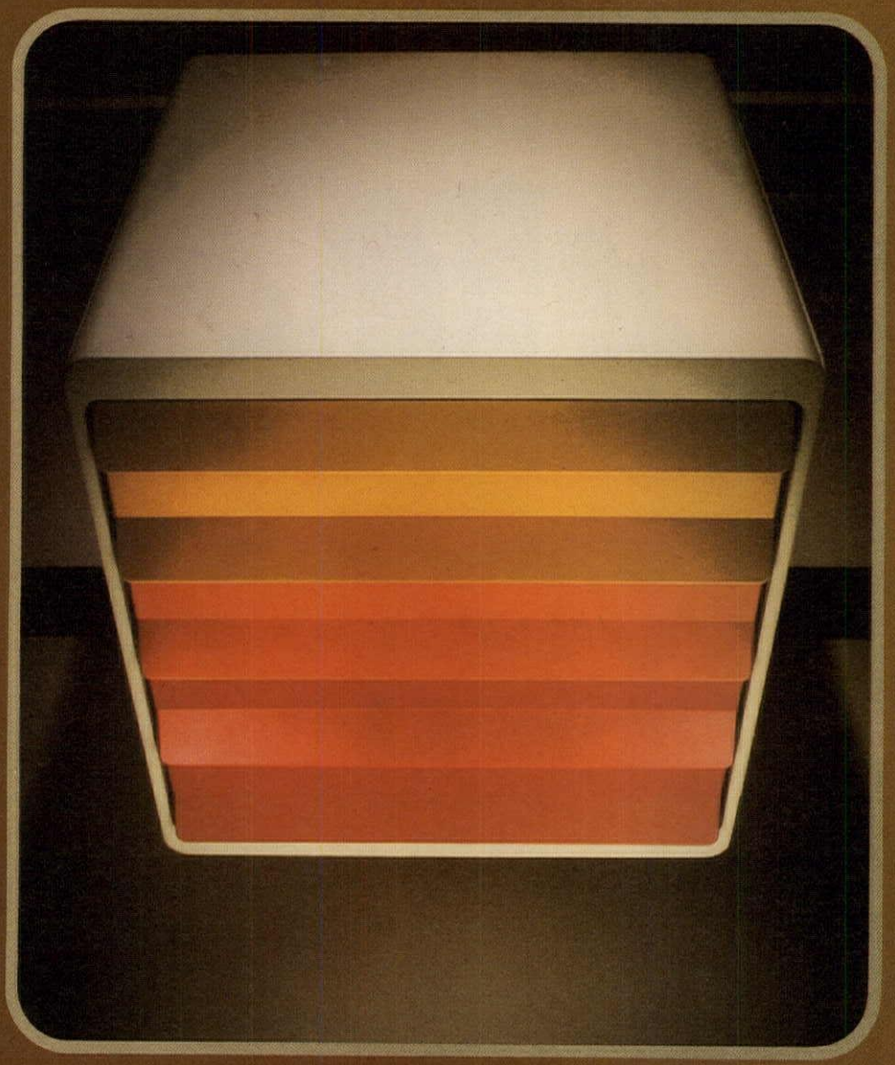

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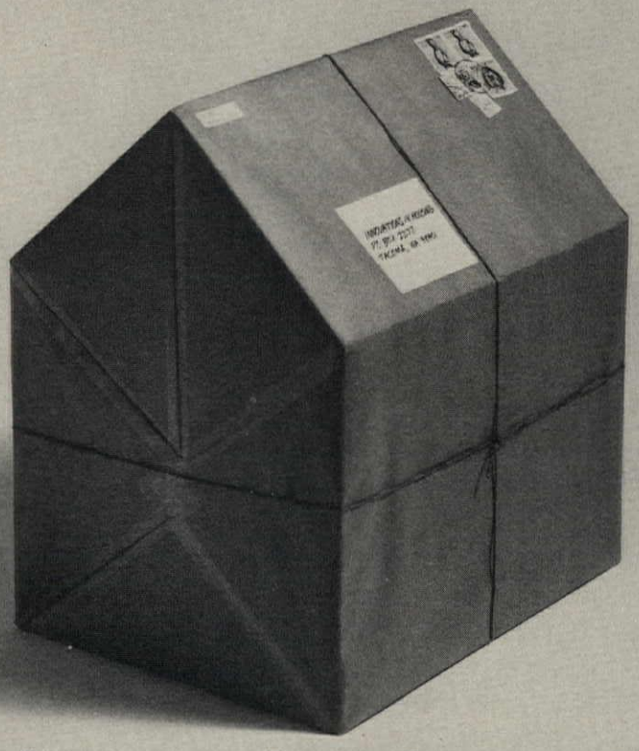

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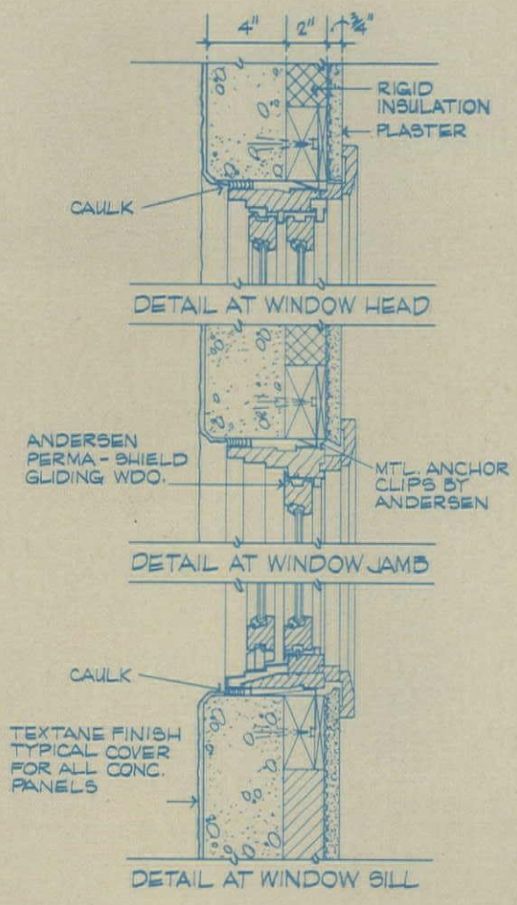

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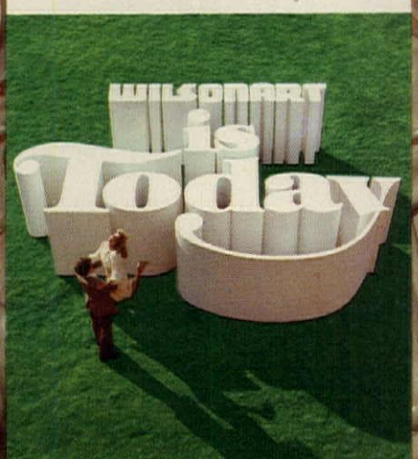

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News report

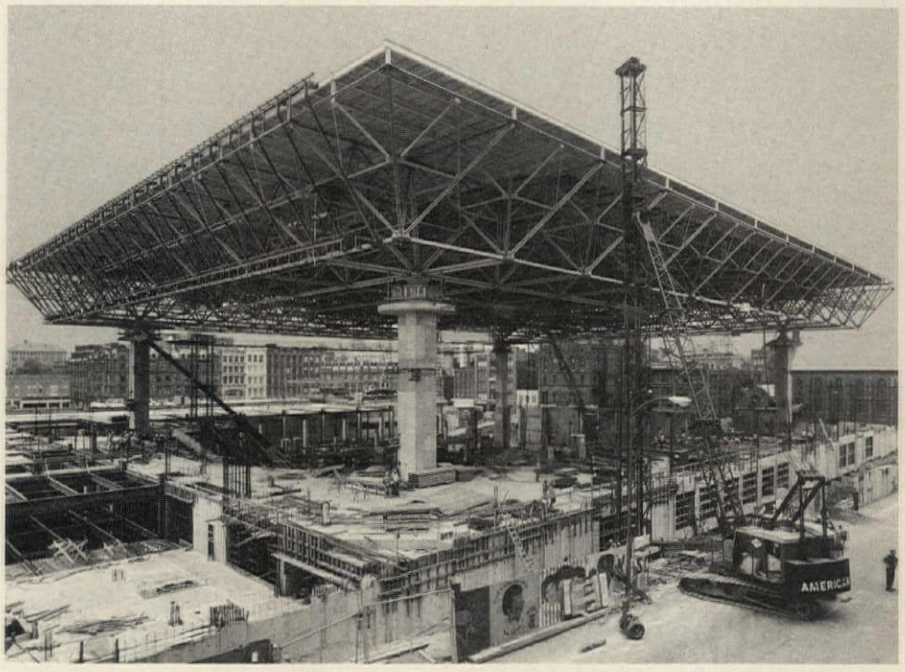
Probe into roof cave-in

An investigation expected to last three months is underway on the roof collapse of the Hartford Civic Center coliseum in Connecticut. The New York consulting engineering firm Lev Zetlin Associates has been hired to investigate the wreckage and take charge of necessary demolition and remedial work. Zetlin will report to the Special Council Committee to Investigate the Coliseum Roof Failure, headed by Hartford council member Barbara Kennelly.

Vincent G. Kling & Partners of Philadelphia with Harry Danos & Associates of Hartford, associated architects, designed the $70-million Civic Center and its 12,000-seat arena, which opened in 1975 (P/A, Feb. 1975, p. 38). Fraioli-Blum-Yesselman of Norfolk, Va, and Hartford were the structural engineers of the coliseum's 1400-ton space-frame roof that had a clear span of 270′ x 210′. The engineers wrote in detail about the roof, which was hoisted 85 ft into place, in the January 1974 issue of *Civil Engineering–ASCE*.

Gilbane Building Company of Providence, RI, was general contractor for the coliseum; Bethlehem Steel Corporation fabricated the space frame; H.H. Robertson of Connersville, In, furnished the insulated metal exterior paneling; construction manager was William L. Crow Construction Company, a division of J.A. Jones Company.

Kling's office had no comment when



Photos: Zaremba

Space frame roof of Hartford coliseum under construction in 1973 and after collapse in January.

questioned about the roof failure, which occurred in mid-January after a weekend ice and snow storm of 4.8 in. of snow followed by rainfall. Just hours prior to the collapse, 4800 people were in the arena for a basketball game. No injuries were reported. (Assembly of the space frame had a perfect safety record; the frame was put together on the ground.)

Charles Thornton, president of Lev Zetlin, is in charge of the investigation, which will involve eight to ten people running computer analyses and chemical tests in addition to other types of examinations. Two Hartford firms also are taking part as consultants—Loomis & Loomis and Buck & Buck.

Meanwhile, the Hartford City Council voted to hire Ellerbe of Bloomington, Mn, to design a new coliseum. George A. Fuller Co. of New York will be the construction manager.

The Civic Center is a mixed-use project planned to revitalize the city center.

The coliseum is owned by the City of Hartford. Ætna Life and Casualty Co. owns the retail portion of the Civic Center and Ætna and ITT are co-owners of the 22-story Sheraton-Hartford Hotel in the complex. Travelers Insurance Co. covers the coliseum with a $24.3-million policy.

A few days after the coliseum collapse, 54 of the stores in the retail portion had reopened. Apparently most of the damage was limited to the coliseum—99 percent—and some to the exhibit hall.

During the week following the snow storm and also during a storm that occurred a week later, more than a dozen roof failures were reported in the upper Northeast, including the cave-in of another space frame structure—the $1.5 million auditorium of C.W. Post College in Brookville, Long Island, NY. Butler Manufacturing of Grandview, Mo, supplied the roof structure, but university officials would not release the names of any other firms involved with the building pending results of an investigation.

Thornton of the Zetlin firm said it's not unusual for roofs to fail during heavy snow storms. Last year a "significant" number of roofs—20 or 30—collapsed in Buffalo, he said, but added, "you never heard of them."

Associated Press Photo

Dome collapses over 3000-seat auditorium of C.W. Post College, Brookville, Long Island, NY.

A different opinion was expressed by architectural engineer Paul Gugliotta of PG Structures, Inc., New York, who said roof failures are "abnormal," and he thinks present building codes are too light. For example, he said, the New York City code previously required structures to bear a live load of 40 psf but it's been changed to 30. The Connecticut code is for 30, and that is what the Hartford coliseum was designed to support.

Since the coliseum collapse, it has been revealed that several complaints came over the years from individuals expressing doubts as to the safety of the roof. Particularly questioned was the downward deflection of the roof by more than a foot. One councilman wrote to the city manager in January 1975 that someone who had been a construction worker on the building was telling people "that a good snow and ice storm would be very dangerous to the roof and there would be fear of its collapse."

In reply to this and other inquiries, F-B-Y engineers Philip Wesler and Werner Blum reassured city officials the structure was safe and designed to deflect 13–15 in. at midpoint with a load of four to five ft of snow, plus lights and other attached equipment. The *Civil Engineering* article reported that the design was run through the computer at Virginia Polytechnic Institute, which indicated a deflection of 13 inches. Actual measurements showed a deflection of 12 to 13 in.

Several of the key firms involved in the Hartford project are among the ones being sued by John Hancock Mutual Life Insurance Co., Boston, (P/A, Oct. 1975, p. 40) over the matter of the falling glass windows in the Hancock Tower, designed by I.M. Pei & Partners. The firms are Gilbane Building Co., general contractor; H.H. Robertson, which supplied the curtain wall for the Hancock building; and Ætna Casualty and Surety Co. of Hartford which furnished the performance bond for Gilbane Building Co.

The Hancock suit and countersuits were filed more than two years ago, but the case has not come to trial and no date has been set, pending completion of pre-trial "discovery"—decisions such as what documents will be admitted.

Major projects for Venturi & Rauch

An architectural, planning, and engineering team has been selected to redesign the White House end of Pennsylvania Ave. in Washington, DC. The project will consist of a plaza and a park that will change the avenue's traffic pattern resolving pedestrian/vehicular conflicts.

The team selected by the Pennsylvania Avenue Development Corporation (PADC) (P/A, Oct. 1977, p. 21) are Venturi & Rauch in association with George Patton, both of Philadelphia; M. Paul Friedberg & Partners, New York, in joint venture with Jerome W. Lindsey of Washington, DC; and Henningson, Durham & Richardson in association with Parametric, both of Washington, DC. Sculptor Richard Serra will collaborate with the team to

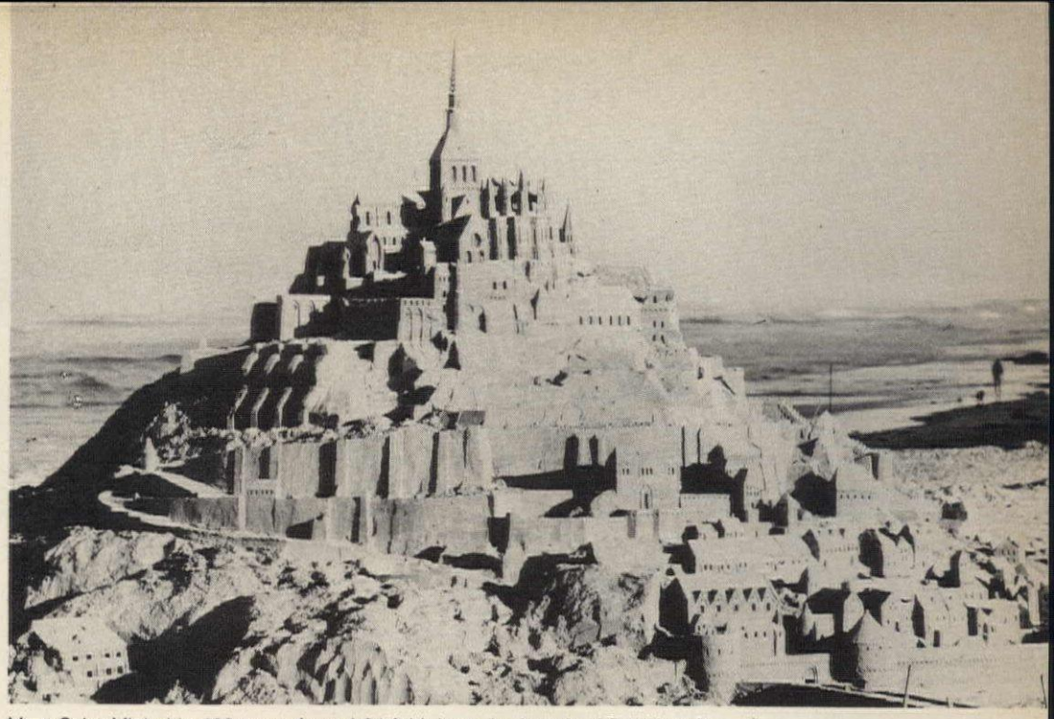
create a work of art for the space.

Venturi & Rauch also was selected to be final phase architects for the controversial $1.16 billion Westway interstate highway in New York. The firm will work with landscape architects Clarke & Rapuano of New York in planning the neighborhood elements for the 93-acre site, to be created to cover the highway. The masterplan was by a team with Skidmore, Owings & Merrill as chief architects.

Mont-Saint-Michel in West Coast sand

A 24-ft-high sand reproduction of the 13th-Century island colony, Mont-Saint-Michel, was constructed last Labor Day weekend on the beach of Del Mar, Ca. The builders were Norman Richard Kraus, a designer, and a group of architects, sculptors, and potters who worked five days making the castlelike structure a reproduction of the monastery and surrounding buildings that occupy a rock island off the Normandy coast of France. The only materials Kraus would allow his workers to use were sand—an estimated 400 tons of it—and sea water.

To start, Kraus leased a bulldozer which shoveled an 18-ft-high mound of sand; then a temporary scaffold was erected to help the builders add to the mound until it reached a height of 24 ft. Then the sand—as dense as low-tide sand—was carved and molded into the Gothic spires and pitched roofs of the original. The scale was 1:150. When finished, it was sprayed with water to help it last as long as possible. The castle remained standing another two days before vandals demolished it.



Mont-Saint-Michel in 400 tons of sand 24 ft high on the beach of Del Mar, Ca.

Photos: Scot Morris

I.W.Y. and W.I.A.A. meet in Houston

As the International Women's Year Conference was getting underway in downtown Houston, a symposium on "Women in Architecture" was held at nearby Rice University, and the exhibit, "Women in American Architecture; an Historical and Contemporary Perspective" (P/A, March 1977, p. 37), was on display at the downtown library. This coincidence of events was the work of the Rice Design Alliance—the community outreach arm of the Rice University School of Architecture—in collaboration with the Houston Women in Architecture.

The symposium attracted 200 who heard New York architect Susana Torre, curator of the "Women in Architecture" exhibit and author of a book by the same name, speak on the historical role of women in architecture—muse, inspirer, household engineer, designer; and "Sissy" Farenthold, who established her reputation as a Texas Lawyer and legislator, and is now president of Wells College, offer observations of women professionals as a group while pointing out that it wasn't until 1847, with the opening of Oberlin College, that any institution of higher learning was available to women.

It's fitting to note that San Francisco architect Beverly Willis, another featured speaker, developed her career without the benefit of an architecture degree or having worked for an architect. This, she confessed, presented complications when she sought and obtained her professional registration. Ms. Willis is head of her own firm and president-elect of the California AIA.

The lone male on the symposium roster was Houston architect Jack McGinty, immediate past president of the AIA. McGinty said women's professional role is most often limited to conducting studies and offering recommendations. The AIA alone, he said, cannot end discrimination despite its "affirmative action" programs.
[News report continued on page 25]

Robin Hood Dell West, Philadelphia, Pa. • Architects: John H. MacFadyen and Alfredo De Vido, New York • Associate Architect: I. Demchick, Philadelphia, Pa. • Roofing Contractor: Warren-Ehret-Linck, Philadelphia, Pa.

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News report continued from page 23

Panelist Natalie deBlois, a Houston architect, echoed the sentiments of several others when she spoke of women as being responsible for their own future. Having been a project designer in large offices for many years, Ms. deBlois is part of the growing "collective" voice of women architects. The collective identity was best expressed by Sheila de Bretteville, a graphic designer and co-founder of Woman's Building in Los Angeles, where the goal is to heighten the visibility of women as both talented and exceptional. Journalists Suzanne Stephens, senior editor of *Progressive Architecture,* and Mildred Schmertz of *Architectural Record,* both remarked on how few women architects aggressively seek publication of their own work. That, combined with the comparatively small number of women in the practice, contributes to the invisibility of women architects.
[Christel Jorgenson]

Technics editor appointed

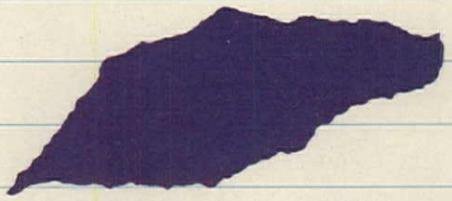
Richard Rush, visiting assistant professor at Carnegie-Mellon University, Pittsburgh, has been named an associate editor of *Progressive Architecture* and will join the staff full time in May. In this position, Rush will be in charge of P/A's Technics features.

Since 1973, Rush has been teaching architecture and building technology. His recent research has been in "self-paced" learning methods for basic building science courses.

Rush received his bachelor's degree in architecture from the Massachusetts Institute of Technology and his master's from Cranbrook Academy of Art. He served in the Peace Corps, supervising construction of low-cost housing on the Ivory Coast and studying indigenous building forms.

Urban design meet set for New York

The first National Conference on Urban Design will be held in New York in April under the auspices of *Urban Design* magazine, a New York-based quarterly. Scholarly papers and other reports now being solicited will be presented on such topics as marketing urban design; creating urban design for both the private and the public sectors; and urban design through preservation and recycling.
[News report continued on page 28]



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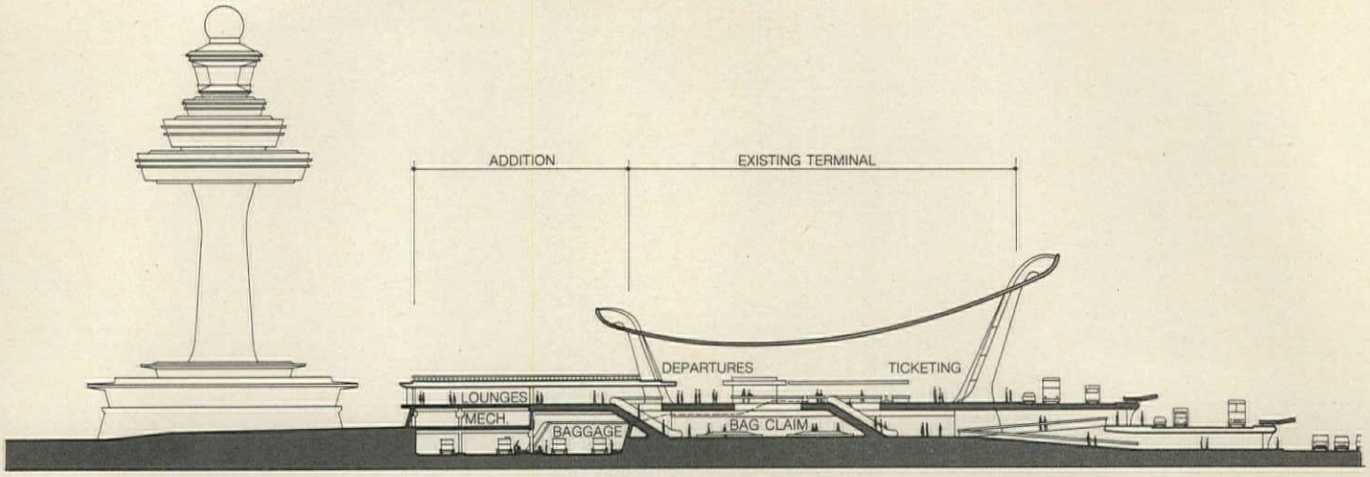
so that people are free to attend to what they care about. Ironically, though, the freest societies invariably create environments that militate against attention. Visual pollution is harmful not just because it is ugly but because it is distractive. And therefore destructive. Like other pollution, it destroys the balance of nature---in this case, human nature. A climate loaded with designs clamoring for your attention is a climate in which you end up paying attention to nothing. For example,

News report continued from page 25



Whither Dulles? Cold war 'landmark'

Concern over the future of Eero Saarinen's architectural masterpiece, Dulles International Airport near Washington, DC, has mounted in recent months. The Federal Aviation Administration, owner of the airport, has immediate and future plans that will significantly alter the design of the soaring concrete structure.

The FAA received bids in January for an approximately $7-million, 70,000-sq-ft addition to the field side of the terminal. The wall where the mobile lounges receive their passengers would be pushed out about 50 ft to create a waiting room. Underneath there would be additional space for baggage handling.

The airport master plan also is being updated, and it calls for linear expansion of the terminal (as Saarinen planned) from the present 600 ft to 1200 ft by 1995. The waiting room soon to be built would be further enlarged to 100 ft deep, and the present interior configuration of the ticket counters would be altered.

There is no question that the mechanics of airports have changed since 1962 when Dulles was completed; added security requirements are but one area. However, architects and preservationists have raised a number of questions about the nature of the alterations—the waiting room causing the most problems. The huge room, extending the entire length of the terminal, will have only a 9'-6" ceiling (in order to alter the exterior configuration as little as possible). *Washington Post* architectural critic Wolf Von Eckardt describes this room as a "dingy crawl space," and adds that it "promises all the architectural charm of a bowling alley."

Courtesy: Dept. of Transportation

Mobile terminal-to-aircraft lounges are shown where planned addition would be built.

Architects for the extension are Hellmuth, Obata & Kassabaum, who are also the architectural consultants on the master plan update. A spokesman for HOK maintains that the addition would not be visible at all from the front, has a low profile from the side, and would not substantially change the appearance of the building from the field. He acknowledged that the low ceiling might seem confining to some, but that skylights are part of the design to lessen this effect as well as to afford views of the main terminal.

Under public pressure—articles and editorials in *Preservation News*, *The Washington Post*, *The New York Times*, *AIA Journal*, and *The Christian Science Monitor*—the FAA invited federal and private architects and preservationists to a briefing on the plans in January. The agency also is giving renewed and serious consideration to nominating Dulles to the National Register of Historic Places. Such a listing would give federal recognition of the importance of the structure and provide for review of future changes to its architectural character by the Advisory Council on Historic Preservation. It's uncertain whether changes now contemplated would come under the Council's review.

James T. Murphy, airport manager, has said, "We look at Dulles as an airport with monumental qualities, not as a monument that also serves as an airport." Those concerned for its future hope that the monumental qualities of Dulles are not changed by unsympathetic alterations. [Carleton Knight]

[News report continued on page 32]

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In perspective

Westport area in Kansas City (above) holds its own while River Quay (below) languishes.

Photos: Donald Hoffmann

Kansas City's two 'old towns'

"The three main assets we have are the river, the City Market, and the old buildings," said Marion Trozzolo in 1972. "We don't want to cover up the old buildings. They're beautiful, and they're uniquely ours." Trozzolo, a graduate of the business school of the University of Chicago, was talking about the River Quay, a project he initiated for the oldest quarter of downtown Kansas City, Mo, near the site of the steamboat landing "Kansas," so named as early as 1838. For a year and a half he had things humming. Today the River Quay is little more than a bombed-out memory. About 35 blocks south is Westport, first platted in 1835; this area underwent a restoration program in 1972 shortly after River Quay and has steadily prospered.

What happened to River Quay? Trozzolo blames local business leaders and City Hall for lack of financial support and for treating the Quay not as a community but as an entertainment spot, almost a "Combat Zone." The project consisted essentially of only three and a half blocks; it never got past tracks and weeds to the Missouri River though Trozzolo envisioned a marina. Renovation was slight and cosmetic, mostly signs and paint.

Then four murders committed elsewhere in the city were attributed to River Quay gangland disputes about go-go girls, parking lots, and other problems. There were fires, and a merchant was beaten to death in his shop. Two taverns were demolished by a force equal to 100 pounds of dynamite. Trozzolo sold most of his interests in October, 1973, to Joseph Canizaro, a New Orleans developer who said he would seek urban redevelopment authority for condemnation powers in a 40-block area, but Canizaro never got it.

The number of bars grew to about 30, disco girls and an X-rated house arrived. Artists and craftsmen—angered by the drunks, motorcycle noises, and rising rents—moved away. By the end of three years Canizaro said he had lost $750,000. He called the Quay a "bad dream," and his representatives retreated to New Orleans. Lawsuits followed. Robert Berkebile, an architect who worked on the Quay concept for Canizaro, said the backbone of their strategy was redevelopment authority. "We could see that without control it was a very fragile development."

The Westport area by 1845 had become the eastern terminus of the Santa Fe Trail. Westport Square, a project, started shortly after River Quay, was backed by Business Men's Assurance Company of America; it also had the advantage of a location closer to residences, colleges, and to a shopping center dating from the 1920s and still considered high class. Kansas City businessman Donald Anderson, who conceived Westport Square, said he was inspired by Ghirardelli Square in San Francisco and by "European-scale neighborhoods, courtyards, surprises around the corner, and amenities." One of his partners was Robert Moore, an architect who collaborated with architect Stuart Hutchison.

Ownership of Westport Square has changed. The development has won awards from the AIA and from the Municipal Art Commission, but Hutchison is most pleased by the voluntary design improvements it has inspired. [Donald Hoffman]

Hoffman is a writer on urban design for The Kansas City Star.

[News report continued on page 40]

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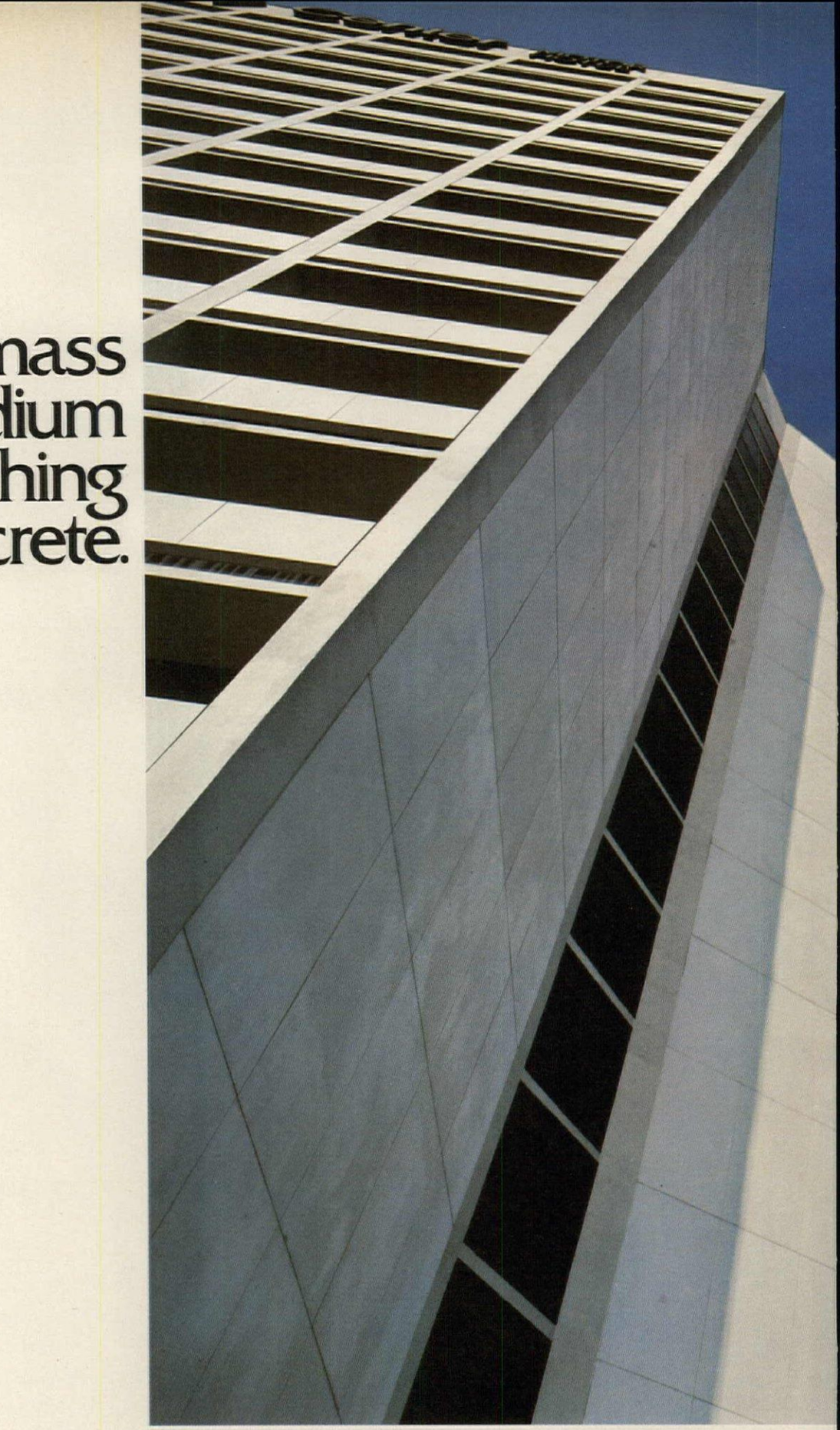

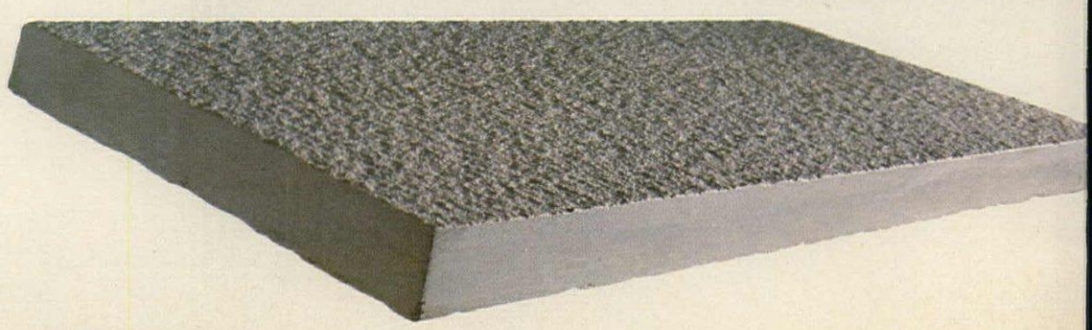

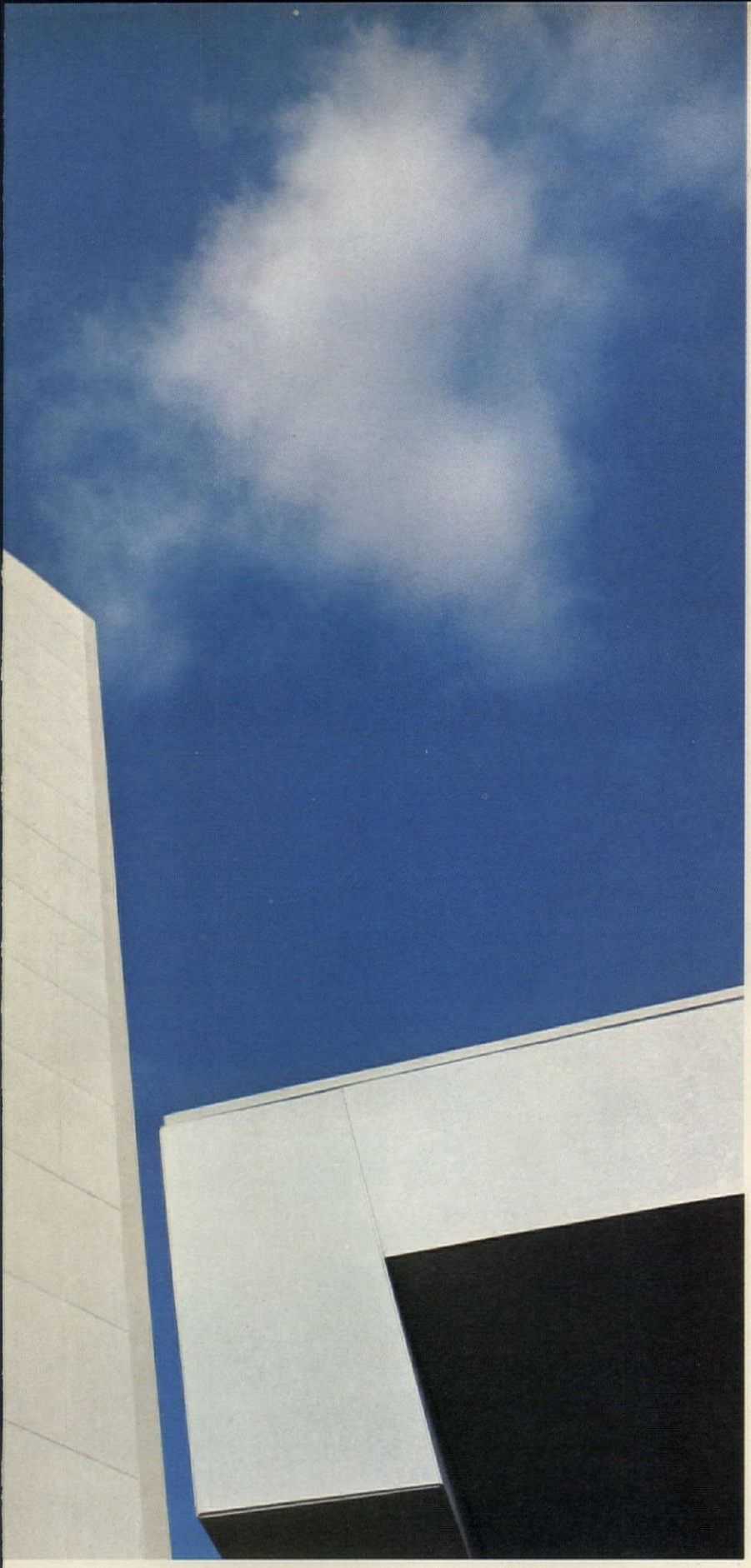

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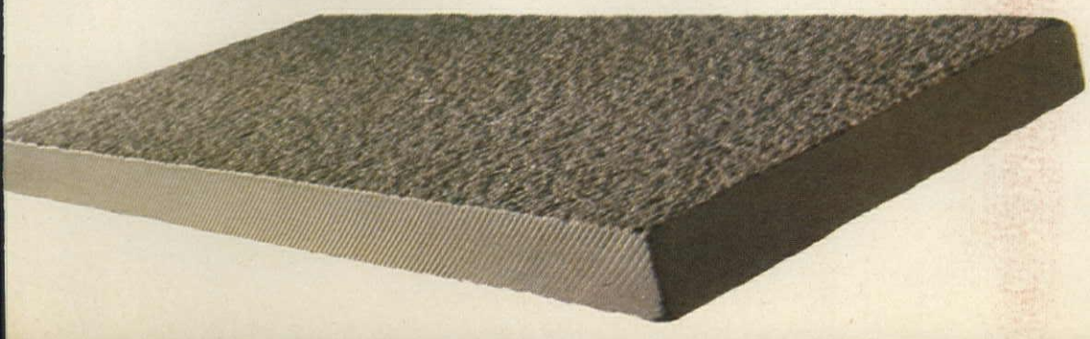

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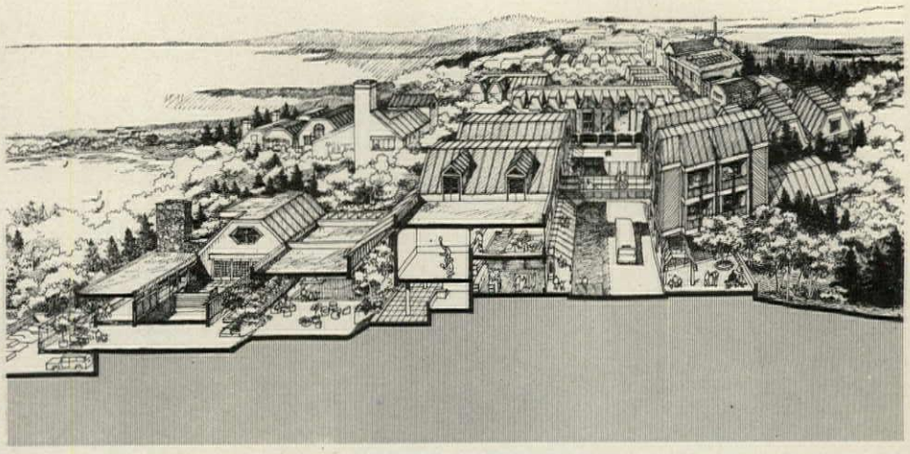
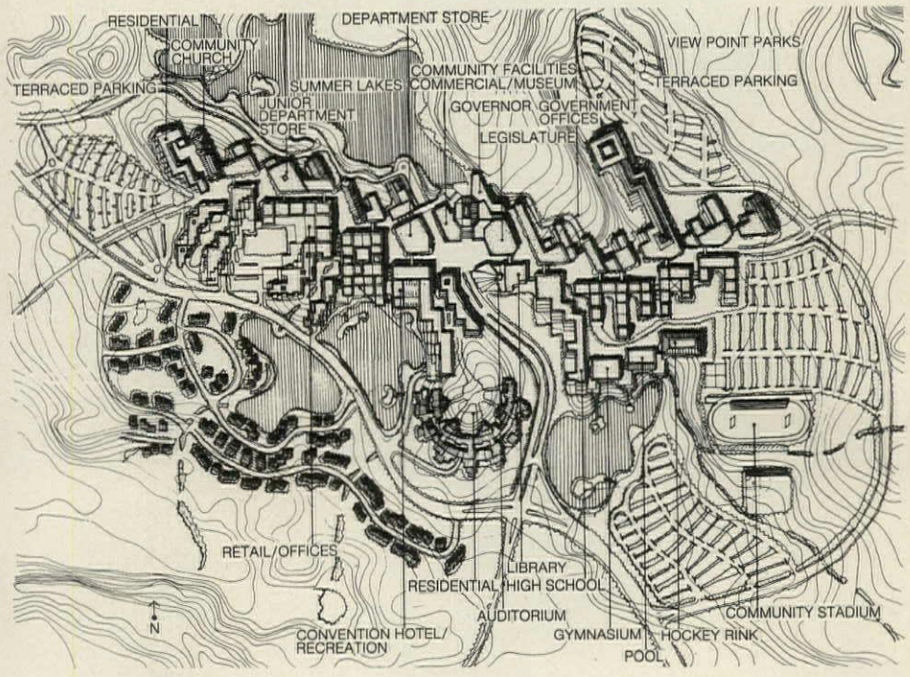


A proposed Alaskan capital; plan shows sun-filled side streets but a main street in shadows.



SF firms design Alaska capital city

San Francisco firms Bull Field Volkmann Stockwell, architects, and Sedway-Cooke, planning, have won the contract in an invited competition to do the master plan for the proposed new capital city of Alaska. Alaskans have voted to move their capital from Juneau in the south to a site 70 miles north of Anchorage near Mt. McKinley, highest point in North America.

Accepting the rugged landscape, the winning scheme places the city for 30,000 on a ridge of between 700 and 800 ft in elevation so that views of the mountain are unobstructed. The city plan is linear, following the topography with an east-west main street which will combine government and business office buildings and commercial facilities. Covered arcades will line either side of the street for weather protection; above the street will be an indoor circulation system linking the buildings. The Commons will be a glass-enclosed landscaped circulation area joining the three branches of government: administrative, legislative, and judicial. Promenades opening south off the main street are planned to take advantage of the low winter sun and provide vistas of Mt. McKinley to the north.

The basic neighborhood unit will be 1000 families living in detached houses centered around an elementary school and general store. Options for other types of housing with greater

[News report continued on page 42]

New, factory-formed zinc roofing systems

Lynwood Recreation Center, Lynwood, Wash. Architect: ORB Planners & Engineers, Seattle, Wash. Installation: City Heating & Sheet Metal, Inc., Everett, Wash.

Seattle Aquarium, Seattle, Wash. Architect: Fred Bassetti & Company, Installation: Pacific Rainier Roofing, Inc.

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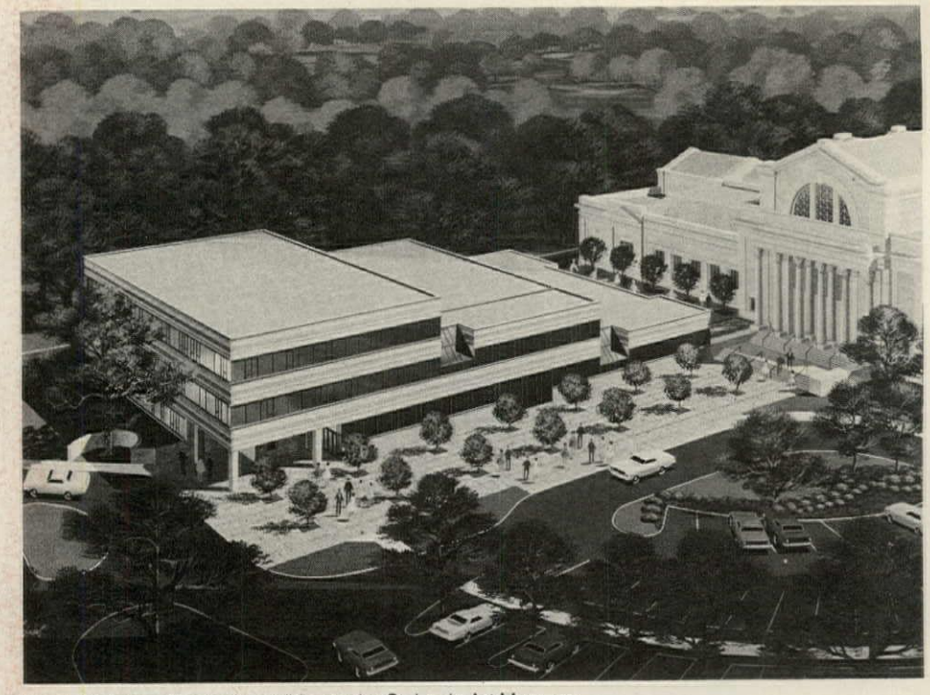
News report continued from page 40

density will be provided. Transportation from the residential areas to the city center will be a transit system of small buses operating on two intersecting loops with a wait of only two minutes anticipated for rush hour; the lines would be within 1000 ft of the majority of homes. Buses would be the only vehicles on the main street.

St. Louis museum addition

The St. Louis Art Museum, designed by Cass Gilbert as the only permanent building for the Louisiana Purchase Exposition of 1904, is in full operation after more than two years of a $6.6 million restoration and renovation program. Coincidentally with the reopening, the museum began construction of a $4 million office and service annex to be completed in 1979. Hardy Holzman Pfeiffer Associates of New York designed both the renovation and the annex, with Peckham & Guyton, St. Louis, as field architects and Kivett & Myers/Howard Needles Tammen & Bergendoff, Kansas City, as construction manager.



Hardy Holzman Pfeiffer's addition to the St. Louis Art Museum.

"The interpretive restoration" reopened the principal cross axes of the museum and cut windows in façade niches. These afford orienta-

[News report continued on page 45]

Everybody's cheering this "draft dodger"

Fuel savings of up to 33 1/3% are reported after installation of draft-free replacement windows with AllianceWall porcelain panels.

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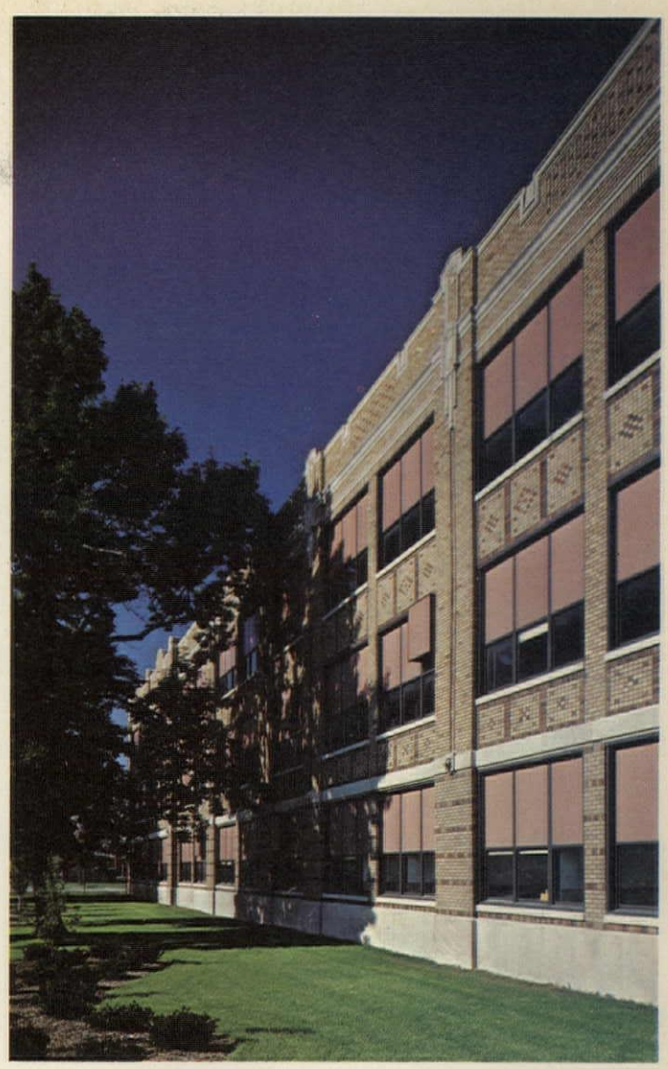

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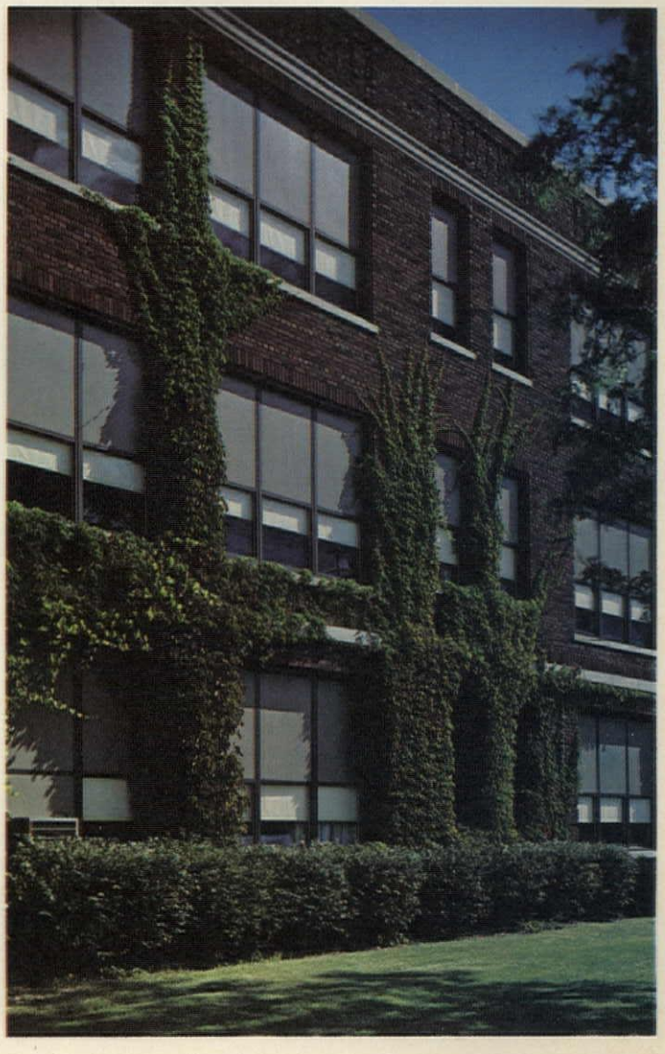

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News report continued from page 42

tion to the Forest Park setting from within—a new experience for visitors. Original Beaux-Arts ornamentation and airy spaces obscured by alterations were reclaimed, and the renovation created 10,000 sq ft of new gallery space from old storage rooms and offices.

The 45,000-sq-ft annex, to be connected with the main building by a sculpture garden and restaurant in a later stage, will be a stepped, four-level facility faced in horizontal bands of buff brick and opaque glass spandrels with solar bronze glass windows. It will incorporate a Murphy & Murphy auditorium built in 1959 and will have an underground corridor to the main building. The new restaurant will liberate the rear portico, where a sculpture deck has been built as the roof of the present restaurant, in place of monumental steps, which will be restored.

This Palace of Art was based on the Baths of Caracalla and includes a spectacular sculpture hall with a barrel-vaulted ceiling 78 ft high which passes through the building between front and rear porticos. Skylighted ceilings of side galleries, which reach heights of 24 and 38 ft, have been refitted with new ultraviolet filtering glass. The present limestone building was the central unit of the Palace; vast matching extensions were removed after the World's Fair. The entire original complex was built in one year for $945,125.50. [George McCue]

Texas architects to hold 'town meetings'

A year-long series of "town meetings" sponsored by local chapters of the Texas Society of Architects, in collaboration with other local groups, will examine aspects of the subject, "Texas—The Quality of Life." Initiated by any of the 17 chapters electing to participate, these town meetings will be supported by services and funding from the Texas Society.

Society President Preston Bolton said the purpose is to help maintain or enhance the quality of life in a time of change, and he stressed the need to channel the rapid growth of Texas into "*quality* growth," recognizing the hard choices to be made (even in Texas) in the allocation of land, resources, and public funds.

The first of these meetings, to take place in San Antonio on March 17, will take up "Mobility and the Good Life." Coinciding with the establishment of the city's first metropolitan transit system—a bus system—the meeting is intended to assess transit strategies and their potential impact. Principal speakers will be Dr. Hans Blumenfeld of the University of Toronto, and Kenneth Orsky of the Urban Mass Transit Administration.

Collaborating with the San Antonio AIA on this program are the Metropolitan Transit Authority, the city department of planning, Centro 21 (a downtown development office with city and private support), Trinity University, and the University of Texas at San Antonio, the local section of the American Institute of Planners, and the Alamo Area Council of Governments.

Within the next 12 months other chapters including Houston, Austin, and Waco will schedule meetings which should go far to focus public attention on architectural and planning issues, both local and Texas-wide. [JMD]

[News report continued on page 46]

News report continued from page 45

Calendar

Through Mar. 26. "Le Corbusier: Architectural Drawings," Museum of Modern Art, New York.
Mar. 5–Apr. 1. "The Architecture of James Stirling: Four Works," Graham Foundation, Chicago. Subsequent exhibits: **June 25–July 22.** University of Washington, Seattle; **Aug. 13–Sept. 9.** Baltimore Museum of Art; **Oct. 8–Nov. 4.** Moore College, Philadelphia.
Mar. 16–17. Barrier-free buildings workshop '78, presented by *Progressive Architecture,* San Francisco. Subsequent workshops: **Apr. 3–4. Houston; Apr. 10–11.** New York; **Apr. 17–18.** Chicago; **May 1–2.** Atlanta.
Mar. 16–31. Exhibit of Charles Pollock sculptures and drawings, sponsored by Thonet Industries, at their showroom, Merchandise Mart, Chicago.
Apr. 5–10. Society of Architectural Historians annual meeting, St. Anthony Hotel, San Antonio.
Apr. 8–11. Environmental Design Research Association annual conference, University of Arizona, Tucson.
Apr. 14–15. "Positions in Architecture III" symposium, Rhode Island School of Design, Providence.
Apr. 15. Postmark deadline for entries to "Innovations in Housing" awards program, sponsored by American Plywood Association, *Progressive Architecture,* and *Better Homes & Gardens.* Mail entries to: Innovations in Housing, P.O. Box 2277, Tacoma, Wa 98401.
Apr. 17–19. Annual apartment builder/developer conference and exposition, Georgia World Congress Center, Atlanta.
May 15–20. International Federation of Interior Designers world congress, Washington, DC.
May 21–24. American Institute of Architects annual convention, Dallas.
June 14–16. NEOCON, National Exposition of Contract Interior Furnishings, Merchandise Mart, Chicago.
June 18–21. Construction Specifications Institute annual convention, San Antonio.
July 22–25. American Society of Interior Designers national conference, Washington, DC.
[News report continued on page 49]

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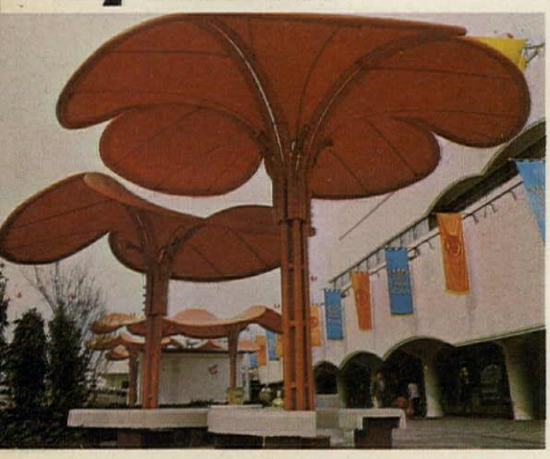

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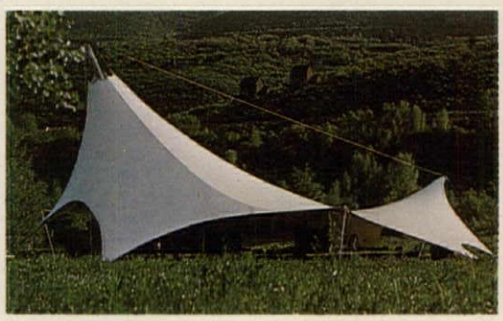

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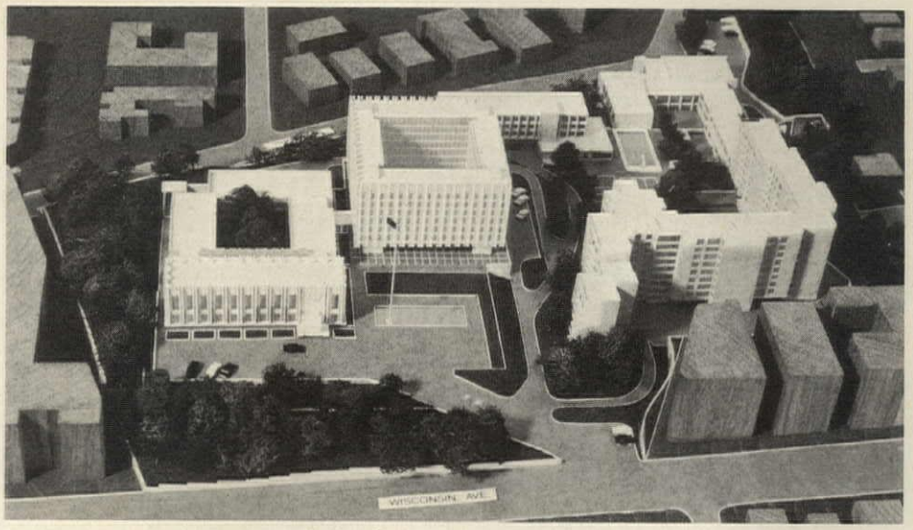
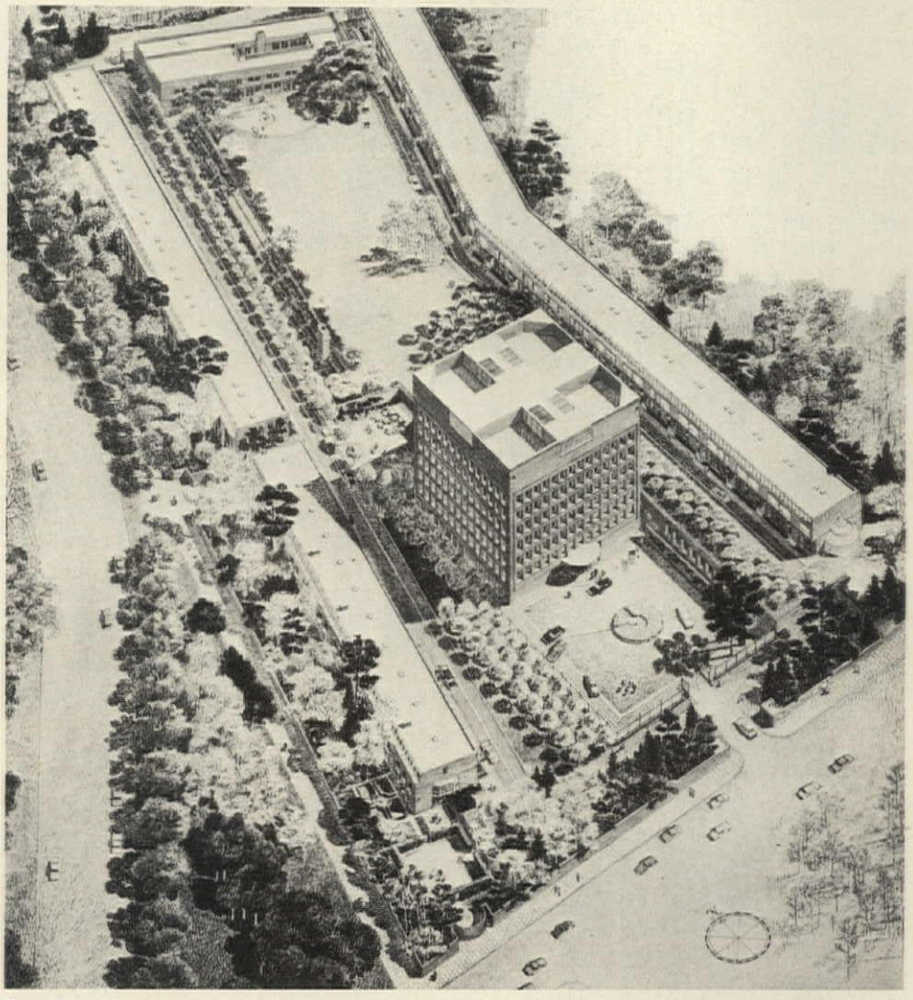


1

1 Soviet embassy—Ground has been broken on the $70-million Soviet Union Embassy in Washington, DC, on a 12-acre site north of Georgetown. Completion is anticipated for the early 1980s. Soviet chief architect Mikhail Posokhin designed the complex and selected the architectural office of John Carl Warnecke & Associates to be his local associate; Boris Illarionov is head of the Soviet architectural/engineering team on the project. The compound will consist of: phase one, housing of 165 apartments, school, clubhouse, health clinic, swimming pool, and cafeteria; phase two, nine-story office building, ambassador's residence including concert hall, state dining hall, and reception hall. The project is supposed to coincide "brick-for-brick" with construction of the new United States Embassy in Moscow and has been in negotiation for 15 years; however, permission was granted for the Soviets to start construction before work began on the American embassy.



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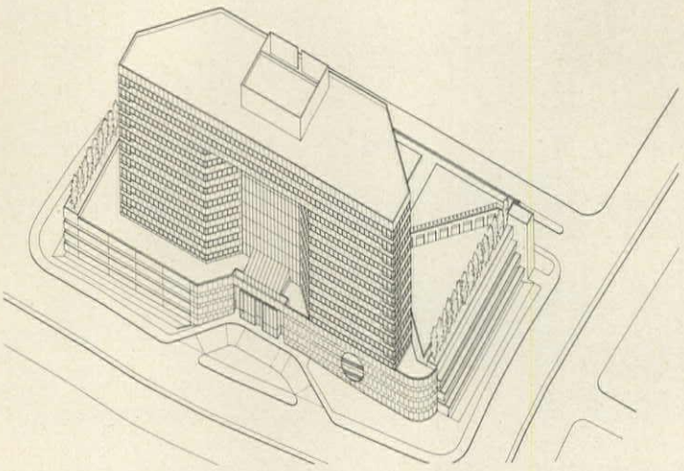
2 United States Embassy—The State Department has confirmed that construction of the U.S. Embassy complex (P/A, Dec. 1974, p. 45) will begin in the spring with completion of the eight-story chancery portion expected to coincide with that of the Russian Embassy now under construction in Washington, DC. The enclosed park scheme by Skidmore, Owings & Merrill, San Francisco, and Gruzen & Partners, New York, was designed to create a "strong sense of community" while avoiding "overt monumentality." Two rows of terraced townhouses for Embassy personnel will border a central park on the east and west sides; a school will form the north enclosing element. Service facilities and parking located beneath the landscaped common will be accessible at grade on the west due to the natural slope of the site.

3 Laclede's Landing—Bi-State Development Agency, which operates the St. Louis area's transit system, plans to open executive/administrative offices by 1979 in a renovated tobacco warehouse, the largest element of Laclede's Landing, a nine-block riverfront district just north of the Gateway Arch. Design and remodeling are by SRT Associates/JG Randle & Associates, a joint venture. Part of the renovation will include a roof garden and open plan offices with task/ambient lighting.



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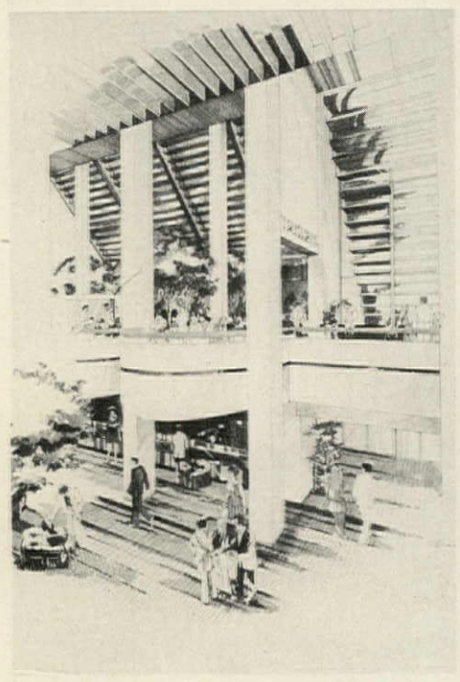

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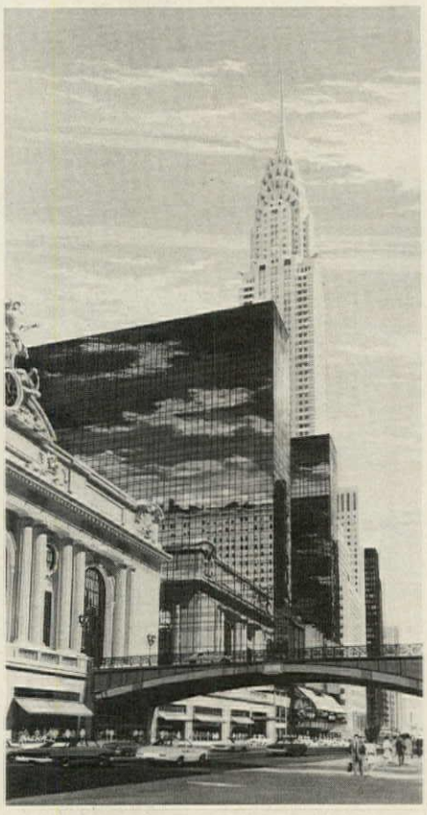

7

4 Mitchell/Giurgola office building—The New York office of Mitchell/Giurgola has designed a 15-story, 250,000-sq-ft speculative office building for an urban renewal site along the Connecticut Turnpike in downtown Stamford, Ct. Eleven stories of office space will be placed above four of parking; as required by zoning, the top of the parking structure will be a landscaped plaza eventually to be connected with other buildings in the development strip. The building faces an exit ramp of the turnpike, and its front forms a gateway on a scale relative to the automobile. Office floors will wrap around three sides of an atrium. The developer of the $10-million building is the F.D. Rich Company of Stamford. Completion is set for mid-1979.

5 Mixed use in Washington—Schematic plans have been completed for a mixed-use project including 200 apartments at Thomas Circle, next to the Madison Hotel, in Washington, DC. Recreational facilities including a racquet club will be part of the development as well as offices and retail space. DRG Ventures of Washington is the developer; Thompson, Ventulett, Stainback & Associates of Atlanta are the architects.

6 Colony Square redone—Atlanta's Colony Square, by Jova, Daniels, Busby of Atlanta, has come under the control of the Prudential Insurance Company following bankruptcy; Prudential has hired Atlanta architects Thompson, Ventulett, Stainback & Associates and interior designers Howard Hirsch & Associates of Beverly Hills for remodeling of the complex, at an estimated cost of $4.5 million. Office blocks and the hotel will be linked at the retail mall level with a town square environment; the ice rink will be replaced by a landscaped cocktail lounge; and the hotel lobby will be extensively redecorated. A much-needed visitor arrival area will be added on Peachtree Street.

7 Tax abatement applied—A unique application of a tax incentive granting abatements to developers while earmarking for the city a percentage of net profits has opened the way for the building of a 1400-room hotel in New York on the E. 42 St. site of the inoperative Commodore Hotel. The Commodore's structure will be the framework for the new Hyatt Regency New York; architects Gruzen & Partners, New York, will enclose the Commodore's brick walls with a mirrored bronze-tinted glass skin. The interior will contain a three-story-high atrium lobby and a cocktail lounge cantilevered over the 42 St. sidewalk as a canopy for the entrance. Completion is anticipated for 1980. The developer is Wembley Realty, subsidiary of the Trump Organization, and the Hyatt Corporation. The tax plan is administered through the innovative New York State Urban Development Corporation, which owns the Commodore and is leasing it to the developers.

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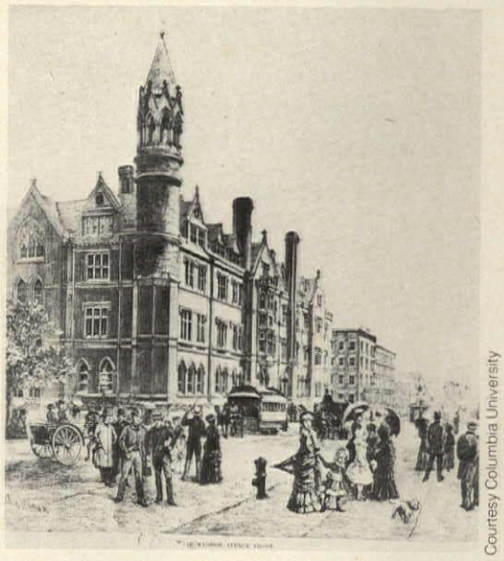
Circle No. 331

The new college try



Courtesy Columbia University

Columbia College 49 St. and Madison, 1880s.

An institution active in the ongoing formulation of social values, the university expresses much about its attitudes in the architectural choices it makes.

In the last two decades it seems that universities and colleges have been intent on corroding in the name of Modern Architecture any kind of quality their traditional campuses offered. Results ranged from overcooked extravaganzas that have little to do with existing context, to underdone derivatives that have little to do with design. None of this is over. It is exhilarating, however, to see some different attempts being made—attempts to recognize the special characteristics of the setting, to build upon them, and with them—where design doesn't mean destruction. If one goes by the examples shown on the following pages, Columbia University has pursued this path in an exemplary manner. These recent works exhibit a respect for the past architectural heritage by recycling and renovating existing structures, and by a contextual approach toward new construction.

This attitude is grounded in "economy" in its truest sense. One building is placed atop part of another (Fairchild Center, p. 54); another building is underneath a courtyard and in borrowed basement space of surrounding buildings (Avery Library extension, p. 60); yet another is a converted nursing home (Hogan Hall, p. 62); another occupies renovated spaces of a former drama club (Greene Hall, p. 64). Part of this philosophy of "nonarchitecture" was reflected in I.M. Pei's master plan of 1969. The plan drew attention to Columbia's catacomb-like infrastructure below grade where space existed to expand in the tight urban situation.

But Columbia is also relying more on participation now—not just in terms of its heeding student criticism following the riots of 1968, but also in looking to its architectural school for advice on decisions about new construction. Thus James S. Polshek, dean of the architecture school, has taken an increasingly active role as a special advisor to Columbia's president, and works often with campus architect D. Dean Telfer in recommending architects to be interviewed. While the university seeks architects from the general profession, it has in these four cases hired architects from its own faculty. The results show a vast improvement over previous (and recent) efforts. Perhaps it helps to have a potentially vocal chorus of critics—whether students or peers—around; perhaps first-hand knowledge of the functional and psychological needs of the place extracts additional time and more sensitivity from the architects involved.

There are disadvantages of course: sometimes colleagues hate to criticize the architect for fear of creating ill will; and should the building have serious defects, the university may find itself having to sue an employee. There is no assurance that if such a hire-within-the-ranks policy were mandated it would work as well in every instance. Nor for that matter is every effort that is guided by this design attitude above reproach. For this reason, P/A discusses elements of a solution that may fall short of the intent or general expectations.

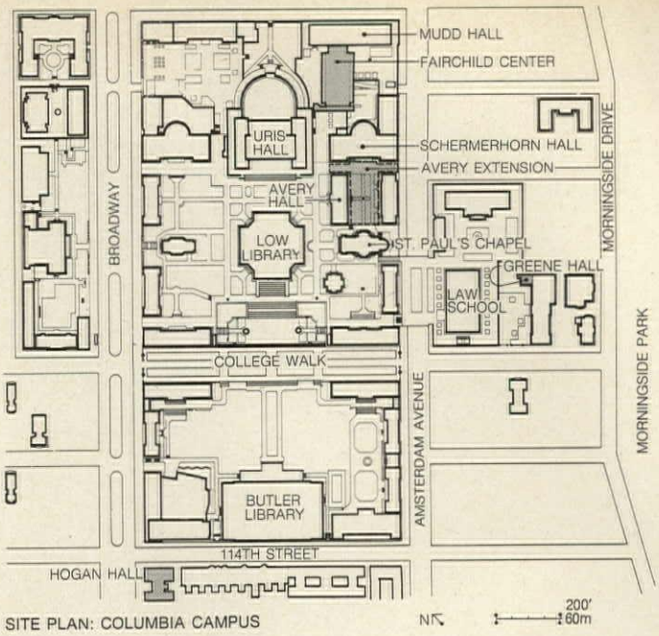
A contextual approach, however, does not have to be limited to any orthodox kind of response, such as one grounded in literal allusions to a historical style. This is seen clearly at Fairchild Center where Mitchell/Giurgola has engaged in a structuralist form of contextualism—where the classical-style architecture nearby is referred to through proportions of the screen walls' panels and the rhythmic progression of open and closed planes.

Similarly the Science Center at Wellesley College (p. 70) pursues a more "disparate" kind of contextualism in a rural setting. Here a current vocabulary is juxtaposed with a Collegiate Gothic vocabulary, the two unified by syntactical links: stylistic similarities give way to an understanding of Gothic architecture's "progressive divisibility" (to use Erwin Panofsky's term) that makes perceptible the visually and structurally logical hierarchy of its parts and pieces.

Yet on the other hand, college buildings are still designed as pyrotechnical displays of virtuosity to seize upon the collective fantasies of their users. In the case of the Student Union at San Francisco State University, (p. 66), we're not sure whose fantasy life, the architects' or the students' has been seized most. It indicates that there are professionals and universities out there who do not want their architecture to be contextual, self-effacing, modest, or hidden. Whatever the case, this is indeed a pluralistic time. [Suzanne Stephens]

Fairchild Center, Columbia University, New York

Hail Columbia



SITE PLAN: COLUMBIA CAMPUS

Mitchell/Giurgola's brilliant solution to problems of site and surroundings gives Columbia a great new building.

Columbia University has long occupied a central place in the architectural life of America. Its Avery Library is the world's largest and most important architectural archive, an essential resource for historians and scholars. Its architecture school is among the nation's best, and has produced some of our greatest architects and architectural educators. Its art history department has been the spawning ground for many important careers, and for a decade was headed by the greatest architectural historian of our time, the late Rudolf Wittkower. Its campus design by McKim, Mead & White is today recognized as a classic of Beaux-Arts planning principles, and its centerpiece—the majestic Low Memorial Library—is appreciated as a masterwork of its architect, Charles Follen McKim. Only in its own campus architecture of the past half century has Columbia not lived up to its role as a major force in shaping the architectural taste of our country: a classic case of the cobbler's family going without shoes.

Originally planned in 1894 (see "The Design of Columbia in the 1890s, McKim and His Client," by Francesco Passanti, *Journal of the Society of Architectural Historians,* May 1977), the Columbia campus, in its first three decades on Morningside Heights, saw the orderly development of its component parts along the lines set out in McKim's initial scheme. For the most part the first buildings were look-alike classroom structures, but occasionally an important building would surpass the norm: I.N. Phelps Stokes's St. Paul's Chapel of 1904 is a work of considerable grace and dignity.

But with the completion in 1926 of John Jay Hall, a high-rise dormitory, came the first radical departure from the carefully maintained building height that was an integral part of McKim's plan and which gave the campus its sense of unity and coherence. James Gamble Rogers' Butler Library of 1934 is such a dreary affair that it is hard to believe that it is by the same hand that gave Yale its incomparable colleges of the 1920s and 1930s. And although some of Columbia's architecture before World War II might have been banal, the general level of design there in the 1950s and 1960s ranged from the awful to the execrable. One after another, the buildings of the past 25 years used up precious space on the compact campus, adding to the bleak urbanism that increasingly encroached upon the once-beautiful enclave.

Up against the wall

To try to determine which of those buildings is worst is a fruitless task, for, to paraphrase Tolstoy, every unhappy building is unhappy after its own fashion. But the recognition that the buildings were very bad indeed was the first step on Columbia's road to restitution. The Cox Commission, set up after the student rebellion of 1968 to determine the causes of campus unrest which captured headlines around the world, found that the depressing physical environment at Columbia had played a significant part in fomenting student dissatisfaction with the university and its policies. After all, weren't the architecture students considered the most radical of those in the uprising, and was it not a protest against a projected gymnasium insensitively sited on public park land adjacent to Columbia that set off the 1968 riots? Thereafter, the university began to pay more attention to the quality of its architecture, and now, at last, the fruits of the effort are beginning to be seen.

Some of the results have been blatantly cosmetic, such as the gift by alumni of a preposterous, five-story-high, 23-ton bronze sculpture by the late Jacques Lipschitz that has been placed in front of Harrison & Abramovitz's dismal Law School building of 1961. But other efforts have been more significant, and finally Columbia is emerging from an architectural wilderness through which it has wandered for many years. And its proudest evidence of that emergence is its new biology laboratory building, the Sherman Fairchild Center for the Life Sciences.

Under the guidance of James Polshek, dean of the Columbia School of Architecture, and D. Dean Telfer, the campus architect, the university wisely and uncharacteristically turned to its own best talent: the office of Romaldo Giurgola, who is professor in the architecture school, was chosen for the job. From every outward sign, this was from the beginning an extremely difficult commission, and the degree to which Mitchell/Giurgola triumphed over some great obstacles makes this achievement all the more impressive.

Rise above it

To begin with, there was the site, or, more accurately, the lack of it. It is hard to imagine a more ungrateful location for any building. Set atop an existing five-story podium structure, Fairchild is tightly hemmed in on three sides by buildings: sedate old Schermerhorn, part of the original McKim, Mead & White ensemble, to the south; Seeley W. Mudd Hall, the grim home of the Columbia School of Engineering, to the north; and the unspeakable Uris Hall, housing the Columbia Business School, to the west. Small and cramped, the site paradoxically offered the guaranteed prospect of making any new building that rose there look good if only by comparison with what surrounded it.

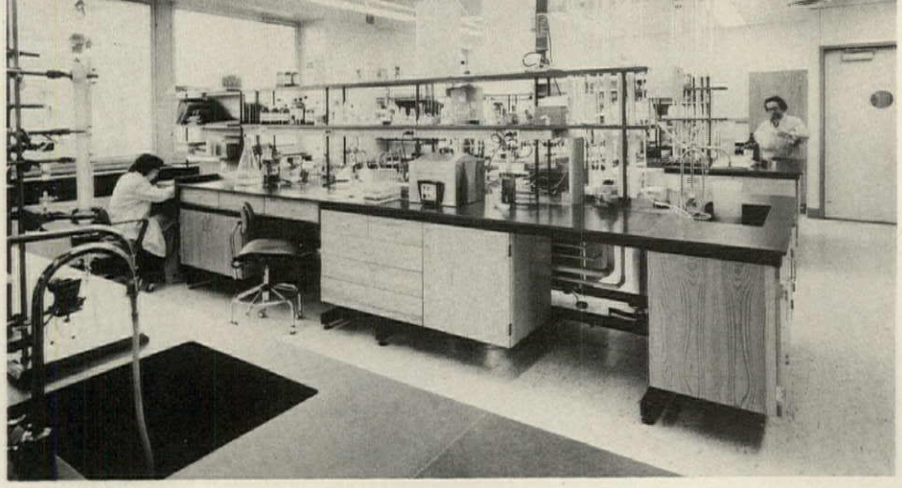
But that, to say the least, was not good enough for Mitchell/Giurgola. "If any good result is to come out of architecture," observes Romaldo Giurgola, "then it must start from the conceptual level. One must try to attack from a conceptual level what kind of function those various elements will

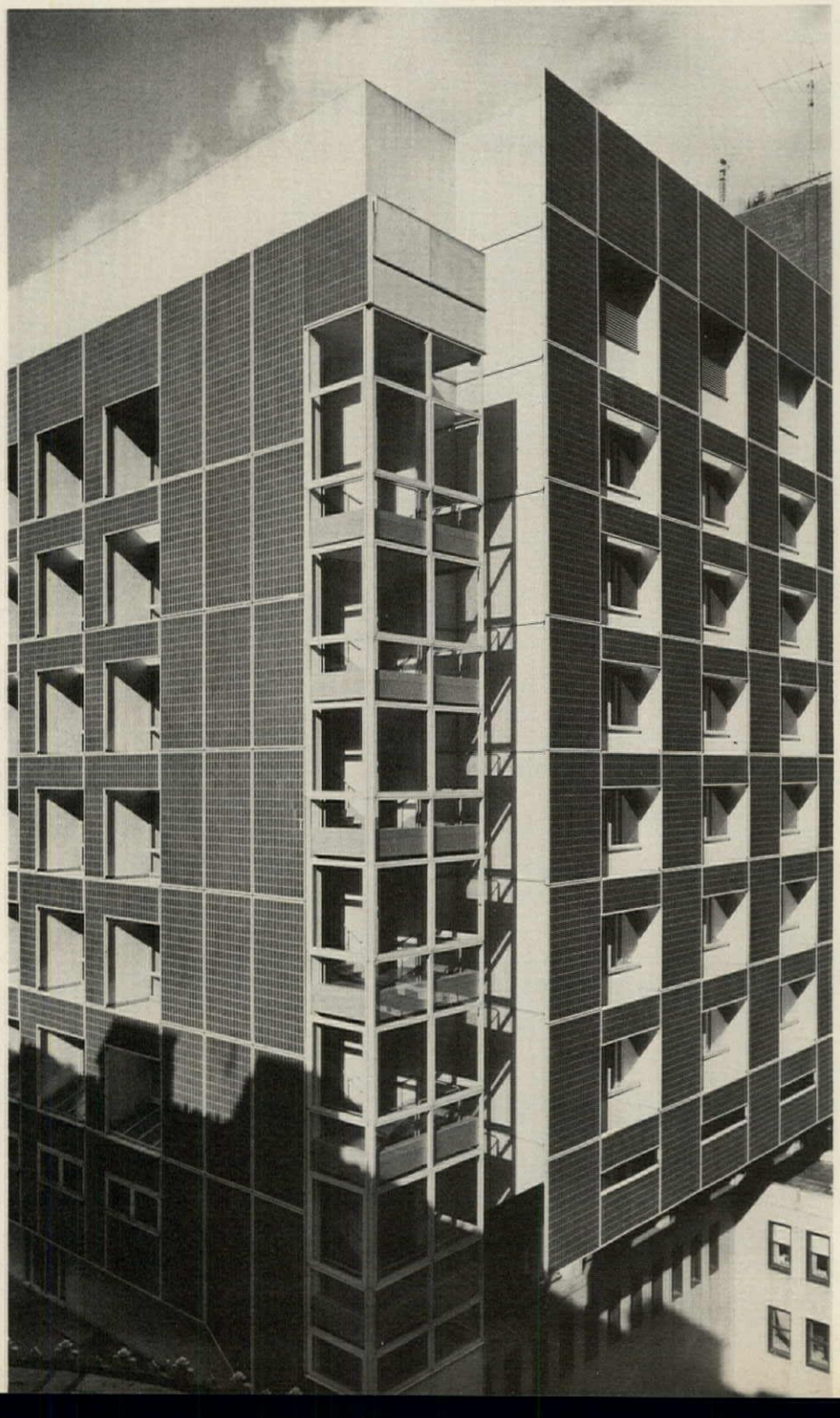
The Sherman Fairchild Center for the Life Sciences (opposite page) is flanked on the right by Schermerhorn Hall and (barely visible) Avery Hall, home of Columbia's world-renowned Avery Architectural Library (see pp. 60–61) and the Columbia School of Architecture. To the left are the Collegiate Gothic tower of Teachers College—the only example of that style on the Columbia campus—and part of Uris Hall.

have, and the aesthetic is a result of it." The conception for Fairchild emerged from the physical realities of the situation. Because of the existing podium below, the only structural option open to the architects was light steel framing, and the whole design in turn was calculated to reaffirm the lightness that the framing expressed. That feeling of lightness was further emphasized through the major design element of the building's exterior: the screen of tile paneling hung from the steel skeleton. "It makes clear the way it has been built," says Giurgola, further explaining that "no matter how hard you try, masonry kills the nature of the structure. The paneling is a shield that emphasizes the lightness of the structure."

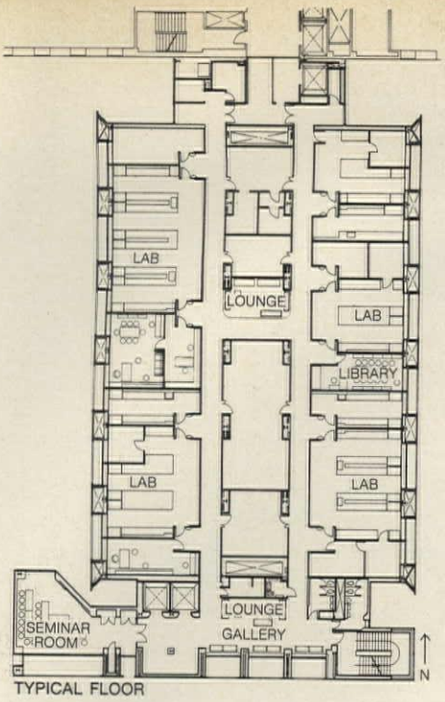
The material used for the paneling has been the source of considerable, if unwarranted, misunderstanding. The warm, terra-cotta-colored tiles are not intended to mimic brick. Perhaps the chief misapprehension among some campus observers is that the tiles were meant, but fail, to "match" the material of the surrounding buildings. A perfect instance of the inefficacy of that notion is the building just to the north of Fairchild, for in Mudd Hall the materials—brick, with pinkish gray granite for the base—carefully replicate those of the original McKim, Mead & White buildings. But the design of the engineering building is so poor that it might as well have been made in the same cheap cinder block of its interiors as in the expensive materials actually used.

The new biology building is surrounded by buildings employing a number of different materials, so the assumption that its cladding refers to any one of them in particular is misleading. In truth, the tile alludes to some of those materials, but it performs a more important function within the architects' conception. The white-enameled aluminum trim of the panels serves to make each discrete component of the exterior read individually, in much the way the nearby Neo-Renaissance buildings combine darker brick with lighter masonry trim. "I'm very afraid of sleek things," Giurgola admits, and the panels therefore avoid the overly facile legibility of many other curtain wall structures by stopping the eye during its exploration of





Laboratories (top) were designed for possible future expansion or reduction. Overhead utilities were left exposed, and light fixtures run perpendicular to pipes to create a grid effect. Ventilation ducts for labs lie behind exterior wall panels in the interstitial spaces of the double wall system. The glass enclosed stairway (bottom) is a departure from the usual treatment of the windows as voids. The east (at right in bottom photo) and west façades and the south façade (at left) cannot be seen at the same time from the surrounding plazas: photo taken from adjacent Schermerhorn Hall breaks the illusion that gives great visual variety to the exterior.



TYPICAL FLOOR

the remarkably varied exteriors. The aluminum precast tile paneling was chosen because it reads with a thinness, but has the durability, that only a metal panel system could combine: the tiles add warmth that the architects wanted the building to express. The double wall plane which the panel creates works well in screening light along the east and west exposures of Fairchild (where the labs are located), and reduces glare in those sensitive work spaces. The extensive network of ventilation ducts that serves the laboratories is housed in the interstitial spaces between the inner and outer walls, allowing the screen to be unbroken by the shapes of the ducts behind it.

You've come a long way from St. Louis

Much at Fairchild is strongly reminiscent of the work of Romaldo Giurgola's acknowledged master, Louis Kahn. The screen created by the hung wall paneling plays down the glazing behind it (save in the crystalline exterior stair well) and it creates the double layer effect—the "wall behind a ruin"—that was a favorite theme in Kahn's work. The so-called "served" and "servant" spaces are rigorously separated and defined, and in the interiors pipes and utilities are left exposed. But the building's light and friendly feeling has little spiritual kinship with Kahn's two laboratory buildings: the functionally disastrous Richards Laboratories of 1957–61 at the University of Pennsylvania, and the solemn Salk Institute of 1962–66 at La Jolla.

Three interiors at Fairchild: The 11th floor seminar room (top), above the cornice line of McKim, Mead & White's original campus, is used—with furniture removed—for departmental receptions. Galleries on each floor (middle) provide lounge facilities along the building's sunny southern exposure. Polished aluminum slat ceilings are used in public spaces throughout the building. Seminar room (bottom) has Arne Jacobsen molded plywood chairs. Recessed circular light fixtures and muted mauve walls give a vaguely Art Deco feeling to the interiors.

Fairchild Center

Stirling and Gowan's Leicester Engineering Building of 1959 is more like this both in its use of materials and in its similar triumph over a ludicrously limiting site. But the humane and organic architecture of Alvar Aalto provides an even better source. Both Giurgola himself and his staff architects on this project share a great enthusiasm for the late Finnish architect. Mitchell/Giurgola's commission for a Volvo assembly plant in Virginia required visits to Scandinavia, where the architects saw a number of Aalto's works, and his general approach to design has been clearly, if nonspecifically, transmitted to the design of this building.

Fairchild is entered from a long, gently ascending stairway that in its quiet, nonmonumental way still manages to impress the feeling that one is entering a rather special place. The entry lobby immediately sets the tone for the rest of the building. The dropped ceiling of polished aluminum slats illusionistically heightens the low space. A stairway is painted with striped graphics in the pink-to-mauve tones which are used elsewhere in the building as well, and the elevator ceilings are wittily decorated with intersecting circles of smoked acrylic sheet that evoke the spirit of the compass-crazed later works of Wright.

Rounded corners, shiny metal, and dusty colors all combine to create an atmosphere that is reminiscent of the 1930s, though the interiors use Art Deco design only as a reference point in the way that the most inspired Neo-Classic design used the vocabulary, but not the syntax, of Classicism. That vocabulary is put to use with great affection and invention in many places at Fairchild. For instance, the archetypal Deco motif of three horizontal lines is alluded to in the gray corner guards used in the laboratory corridors: a triple band is perceived as the small rubber protectors are seen in perspective down the hallway. A departmental mailbox is lightheartedly revivalist, and the round, indirect lighting fixtures in seminar rooms haven't been seen since the palmier days of Streamlined Modern.

The organization of the interior spaces themselves was dictated by the desire to separate physically and to differentiate psychologically what Giurgola calls the "no-fooling-around sequence of laboratories and to contrast them with the more homelike space" of such communal areas as lounges and seminar rooms. This is executed with great finesse, and the building's occupants feel it, by and large, to be a very pleasant environment in which to work. The laboratories, offices, and other service facilities were designed in consultation with members of the biology department, and have therefore achieved a rare degree of user satisfaction.

Minor problems there assuredly have been, but the "tuning" of the complex mechanical system and technical apparatus continues in full expectation of a complete resolution of those imperfections. And by all accounts, the building is performing its other great intended purpose quite well, too. For years, Columbia, because of the inadequate facilities endured by its biology department, found it virtually impossible to compete with other institutions in the recruitment of first-rate talent in that field, and the university's reputation in the life sciences dropped accordingly. As the trump card in its plan to expand its faculty and research potential in the life sciences, this building enables Columbia to compete with the leading biology departments in the country.

The laboratories in which that research will be done are unusually handsome and coherent. Ceilings were left exposed to provide access to the utilities that must frequently be adjusted. Light fixtures perpendicular to the pipes and ducts form a grid pattern that makes a gesture toward design, even though similar exposure was one of the chief complaints at Kahn's Richards Labs, where build-up of dust proved to be troublesome to researchers.

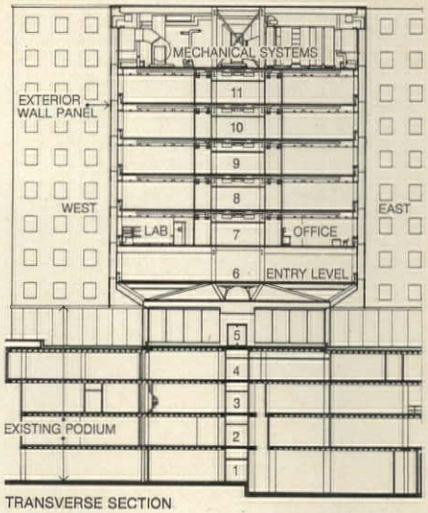
Future adaptability of the laboratory spaces—for their expansion, reduction, or conversion to other functions—was a major requirement of the client, and therefore all planning was conceived with an eye toward those eventualities. Building atop an existing building, the architects were given a situation in which they could not provide the degree of rigidity that would have been possible had they been responsible for the foundations as well. It was therefore decided to move extremely sensitive equipment into adjacent Mudd Hall, rather than to raise significantly the cost of Fairchild by providing an expensive, vibration-resistant concrete slab core, an alternative which university officials considered and rejected.

In this light they shall see light

Like many scientists, the users of Fairchild have a tendency to work late at night, and it is then that the building takes on further aspects of delight. If one of the great serendipities provided by Fairchild is the wonderful way in which it hides Mudd Hall from view as it is approached from the main campus, then nighttime is also the building's friend, as it obscures the contiguous eyesores and reveals new patterns created by the glowing fenestration. Fairchild shares that quality held alike by all great buildings: it makes you want to look at it, and that is no less true here at night than it is during the day.

For a great building this is. Romaldo Giurgola has gathered about him an able group of young architects for this building, and his project team for Fairchild—G. Daniel Perry, Steven Goldberg, and Dart Sageser—has helped to make this possibly the best building yet from that office. Columbia now has a building that surpasses many of the highly vaunted monuments of the 1960s that were built at Yale, Harvard, and Penn while their Ivy League cousin languished in architectural limbo. Its faculty and alumni (this writer among the latter) have a building of which they can be proud. But most importantly, its architecture students now have before them, as they head into Avery Hall toward their drawing boards, the example of a building that, if they are very lucky, they might some day become good enough to equal.
[Martin Filler]

In the gathering twilight, Fairchild (opposite page) dramatically reverses its solid/void composition as the recessed windows on the south façade glow with light: in the daylight, the double wall screen de-emphasizes the glazing behind it. The south façade houses public spaces and is wider than the lab areas behind it, preventing Fairchild's elevations from being read simultaneously at campus level.



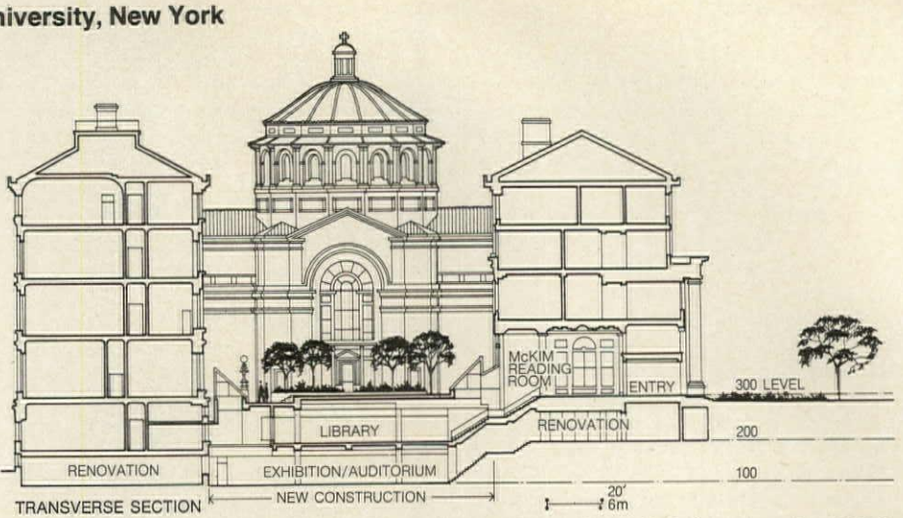
TRANSVERSE SECTION

Data

Project: Sherman Fairchild Center for the Life Sciences, Columbia University, New York.
Architects: Mitchell/Giurgola Architects. Team: Romaldo Giurgola, G. Daniel Perry, Steven Goldberg, Dart Sageser, project architects; Jan Keane, Jack Cain, associates.
Program: a biology research building containing laboratories, offices, seminar rooms, libraries and lounges, for a small, tightly constricted site atop an existing five-story podium structure at a large urban university.
Major materials: aluminum paneling precast with tile (exterior walls), gypsum board walls (interior); vinyl asbestos tile floors; exposed steel deck and aluminum plank ceilings; lightweight concrete on steel deck and liquid membrane roofs. (See Building materials, p. 120.)
Mechanical system: steam heating; two-stage absorption air conditioning.
Consultants: Joseph R. Loring Associates, mechanical engineers; Skilling, Helle, Christiansen, Robertson, structural engineers; Howard Brandston, lighting; Earl L. Walls Associates, Michael Somin, project manager, laboratory systems; John O. Meadows, cost estimator.
Construction manager: Tishman Construction and Research Corp.
Cost: $12,254,237/$103.84 per sq ft.
Photography: Guy Sussman.

Avery Library extension, Columbia University, New York

Beneath the halls of ivy



TRANSVERSE SECTION

Idea for extension of building behind Avery Hall (at right) came from I.M. Pei's master plan of 1968.

Expanding underground proved to be the preferable way to add much needed space to Columbia's architecture library in a crowded campus setting.

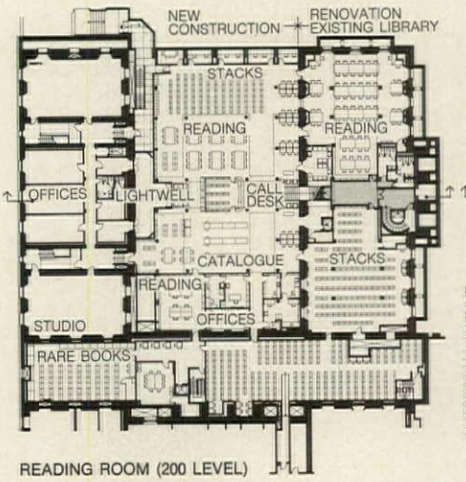
The Avery Library extension at Columbia University responds to a range of architectural issues bound up in its physical and historical contexts, the nature of its program, and the always present budgetary constraints. It is to Alexander Kouzmanoff & Associates' credit that the library extension resolves most of these issues.

As Chairman of the Division of Architecture in Columbia University's School of Architecture and Planning, Kouzmanoff was connected intimately with the functions of Avery Hall, designed in 1912 by Charles Follen McKim of McKim, Mead & White, which houses the school and incomparable architectural library.

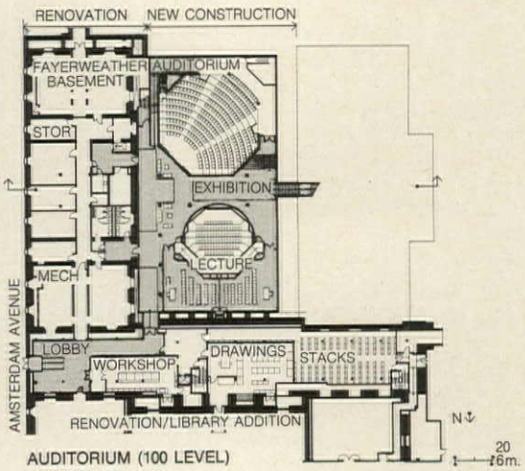
If there are unsettling aspects or missed opportunities in the design solution, they result in large part from the complex set of financial and physical constraints. Two libraries were to be merged in this extension—the 110,000-volume Avery architectural library and the 60,000-volume fine arts collection. Furthermore, the architectural school sorely needed an auditorium, plus exhibition and reception space.

Mindful of the vehement student criticism of Columbia's "expansionist" leanings in the 1968 riots, when Avery Hall was seized, Kouzmanoff, working closely with Avery librarian Adolf Placzek and others (see data), came up with the two-level underground building for the courtyard behind Avery. The 88′ x 152′ courtyard is enclosed by brick school buildings of similar neo-Renaissance design.

The scheme developed places the library on top of the auditorium/exhibit space, so that the new reading room could merge directly with the basement stacks of the old library and be linked directly to the McKim reading room on the main floor of Avery. By any structural reasoning, of course, the 150 psf live loads of the library stacks should have relegated it to a position underneath the auditorium, which



READING ROOM (200 LEVEL)



AUDITORIUM (100 LEVEL)

needed clear spans for sight lines. But, working with concrete slab-beam construction Kouzmanoff and structural engineers Geiger-Berger came up with a viable solution. (See data.)

Besides structural considerations, mechanical ones were considerable; the new Avery extension seemed to be preempting the meeting ground for all the mechanical systems of four buildings around the court. The extension, as an underground building, had its own HVAC requirements, plus humidity and temperature control for the rare books and drawings. Accommodating pipes and ducts became a minor obsession with Kouzmanoff, one he handled by furring out walls and changing ceiling heights in the reading room to define functional areas.

Formal treatment

To get natural light into the subterranean depths, Kouzmanoff installed two skylights in the courtyard: one over the stair leading down to the new reading room from the main floor of Avery; the second over a lightwell at the far wall, plunging down to the auditorium/exhibition level below. On entering the library, one first passes through the 50′ x 155′, 20-ft-high McKim reading room and then moves on axis down the stairs, with a glance through the skylight at Fayerweather Hall for orientation. Downstairs, the central call desk signifies straightforwardly the room's function; 32-ft bays and dropped ceilings on either side of the axis indicate major reading spaces: Additional drops in ceiling heights and closer column spacing beyond, then semi-enclosed and closed rooms, establish a clear hierarchy of use from the axis outward.

The most serious side effect of this organization is that the library's center has been relocated. The McKim room now functions as an ante-chamber to the extension, even though the architecture books and reading tables are located there. In the extension, the placement of the call desk interrupts the axial movement, leaving the issue of axis vs. center unresolved. And because of the axial alignment of the skylights and call desk, the lightwell at the end comes as a letdown; one expects something more than bare white walls as a terminus

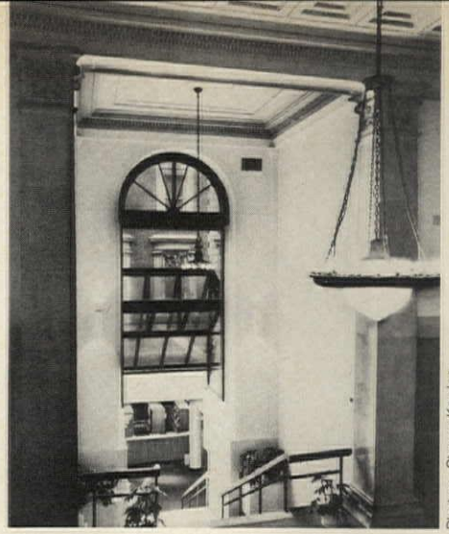
The auditorium level has a more consistent axiality, and here the lightwell at the end of the axis provides a much needed point of orientation—a link to the outside world—and its double-height space defines a reception area. This level however, lacks the legibility of the separate functions and the sense of spaciousness found above. The entrance to the 400-seat auditorium is well defined—the function of the smaller lecture hall, its entrance, and classrooms wrapping around it, less so.

Edmund Stoecklein

At auditorium exhibition level, a double-height skylight defines reception/conversation area.

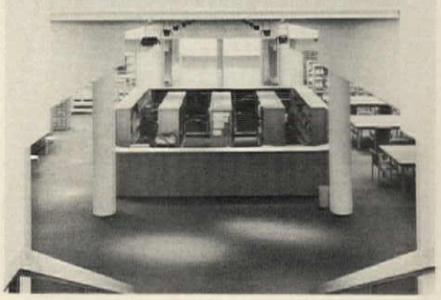
Steven Kaplan

Reading room areas defined by 32-ft bays and changes in ceiling heights where ducts installed.



Photos: Steven Kaplan

View from old reading room to new one.



From stairs one sees court through skylight.

Pavement pattern of court echoes architecture.

The quiet serenity of the white walls, oak furniture, and gray carpeted and red quarry tile interiors will be appreciated by readers. Kouzmanoff's details include clean edges on soffits, corners, and reveals; the workmanship demanded of this approach is always there. But less successful is the visual juxtaposition of the old with the new. While his changes in walls and ceiling planes are expressive, they don't *mold* the space the way McKim's coffers and niches do. Important design elements and details in the new reading room—such as the skylight ribs, handrails, and artificial lighting—lack the delicacy that the old work calls for. Even considering the budget, less was attempted here to refer to the neo-Renaissance palazzo upstairs than one might hope. Kouzmanoff might have been uncomfortable incorporating historical allusion and other post-Modernisms in this extension but, interestingly, he does so in the outdoor court with the paving pattern, gates, lampposts.

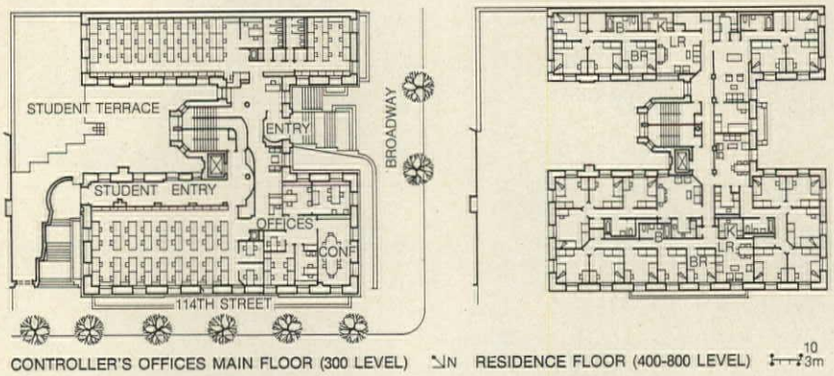
The new Avery extension thus still leaves certain issues open regarding the adding of underground spaces onto existing ones. What the architectural solution does achieve, however, is a high standard of design in terms of its organization of functions, its solution to technical and mechanical problems, and the creation of serene comfortable spaces to spend time—underground. [Suzanne Stephens]

Data

Project: Avery Library extension, Columbia University, New York, NY.
Architects: Alexander Kouzmanoff, Architect, New York, NY, Kelton Painchaud, coordinator; Luellen Fields, Thomas Dahlquist, James Lancaster, Sharon Howell, design team.
Site: a 25-ft-deep excavation under an 88′ x 152′ courtyard behind Avery Hall and under adjacent 30′ x 212′ Schermerhorn terrace.
Program: combined facilities for architectural library of the School of Architecture and Planning (110,000 volumes) and fine arts library for the graduate department of art history and archeology (60,000 volumes); lecture rooms, 400-seat auditorium and exhibit/reception area. Total underground area, 50,000 sq ft.
Structure: concrete frame and slab on 16-ft module, expanded to 32-ft bays in main reading room and lecture hall. In major auditorium, two columns moved out of the grid for unobstructed sight lines rest on 3-ft-wide post-tensioned girders. Floor slabs are cantilevered 12 ft out from columns to allow building to "breathe" and not disturb Avery foundations. Under Schermerhorn Terrace, the library reclaimed an additional 14,000 sq ft on two levels, for rare book and drawing stacks, in the shell of an old carpenter's shop by bracing and installing slab.
Major materials: concrete, brick, oak, gypsum board. (See Building materials, p. 120.)
Mechanical system: 1500 sq ft of space for equipment borrowed from offices basements of Schermerhorn and Fayerweather Halls. System relies on existing steam system plus special multi-zone a/c system with 95 percent efficiency infiltration air supply.
Consultants: Geiger-Berger, structural engineers; Dubin-Bloome Associates, mechanical; Cyril Harris, acoustical consultant.
General contractor and construction management: Tishman Construction & Research.
Client: Columbia University; James Stewart Polshek, Dean of the School of Architecture and Planning; Adolph Placzek, Avery librarian; Warren J. Haas, University librarian.
Costs: approximately, $3,325,000, including all construction, excavation, gutting, etc.: approximately $60 per sq ft.

Hogan Hall, Columbia University, New York

Saving traces



View towards entrance to controller's offices.

A nursing home turned into dual use building for the university gives its architects opportunity to experiment with a contextual approach to design.

With this project, Columbia University commissioned a small "unestablished" firm of architects, R.M. Kliment & Frances Halsband Architects, to undertake the conversion of a nursing home into a graduate residence and university offices. Kliment and Halsband, who teach in Columbia's architecture school, have been developing their own kind of a restrained contextual approach to architecture that reveals affinities to the ideas of Louis Kahn, Romaldo Giurgola, and Robert Venturi, among others.

Although the graduate residence is not their first work, this 72,380-sq-ft conversion is their largest to date. Parts of the effort come off exceedingly well, whereas others do not. Fortunately the elements that falter are not important to the functioning of the building, nor are they major formal intrusions. But these attempts to accommodate new architecture to old deserve comment because of the questions they raise about the way a contextually based architecture should elaborate on an existing architectural code.

In undertaking feasibility study on this building designed by Trowbridge & Livingston (architects for the St. Regis Hotel) in 1898, the firm proposed that the first three floors be given over to 27,500 sq ft of controller's offices for the university. The other five floors were turned into four- and five-bedroom suites for 114 graduate students, with attic and roof converted to lounge and sundeck.

Little change had to be undertaken structurally. The double-loaded corridors were narrowed to permit bath and kitchen cores to be installed in the suites, but soundproof masonry walls and high ceilings of the existing single rooms could be left. One stair was removed, while another was divided in two by a masonry wall to form two fire stairs. Besides installing new heating, plumbing and electrical systems, the architects were responsible for the choice of the simple furnishings and the design of storage walls in the bedrooms.

On the top of the building, the architects designed a student lounge near the laundry room to open onto a roof deck. The skylight from the former interior stair animates this space, along with wall surfaces and soffits painted pink and red to differentiate this ambience from the more sedate living quarters below. Outside walls of this rooftop house are stuccoed and painted a flamingo pink—a surprising touch of flamboyance that can only be seen from the roof level.

Formal devices

The itinerary students take from the street-level entrance to the rooftop is meant to operate as a sort of spatial reverberation or recall. The curved walls in the corridor and lounge entry on the top floor recall the bowed and inflected walls that form the student entrance from the street (see photos, street level, and lounge on top). The inside parapet wall on the roof is red brick to refer to the taller buildings seen from this level; down at the street, Kliment and Halsband chose a buff-colored brick for the entry wall to refer to the brick of the nursing home and the facades of the townhouses along 114th Street.

In axonometric, the idea behind the form of the entrance becomes clear: it takes the wall of the townhouses along the street as a departure point for its rhythm and shape of portal-like niches, stairs, stair landings, and a reverse curve rear wall. But as a realized composition, the effort doesn't come off: the rhythm is too closely spaced and too nervous in this collage of allusive elements. And the simple pipe railings are artful to the point of being finicky. It seems the architects tried too hard to refer to the perceived space, plane, line and volume of the nearby architecture—but instead of an extension that reinforces the perception of the context, they created a freestanding object that calls attention only to itself.

Elsewhere on the building elevations, the architects removed exterior fire escapes, repainted and cleaned the brick and removed the rotted copper cornice. Owing to the budget limitations, Kliment and Halsband replaced the cornice with a brick parapet, which they found had actually been called for in the original Trowbridge & Livingston working drawings. Unfortunately however, the parapet doesn't read as emphatically as the copper cornice did. The architects wanted to allude to the coursing of the brick on the lower floors near the entrance, which in turn related to the townhouses nearby. But they chose to use bricks of a darker flash to create the Flemish bond pattern and, as they readily admit, the color differentiation is simply too subtle.

Subtle also is the gray-blue color of the pipe railing that winds around the corner from the student entrance, reaching a crescendo at the stairs to the controllers' offices. But if the color is subtle, the florid twisting of the railing is not.

Leaving well enough alone

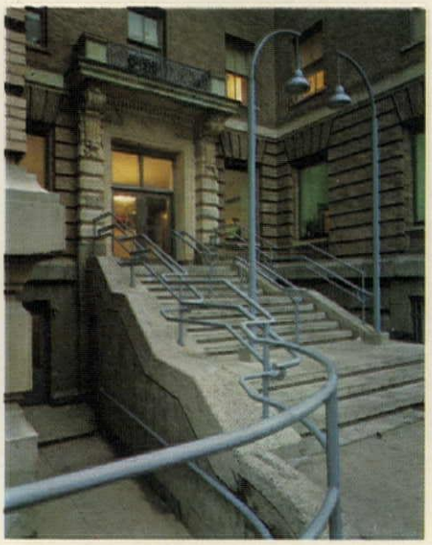
Inside, the offices were sensitively inserted into public spaces of the old nursing home. Clearly the most spectacular room is the old chapel, where the groined vaulted ceiling was retained and painted blue, with plaster ribs painted white. Second to that space is the old dining room, in which the architects designed light blue acoustic baffles edged with white wood trim to fit into coffers of the existing ceiling. New lighting was installed, but with suspended white enamel fluorescent fixtures. Ample natural light is admitted to ground floor spaces through new pivoting windows (existing double-hung windows were kept in the floors above).

Since ducts would have interfered with the ceiling, Kliment and Halsband installed the fin-tube radiators around the room at the sill line and painted them a separate color. In the conference room this wainscoting-like device works well: The existing pewter chandeliers are now dramatized strikingly by the simplicity and elegance of the blue-gray and white palette and the simple detailing.

The design of the main entry vestibule to

The attic and roof were converted to lounge, roofdeck and laundry for student residence; floors in lounge are slate (left), while ceramic mosaic tile surfaces all corridor floors (right). Colors here are vibrant pinks; on residential corridors, they are kept to a blue and gray palette.

Sculptured brick wall was built to define the student entrance leading to separate lobby and to relate to older architecture of street.



Handrails and lamp posts become central motif of controller's entrance (left) outside and in. Security vestibule picks up design motifs.

these offices is strange, however. Much like a small house within a hallway, the vestibule is solid with glazing above to admit light into the lobby. Despite its gray-blue wallboard and wood capping, it is too cumbersome for this small area. The jogs in the planes of the enclosing walls, which appear to echo the configuration of the student entry wall, don't sufficiently bow to the actual space it occupies.

These comments might appear overly concerned with formal detail, in light of the photogenic results. They are made primarily because this talented firm has obviously given these contextual gestures considerable thought. But such gestures seem to work best when the architects let the existing architecture predominate and dramatize it in the simplest way possible. Where Kliment and Halsband start anew (student entrance, handrails, controller's vestibule) there is too much left unresolved as to how the new design should acknowledge the old. Aside from these observations the project is to be commended not only for its thoughtful organization, but for its general simplicity and sensitivity in fitting new uses into old spaces.
[Suzanne Stephens]

Data

Project: Frank Smithwick Hogan Hall, Columbia University, New York.
Architects: R.M. Kliment & Frances Halsband, Architects; John Philip Hesslein, Jennie Young, project architects.
Site: 12,615-sq-ft lot at 114 St. and Broadway.
Program: graduate student residence of four- and five-bedroom suites for 114 students and offices of the controller, Columbia University, totaling 72,380 sq ft gross, 27,500 sq ft, offices.
Structural system: existing building, steel beam and girders, masonry bearing walls, cast iron columns.
Major materials: brick, ceramic mosaic floor tile, carpeting, gypsum board. (See Building materials, p. 120.)
Mechanical system: steam htg; ducted a/c.
Consultants: Flack & Kurtz, mechanical; Robert Silman Associates, structural; Howard Brandston Lighting Design, lighting.
General contractor: Blitman Construction.
Client: Columbia University; D. Dean Telfer, campus architect; Harris A. Schwartz, Director of University Residence Halls; David Halperin, Controller.
Cost: $2.3 million for construction not including carpet and furnishings; $32.50 per sq ft.
Photography: Norman McGrath.

Two public spaces, a 55′ x 30′ dining hall and a 55′ x 25′ chapel were turned into clerical accounting offices. In chapel (above) ribs of groin vaults are painted white, surfaces blue, and white fluorescent fixtures are suspended from ceiling to keep architecture unobstructed.

Jerome L. Greene Hall, Columbia University, New York

Making it legal

A renovation by Robert A.M. Stern gives the Columbia Law School needed room for offices and also an inviting lounge that is a popular campus rendezvous.

When the Columbia University Law School building by Harrison & Abramovitz first opened in 1961, the popular campus epithet for the building was "the Toaster," since its shape and projecting "handles" rather closely resemble that kitchen appliance. But the name never really stuck, perhaps because it carried implications of a warmth and domesticity which the building totally lacks. Aside from the sterile visage it casts across Amsterdam Avenue toward the main campus—the Law School dates from the time its architects were into framing their perennial vertical strip windows with *brises soleil*—its remoteness is further accentuated by the one-story podium on which it is set. The alleged main entrance is reached by crossing a raised plaza built over the street, but for the most part students tend to use the street-level doors that punctuate the chill, blank base.

Nowhere to go, nowhere to hide

Going inside, one moves into an atmosphere that has all the intimacy and charm of the Port Authority Bus Terminal. The lounge facilities that originally were provided by the Law School's architects have long since been commandeered by the school administration for other purposes. As a result, students there have had to resort to using the Law Library for other more diverse pursuits than poring over copies of *Prosser on Torts* and *Rash on Real Property*. Such makeshift arrangements certainly did not enhance the quality of life for the law students, denizens as they are of one of the most ruthlessly competitive groves in Academe.

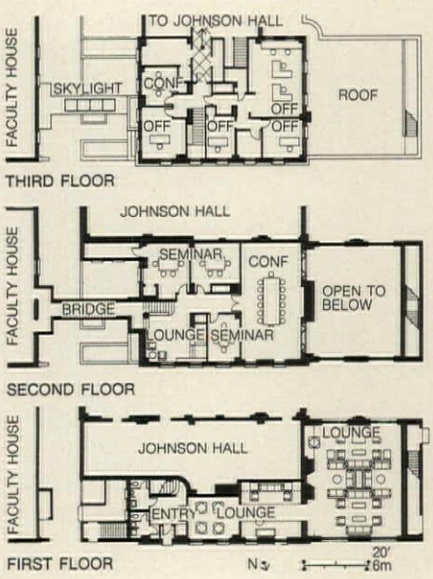
With nowhere to go within the Law School building for more space, the university proposed the construction of a small building on the ground-level plaza directly behind the school to accommodate new offices, lounges, and dining facilities. The projected structure also would have formed both a closure to Sulzberger Plaza and a link with other east campus buildings as well: the School of International Affairs and the dormitory complex now being planned by Gwathmey Siegel Architects for the site directly to the north.

Robert A.M. Stern, professor in the university's School of Architecture, was chosen to prepare the design scheme. His first effort was a considerably grander conception than the one actually executed. That abandoned project called for a new building to link the Law School with a small, three-story wing of Johnson Hall, an adjacent high-rise graduate women's dormitory. But the specter of economic cutbacks raised its emaciated head, and a new solution, less costly and less commodious, had to be sought.

Modesty is the best policy

Columbia did what an ever-increasing number of institutions and individuals have been doing in the past few years: renovating what they've got, rather than building anew and spending what they haven't got. Thus it was decided to establish the sorely needed new facilities in the wing of Johnson Hall with which the scrapped proposal would have connected. Now renamed Jerome L. Greene Hall in honor of its benefactor, the building was for many years the home of the Women's Faculty Club (now merged with its male counterpart next door and given the more egalitarian name of the Faculty House). It later was used by the Columbia School of the Arts, and when Stern began work on this job, he found the lovely, though tepid, Adam interiors obscured under a coating of black paint, a remnant of the drama department's previous occupancy.

The architect's main cues for the restoration came from the clublike atmosphere that the interiors—replete with high ceilings and arched windows—seemed to suggest. Early on he decided "what was most needed was a set of rooms which one associates with the atmosphere of a law school, not with the antiseptic bus station modern of the real Law School." The

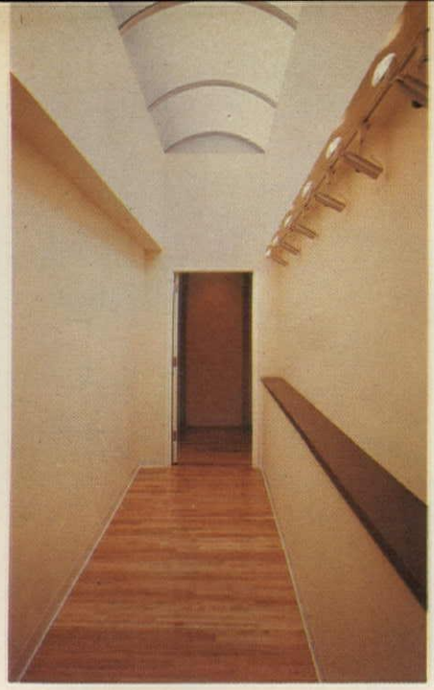


results Stern achieved are astonishingly simple, coming as they do from an architect previously distinguished for his extremely complicated, busily inflected houses for the rich. This is a sensible job, modest but competent, appropriate for its program, its budget, and our times.

Greene Hall sits on the vestigial alleyway that is 117th St., a dead-end mugger's paradise leading to Morningside Park a few feet away, once deemed New York's unsafest place after dark. Security problems are therefore a significant factor, and have regrettably limited Greene Hall's use at night. But the heavy use the lounge gets during the day more than makes up for it, leading law students to complain that interlopers from elsewhere in the university sometimes make it difficult to find a place in the large, pleasant room.

Knowing when to stop

Coming into the building's vestibule (which goes off to the right into the lounge areas) one is confronted straight ahead by a curving element leading to the stairway. This motif is actually one-half of the curving entrance configuration used earlier by Stern in his Lang house of 1974: a treatment first



Greene Hall lounge (below and above right) is furnished to recreate traditional club ambiance. Stairway (above center) leads to second floor and interior bridge (above left) leading to Faculty House.

devised by the ancient Romans, then revived by Stern's much-admired Sir Edwin Lutyens at Folly Farm—though in its current application Stern laughingly refers to it as "all folly and no farm." The steps themselves lead to the second floor containing seminar and conference rooms, and the third floor, formerly the apartment of a Johnson Hall house mother, has been revamped for the Law School placement office. A nicely detailed interior bridge links Greene Hall with the Faculty House, where an adjoining room might be refurbished to provide the dining facilities that had been called for in the first scheme but which did not survive the transition to the new make-do alternative.

The architect made a survey of club interiors in New York in preparation for this assignment, and came away "convinced that red and brown leather were mandatory requirements for all clubs." Red and brown vinyl were chosen for the lounge's cushy couches as an economy measure, and throughout the building similar savings were made, though Stern indulged the love of architects for the "originals" of modern furniture classics by going for *the* famous Prague chair by Josef Hoffmann, not the cheaper Conran's knock-off. An oriental-style rug (alas, not an original from the university's very fine collection) brings warmth to the main lounge. There the walls are painted in creamy off-whites with just enough articulation to give them some visual interest without the addition of art, which had not originally been planned on. As Stern correctly notes, most modern interiors look unfinished without something on the walls, and this was an attempt to avoid that vacant look with some grace.

All in all, this is a decent, interesting piece of work from an architect who in the past has needed to be taken aside by a Dutch Uncle and be told, "Enough already!" This job is proof that all the effects of the economic squeeze in architecture have not been bad. It is responsive to and responded to by its users, and its ultimate success is borne out by the most common refrain heard in the Greene Hall lounge: "Is this seat taken?" [Martin Filler]

Data

Project: Jerome L. Greene Hall, Columbia University, New York.
Architect: Robert A.M. Stern Architects.
Program: renovation of an existing three-story structure to provide lounges, offices, conference and seminar rooms for the law school of a large urban university.
Major materials: gypsum board and painted plaster walls; oak, vinyl asbestos tile, and ceramic tile floors; incandescent lighting. (See Building materials, p. 120.)
Consultants: Robert Silman Associates, structural engineer; Meyer, Strong & Jones, mechanical engineer; Carroll Cline, lighting.
General contractor: James King & Sons.
Cost: $169,630/$33.80 per sq ft.
Photography: Edmund Stoecklein.

Approach from east (above) leads to entrance court (below) with stalls for student craft sales.

Huge east door (above right), designed by Clay, is open when wind and custodial help permit.
West side of building (below) has similar entrance court, with awninged food and clothing stalls.

John Morris Dixon

Student Union, San Francisco State College

Activism in concrete

Peak of north pyramid looks out toward Pacific.

The centerpiece of a California campus is a monument to student participation, embodied in a bristling assemblage of forms recalling the late work of Corbu.

The San Francisco State University Student Union presented here took a decade to realize. That decade turned out to be the most dramatic in American college history, one that dealt cruelly with the ideals of the young—and their elders. Because it sparked one of the period's major encounters between the academic establishment and the radical students, the S.F. State building is freighted with past emotions. The final design, though cast in a futurist mold, is also a period piece, a monument to the beginning of the Aquarius Age which now seems so long ago.

To understand the building's extraordinary appearance on an otherwise mundane campus it is necessary to go back to those traumatic years, to review the first design which was virtually snatched away from the students as a means of reprisal for waywardness and insurrection.

In the mid-1960s, S.F. State was one of the most radical campuses in the country, as notorious in some ways as U.C. Berkeley. To effect greater participation in campus affairs, students mobilized in many ways. The issue that became the ultimate firebrand was the student-controlled design of their union, financed largely from student funds. Moshe Safdie received the commission.

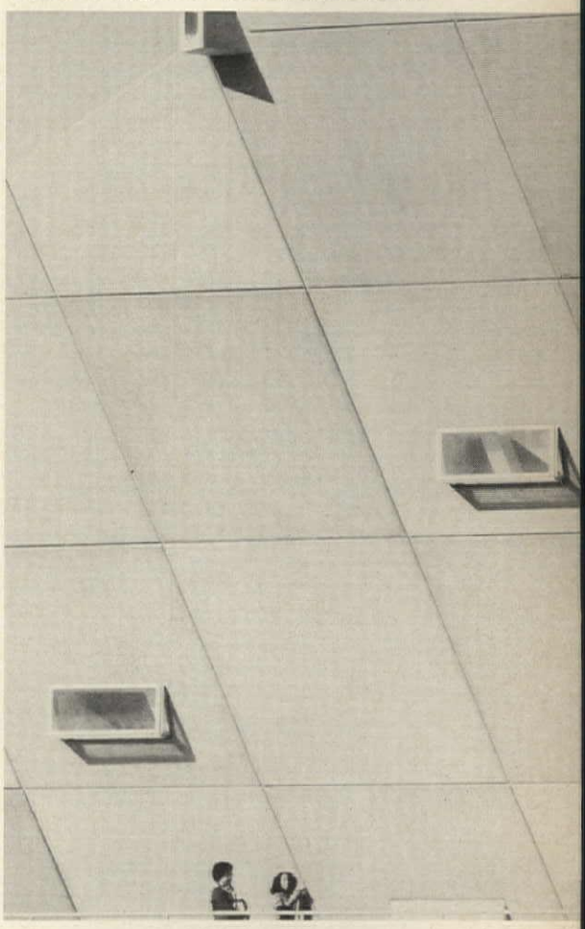
In *Beyond Habitat,* Safdie gives a moving account of his two-year experience designing the union for and with the students. He begins by quoting the 1966 letter he received from the Associated Students saying in part: "We want a building . . . about what students are about—generous, exorbitant, energetic, anxious, frivolous, raw, shy, with some secret spaces and some intricate spaces. We would like to design and build our own building. . . . Since we cannot, we wish . . . to find an architect who will watch and listen and interpret us and let us learn from him as he learns from us." Much impressed, Safdie responded affirmatively and, one month later, flew to San Francisco to be interviewed for the job with seven other architects. The campus at lunch time, he reports, evoked the image of a "biblical pasture." Feelings of kinship with the students enriched the programming experience, making the resultant design an intensely shared object for the architect, students, and concerned faculty.

The design faced the major problems of compatibility with the existing buildings and the site, This was a dip in the open area of the campus where, say, 3000 to 4000 students might converge from all directions at noontime. To handle the flow, Safdie conceived of a building "like a hollow hill, light and translucent, arching over the cross-roads." Instead of walking around it, people would walk over and through it, as in a three-dimensional park, via a series of steps, terraces, and inclined, landscaped planes. While providing a focus for the campus, it would not compete architecturally with the banal buildings of the 1930s and 1940s. Interior spaces would be generated by a "space-maker": combinations of a repetitive, open, structural element, in a variety of sizes and shapes, which would be divisible or expandable.

Safdie's account of being alternately buoyed up by the enthusiasm of the students, the faculty, and the President, then cast down by the Machiavellian workings of the offices of the Chancellor, State Architect, Campus Architect, and finally the Trustees, makes painful reading. The final rejection of the design was linked to the dismissal of a controversial Black Panther lecturer, a student and faculty strike, and the resignation of the President, events which totally immobilized the campus in November 1968.

New situation, new architect

After a hiatus, the college held a limited competition in 1969 among local architects, and Paffard Keatinge Clay won. Prolonged by various delays, the design process consumed several years during which time the generation of students who



Windows project from tilted pyramid wall (above). Artful gutters and scuppers (above and below) direct rainwater to some inconvenient spots.

John Morris Dixon

Student Union, San Francisco State

One of the 17′ x 17′ porcelain-enameled doors.

"grooved on space" finished up and departed the scene. Before they left, about 40 of them participated in an intense summer seminar with Clay in the early 1970s. Here they designed interior furnishings such as hammocks to be slung between the triangular supports of the pyramid interiors, carpeted forms, and wood paneling.

There is some difference of opinion between Clay and the students about whether these were the most important design issues. But in any case, the Central Office did not budget for such custom design. In fact, the building's interior finishing is a continuing problem, chiefly with respect to the noise level.

The main floor space, conceived as a diagonal street channeling campus traffic through great, pivoting, porcelain-enameled doors, conveys the excitement of movement and vitality. It also conveys the high volume of noise generated in the all-concrete structure. Since the architect went into bankruptcy just as the interior finishing phase was about to begin, he provided no supervision or aid in coping with this problem. Independent designers were hired who prescribed carpeting and tiling, but the results are not in harmony with the building itself. Nor has the noise problem been solved. On the basement level where there are other eating and recreation areas, noise adds to the unpleasantness of a bomb-shelter ambience. The only restful areas—and such are needed because in this commuter college many students have nowhere else to go between classes—are the interiors of the two pyramids whose tiered spaces are heavily used. Called by Clay the Pyramids of Silence and Sound, one has a central hearth, the other a bank of TV's, but this is still more reposeful than the small mezzanine lounge below.

Crystalline forms

From the architect's perspective the building's success lies in the expressive quality of its structural geometry. And indeed, by anyone's judgment, the structure is an eye-stopper. Two steel space-frame pyramids, at 60-degree angles to each other facing west and northeast, rise from the roof of the base structure at an angle of 22.5 degrees on their top surface and 45 degrees on the bottom surface. Each contains a stairway leading to four partial floors which diminish in size as the pyramid tapers. The base of each is an 84-ft equilateral triangle. Originally the frames were to be steel pipe—less expensive, more efficient in supporting axial loads, and easier to adapt to multi-dimensional connections than trussed, wide-flange steel members. However, the loads were too great for pipe alone, so the frames were constructed of 12-in. and 14-in. wide-flange girders with 8-in. pipe as interior members. Including the 2-in. steel decking on the upper surfaces, each pyramid contains about 150 tons of steel.

The roof of the Pyramid of Sound has removable concrete benches, creating an outdoor amphitheater with an observation deck at the top. The Pyramid of Silence is truncated on the vertical face to provide natural light and a view from its top floor. The undersides of the pyramids are sheathed in precast concrete panels, each weighing 6900 lbs. These were set in place by fork lifts and, above the third level, by a 40-ft-long, counterweighted lifting device tilted at the required angle of 28 degrees to the vertical.

The roof slab of the base structure serves as both a pedestal for the pyramids and a terrace. The 9-in. concrete slab was cast over 42-in.-deep reinforced concrete coffers supported by a steel frame consisting of 30-in. wide-flange steel girders with reinforced concrete crossmembers framed into ten 96-ft equilateral triangles. Heavier steel wide-flange girders had to be used in the roof framing to provide a clear span for the restaurant, part of which is also used as a theater. The roof slab also distributes some of the loads through a diaphragm action.

Twenty-two paired, diagonal box columns, tapered at both ends and weighing seven tons each, provide bracing against lateral loads and create a vertical truss system that frames the hexagonal building. However, the hexagonal framing system could not be used to support the pyramids because Clay wished the outer edge of the pyramids to fall exactly on the grid line. Therefore, support columns for each pyramid— three 36-in.-diameter concrete columns housing a 20-in.-square steel box column at the prow and a 16-in.-square box column at each of the two rear points—had to be offset from the building's grid system. The apparent integrity of the whole structure is actually formal, rather than structural.

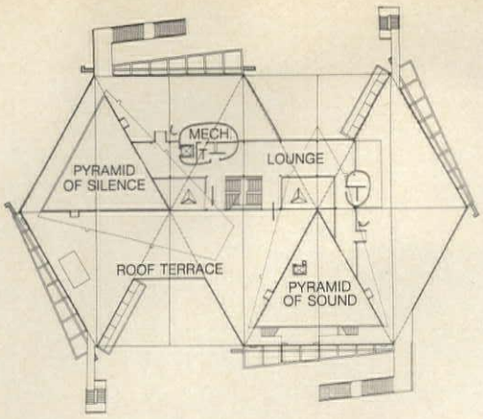
Nonstructural hyperbolic paraboloid walls of steel pipe, lath and plaster shield four sides of the building. Clay feels that these forms particularly enhance the sculptural quality of the building, providing a continually changing surface for the play of natural light outside and inside too, through skylights set inside the top of the walls. But the aesthetic qualities are compromised by two things: first, the skylights seem to be favored by some users of the terrace above as trash receptacles; judging by the contents, they are not on the maintenance schedules. Second, the curving interior wall continuously frustrates bookshop managers who find no easy way to shelve books along it.

User response

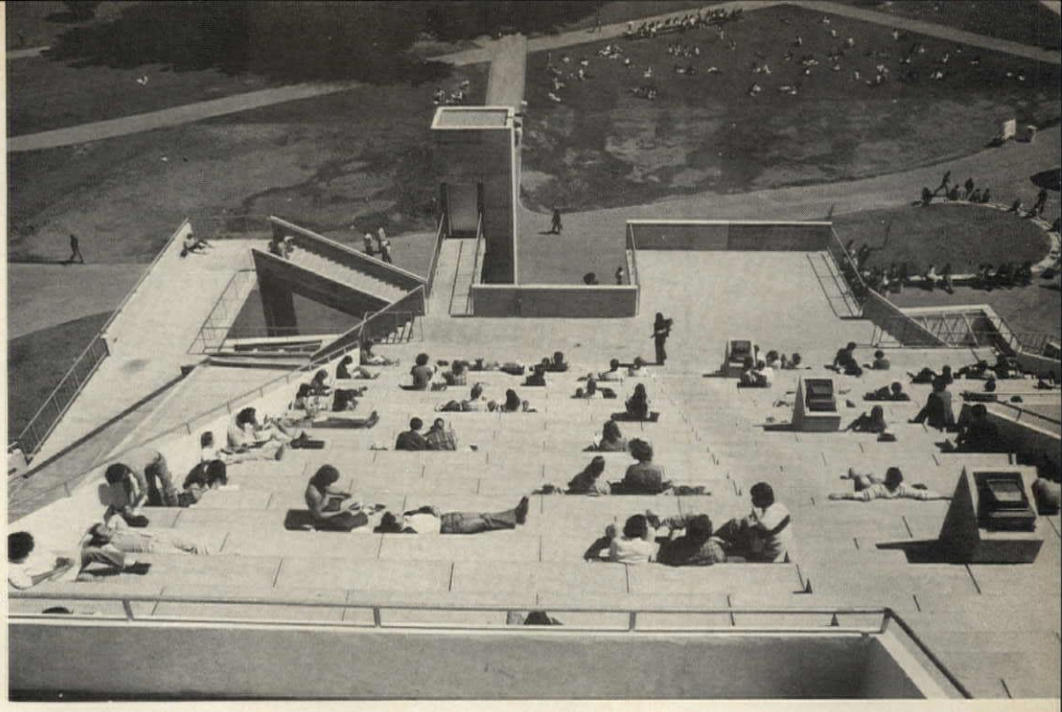
It is not possible to predict future attitudes toward the building. When it opened in the fall of 1975, a poll indicated disapproval by two out of every three student-users. Clearly, the 1960s' cosmic design interests have come down to earth, focusing on everyday needs that might have been better served by a conventional building. Current views are best summed up by Samantha Graf, Assistant Director of the Union, who said, "It's kind of like trying to make a building out of the Statue of Liberty." [Sally Woodbridge]

Data

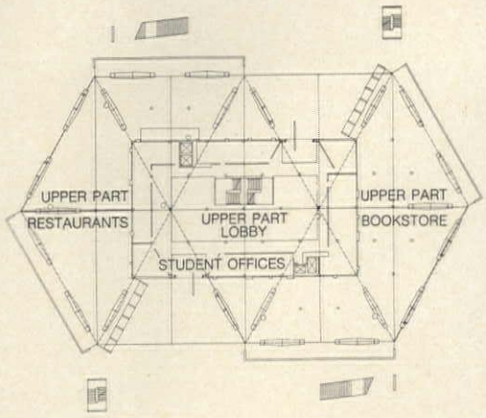
Project: Student Union, San Francisco State University, San Francisco, Ca.
Architect: Paffard Keatinge Clay, San Francisco.
Program: student center of about 137,000 sq ft, with eating, recreation, and lounge facilities, bookstore, student offices, exhibition spaces, and outdoor stalls for student sales of food, clothing, and crafts. Large roof areas reclaimed as terrace and amphitheater. Program was established through intensive student contact, seminars, and computerized questionnaires.
Site: parklike area at center of urban campus, in area cleared of temporary buildings; surrounding bulky multistory structures with repetitive, bland façades. Vehicular access to building only through tunnel to truck dock.
Structural system: paired diagonal precast columns and cast-in-place vertical cylindrical columns at the main level support a triangular grid of steel beams, which in turn supports a 42-in.-deep triangulated coffer system topped by a 9-in. concrete slab, forming a horizontal diaphragm. Massive box columns rising through this base structure support two steel-framed pyramidal structures rising 53 ft and 63 ft above the principal roof slab.
Major materials: exposed concrete framing, inside and outside; corrugated precast wall panels on pyramids and some other elements. Some ground-level walls nonstructural hyperbolic paraboloid shells of steel pipe, lath, and plaster. Large porcelain-enameled entrance doors with colorful abstract designs by architect. (See Building materials, p. 120.)
Consultants: G.L. Gendler & Associates, mechanical; Forell/Elsesser Engineers, Inc., structural.
Landscape architect: David Mayes.
General contractor: Engstrum & Nourse.
Costs: $6.4 million (actual), $6.13 million (bid), $6 million (budgeted). $46.70 per sq ft, gross.
Photography: Rob Super, except as noted.



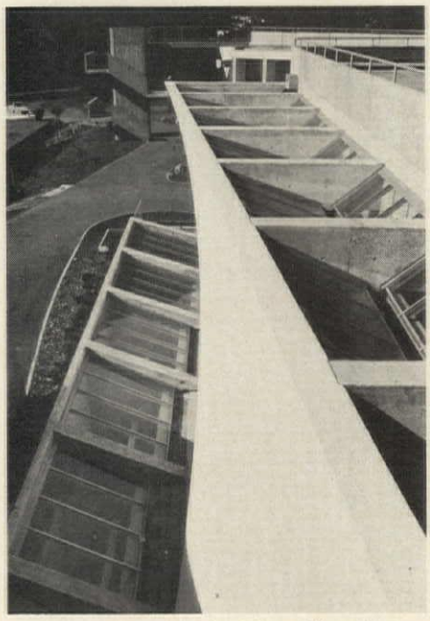
TERRACE LEVEL



Paffard Keatinge Clay

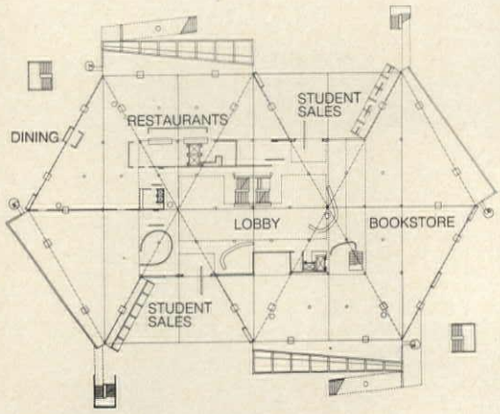


MEZZANINE

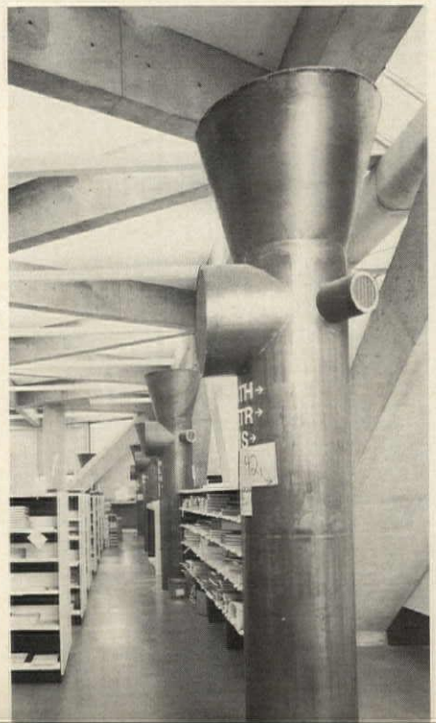


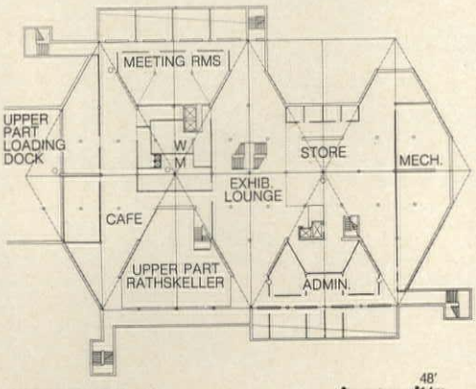
John Morris Dixon

Roof of north pyramid (top) forms bleachers. Warped planes and V columns (above and right) enliven cafeteria, but similar elements are obstructive in bookstore (below). In lobby (below right) triangular grid is apparent.



GROUND FLOOR



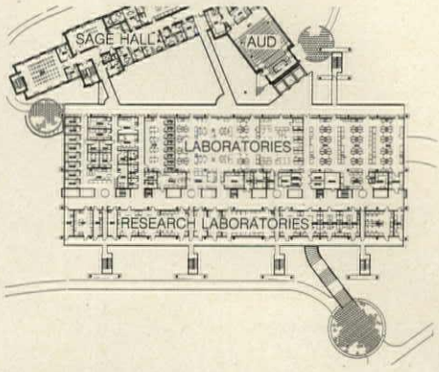


UPPER BASEMENT

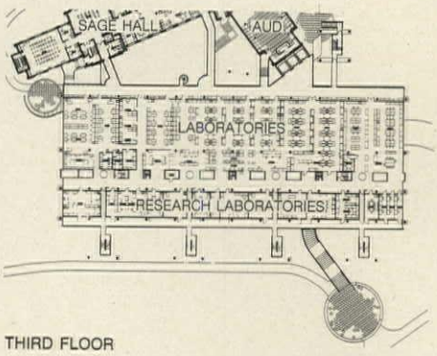
48'
14m

Science Center, Wellesley College, Wellesley, Ma

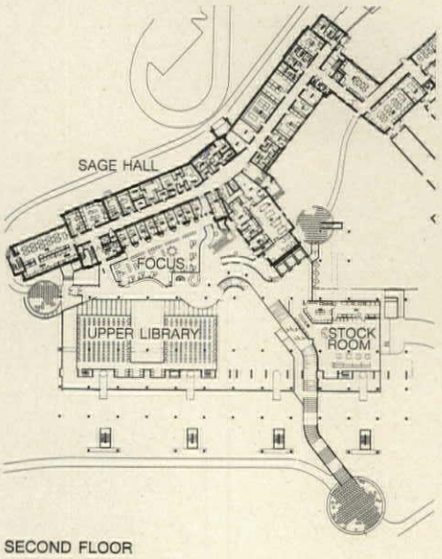
More Gothic than revival



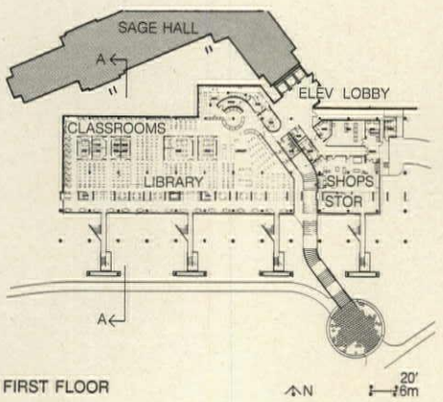
FOURTH FLOOR



THIRD FLOOR



SECOND FLOOR



FIRST FLOOR

On bucolic Wellesley College campus, Perry, Dean, Stahl & Rogers' gleaming new Science Center gives its Neo-Gothic neighbors a fresh view of their sources.

Wellesley College differs most from other American women's schools in that throughout much of its 108-year history it has created and maintained a very strong tradition in the sciences. Of the school's 1800 students, 700 to 800 are typically enrolled in courses that are offered through the 11 major science disciplines available.

Until recently, those disciplines were scattered throughout a number of different buildings on the campus, following the way things were done when Wellesley set up its various science departments, in a period when the individual disciplines were considered to be much more discrete than they are now. Today, science strives for interdisciplinary communication, and this was not well accommodated.

Those old divisions, however, were not the school's only problem. There was also a serious question about the laboratories, some of which were progressive in their time, but woefully out of step with the needs of today. Renovation of the old labs would have been very expensive, and it would have kept the school in the costly position of maintaining a number of separate single-use laboratories.

Wellesley decided to upgrade and integrate all of its science facilities by renovating an old building and building a new one attached to it. In this new Science Center complex are all of the laboratories, libraries, seminar rooms and classrooms, lecture halls, and faculty and administration offices for all of the 11 disciplines.

The old building

The old Sage Hall, which formerly housed the departments of botany and zoology, has now been completely renovated for classroom, seminar, laboratory, and faculty office space. The two large lecture auditoriums occupying similar positions on the second and third floors at the foot of the Y-shaped building have been renovated and retained for use for the whole center. Throughout Sage Hall the same color scheme, carpeting, and furnishings have been used as in the new building.

The new building

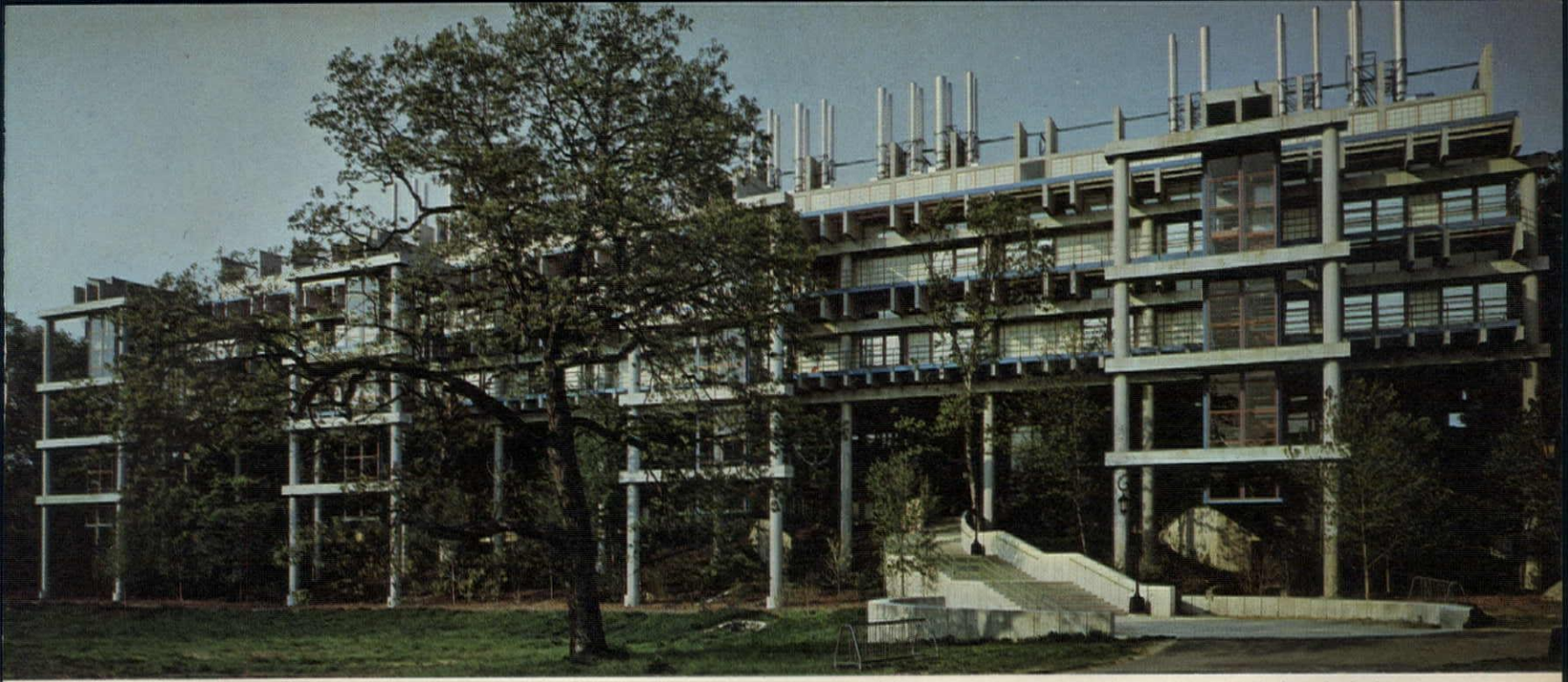
The new building is a 100′ x 300′ reinforced concrete structure. Columns are placed 25 ft on center longitudinally, forming bays of various depths, with the deepest in the vertical zone that houses the open-plan library and laboratories, where one row of bays is 25′ x 45′.

The double-height library extending across the front of the building occupies the first two, narrower floors where the plan has been stepped back to position the ground floor adequately on the rising knoll. The two laboratory floors above extend forward one bay across the front of the building, and the four front fire stairs are extended one bay farther, their glass-enclosed metal cages hung from the top of the supporting structural bays. Although these bays may seem over-structured for their purpose, architect Charles Rogers explains that since they are simply a continuation of the building's established structural system, their use was logical and did not appreciably add to cost. Exterior metal grating walkways extend the length of the building at the laboratory levels to form a continuous access route to the fire stairs.

Throughout the building, concrete-supported metal members are painted blue, and metal elements they support, such as the walkways, stairs, and mullions, are painted orange, thus providing a hierarchy of color that is expressive of each element's function. The whole ensemble is masterfully worked out from a system of exposed columns, beams, ducts, and exhaust stacks, coupled with the colored metal elements and clear glass or translucent walls that indicate office spaces or laboratories beyond.

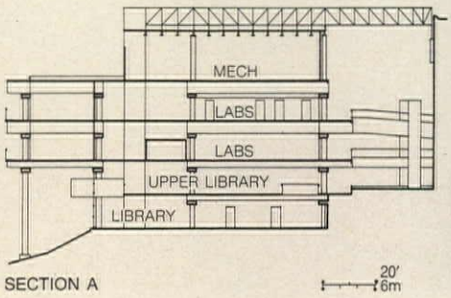
The space between

Open space between the new building and the near wing of Sage Hall has been roofed over to form an enclosed 60-ft-high

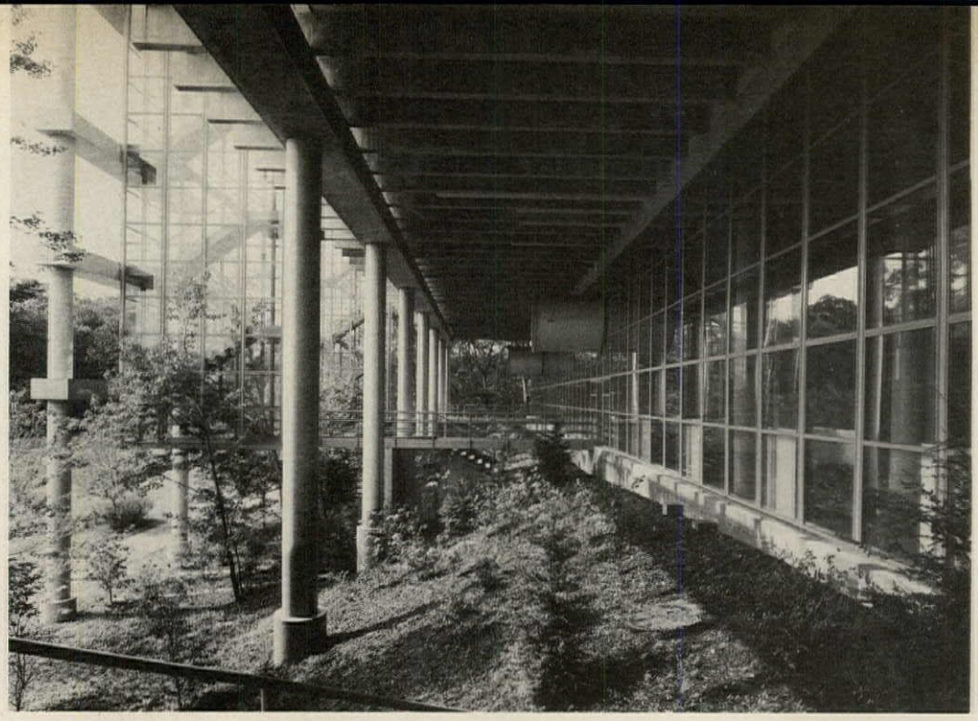


Exposed mechanical and structural elements, and metal members colored to express their function, combine to form rich, mechanistic façade design.

Science Center, Wellesley College



SECTION A



Site conditions required ground level setback (above); buildings connect through atrium (below).

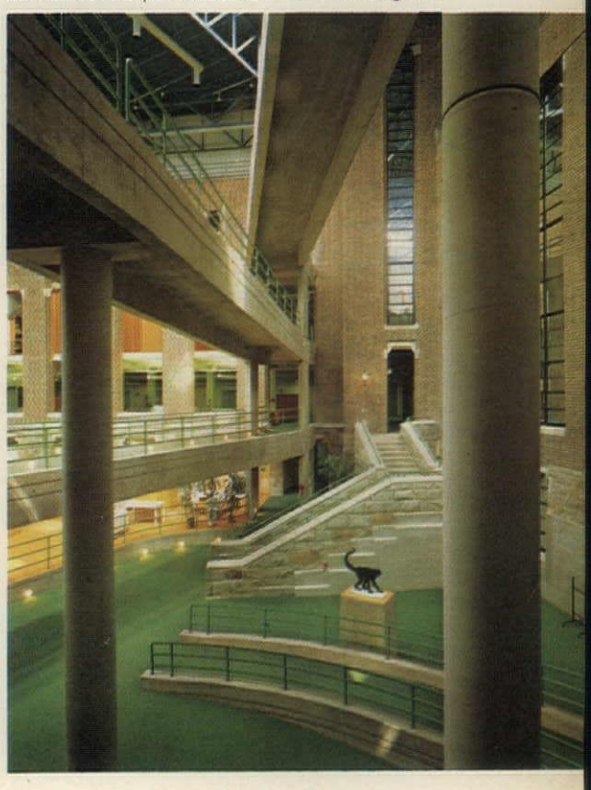
skylighted atrium called "The Focus." Open-plan administrative offices are in this central circulation node that is the heart of the Science Center. This vast interior volume is traversed by bridges that tie the whole complex together at three levels. At ground level the main route through the space follows the old path that used to lead to the back of Sage Hall.

The bridges, ramps, spiral stairs, balconies, and multiple levels of the ground plane activate this space to make it as dynamic as anything seen in some of the newer hotels. It is, of course, much less worked over than the Portman-like spaces, which is to its credit, and it is altogether more likeable than those, because this was "found" space that was put to good use. But even though it may be less "worked" than those other spaces, one could complain that it is overstated, at least in the number of colors used at ground level. If the architects felt they needed to enliven the huge space with so many bold colors in the carpeting and furnishings, they have actually only detracted from its inherent vitality.

Service systems

The front of the new building faces an open field which, during part of the year, becomes marshland along with some other areas of the campus. This condition influenced the siting of the building back on the knoll next to Sage Hall, and explains why it has a top-floor mechanical floor instead of a basement. All mechanical, electrical, and plumbing services drop from the mechanical penthouse between shear walls within a core area that runs next to the main longitudinal corridor. From the core, gas, air, vacuum, electricity, and water are then distributed transversely above the ceiling, dropping down wherever needed via hoses to the turrets, which then distribute the services to each student station. No services penetrate the carpeted floors except at the service core. Only the exposed pyrex acid waste lines go through, and they can be easily capped if a change in laboratory design or function is called for.

Atrium that connects old Sage Hall to new building is 60-ft-high skylighted space crossed by bridges at three levels. Faculty offices and lounge area in Sage Hall (above left) look into space. Old auditorium wing (below) forms east enclosing wall of atrium, where windows have been mirrored to reflect vast space. Collection of stuffed animals from zoology department add interest, and the same idea has been used in the library (following page) but with birds instead. Top floor of new building is enclosed where it faces into atrium (above, top right of photo) as mechanical penthouse is behind the long wall.



Science Center, Wellesley College

In laboratories (facing page top right) all furniture is easily adjustable and can be adapted to various uses in minutes. All services come from central core via ceiling before dropping to student stations. Study carrels (above) surround library (facing page) at perimeter of the building. Like laboratories, library is flexible; walls and shelving can be moved as needed.

Flexibility

The system of services distribution, however, illustrates only a part of the extraordinary flexibility possible within the building. Because there are no permanent walls within the 100-ft-long laboratory areas (fume hoods, chalkboards, and tackboards provide any needed "walls"), spaces can be easily arranged and rearranged as needs dictate. But the Wellesley laboratories go even one step further in terms of flexibility.

The handsome laboratory furniture, which was specially designed by the faculty, the architects, and the manufacturers, is modular and freestanding. Its adaptability, coupled with the open plan and the services distribution, permits any lab to be altered, or converted from wet to dry uses, in about 35 minutes by two women. Because the furniture is adjustable, and can also be fitted with various specialized work tops, it is interchangeable among all the disciplines using it. And although it was custom designed, it cost less than off-the-shelf products that were available, according to Rogers. Another advantage of having all the disciplines in one complex was that it allowed scientific instrumentation to be located in shared areas so that costly duplication could be avoided.

Consolidation of the disciplines also allowed the various libraries to be brought together, further encouraging the possibility of cross-disciplinary communication. It also yields a practical educational advantage, as many students and faculty must often use more than one library. In the double-height library, perimeter study carrels and lounge areas ring the ground floor stacks and seminar rooms, and at the mezzanine stack area the same scheme is repeated. The major ground-level circulation route that follows the old path to Sage Hall actually begins in front of the library, at the new main entrance to the whole complex, before snaking through the building to the elevator lobby and The Focus.

Modern Gothic?

Buildings on the rolling, peaceful Wellesley campus are generally of the Collegiate Gothic variety, and many of them are handsome specimens of that type. It is something of a shock, then, when one comes to the gleaming, machinelike Science Center standing across a wide open field. But the sense of shock does not last, partly because of the undeniable elegance of the form, and also the realization that this building actually fits in quite nicely with those around it. After all, its antecedents and theirs are, in some respects, to be found in the same sources. With respect to its most obvious image, the new building is much further removed from the sources than are those that found inspiration only in surface decoration. In terms of building theory and aesthetics, however, it may be a little closer to the true meaning of the Gothic originals. [David Morton]

Data

Project: Wellesley College Science Center, Wellesley, Ma.

Architect: Perry, Dean, Stahl & Rogers, Inc., Boston, Ma; Charles F. Rogers II, architect, Peter A. Ringenbach, job captain; Stan Dunbar, project coordinator; Dell Mitchell, signage.

Site: building is placed on a knoll, facing open field through screen of trees.

Program: to unite 11 academic science disciplines in one complex of a 148,574-sq-ft new and an 89,000-sq-ft renovated building.

Structural system: exposed reinforced concrete, designed in a simple orthogonal slab, rib, and beam system. Cast-in-place reinforced concrete foundation.

Major materials: reinforced concrete; lightweight structural steel roof; steel frame windows within square steel tube framing members; translucent fiberglass panels; ceiling of exposed structure and acoustic, concrete-coated wood-fiber plank-form board; built-up roofing; gypsum wall board partitions. (See Building materials, p. 120.)

Mechanical system: existing building has perimeter two-pipe fan-coil system with ventilation air from two roof-top units; new building is served by four medium-pressure variable-volume air supply systems, ducts exposed; each branch terminates in constant variable-volume box with integral hot water reheat coil. No perimeter radiation is used.

Consultants: John W. Nevins of Simpson, Gumpertz & Heger, Inc., structural; Robert L. Hough of Robert W. Sullivan, Inc., plumbing; Frederick L. Vegkley of McCarron, Hufnagle & Vegkley Associates, Inc., HVAC; John A. Gentili of McCarron, Hufnagle & Vegkley Associates, Inc., electrical; William Lam Associates, Inc., lighting; William J. Cavanaugh, acoustical.

Landscape architect: John W. Frey of Mason & Frey.

General contractor: Kenneth F. Leach of George B.H. Macomber Co.

Costs: $14.75 million fully equipped; $61.87 per sq ft.

Photography: © Edward Jacoby.

Interior design: Garey Shirtmakers and Swirl showrooms, New York

Two for the show

Gwathmey Siegel Architects' fine new showrooms for two garment manufacturers in Rockefeller Center are executed with that firm's customary competence, and above all allow buyers to see the merchandise.

New York is the center of America's garment and fashion industry, and as such, it has thousands of showrooms to display the bras and the girdles, the coats and the dresses, the jumpsuits, the caftans, and slacks that are made there. Those showrooms range from the designer salons where the best-dressed likes of Jackie O and Babe Paley check out the new Oscar de la Rentas and the new Bill Blasses, to those of the cut-rate manufacturers who make (in the words of one of Myron Cohen's inimitable garment center *schticks*) "the better brand of cheap junk." Recently, Gwathmey Siegel Architects was asked to do showrooms for two garment manufacturers within two blocks of one another in New York's Rockefeller Center, and the outcome is proof of the old garment trade saying, "You buy good, you have good." Both showrooms make clear, unobtrusive backgrounds for what is sold to the trade in each (men's shirts at Garey; women's housecoats and leisurewear at Swirl) and show those garments in atmospheres that are elegant, sophisticated, simple, and clean.

At Garey Shirtmakers, in the epigonal Time/Life building (technically part of Rockefeller Center though born too late), the architects were faced with the problem of placing three office/showrooms, a design office, a showroom, a reception area, and room for three secretaries within a small, very inflexible 2000 sq ft of space. In the architects' first scheme, the rectangular space was to have been entered through a portal distinguished by glass blocks and an unusual pivot door. But Rockefeller Center prohibits alteration of the hallways, and a painted graphic design in a warm terra cotta color now marks the spot in the bleak corridor instead.

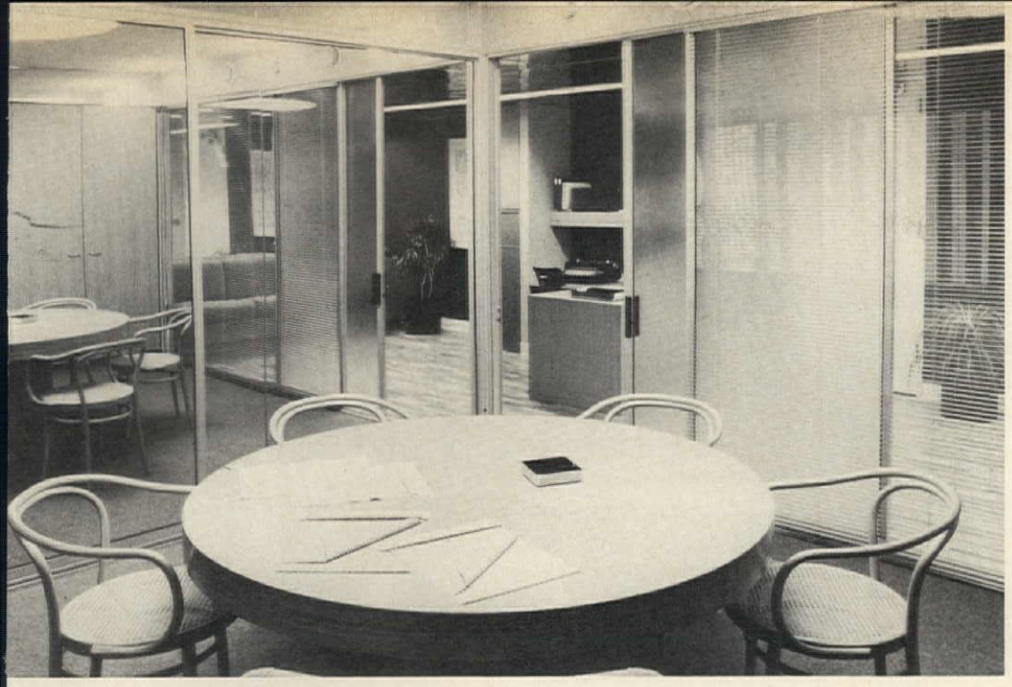
Dancing on the ceiling

The basic idea at Garey is so apparently simple that at first glance it might seem to fall into the "Why, I could have thought of *that!*" category. But you didn't. The architects chose a "Layered Look" (to swipe the name of one of the fashion industry's favorite ploys for getting people to wear more clothes). But here, the layers perform to provide a sense of depth and visual interest, not a sense of abundance or conspicuous consumption. The five separated offices that face out to the street are fronted with frosted and clear glass sliding doors, the venetian blinds inside them offering further degrees of translucency and opacity. The sliding doors can be left open (making them visually disappear), or can be closed with blinds open, or closed with blinds shut: at some point in each day they are usually in some interesting pattern combining those options. The net effect is to make this space—extremely small for all that goes on inside it—seem much larger indeed.

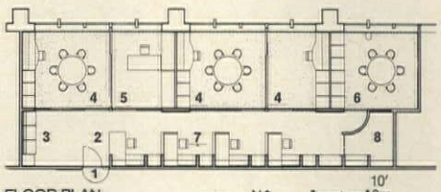
The color scheme at Garey is worked out in shades of gray, and once again (as notably as in their Shezan restaurant of 1976 in New York), the architects show how a simple, neutral background need not be cold or forbidding. One factor contributing toward that feeling in both showrooms is the very sparing use of white. That color basically is reserved for ceilings in noncirculation areas, the corridor ceilings in both installations covered with the perforated, polished aluminum tiles that have become a Gwathmey Siegel trademark. Those ceiling tiles heighten (both figuratively and literally) our perception of the overhead space, and are a way for the architects to circumvent the limitations of the existing structures, interfering as they do with the development of vertical space, a key concern in Gwathmey Siegel's work.

Limousine liberal

Oak strip floors beneath those ceilings give something rich and warm for the aluminum to reflect, and the classic Corbusier bentwood chairs in a harmonizing blonde finish add to the tidy, no-nonsense feeling that pervades the shirt showroom. The ambience at Swirl seems considerably warmer and more voluptuous, though many of the same concepts are repeated there. The architects helped convince the owners of Swirl to rent an entire floor in one of the original Rockefeller Center buildings, permitting the incorporation of the elevator lobby into the design scheme, an option of total design possible only if they alone were tenants on that floor.



Legend
1 Entry
2 Reception
3 Waiting
4 Office/showroom
5 Design office
6 Showroom
7 Secretaries
8 Utilities



FLOOR PLAN
GAREY SHIRTMAKERS

At Garey, sliding glass doors are combined with blinds to promote a feeling of depth in the relatively shallow space (above, below, bottom right).

Secretaries' desks (above) are reflected in the firm's familiar polished aluminum ceiling tiles.

Gwathmey Siegel Showrooms

Clothing display rack at Swirl showroom.

If Swirl has a warmer feeling than most Gwathmey Siegel commercial jobs to date, it is partly because of the browns, grays, and beiges that predominate there, with an even warmer red forming the backdrop for the Swirl logotype behind the reception area. Those awaiting appointments are seated in one of two wonderful old armchairs which look like they could have come from a Michael Graves garage sale. They are actually old Cunard Line lounge chairs, reupholstered in the same gray limousine cloth that was sometimes used to cover seats of luxury automobiles in the days before sueded vinyl. Traditional furniture can also be found in the executive offices at Swirl, a liberal departure from the rather stringent attitudes of the architects in previous works, but "we've gotten more tolerant about that kind of thing," allows Charles Gwathmey. As well he might, since the few old pieces never threaten to take over one's attention in a setting that might be neutral, but is never anonymous.

The warmth expressed by the colors is further enhanced by the generous amounts of light that the showroom's four-directional exposure admits. The unusually deep-set windows—a feature shared by all first-generation Rockefeller Center buildings—were left uncovered by the architects, since the activities that go on at Swirl need access to natural light for reference to color fidelity. An arrangement similar to that at Garey—outer offices walled with glass panels lined with venetian blinds—is used at Swirl, though in the latter the executive spaces are further differentiated by their not having the blinds at all.

Curtain up, light the lights

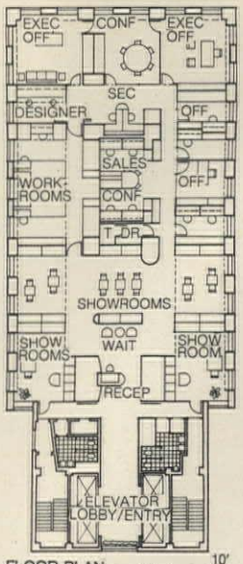
In the showroom areas themselves, more blinds cover the racks on which the company's samples are kept (fortunately out of sight, since the colors of the Swirl offerings tend toward the—shall we say—*bright?*), enabling a theatrical, curtain-raising effect as the dresses are revealed for the delectation of the buyers. That device also allows for the visual separation of the different lines of leisurewear produced by such designers as Geoffrey Beene and Albert Nipon. That segregation was an important requirement of the client, whose initial desire for clearly differentiated showrooms for each line was overcome by the architects' solution. Floor-to-ceiling photographs of models wearing fashions by specific designers demarcate the showroom areas for each, and avoid breaking up the space, allowing the open-plan showroom space to read as one large, continuous room.

Detailing at both showrooms is brought off with Gwathmey Siegel's characteristic neatness and competence, making the installations look businesslike but not craven, clean but not obsessive, prosperous but not ostentatious. It has always been a source of some amazement that so many firms directly involved with the transmission of design—advertising agencies, publishers, clothing manufacturers and retailers among them—have often been so unconscious of the way that interior design transmits the quality of their own work. Working in surroundings designed with intelligence and skill might not help those who work there to reach new heights of creativity and success, but as the old saying goes, "It wouldn't hurt."

Gwathmey Siegel Architects has developed a successful, but not glib, formula for the design of showrooms. That formula will lend itself well to the kind of wholesale knocking-off that inevitably happens to architect-designed commercial interiors of this sort—much as it does in the fashion industry itself. The cheaper imitations won't have the understated quality of the originals, but showrooms of every kind could benefit from some of the things seen at Garey Shirtmakers and Swirl. And if you come across a reminiscent version of either, beware the punchline of another Myron Cohen joke, about a much-cheaper-than-the-original knockoff: "It's *exactly* the same dress: same material, same buttons, same belt. So how do we manage to do it? Volume. And we use a cheaper buckle." [Martin Filler]

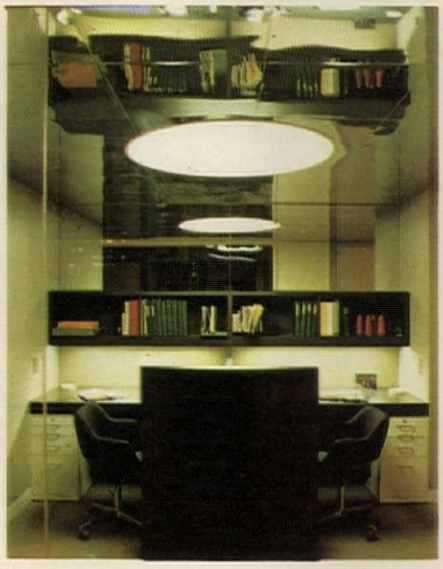
Data
Project: Garey Shirtmakers offices and showrooms, New York.
Architect: Gwathmey Siegel Architects.
Program: given 2000 sq ft rectangular space, with building window wall (south) parallel to corridor wall, to accommodate reception, waiting, three secretaries, three office/showroom spaces, one designer space, one showroom space.
Major materials: gypsum board, mirror, frosted glass and clear glass walls; oak strip and carpeted floors; polished aluminum tile and gypsum board ceilings; fluorescent and incandescent lighting. (See Building materials, p. 120.)
General contractor: All-Building Construction Co.
Cost: $30 per sq ft/approximately $60,000 total.
Photography: Norman McGrath.

Data
Project: Swirl offices and showrooms, New York.
Architect: Gwathmey Siegel Architects.
Program: to design five showrooms, workroom, sales offices, executive offices, and conference room for apparel design firm on a single 6000-sq-ft floor.
Major materials: gypsum board, mirror, clear glass walls; oak strip and carpeted floors; polished aluminum tile, gypsum board, and painted ceilings; surface-mounted and recessed incandescent lighting. (See Building materials, p. 120.)
Consultants: Thomas Polise, mechanical engineer.
General contractor: Rockefeller Center Construction Co.
Cost: $26 per sq ft/approximately $56,000 total.
Photography: Norman McGrath.



FLOOR PLAN
SWIRL

At Swirl, floor-to-ceiling photomurals define specific showroom areas for designer lines (above).

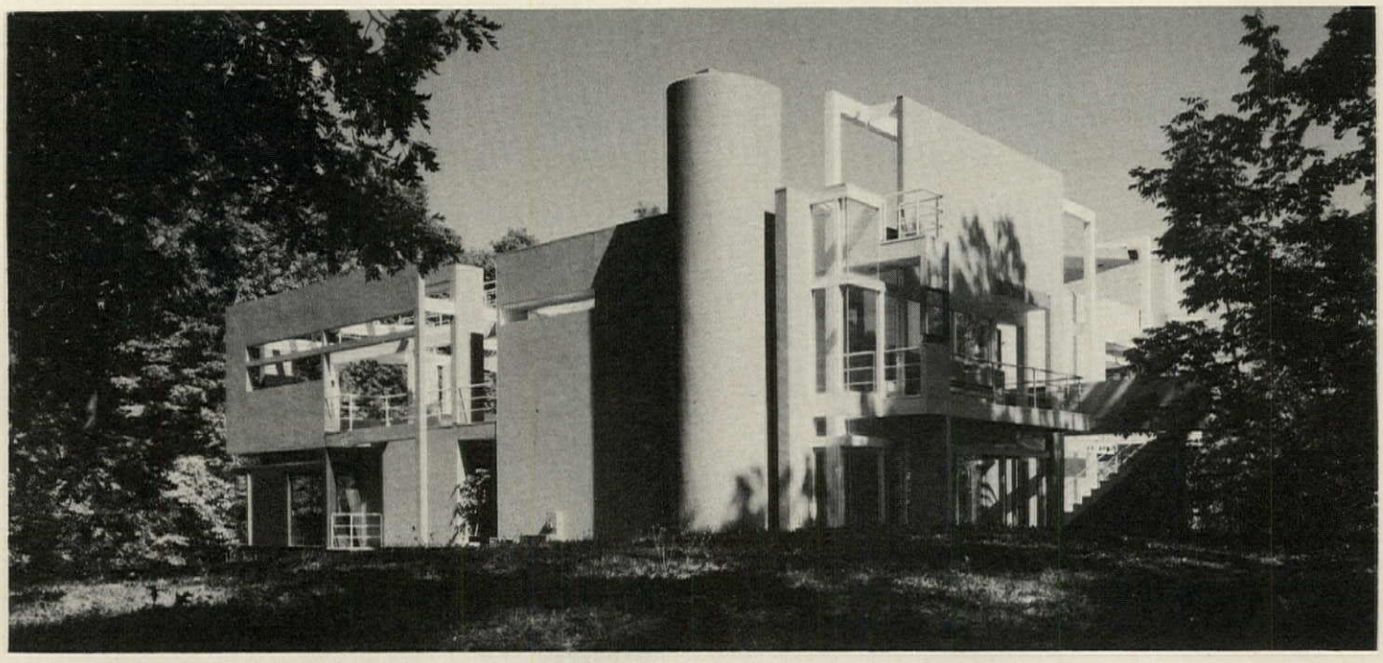


Private conference room (top) has reflective ceiling tiles, as do the corridors (below).

Reception area (above, above right) has old Cunard Line lounge chairs. Clothes racks in showroom (below) are concealed by venetian blinds.

Snyderman House, Fort Wayne, In

Living in a work of art



On west side of house are master bedroom, with terrace above, living room fireplace wall; seating area in living room opens up to the south.

A polychromed house in Indiana represents a step in the development of one of the country's most promising practitioner/theorists, Michael Graves.

Architectural issues being debated these days may be described by any number of different labels, but most issues tend to focus on the search for a "meaningful" architecture. This kind of architecture is concerned with both thinking and feeling: that is, understanding the way people respond to architecture in terms of apperception, recall, and associations, and the manner in which they experience architecture moving through space. This house designed by Michael Graves represents an interesting step in the development of one architect who is becoming increasingly recognized for trying intelligently and sensitively to solve these issues.

Frankly, the Snyderman House does not totally fulfill the expectations fostered by the above statement. It represents a point where certain ideas coalesced, while others remain plainly unresolved. The house does reveal, however, the potential of this architect to create great work, and recent projects (mentioned later) reflect lessons learned from his experiments here. Because of the house's successful fragments and particular spaces, because of its manner of referring back to previous work as well as anticipating that which is to come, it will probably occupy a prominent place in the history of Michael Graves's *oeuvre*.

Although the Snyderman House was not finished until last year—and there is still additional work to be done—it was designed in 1969–70 (P/A, Jan. 1976, p. 68). Because of contractor problems and unforeseen delays, the house was a long time in construction. And due to the years it took to complete, the design bears distinct traces of its early genesis. By now Graves's ideas on the referential aspect of architecture—references to itself, its past, its interaction with the natural world—are familiar.

Graves's exploration of opposing themes in his work has long informed his architecture with a certain resonance,

Balconies, stairs, and walls project through frame of house, as shown in south elevation (above and below); guest wing (above right) is over entry.

Snyderman House

Fireplace wall is pulled away from frame in living room.

Inflected plane borders the stair (above) and defines space (below).

The main stair, a three-dimensional entity, forms the core of the house, which has a quadrapartite organization. The stair, a distilled essence of architectural elements in the house, uses walls, portal, frame, piers, windows, balcony, and skylight to yield spatial and referential qualities.

with "meaning." The themes that most visibly find their architectural equivalents in this house focus on an inside-outside duality, the theme of natural world versus the man-made, and the public realm versus the private. The tension between these themes works surpassingly well in some places in this house; in other places less effectively.

The natural and the man-made

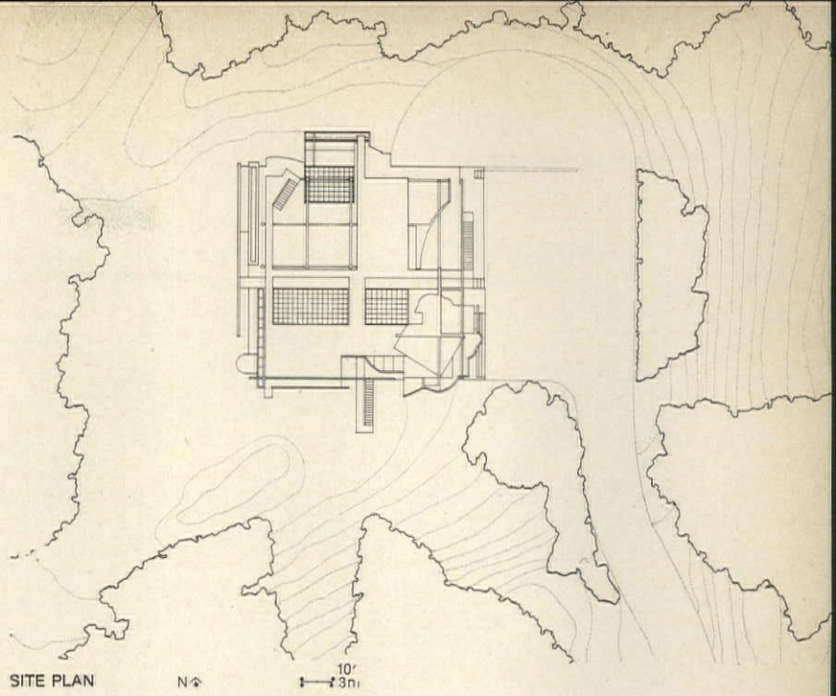
In exploring the theme of the natural world versus the man-made in the Snyderman House, Graves approaches the issues on several different levels. This house for a family of five on a 40-acre wooded site outside of Fort Wayne is very much tied physically *and* metaphorically to the natural landscape. Visual privacy was no problem. Using a quadrapartite organization on both levels Graves planned spaces to respond to the position of the sun throughout the day and to the magnificent views. The breakfast room and kitchen face east; living room, south; bedroom, west; with guest and children's rooms upstairs. The house is large—about 2500 sq ft on each of two floors. But within these zones, defined and subdivided by a grid of columns 16 ft on center, Graves inserted planes, curved and flat, to accommodate the separate activities taking place within that grid.

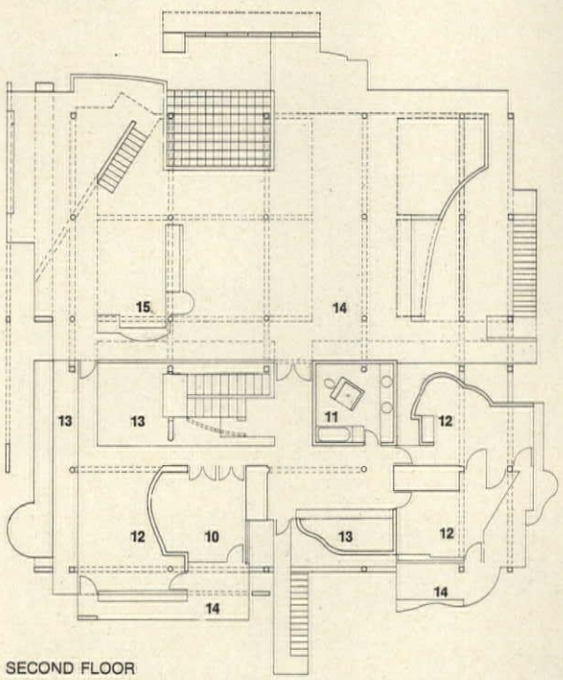
Moving without and within the house one clearly perceives the continuous open space interacting with this grid of round columns. Movement and functions are defined by planes and curved surfaces that are made opaque or transparent—or dematerialized—by being glazed, painted, pulled out from the building's frame, washed by a skylight above. Lowered ceilings push the space out laterally; double-height spaces expand it vertically. In this fluid domain where planes advance and recede, views of the surrounding landscape are revealed in a series of ways—some framed through clerestory slits, others framed within the building's (picture) frame, some (such as the south-facing living room wall) protected by overhangs, some simply open.

Aside from the direct physical relationship with nature, there is a metaphorical one. A constant interplay between elements that signify the natural world—lyrical colors, curvilinear planes, sinuous lines—is maintained in opposition to the elements that signify man-made intervention—straight lines, flat planes, a regular frame, the color white.

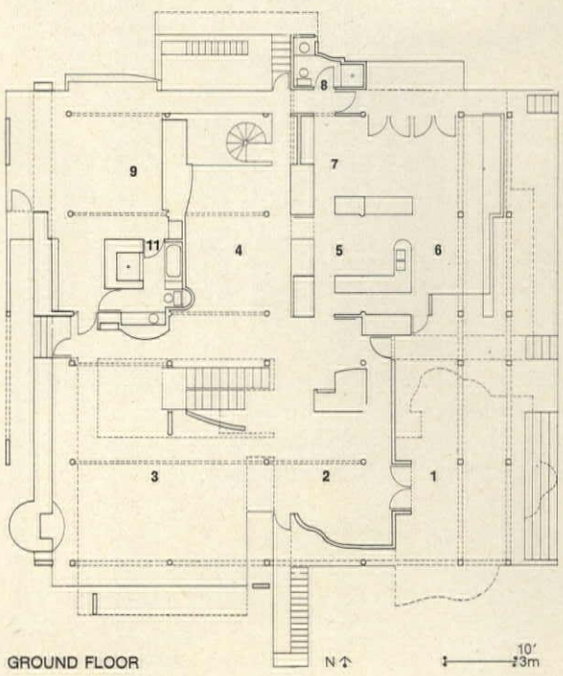
On the same level of reference is Graves's choice of colors inside and outside the house that pay homage to the landscape: green to foliage; blue, sky; yellow, sun; terra cotta, earth. In some cases Graves uses polychromy to reverse an effect created by form: for example the exterior wall of the guest suite is painted a light terra cotta to bring it down to earth, to keep the curved plane from being too ephemeral. The south elevation, however, where the wall plane is taut and flat, Graves softens and dematerializes with a skylike gray-blue color. Meanwhile other elevations are kept more strictly referential, such as the earth-brown chimney on the west elevation.

Since the children were almost grown, the upstairs was viewed as a wing to be reserved for guests, with clients spending most of their time in their own quarters downstairs. Thus the guest wing is located above the entry, but is differentiated from the rest of the house by being turned on an angle to the frame. Its curvilinear walls are visually





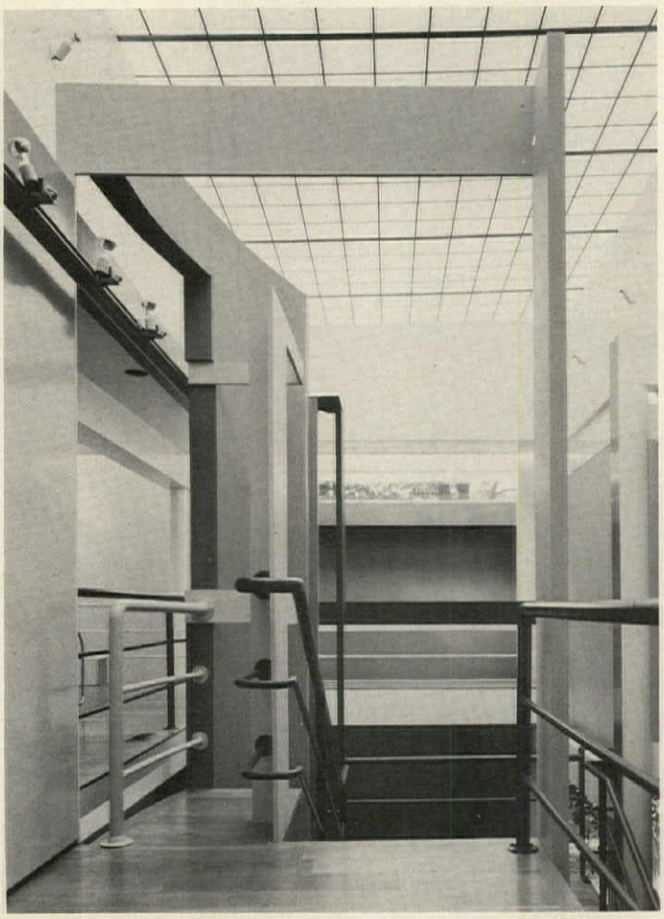
SECOND FLOOR



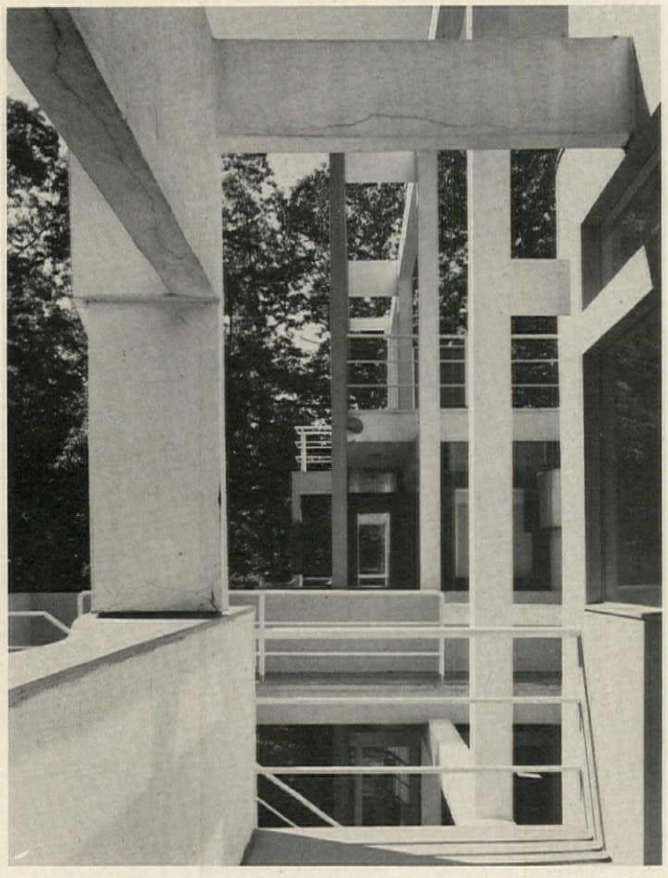
GROUND FLOOR

Legend

1 Entry terrace
2 Foyer
3 Living
4 Dining
5 Kitchen
6 Breakfast
7 Family
8 Guest toilet
9 Master bedroom
10 Bedroom
11 Bath
12 Study
13 Void
14 Roof terrace
15 Terrace seating



Elements refer back to each other inside (above), and outside (below).



detached from the exterior front plane established by the house's wood frame. From the driveway, these curved walls give these quarters a legibility in relation to the rest of the house and demarcate the entry under the volumetric overhang.

This sense of open but partially closed space is perceived approaching the front door through the porchlike space, within the volume of the house but still out-of-doors (opposite). The entry anticipates the open-closed progression that continues to operate inside, upstairs, and outside again in this man-made artifact that mediates between the occupants and the natural world.

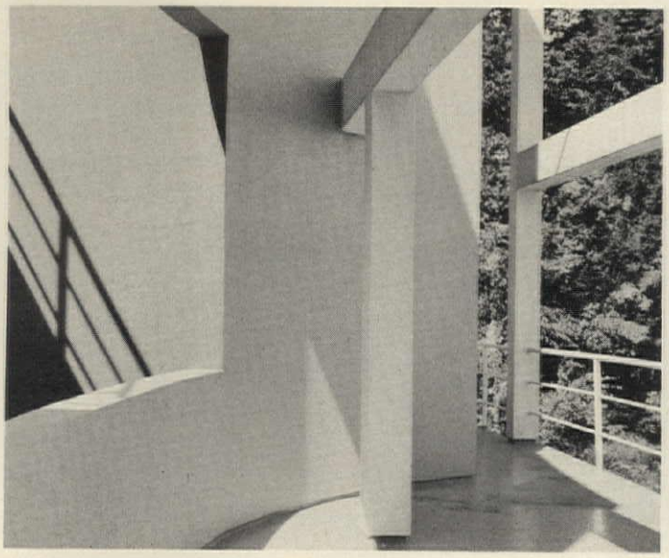
A sense of place

In the movement between outside and inside Graves uses materials and line as well as color architecturally to formulate the progression. On the outside of the building balconies, terraces, and stairs constantly break through the enclosing planes and frame of the house. Graves is attempting to do more than create gradual transitions from one domain to another: he is stressing a fluidity between inside and out, or as Ernst Cassirer has articulated this process, where each domain contains references to the other, each reflects the other and is reflected in the other.

Thus the architecture expands its references beyond the man-made milieu versus nature. It is also *self*-referential. One architectural gesture refers to other architectural events occurring in the house. We see the main stair—a three-dimensional enclosure at the house's center—also referring to the space outside the house's walls where a balcony projects between framing members (photos, left). The memory of one space is built into the formation of the other. In the same way the balcony becomes a fragment in an elevation that appears two-dimensional seen frontally from the drive. This elevation is recalled in the two-dimensional transposition—a mural that Graves painted on the dining room wall, which forms an interior "elevation" (photos, p. 86).

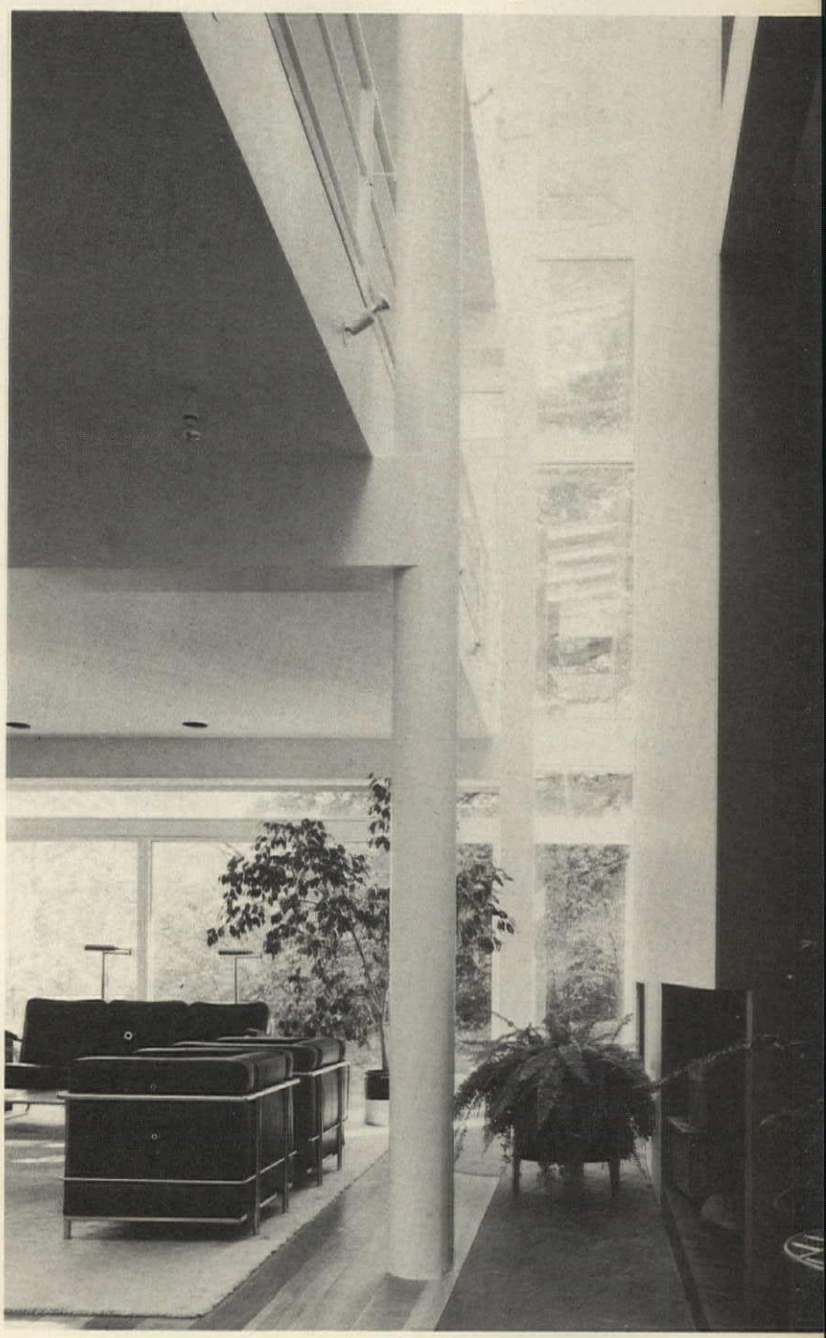
A three-dimensional "transposition" of the house's architectural elements occurs with the stairwell, where walls, portals, frame, piers, windows, balcony, and skylight are all present, a distilled essence of the house. At the point of intersection of the four quadrants, the stairwell forms the core around which these spaces are organized. Mass, lines, planes, light, and space are brought together in an enclosed volume: because of this system of references and its role as a center in the house, the stair becomes significant to the architectural experience. Its integration as a compositional, spatial, and referential entity make it one of the most successful places created in recent architecture. One effect, for example, is a view from the door of the guest suite out the west wall, framed by the porticolike yellow beam at the top of the stair and finally the window in the wall beyond (see cover). This plane, pulled away from the house's frame and washed in light from the glazing above, is painted green and will be surfaced in latticework as a metaphorical gesture to a garden wall.

In designing this building-within-a-building, Graves looked to Domenico da Cortona's stair at Chambord (1519–47), a cage in stone, as the departure point. In this case Graves used polychromed elements to give the sense of physicality to the stair—the gray walls alluding to



Curved plane is pulled back from frame for balcony next to guest suite.

Outside is inside at entry (above); inside, outside in living room (below).



stone; terra cotta walls to masonry. Beams, columns, and pipe railings echo the tension between space and void one sees in the double spiral motif of Chambord.

There is one problem, however. The stair as the functional core of the house works only when the upstairs is occupied, or when people are moving through the house—on the way, for example, to a party on the terrace. Originally more bedrooms were to be included on the second floor, but as construction costs mounted, the terrace became larger. Because the owners live on the first floor most of the time, the focus of activities is not at the stair core: it shifts from bedroom to living room (where the fireplace is pushed off center to the south end of the west wall) and to the kitchen/family room.

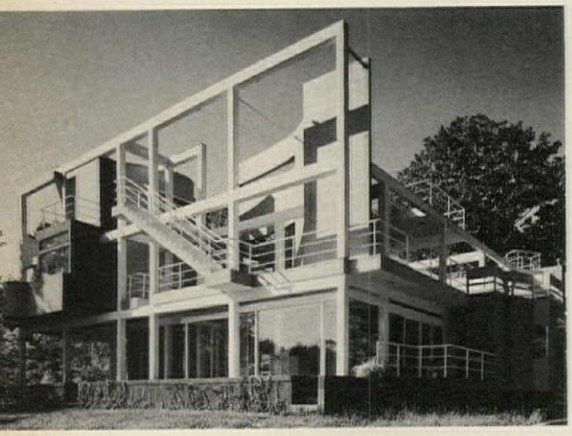
A sense of enclosure

The stair is experienced more as a lightwell or as piece of sculpture than as a vertical spiraling spatial entity. Yet it still achieves a level of coherence, a sense of place, that sets it apart from the rest of the house. The house generally appears too large for its complicated composition on the outside; its spaces within seem too fluid. The problem is peculiar: If the house were shrunk in size, the overall effect would be too busy. If the house were stripped down and simplified to a more reductive form, its elements might lose their relation to the human sense of scale.

Yet one wants more oppositions: a solidity to counterbalance the house's spaciousness and lightness; a stasis and more of a sense of enclosure to oppose the fluidity; a denseness and compaction of volume and mass to counter-balance the transparency of taut planes and linear framing. The argument Geoffrey Scott makes in *The Architecture of Humanism* (Scribner & Sons, 1914, Peter Smith, 1965) constantly comes to mind when experiencing this house: that the dependence on physical firmness and security is as fundamental to architecture as the feeling of expansion conveyed by movement through space.

The house represents too single-mindedly Graves's exploration of ambiguity and a concern with grid and frame, within which the oppositions of space as pattern and space as volume interact. In spite of the insistence with which planes mold space within the legible frame, enclo-

Snyderman House



East elevation, with its legible frame, receding curved plane, and diagonal stair, is recalled in composition of the interior (right).

sure is perceived primarily as plane—opaque, transparent, or pierced, flat or undulating—not as a volumetric enclosure one sees in the Crooks House (P/A, Jan. 1977, p. 52). There nature is harnessed in a volumetric interaction that creates a succession of centers through which one moves from the poché-like topiary enclosing a court to the skylit fireplace in the house itself.

In Graves's development can be seen the interest in combining and synthesizing modernist notions of composition (for example two-dimensional planes within a three-dimensional grid) with increasingly more literal references to architecture. These elements that invoke an architectural code of openings and enclosures—walls, windows, doors—and details such as moldings, fragments of pediments, latticework reflect an emphasis on the vertical surfaces seen frontally and registered by the bodily associations most directly. The Claghorne House (P/A, April 1975, p. 88) showed a more clear-cut step in this direction over the Snyderman House (The Claghorne was designed after the Synderman House but finished before it). The Crooks House represents yet another step—from emphasis on vertical plane as plane to vertical plane as mass.

Graves himself remarks that whereas with the Snyderman House he wanted to extend the neo-platonic frame into the landscape with wall planes receding or varying from it, today he would not deploy those planes through space. He would make the house more compact, compressing the statement about the wall and frame so that they would be treated as surface tensions simultaneously interacting on the enclosing wall.

The man-made and the natural

A final point must be taken up with regard to Graves's explorations. By designing so much structure in the Snyderman House in a highly intricate open and closed manner, the architect heightens the vulnerabilities of the man-made artifact to nature's intervention. There is a romantic defiance of nature's forces in this kind of conception, with its flat terraces and roof, overhangs, curved stucco walls, linear frame. Cracks, leaks, and peeling paint tell of the extreme climatic conditions typical in Fort Wayne.

The battle scars, however, are not overwhelming and not completely the fault of the design: because of contractor problems the house was left exposed too long during construction. Considering that few workmen really sympathized with this kind of architecture—in fact many objected to building this unorthodox house with all its complicated alignments and configurations—it is surprising that it turned out as well as it did.

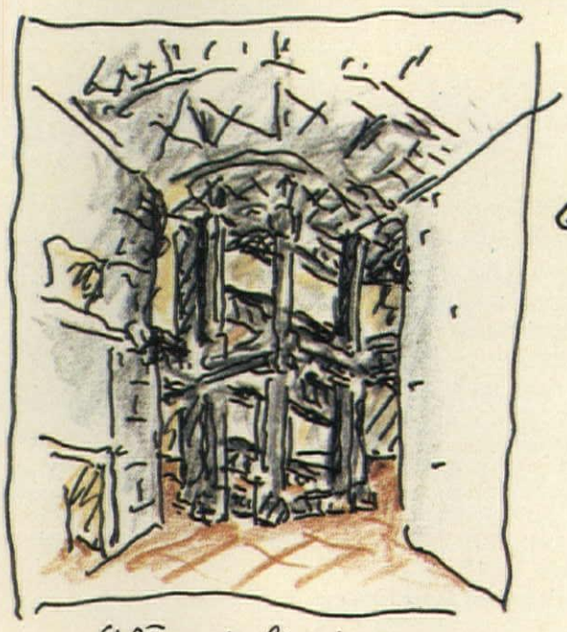
Architects like Graves come under much criticism from more pragmatically minded architects for designing complicated buildings that demand too much from current technologies, building materials, and labor. This is a difficult issue: Should the architect turn down a commission because a certain kind of climate or labor force doesn't suit the sort of architecture he wants to investigate? Aside from the question of refusing commissions in a period when work isn't plentiful, how else is this sort of investigation to be done?

The architect can easily argue that since the house is not a matter of public responsibility, the decision is between him and his clients. But the clients of course don't often know the burden they are assuming in building an experimental work of art. Clients of innovative architecture usually share similar unpredictable experiences, capped by curiosity seekers when the undertaking is finally completed. Nobody has to go through this aggravation to patronize other forms of culture. Buying a painting is easier.

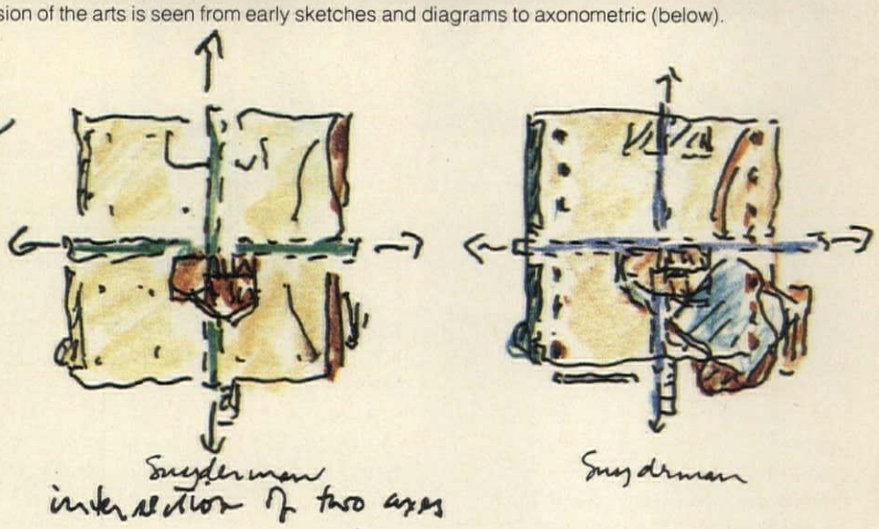
But you can't live in a painting. Here you can live in a work of art. It does require *engagement* in a domain where appearance and reality are constantly in dialogue and sometimes in rather direct confrontation. Fortunately these clients wanted that engagement. Other patrons of culture go to the theater or symphony hall to find their opposing themes; others would rather take their ambiguities with their bedtime reading. But clients of this kind of architecture live with it every day, interact with it, must respond continually to it.

The Snyderman House's failings or weaknesses thus have to be seen in the context of what it represents to the architectural "culture"—a promising step toward an architectural synthesis of import by a talented architect; and what it represents for its clients—a step light-years away from the quotidian, one that demanded their commitment in time and money, and now demands their commitment of the mind and senses. [Suzanne Stephens]

Mural refers to architectural motifs two-dimensionally; fusion of the arts is seen from early sketches and diagrams to axonometric (below).

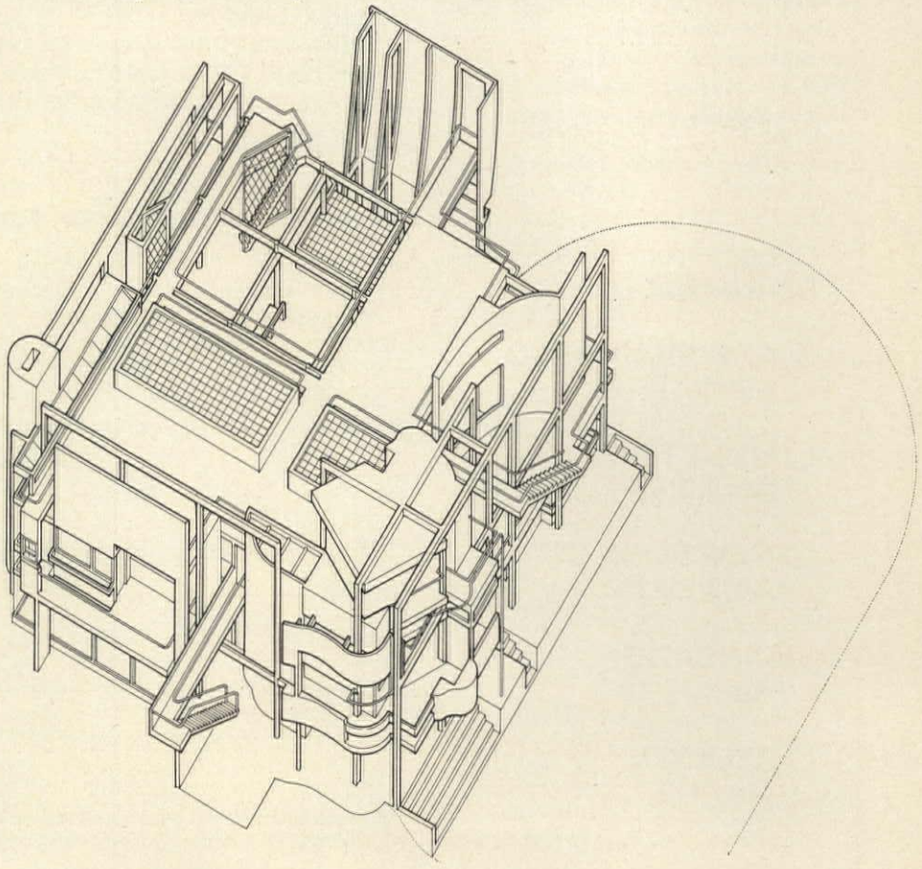


Château de Chambord staircase



Snyderman intersection of two axes

Snyderman



Data

Project: Snyderman House, Fort Wayne, In.
Architect: Michael Graves, principal; Bruce Abbey, Robert Carey White, Peter Waldman, Christopher Chimera, Peter Carl, assistants.
Site: 40-acre wooded site about ten miles outside of Fort Wayne.
Program: house 5500 sq ft, for a family of five, with separate entrances for children who are reaching adulthood; guest quarters.
Structure: concrete foundations; steel framing members; wood frame, walls, floor, roof.
Major materials: wood, stucco finish on exterior, oak flooring, glazed tile, slate, gypsum wallboard. (See Building materials, p. 120.)
Mechanical system: forced air system htg/a.c.
Consultants: Coe Matson & Matott, mechanical.
General contractor: Joy Snyderman.
Costs: withheld at request of client.
Photographer: © T. Kitajima RETORIA, except Eric Kuhn p. 81 top; and p. 87 top.

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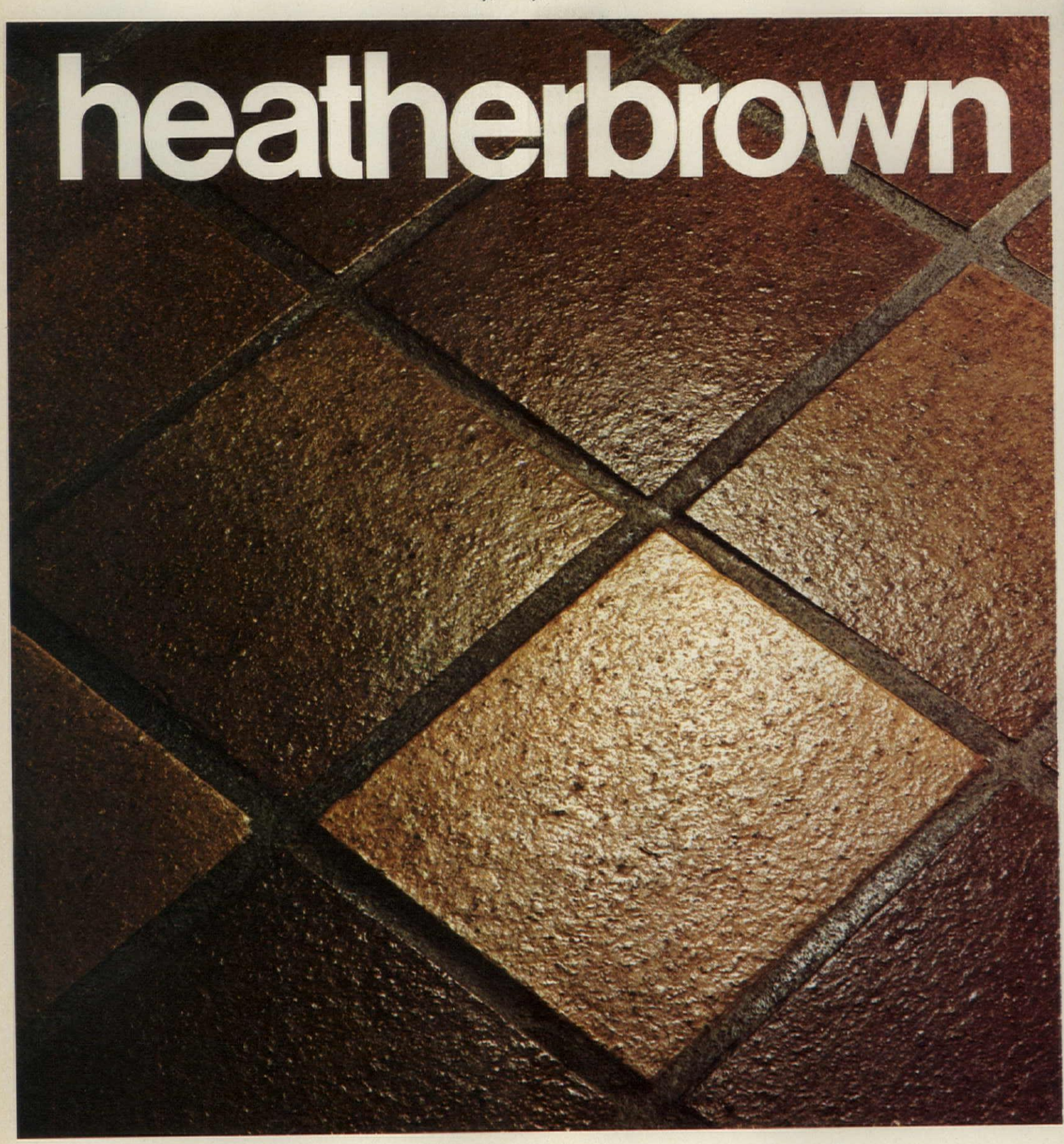

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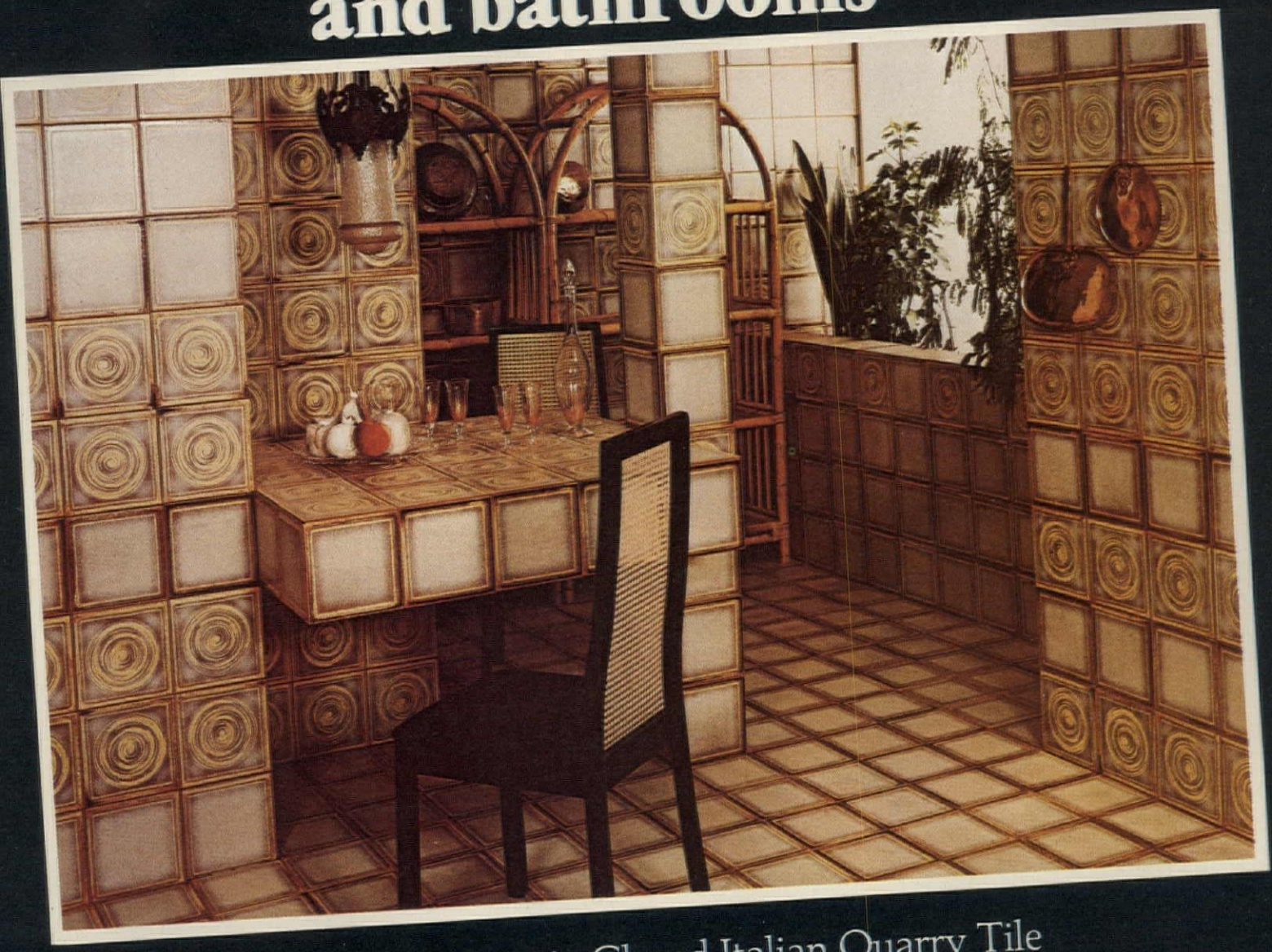

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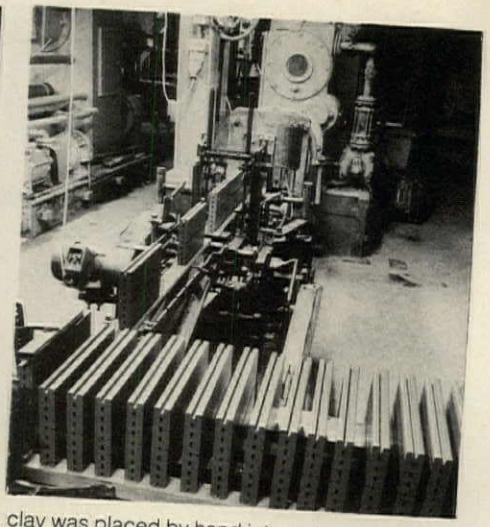

Tile-making then and now: In 17th-Century Holland, clay was placed by hand into molds (left), dried in the sun, then fired in kilns. Automated techniques (right) are most frequently used today.

Ceramic tile, which was once relegated to the bathroom or the kitchen, is once again returning to favor among design professionals as part of the widespread revival of natural materials. Moreover, it is another sign of America's new interest in learning how to build to last. Here is an overview of this encouraging development.

Of all materials used in the finishing of buildings—both inside and outside—perhaps none enjoys a more disproportionate popularity in Europe in contrast to the United States than does ceramic tile. From the hearthsides of London to the subways of Moscow, ceramic tile is used in Europe to a degree never equaled in America: it has been estimated that the average annual per capita usage rate of ceramic tile in Italy was 25.9 sq ft in a recent year, as opposed to a mere 1.4 sq ft in the U.S. And where ceramic tile is used in this country, it is more than likely to be in an area with strong ties—both architectural and ethnic—to Europe. States with a strong Spanish heritage, such as California, Texas, and Florida, and states with strong Germanic or Scandinavian influences, such as Michigan, Minnesota, and Wisconsin, are said to be responsible for about 70 percent of all the ceramic tile installed in America each year. But even with those regional tile traditions (and the fact that for certain installations such as bathrooms, ceramic tile is used almost universally), the ceramic tile industry here remains a relatively small one: even the fishing tackle industry surpasses it in volume of sales annually. But a growing number of architects and designers are rediscovering a material that has been a favorite among builders for six millennia, and which today still possesses the same qualities of beauty, durability, and long-term economy which have been appreciated since the days of the ancient Egyptians.

The pages of this magazine in the past few years have been filled with many examples of ceramic tile's increasing use in a variety of applications, from Ueland & Junker's vibrant Mummers' Museum in Philadelphia (P/A, Apr. 1976, p. 70) to the geometric black and white bathroom of Venturi & Rauch's Brandt house in Greenwich, Ct (P/A, Aug. 1976, p. 50), from the dazzling white floors of Moore and Vedensky's Shinefield house in San Francisco (P/A, Sept. 1977, p. 80), to the distinctive red exterior wall panels of Mitchell/Giurgola's Fairchild Center for the Life Sciences at Columbia, illustrated in this issue (p. 54). Much recent architecture, with its increased respect for design as part of a continuing historic and aesthetic development, has incorporated ceramic tile in a way that would have been unforeseen 20 years ago. At that time, ceramic tile seemed to many to be drearily recollective of gymnasium shower rooms and institutional kitchens, of housing project corridors and hospital emergency rooms. The universal adoption of ceramic tile as the material which best conveyed an image of hygiene, efficiency, and modernity unfortunately, in time, kept many designers from thinking about it in any other terms. But ceramic tile is finally returning to its rightful place among the most desired—and desirable—of building materials, especially in interior design.

Giving them what they want

For instance, in Southern California, America's barometer of trends and its long-time leader in the consumption of ceramic tile, there has been a marked increase in the use of ceramic tile in recent years. Contractors there of mass-produced housing (a segment of the building industry particularly reflective of and responsive to consumer trends) have been in the forefront of the ceramic tile revival in that part of the country. There and in other sun-belt states, where most developer housing in the U.S. is now being built, ceramic tile is being used as it hasn't been in the residential market since the boom years of the 1920s. According to George N. Lavenberg, president of the Ceramic Tile Institute of America (with headquarters in Los Angeles), some 90 percent of all kitchens in contractor houses being built in Southern California today have ceramic tile countertops in their kitchens, as opposed to the high-pressure laminate countertops that still account for 90 percent of the market in the northeastern United States. Bathrooms in contractor houses which ten years ago would have been floored in plywood covered with carpet now are tiled once more. Entry halls in the more sought-after models have ceramic tile floors, usually in one of the earth tones that comprise over half the volume in that market. Clearly, something is afoot when builders whose chief interest is

John Morris Dixon

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George R. Collins

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David Morton

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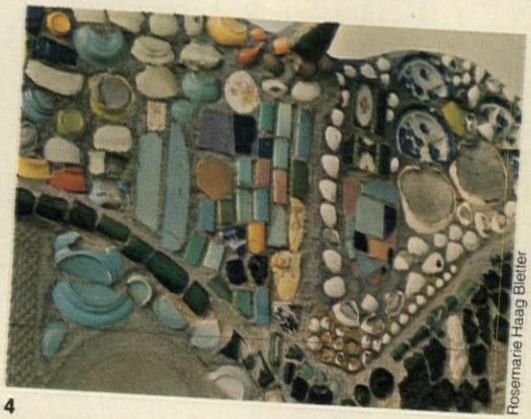

Rosemarie Haag Bletter

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David Morton

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Ed Spiro

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Norman McGrath

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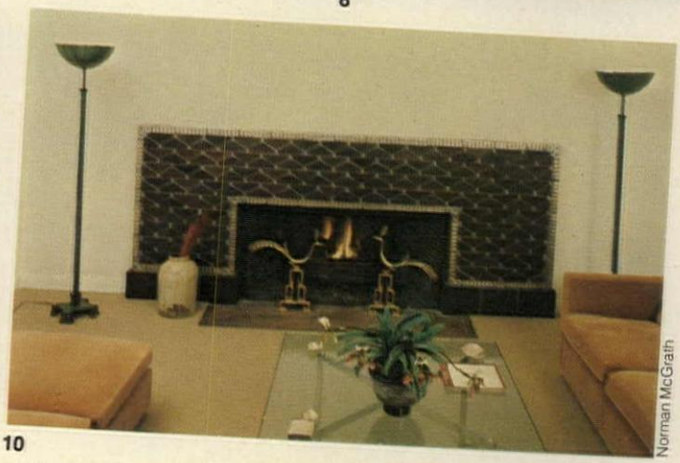

Norman McGrath

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Some highlights—old and newer—in the long history of ceramic tile: **1** Detail of the Madrassah Madir-i-Shah, Isfahan, Iran, 1706–14. The legendary tile city of Persia, Isfahan has captivated visitors since the 14th Century. Near Eastern influences were transmitted by the Arabs as far west as Spain. **2** Detail of Casa Vicens, Barcelona, by Antonio Gaudí, 1883–85, with modifications by an associate, 1925–26. One of Gaudí's earlier buildings, this house for a Catalan tile manufacturer was part of the Mudéjar revival, which incorporated traditional Hispano-Moorish motifs. **3** Doorway of El Patio restaurant, Ybor City, Tampa, Fl, 1920s, a fine example of the revival of Spanish forms in American states once colonized by Spain. **4** Detail of Watts Towers, Los Angeles, by Simon Rodia, 1921–54, an exuberant folk art masterpiece using ceramic tile and other ceramic found objects. **5** Delft Tile Museum, Delft, the Netherlands, preserving examples from the great age of Dutch tile making. **6** Decorative tile detail, depicting old Borough Hall spire, Borough Hall station, 7th Ave.-IRT subway line, circa 1905, Brooklyn, NY. (Photo courtesy Cooper-Hewitt Museum) **7** Detail of bathroom, Villa Savoye, Poissy-sur-Seine, France, by Le Corbusier, 1928–31 (see ill. 7, p. 97). **8** Paramount Theater of the Arts, Oakland, Ca, by Miller & Pfleuger, 1931, restored 1973 (see P/A, July 1974, pp. 50–57). **9** Bathroom and **10** living room chimneypiece, Saarinen House, Cranbrook Academy of Art, Bloomfield Hills, Mi, by Eliel Saarinen, 1929. Showing clearly the influence of turn-of-the-century Viennese sources in the elder Saarinen's work, the interiors of the president's residence have Pewabic tile made in Michigan.

marketability turn so decisively to one material.

One lesson these mass-housing experts have learned lately is that the public is demanding more quality for its ever-inflating housing dollar. While prices continue to rise, so do the public's expectations about what they are getting for their money. Quite simply, tile spells quality, and does so in a way the average consumer can readily understand. Tile bespeaks hand labor, warmth and genuineness, durability and permanence, and canny developers, not known for their love of anything that raises the price of a spec house, are reacting wisely and are putting their money where it counts. For they know that mass-produced housing is most likely sold (or not sold) by three areas: the entry, the kitchen, and the bathroom, and that the application of ceramic tile in any or all of those places nowadays can substantially increase the prospect of making a sale.

Architects, too, have figured heavily in this development, though their motivations might not be so commercially inspired as those of mass-market contractors. Few major architects in the past two centuries have excluded ceramic tile from their materials lists, and even though the so-called post-Modernist architects have been particular champions of the renewed use of ceramic tile, it should not be forgotten that most of the Modern Movement's masters used ceramic tile as well. Architects, in short, have very long memories. The fact is that their profession—and its means of being taught and transmitted—provides a built-in mechanism for maintaining tradition.

Of time and tile

Ceramic tile is simply one of the oldest building materials known to mankind. It is an obvious relative of the sun-dried adobe brick which was used by primitive peoples around the world, but represents a further development over its precursor through the application of an early technology. Instead of being baked by the sun, ceramic tiles were fired in kilns, with vitreous glazes adding a further layer of protection against the elements. Exactly where or when ceramic tile was first used is not precisely known, though it was undoubtedly somewhere in the "cradle of civilization" that stretched from the Nile to the Tigris and Euphrates. By 4000 BC ceramic tile was already being used by the ancient Egyptians, the siliceous sands of that desert kingdom perfectly suited to the manufacture of the glazed clay tiles that were fired to their characteristic turquoise iridescence by the addition of copper compounds. The Assyrians and Babylonians used ceramic tiles too: in fact, a better facing material for harsh desert climates can scarcely be imagined, and its suitability for the physical conditions of those ancient civilizations cannot be discounted as the major factor for the prevalence of ceramic tile.

If it were necessary to pick one building material which best embodies the transmission of artistic influences and ideas between cultures and across time, ceramic tile would be a very strong contender. This is most clearly demonstrated in the Near and Middle East, the regions wherein ceramic tile for thousands of years has received its widest use and most skillful refinement. The conquests of one victor after another in that part of the world left few

Norman McGrath

Game and Hunter pictorial tiles in bright polychrome surround library fireplace in a house near New York, by Charles Moore and Richard B. Oliver. Tiles are imported from Holland by Country Floors, Inc., New York.

regions ignorant of the manufacture of ceramic tile, but in time Persia emerged as the center of ceramic tile-making in the Near East. The city of Kashan (about 120 miles south of modern-day Tehran) became the center of the ceramic industry: to this day, the Parsi word for tile is *kashi*. Techniques for manufacturing and embellishing ceramic tile in Kashan reached unprecedented heights of invention and sophistication. Although the Mongol invasion of Persia in 1219 brought most construction in that country to a halt for almost a century, the domination of the invaders also brought knowledge of ceramic manufacturing methods from China, likewise held under Mongol rule. This period, coinciding with the Yuan Dynasty in China (1280–1368) brought together the discoveries and techniques of masters of fired earthenware at both ends of Asia, an international artistic communication over a vaster distance than perhaps at any time since the reign of Alexander the Great. During the 14th Century, the cities of Isfahan, Tabriz, Yezd, and Samarkand became legendary for the vivid beauty of the tile that bedazzled travelers who passed through those caravan stops then and ever after.

Tile pandemic

Around the Mediterranean Sea, a similar pattern of influence through domination emerged: the conquering Arab tribes brought ceramic tiles from the center of their

Ceramic tile in a variety of recent architect-designed installations (opposite page): **1** Shinefield house, San Francisco, by Charles Moore and Dmitri Vedensky. Tile by Structural Stoneware, Minerva, Oh (P/A, Sept. 1977, pp. 80–83). **2** Junior department, Bonwit Teller, New York, by The Walker Group. Tile by American Olean, Lansdale, Pa. **3** Harristown Key Block/Phase I, Harrisburg, Pa, a joint venture by Lawrie + Green and Mitchell/Giurgola Architects. Tile by Gail Ceramics, Orange, Ca. **4** Detroit Plaza Hotel, Renaissance Center, Detroit by John Portman & Assocs. Tile by U.S. Ceramic Tile Co., Canton, O. **5** Century West Health Spa, Los Angeles, by George Nowak. Tile by Franciscan, from Interpace Corp., Los Angeles. **6** Men's furnishings department, Bloomingdale's, White Plains, NY, by Kennerly, Slomanson & Smith. Tile by Elon, New York. **7** Bathroom of Villa Savoye (see ill. 7, p. 95), inspiration for **10** Bathroom of Dunaway apartment, New York, by Gwathmey Siegel Architects. Tile by American Olean, Lansdale, Pa. **8** House in Captiva Island, Fl, by Charles W. Moore Assocs. Tile by Elon, New York. **9** Blanchard house, Anchor Bay, Ca, by Dmitri Vedensky. Tile by Earthstone.

Morley Baer

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H. Bernard Askienazy

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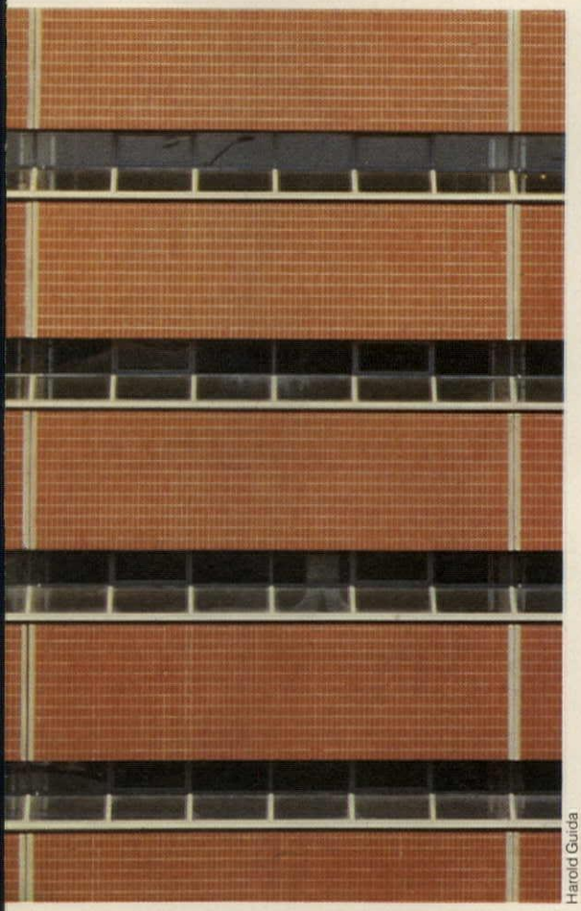

Harold Guida

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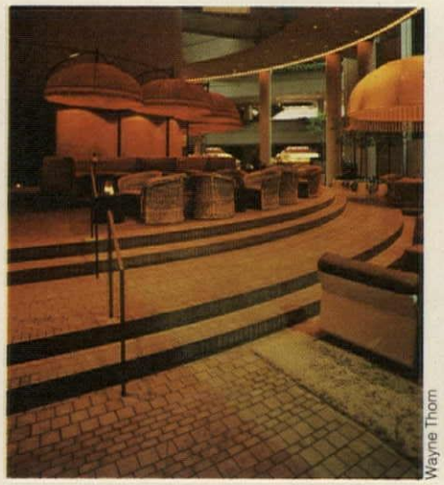

Wayne Thom

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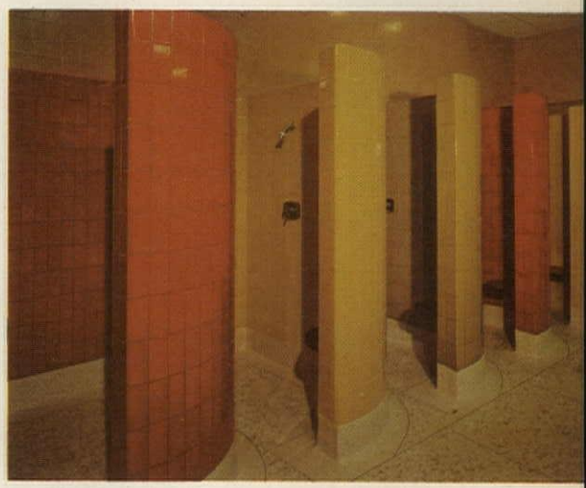

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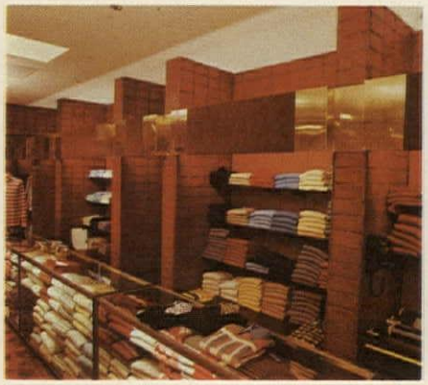

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James Volney Righter

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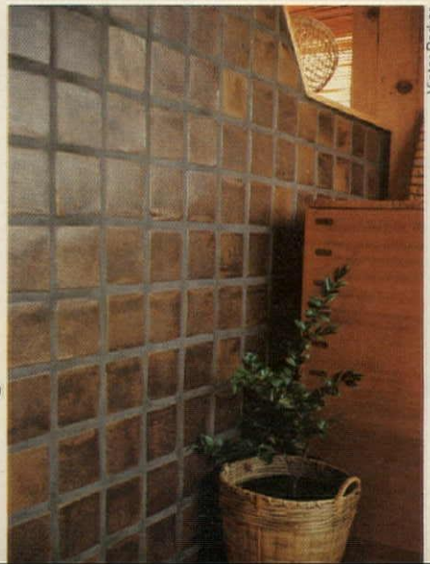

Victor Parker

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Ezra Stoller © ESTO

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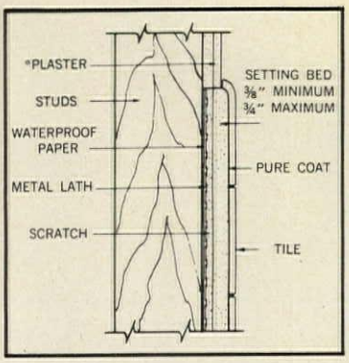
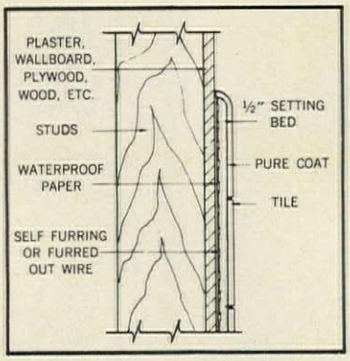
world to its very limits at the Straits of Gibraltar. The nomadic Arabs had no indigenous art forms of their own, but adopted and spread those of its conquered lands. The propagators of a new religion, they also held to a prohibition against the depiction of any living being in public or religious art and decoration, which affected the artistic content of ceramic tiles in their sphere of influence to this day. The Arabs were also responsible for the spread of a new technique, originated in Persia, and now known by its Spanish name of *cuerda seca*. Previously, the use of more than one colored glaze on a ceramic tile necessitated the gouging of deep grooves between areas of different colors to prevent the glazing from running together. This new technique used a "dry cord" (actually a thin line) of pigment, mixed with a greasy material that evaporated during firing, to separate the individual colors applied to segments of the tile.

The fact that the name of this process comes down to us in Spanish should be a clue that the Arab-dominated regions of southern Spain were the next port of entry in the westward journey of ceramic tile. Not until the second half of the 12th Century were tiles in general use in Europe outside of Spain, but thereafter ceramic tile spread rapidly throughout the continent. One exception, surprisingly, was Italy, which, with its vast deposits of marble and other stone, did not take to ceramic tile until the early 16th Century. In northern Europe, where there was less native stone, the idea caught on more rapidly: first in France in the late 12th and early 13th Centuries, thence to England and the Netherlands. By 1521 the use of ceramic tile for flooring, facing, and roofing was so common in northern Europe that Martin Luther, upon his entry into Worms (where he was under a sentence of death), could exclaim to an admonishing messenger, "Tell your master that if there were as many devils at Worms as tiles on its roofs, I would enter." The Netherlands became a chief center for the making of ceramic tiles (not least of all for the widespread Spanish influence: the Low Countries were a colony of Spain until the early 17th Century). Soon the familiar blue and white Dutch tiles were seen across Europe, from English parish churches to the kitchen of the Amalienburg at Munich. The increase of world trade and colonization brought ceramic tiles to the Americas, and the predominance of ceramic tile in Spanish and Portuguese colonies is a further extension of the unbroken line of descent from the ancient Near East ever westward to the New World.

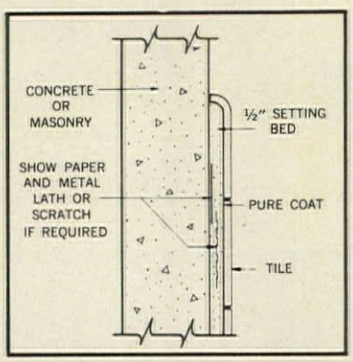
The rise of the Industrial Revolution saw the increase of new techniques for manufacturing ceramic tile. But somehow, even when machine-made, ceramic tile still managed to convey a sense of individuality, if only because no satisfactory method for its installation other than by hand has ever been devised. Small wonder, then, that ceramic tile became one of the standard materials of the various crafts movements that flourished in Europe and America in the late 19th Century in reaction to the increasing industrialization of the decorative arts. The Arts and Crafts Movement in Great Britain, the Craftsman Movement in the United States, the Mudéjar revival in Spain and the Vienna Secession were all part of the international rediscovery of



Wood or steel stud construction with plaster above a tile wainscot—Application 1.

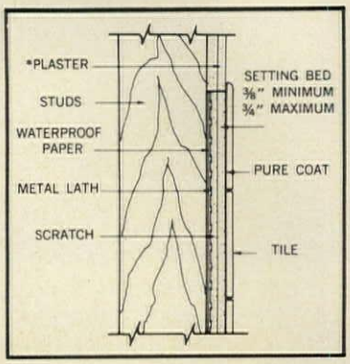


Wood or steel stud construction with solid covered backing. This is the "one float coat" method of applying tile and makes an excellent installation. Backing should be specified to be a straight, firm and true surface. This should be specified in the proper section of the specifications for the trade that is to install the backing material.

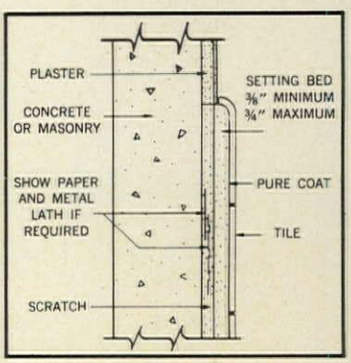


Solid type wall construction without plaster above wainscot.

Ceramic tile application methods, showing six typical installations, along with items specified by tile contractors (at right in diagrams) and items specified by other building trades (at left in diagrams). Scale: 1" = 8". Reproduced courtesy of the Ceramic Tile Institute, Los Angeles.

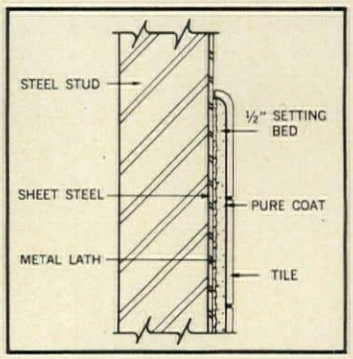


Wood or steel stud construction with plaster above a tile wainscot—Application 2.



Solid type wall construction with plaster above wainscot.

Heavy gauge steel. Specify self-furring metal lath fastened with pan head metal screw 8" O.C. "One float coat" method with ½" mortar may be used or scratch coat may be specified



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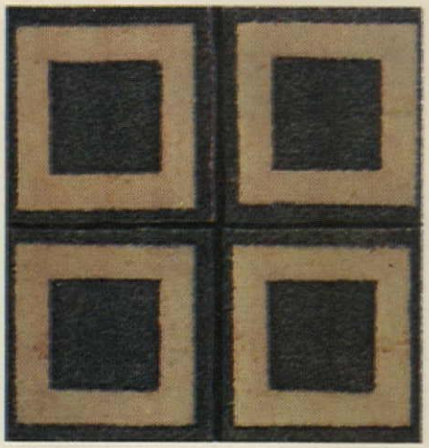

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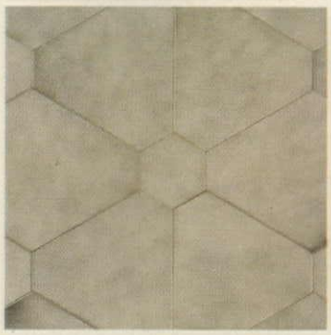

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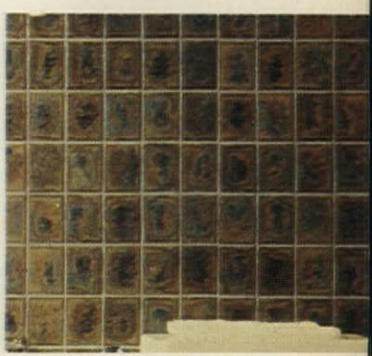

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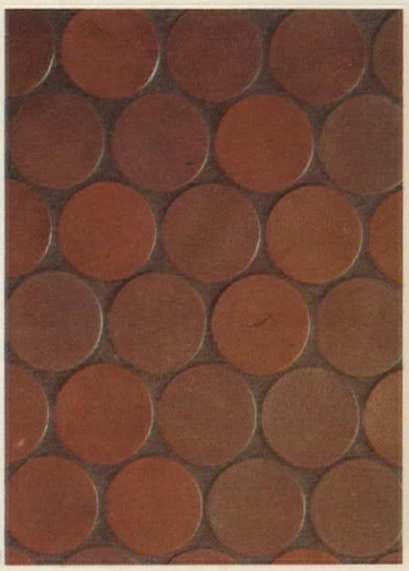

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Ceramic tiles now available for a variety of applications: **1** Grandezza Rustik, by Buchtal, imported from Germany by Amsterdam Corp., NYC. **2** Heatherbrown Welsh quarry tile, imported by Shep Brown Assocs., Boston. **3** Quadrille, by Summitville Tiles, Summitville, Oh. **4** Esa "T," by Tecnoceramica, imported from Italy by Agency Tile, Spring Valley, NY. **5** Dal-Duraflor Cognac, by Dallas Ceramic Co., Dallas. **6** Serpentine Flashed Walnut, by Franciscan, from Interpace Corp., LA. **7** Malatesta, by Euroceramica, imported from Italy by Philip Chialvi, Rego Park, NY. **8** Bay Blue glazed veneer by Maybrik, LA. **9** Castel Labrador, by Jasba Mosaik, imported from Germany by Amsterdam Corp., NYC. **10** Pacifica 2-in. rounds, and **11** penny rounds, from Hastings Tile, Lake Success, NY.

ceramic tile, and the half-century from 1880 to 1930 was surely a great era for that material.

Aside from its decorative qualities, ceramic tile's physical properties made it ideally suited for all sorts of applications in areas that dealt with sanitation and hygiene. Though the Dutch had known for centuries of ceramic tile's ease of maintenance in settings that required frequent cleaning, the continent at large did not catch on to that beneficial aspect until the mid-19th Century and the rise of awareness in the connection between cleanliness and health. Prince Albert, the obsessive organizational genius who brought the world the Crystal Palace exhibition, had a model dairy built near Windsor Castle that was a marvel of modernity, not least of all in its forward-looking interiors entirely (and beautifully) covered in ceramic tile. Tile manufacturers capitalized on the public's growing concern with health and sanitation, with one firm advertising its product around 1920 with the slogan "Clean and inviting—and easy to keep so." By the 1930s tile and enamel finishes had become almost universally accepted as the very image of the healing profession.

It belongs to the ages

Over the thousands of years in the history of the world just described, it was realized that ceramic tile is a very durable material indeed. It was also found to be as maintenance-free as a material is ever likely to be. Its smooth glazes repelled dirt, and beneath the surface, ceramic tile did not decay like wood, rust like metal, or break as easily as glass, and, not least of all, its colors could remain amazingly fresh over a period of centuries. For that was the way things used to be built: save for the catastrophes of war and invasion, the life of a building was calculated in centuries, not in the decades that might be the normal life expectancy of an American building in the 20th Century. The concept of building to last has more than a historic message for our times, now that the eventual depletion of many of the earth's natural resources is within the foreseeable future. The uncommon longevity of ceramic tile is underscored by its frequent reuse even after removal from its original installation. The practice of the wholesale incorporation of building materials salvaged or stolen from older buildings for use in newer ones is a habit of long standing in Europe, where building materials have been in short supply for many centuries. The materials most frequently retrieved in that way are stone and tile, both because of their durability, and in the expectation of their lasting even longer still.

Closer to home, for example, the patio of the Ernest Hemingway house in Key West is paved with cast-off ceramic tiles from the old Presidential Palace in Havana that were a gift from a former Cuban dictator, with choicer Art Deco examples from the same source decorating an upstairs bathroom. Antique Delft tiles have long been prized as embellishments around a fireplace, and Mercer and Rookwood ceramic tiles (highpoints in the ceramic art in America around the turn of the century) are now being rediscovered and appreciated by collectors around the country. Thus we can see that architecture as palimpsest (P/A, Nov. 1976, p. 46) is finally coming of age in America: reuse of old materials is following the reuse of old buildings, and, accordingly, there is much greater interest in materials that have a reasonable chance of growing old themselves. Thus the time has come for architects and designers to re-examine some of the old myths about ceramic tile that might have stood in the way of this demonstrably superior material's wider acceptance in American architecture.

First among these is the question of cost. America, the native land of the bottom line, has had great trouble in this century in coming to terms with the notion of cost versus value. Knowing the cost of everything and the value of nothing has too often resulted in the kind of thinking that has made ticky-tacky construction the rule, rather than the exception, in most of what is built in America today. Yes, tile *is* more expensive than most other materials used for flooring, facing, and roofing, but only on a simplistic sq ft-to-sq ft comparison can it be seen to be so. Ceramic tile has a life expectancy far greater than any carpeting or vinyl asbestos floor covering, any synthetic, fabric, or painted wall covering, or any shingle or shake roofing. The true cost (and real value) of ceramic tile must always be

Ceramic tile floors installation performance levels

Performance-level requirement guide
Courtesy Tile Council of America, Inc.

Use this guide to find the performance level required, then consult the selection table to the right and choose an installation which meets or exceeds that performance level. For example: Method F113, rated Heavy, can also be used in any area requiring a lower performance level.

General area descriptions		Recommended performance-level rating
Office Space, Commercial, Reception Areas	a) General	Light
Public Space in Restaurants and Stores, Corridors, Shopping Malls	a) General	Moderate
Kitchens	a) Residential b) Commercial c) Institutional	Residential or light Heavy Extra Heavy
Toilets, Bathrooms	a) Residential b) Commercial c) Institutional	Residential Light or Moderate Moderate or Heavy
Hospitals	a) General b) Kitchens c) Operating Rooms	Moderate Extra Heavy Heavy — use Method F122
Food Plants, Bottling Plants, Breweries, Dairies	a) General	Extra Heavy
Exterior Decks	a) Roof Decks b) Walkways and Decks on Grade	Extra Heavy — use Method F153 Heavy, Extra Heavy — use Method F151 or F152
Light Work Areas, Laboratories, Light Receiving and Shipping, etc.	a) General	Moderate or Heavy

Selection table

Maximum performance level	Method Number	Description	Grout	Comments on use
Residential: Normal residential foot traffic and occasional 300 pound loads on soft (70 or less Shore A Durometer) rubber wheels. (Equivalent to passing test cycles 1 thru 3 of ASTM Test Method C 627-70.)	F116	Organic adhesive on concrete Ceramic mosaic or glazed floor tile	Wet cured* 1 pc: 1 sand	Dry-Set or Latex-portland cement mortar preferred
	F142	Organic adhesive on wood Ceramic mosaic or quarry tile	Latex-portland cement	Residential, low cost, bathroom, foyer
	F143	Epoxy mortar on wood Ceramic mosaic tile	Wet cured* 1 pc: 1 sand	High bond strength in residential use
	TR713	Epoxy adhesive over existing resilient tile Ceramic mosaic or quarry tile	Latex-portland cement	Residential renovation
Light: Light commercial and better residential use, 200 pound loads on hard (100 or less Shore A Durometer) rubber wheels. (Equivalent to passing test cycles 1 thru 6 of ASTM Test Method C 627-70).	F141	Portland cement mortar on wood Ceramic mosaic tile	1 pc: 1 sand	Depressed wood subfloor in residence
	F143	Epoxy mortar on wood Ceramic mosaic tile	ANSI A118.3 epoxy	Best for wood subfloors
Moderate: Normal commercial and light institutional use, 300 pound loads on rubber wheels and occasional 100 pound loads on steel wheels. (Equivalent to passing test cycles 1 thru 10 of ASTM Test Method C 627-70.)	F112	Dry-Set mortar on cured mortar bed Ceramic mosaic tile	Wet cured* 1 pc: 1 sand	Economy for smooth surface
	F113	Dry-Set mortar on concrete Ceramic mosaic tile	Latex-portland cement	Economy.
	F113 F114	Dry-Set mortar on concrete** Ceramic mosaic tile	ANSI A118.3 epoxy	Mild chemical resistance
	F122	Conductive Dry-Set mortar** Conductive tile	ANSI A118.3 epoxy	Hospital operating rooms, other special
Heavy: Heavy commercial use, 200 pound loads on steel wheels, 300 pound loads on rubber wheels. (Equivalent to passing test cycles 1 thru 12 of ASTM Test Method C 627-70.)	F111 F112	Portland cement mortar Ceramic moasic tile	1 pc: 1 sand	Smoothest floor surface
	F112	Dry-Set mortar on cured mortar bed Quarry Tile	Wet cured* 1 pc: 2 sand	Economy for smooth surface
	F113	Dry-Set mortar on concrete Ceramic mosaic tile	Wet cured* 1 pc: 1 sand	Best general thin-set method
	F122	Conductive Dry-Set mortar Conductive tile	Wet cured* 1 pc: 1 sand	Hospital operating rooms, other special
Extra heavy: Extra heavy commercial use, high impact service; meat packing areas, institutional kitchen, industrial work areas, 300 pound loads on steel wheels. (Equivalent to passing test cycles 1 thru 14 of ASTM Test Method C 627-70.)	F111 F112 F151	Portland cement mortar Quarry tile or Packing house tile	1 pc: 2 sand	Smooth, hard service best ceramic tile floor
	F113 F152	Dry-Set mortar on concrete Quarry tile or packing house tile	Wet cured* 1 pc: 2 sand	Best general thin-set method
	F113 F114 F115	Dry-Set mortar on concrete Quarry tile or Packing house tile	ANSI A118.3 epoxy	General, on concrete, for mild chemical resistance
	F143	Epoxy mortar on wood Quarry tile or packing house tile	ANSI A118.3 epoxy	Hard service on wood subfloor, chemical resistance
	F131 F132	Epoxy mortar on concrete Quarry tile or packing house tile	ANSI A118.3 epoxy	Chemical resistance
	F134	Chemical resistant mortar on acid proof membrane Packing house tile***	Furan or ANSI A118.3 epoxy	For continuous or severe chemical exposure

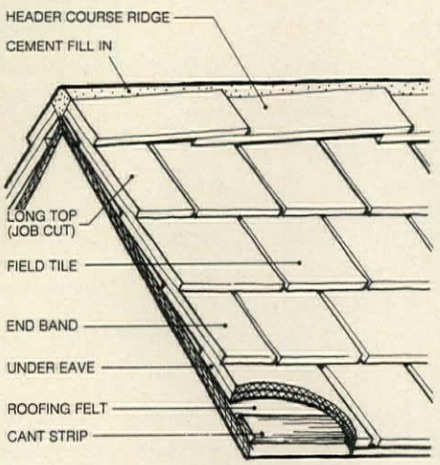
*Floor covered after grouting with polyethylene sheeting for three days. Water added to entire surface on second day and sheeting replaced.

**Rates "Heavy" if dry-set is wet cured for three days before grouting.

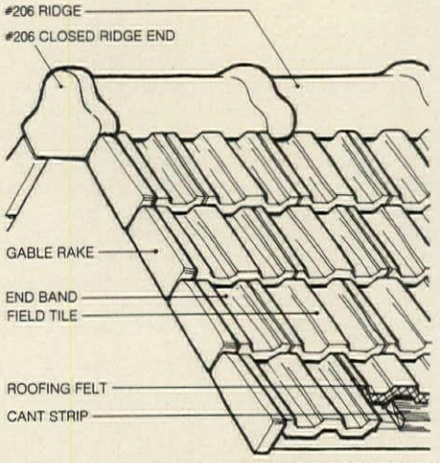
***Floor may show surface wear under constant steel wheel traffic.

considered as a function of its lifespan, which, if the tile is specified correctly for its function and is installed professionally, is unlikely to end any sooner than the building that houses it does.

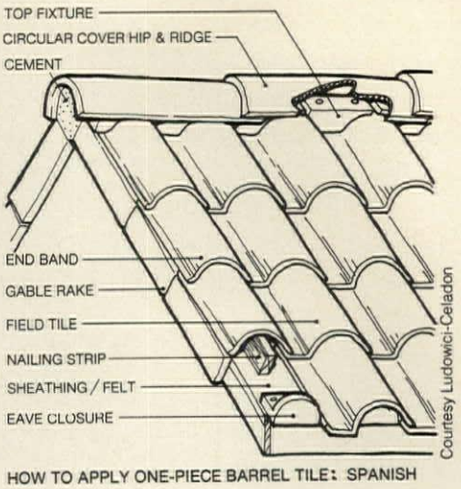
The major guarantee against errors in specification is proper education of architects and designers in what ceramic tile can and cannot do. An estimated 50–60 per-



HOW TO APPLY FLAT SHINGLE TILE: NORMAN



HOW TO APPLY INTERLOCKING SHINGLE TILE: FRENCH



HOW TO APPLY ONE-PIECE BARREL TILE: SPANISH

cent of a tile installation bill in the U.S. goes toward labor costs, so it can easily be seen that if tile has been incorrectly specified and must then be replaced, one is dealing with a very expensive proposition. Many professionals have therefore shied away from using ceramic tile, fearing that the imagined risks involved are greater than any potential benefits. This is especially true in those parts of the United States where ceramic tile is not widely used, where qualified tile contractors are sometimes hard to find, or hold virtual monopolies in certain areas, or those who refuse to install the handmade tiles that are all the rage among designers, but which prove troublesome to workmen used to working only with uniform, machine-made tiles. The answer to these problems lies in the necessity for architects and designers to keep abreast of the comprehensive range of ceramic tile specification data now readily available. The various professional ceramic tile organizations (whose component members are the tile manufacturers, importers, and distributors of the United States) are more than willing to help design professionals avoid these common problems.

Good till the last drop

Other myths surrounding the use of ceramic tile are similarly the result of misinformation or lack of adequate experience in dealing with the material. Tile is cold, some people think. Compared to wood this is true, but what building material is inherently warm without proximity to heat? Ceramic tile generally has been used in this country as a facing over materials such as concrete (often without insulating materials between the two) that are more responsible for the transmission of cold than the tile itself. Tile is noisy, other people say. Once again, this is more a result of the ways tile has been used in this country, for kitchens and bathrooms are not particularly known for having the wide range of acoustic absorptive materials found in the other rooms of an average house. In a living room, for example, ceramic tile will not raise the decibel level any more appreciably than the glass, stone, chrome, or steel that are frequently used not only for facing, but for furniture as well, with nary a thought given in those instances to the question of noise.

The myths of country of origin deserve debunking, too. A staggering range of ceramic tile is now available in the United States for those who want to use it, and as is often the case where too much choice and too little information exists, a number of stereotypes have evolved about tiles from various countries. As Jack Veerman, president of the Amsterdam Corp., one of the largest importers of ceramic tiles from Europe in this country has observed, "The conventional wisdom is that all American tiles are good, all German tiles are good, all Italian tiles are bad, all Japanese tiles are cheap, all Korean tiles are cheaper. Well, this just isn't so." In point of fact, superb and terrible tiles are produced in all countries, and as with the other myths surrounding ceramic tile, the chief safeguard against misinformation and worse is a thorough investigation of the materials that go into a specific tile's making.

There is, unfortunately, no easy rule of thumb by which the tens of thousands of available ceramic tiles can be judged. Those made in the United States are rated more uniformly than those from some foreign countries, but the necessity for such information is not terribly pressing in a large number of installations, especially on walls, where the glaze, color, and decorative quality are of paramount importance, since the tile is not being used structurally. For flooring, industrial and commercial jobs, and special installations such as swimming pools, steam rooms, refrigerated rooms, and the like, greater care must be taken, but manufacturers both here and abroad offer a wide range of specially made ceramic tiles for those more demanding uses. Like any other business, the ceramic tile industry will react to the varying needs of the marketplace, just as architects, designers, and contractors are reacting to the demands of the public in using more tile than in many years before this. Just what the ceramic tile industry's response to this movement toward tile will be is hard to predict, but certainly the products that come from further development of ceramic tile are rather sure to outlast those who devise them, and possibly even the installations they are devised for. If the contents of America's junkyards and salvage companies are the instant midden heaps they appear to be, then a lesson can be learned from the quantities of ceramic tile that are usually to be found there: we have materials that can survive the test of time. Let us have more buildings that can, too. [Martin Filler]

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'Continuity' key to malpractice cutoff date

Bernard Thomson and Norman Coplan

Although the 'continuous treatment doctrine,' used as a basis for determining whether a malpractice claim should be time-barred, has been widely adopted, there are still uncertainties concerning its application—as evidenced in the recent court case cited below.

In view of the large number of malpractice actions which have been instituted against architects and engineers in recent years, the rules which determine the time within which such suits must be brought are of significant concern to the profession. This concern is reflected in the large number of relatively new statutes of limitations which have been adopted in many jurisdictions which provide cut-off dates when third parties, who sustained personal injuries, may sue a professional for design error, and at the same time, this concern has been heightened by judicial decisions which have extended the time in which suits by an owner based upon errors or omissions may be brought.

The time in which an owner may institute an action for malpractice against a design professional is ordinarily measured from the date when such malpractice allegedly occurred, or at the latest, from the time the project is completed. We have discussed the application by certain courts of rules (which initially applied to the medical profession) to the design professions whereby the time within which a malpractice suit may be brought has been extended (see "It's the law," P/A, Apr. 1975 and Apr. 1977). This application of law has been termed the "continuous treatment doctrine" and stands for the proposition that if a design professional has been allegedly guilty of malpractice but has continued his professional relationship with the client in an effort to remedy any defect which has occurred, the time within which the owner is required to bring suit does not commence to run until the professional relationship is terminated, rather than from the time the alleged malpractice occurred.

However, even in those jurisdictions which have adopted the continuous treatment doctrine, there are uncertainties as to its application. For example, in the recent case of *Tool* vs *Boutelle*, 398 N.Y.S. 2d 128, the complaint of the owner alleged malpractice against an engineer who performed engineering and surveying services. These services consisted of preparing a survey of the plaintiff's property for the purpose of establishing property lines and building locations. The services were performed in 1967, but the alleged error of the engineer was not discovered until November 1975. It was the claim of the owner that he had engaged the engineer in 1972 to revise the survey and again in 1975 for a further revision. The owner further contended that because of this continuing relationship, the statute of limitations did not begin to run until 1975. The defendant, on the other hand, argued that although when the error was discovered in 1975 he agreed to do the necessary work to correct the error and did in fact perform this work, his services in 1972 and 1975 relating to the survey revision had no connection with the original error.

The Court, in its opinion, stated:

"The applicable statute of limitations period in an action for malpractice is three years . . . and the cause of action accrued upon the performance of the work by the professional. . . . The 'continuous treatment' exception upon which plaintiff relies holds that when a course of treatment by a professional which includes wrongful acts and omissions has been continuous and is related to the original condition or complaint, the claim acrues at the end of the treatment.

"However, the 'continuous treatment' must be a treatment for the same or related condition, continuing after the alleged acts of malpractice; not mere continuity of a general professional relationship.

"In medical malpractice cases, continuous treatment is for a particular physical injury or illness . . .; and in malpractice against architects, the architect's subsequent work must be related to a particular project. . . . In malpractice against a surveyor, in order for the doctine to apply, the subsequent work must be related to the original work for which the surveyor was engaged. Thus, if a surveyor performs unrelated work for a client on the same property, the rule would not apply. If the subsequent work, however, builds on, expands, or integrates the initial work, then the rule would be applicable."

The Court concluded that although the work performed by the defendant between 1967 and 1975 was related to the work which he had performed in 1967 and which was allegedly in error, the complaint should nevertheless be dismissed because there was not sufficient continuity to apply the "continuous treatment" doctrine. The Court said:

"In the present case, the court finds that the defendant's work in 1968, 1972, 1973, and 1975 was related to work performed by the defendant in 1967. But 'relation' is not the only element which must be found in order for the doctrine to apply; there must also be 'continuity.' . . . If there is a three-year gap between the services performed by a professional, even though such services are related to the original condition or initial acts upon which the malpractice is predicated, then the Statute of Limitations will have run. . . . In the present case, there was a three-year gap between the services performed . . . in 1968 and those performed in 1972; thus, . . . plaintiff's claim is time-barred."

If the design professional's reward for assisting his client to remedy a defect which appears after construction has been completed is to increase the opportunity of a malpractice suit, it appears clear that the owner will find increased reluctance when seeking such assistance. □

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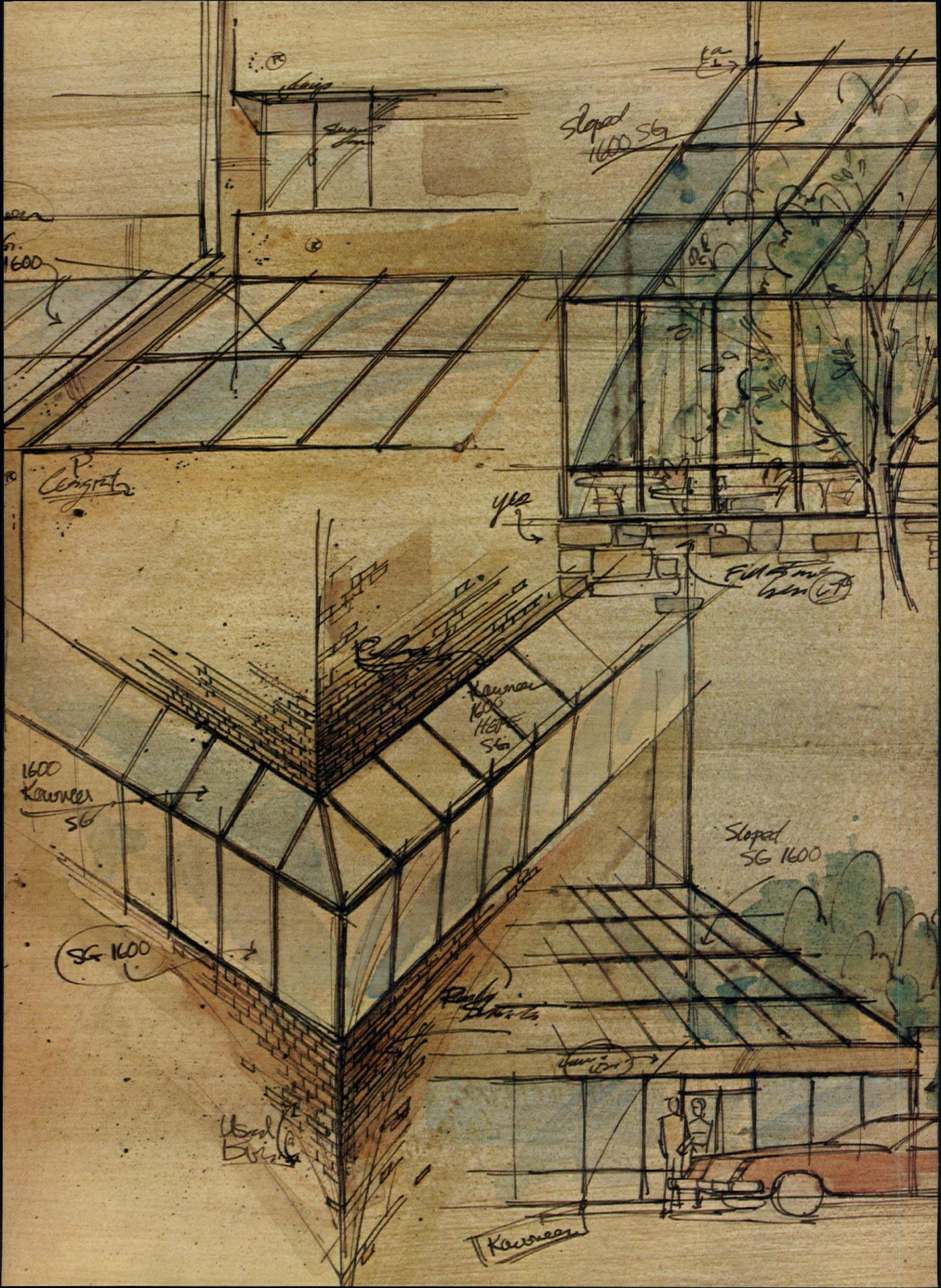
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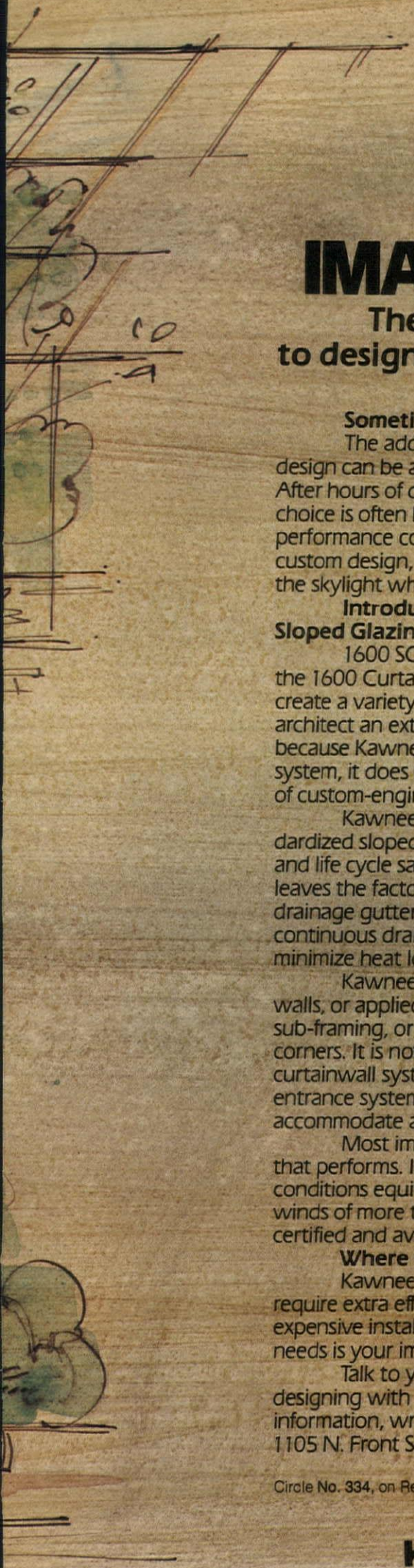

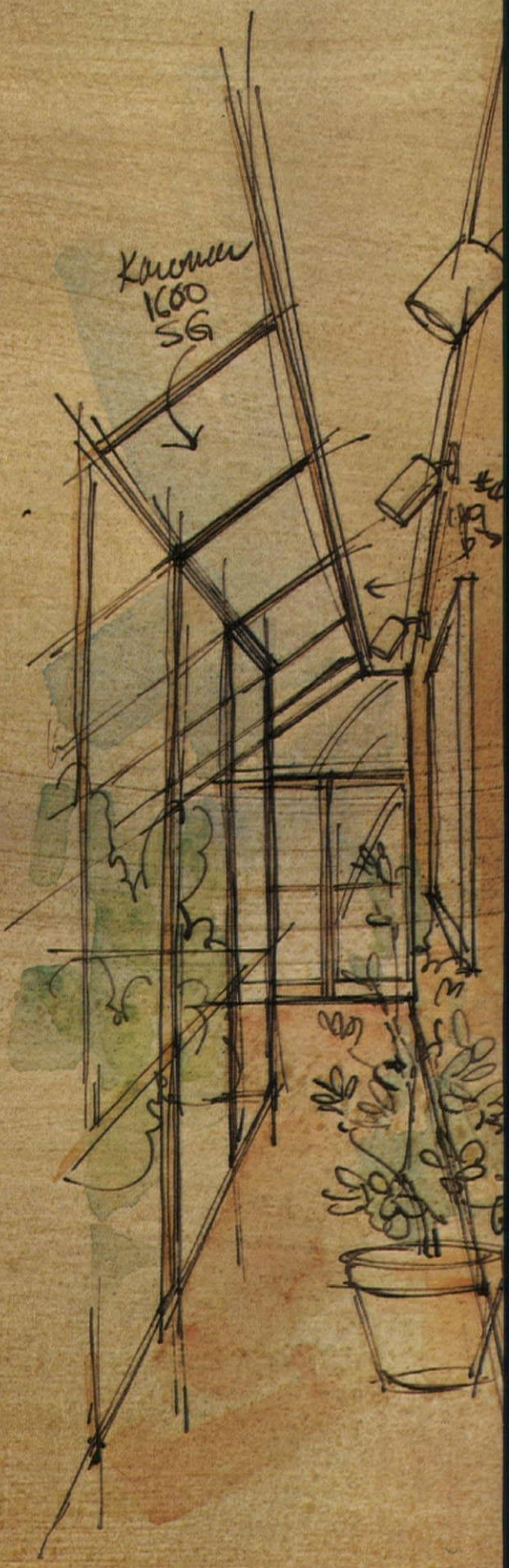

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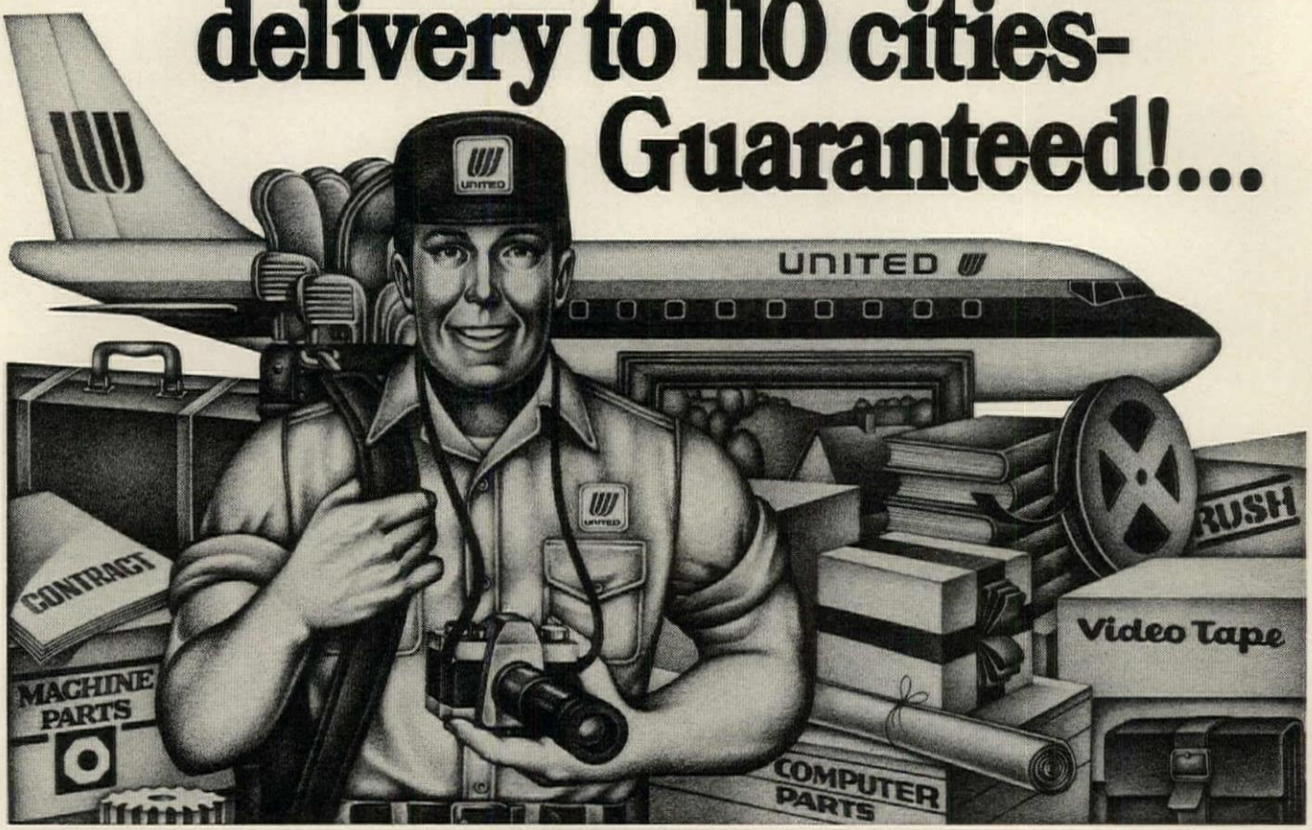

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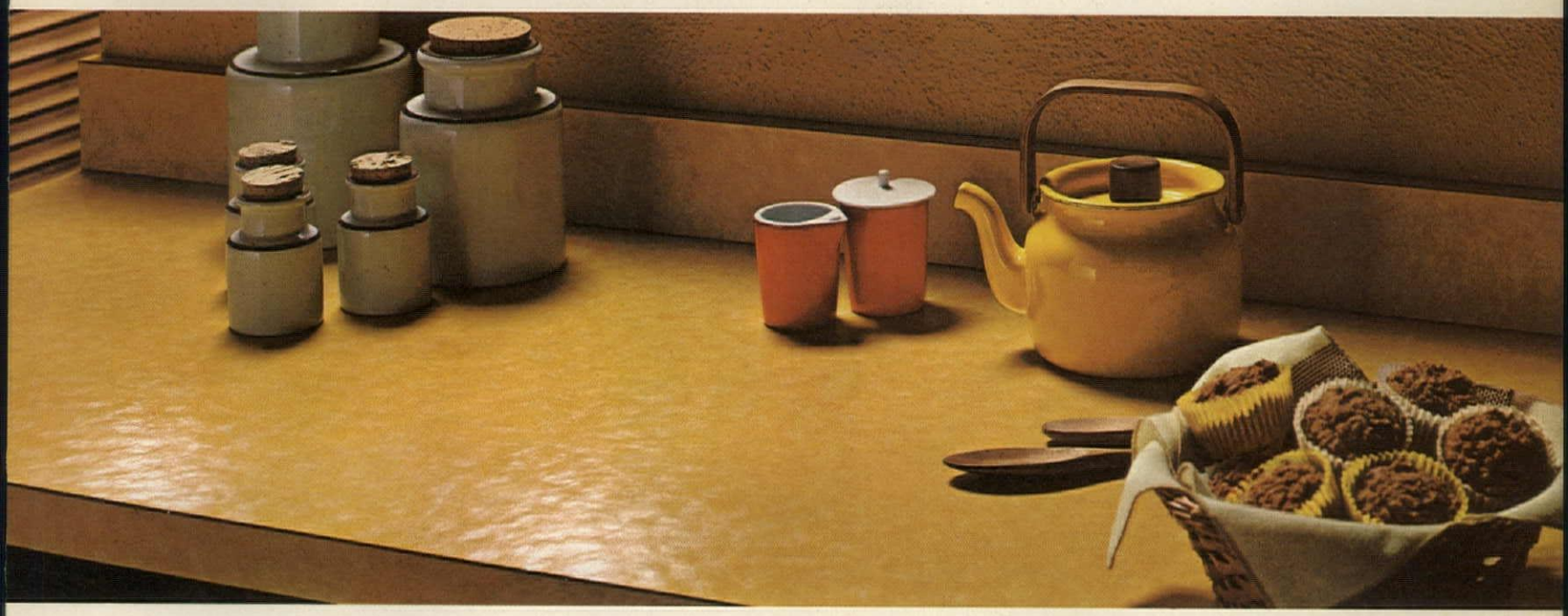

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When modern was new

The New Architecture: 1930–1940, *edited by Alfred Roth. Zurich, Verlag fur Architektur Artemis, 1975. Illus., $28.50.*

Reviewed by William C. Miller, assistant professor of architecture, Kansas State University, Manhattan, Kansas.

The original edition of this volume was published in 1939, but due to World War II its potential impact was never realized. Roth's and publisher Girsberger's intention was ". . . to create a book on architecture that would be something *sui generis,* that would satisfy the most exacting criteria and would appeal to architects in all countries." To do this 20 works were selected, works considered significant at the time, and presented in their entirety. Included for each completed building or complex is an extensive set of drawings (plans, sections, details, etc.), numerous photos, and accompanying written material (covering spatial planning, technical considerations, economic factors, and aesthetic aspects).

Although at the time of publication *The New Architecture* was heralded as "a Rolls-Royce among Books," and "the most valuable book ever written on Modern Architecture," today much of its content seems dated. "The Reality of the New Architecture, 1930–1940," Roth's introduction, is a piece of period polemics that can be seen in such statements as: "The New Architecture may thus be seen designated as the most distinct cultural and social movement in modern times." This is a somewhat amusing and ironic statement given the European political situation of the time.

As Europe was in turmoil, so was the Modern Movement. By the late 1930s Le Corbusier had, in the words of Reyner Banham, "returned to the woods," by moving away from the machine aesthetic of the previous decade. The Bauhaus had been closed, avant-garde developments in the arts in Germany stopped, and Gropius and Mies had left the country. That the image of the machine aesthetic was failing and new directions were emerging can be seen in some of the projects included in *The New Architecture.* While some projects still contain some mechanistic imagery, the vacation house at Mathés by Le Corbusier, the Japan Pavilion at the 1937 Paris World's Fair by Sakakura, the Viipuri Library by Aalto, and the prefabricated timber house by Eric Friberger in Sweden contain the seeds of the changes to come. Those projects with the strongest machine imagery—the two-family house in Zurich by the Roths and Breuer, the Planning scheme for

[continued on page 118]

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Books continued from page 116

the "Zizkov" quarter in Prague by Havlicek and Honzik, and the Werkbundsiedlung "Neubühl" in Zurich—are quite equivocal when compared to the potent images of the previous decade (the Villa Savoye, the Bauhaus, the Paimio Sanatorium, etc.). The remainder of the projects have that "foot in both worlds" kind of transitional quality.

Through hindsight, one might say the selection of the specific works appearing in this volume seems questionable. For example, the three works chosen from the U.S. to represent this period are: a weekend house on Long Island by A. Lawrence Kocker and Albert Frey; the Cooperative Farm Community in Chandler, Arizona, by Vernon De Mars and Burton Cairns; and the Experimental School in Los Angeles by Neutra. Why not the PSFS Building, Falling Water, or the communities by Henry Wright and Clarence Stein? Or was the selection based on the fading Heroic polemic, so particularly "European" in view. This reviewer feels that creating a book which "would appeal to architects in all countries" obviously meant it would educate the architects of all countries to the formal vocabularies of the International Style.

To this edition of the volume Roth has added an epilogue, "The New Architecture—Today?" Unfortunately this essay adds little insight into the issues confronting the architects of that period, or what it means in the context of today. Over half the essay rehashes the 1920s and 1930s, adding nothing new to our perceptions by an individual actively engaged in architecture during that period. Roth might have drawn parallels between that time and today, since we seem to be in a period anticipating a change in architectural direction. But instead, he plays the part of the old warrior lamenting the battles he was so intimately involved in, and wondering why they are no longer being waged. The lament seems to be to the tune of "Gee, what ever happened to that good old Modern architecture."

Although the New Architecture is not so new anymore, the uniqueness of this volume as a significant period piece cannot be understated. In addition to the book's being well conceived and superbly executed, the depth of its presentations and historical value are unique. Because of this, and because there is so little on the period of the late 1930s, one wonders why it took the publisher nearly 40 years to re-issue *The New Architecture*.

After Mies

After Mies: Mies van der Rohe, Teaching and Principles, *by Werner Blaser. New York, Van Nostrand Reinhold Co., 1977, illus., 291 pp., $19.95 paper.*

This profusely illustrated new book portrays Mies's pioneering educational work as head of the department of architecture at Illinois Institute of Technology in Chicago during the period 1938–1959, and it surveys the work of his successors as architects and teachers. Based on documentary material, on the curriculum at IIT, and at the Second Chicago School of Architecture, the book exemplifies the principles and teaching of Mies. □

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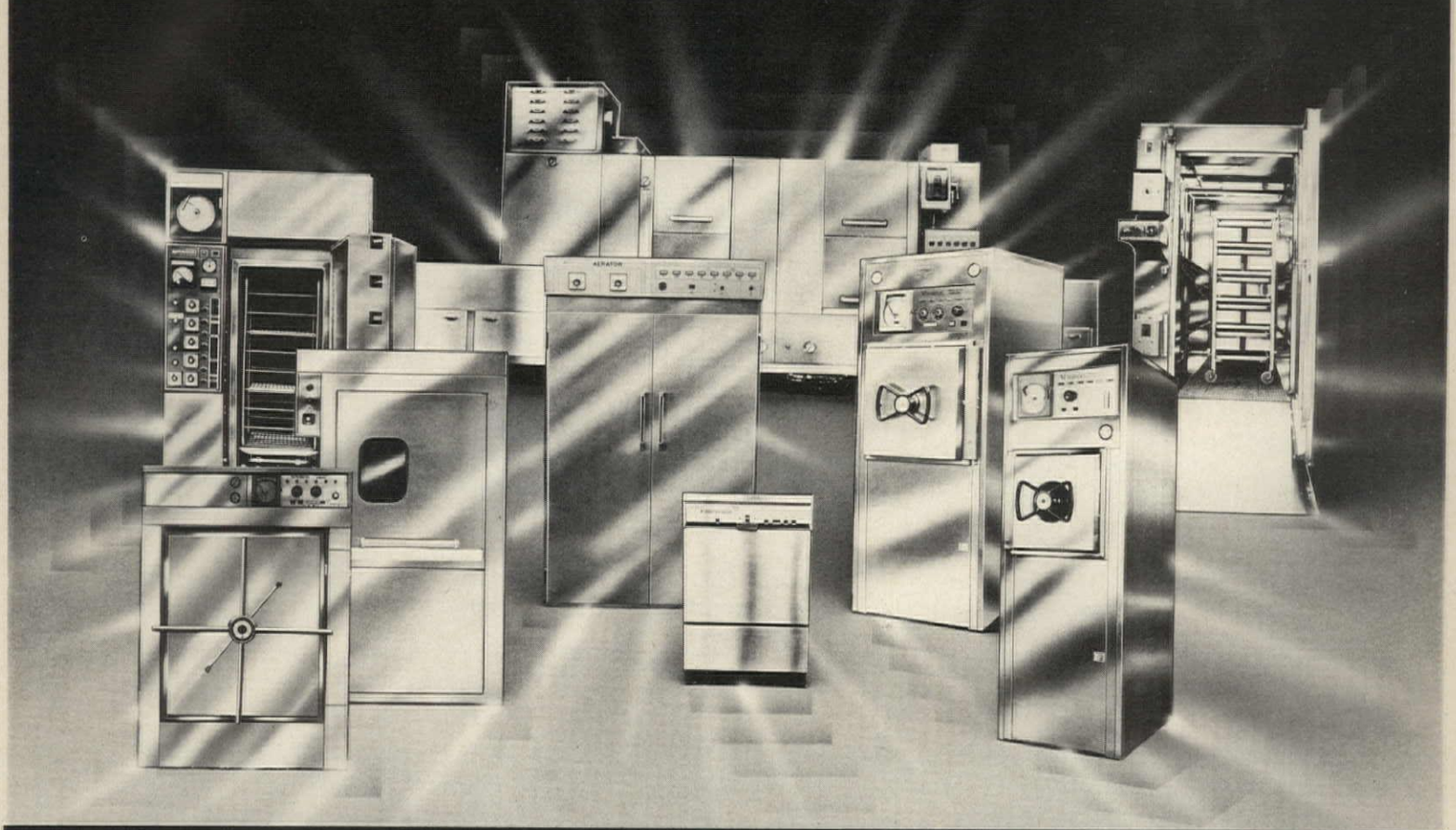

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Building materials

Major materials suppliers for buildings that are featured this month, as they were furnished to P/A by the architects.

Jerome L. Greene Hall, Columbia University, New York (p. 64). *Architect: Robert A.M. Stern Architects, New York, NY.* Vinyl asbestos tile: Armstrong. Ceramic tile: American Olean. Continuous vaulted dome skylight: Naturlite, Inc. Hardware: Corbin, Norton, and McKinney Manufacturing Co. Paint: Benjamin Moore, Janovic Plaza. Plumbing and sanitary: American Standard, Sloan Royal. Incremental conditioners: Singer Climate Control Products. Carpet: Brinton. Seating: Stendig (Prague chairs), Beaver Furniture Corp. (couches, armchairs), Atelier International, Ltd. (Modus D swivel chairs), Herman Miller (Ergon chairs). Tables: International Contract Furnishings, Inc. (Aalto gaming tables, Aalto conference tables), Intrex Furniture, Inc. (side tables). Desks: Atelier International, Ltd. (Marcatre System). Shelving: Computer and Office Equipment Corporation. Lighting: Edison Price (pendant reflectors, recessed darklights and washlights, canopy lights), Lightolier (spotlights), Harry Gitlin (canopy lights), Holophane (pendant reflectors), Nessen (table lamps), George Kovacs (floor lamps), Louis Poulsen (sconces).

Sherman Fairchild Center for the Life Sciences, Columbia University, New York (p. 54). *Architects: Mitchell/Giurgola Architects, New York, NY.* Structural steel: Bethlehem Fabricators. Composite floors: Inryco. Liquid membrane roof: Dow. Aluminum curtainwall: Trio Industries. Exterior tile: Gail. Gypsum board: U.S. Gypsum. Vinyl asbestos tile: Amitco. Exposed steel desk: Alcan. Styrofoam insulation: Dow. Mineral wool insulation: U.S. Gypsum. Fiberglass insulation: Owens-Corning, J.W. Smith. Vertical pivot windows: Trio. Interior doors: Acme. Elevator doors: Williamsburg. Balanced entrance doors: Ellison. Hardware: Corbin, Rixson, Stanley, Von Duprin. Interior latex paint: PPG and Porter. Elevators: Westinghouse. Lighting fixtures: Contemporary Ceilings. Electric distribution: Federal Pacific. Plumbing and sanitary: American Standard. Air conditioning: Trane, Marley.

Avery Hall Extension, Columbia University, New York (p. 60). *Architects: Alexander Kouzmanoff & Assocs. New York, NY.* Reinforced concrete structure: Transite Mix. Gypsum board interior surfaces: U.S. Gypsum. Brick flooring: Belden Stark. V.A.T.: Kentile. Carpeting: Wunda Weve Carpets. Ceiling surfacing: U.S. Gypsum. Neoprene roof surfacing: Gates Engineering Co. Epoxy: Sika. Cold applied asphalt roofing: A.C. Horn. Insulation (urethane foam): Amspec Inc. Trench and deck drains: Zurn Industries. Aluminum and tempered glass skylights: Berjen Metal. Hollow metal doors: Williamsburg. Solid core doors: Paniflex Inc. Hollow metal elevator doors: Burlington/Dover. Locksets, doorclosers: P & F Corbin. Hinges: Stanley Works. Rolling door: Modernfold. Panic exit: Von Duprin. Kitchenette: Dwyer Kitchens. Intercom: Executone Inc. Sound system: Commercial Radio-Sound Corp. Auditorium seating: American Seating. Oildraulic elevators: Burlington Elevators Inc., Dover Corp. Step lighting: McPhilben. Recessed incandescent and fluorescent: Lightolier. Electric distribution: Consolidated Electric Co. Water closets, tubs, and lavatories: American Standard. Sprinklers: Viking Corp. Heating pumps: Weinmer. Grills and registers: Tuttle & Bailey. Controls: Johnson Service Co. Air handlers: McQuay. Unit ventilators: American air filter. Fans: Joy. Ductwork: Alpine Sheetmetal. Filters: Continental. Mixing boxes: Buensod.

Frank Smithwick Hogan Hall; Columbia University, New York (p. 62). *Architects: R.M. Kliment & Frances Halsband, New York, NY.* Masonry: Brick Western. Paint: PPG Industries. Acoustical ceiling tile (offices): U.S. Gypsum. Ceramic mosaic tile (corridor floors): American Olean. Carpeting (apartments): Seamloc. Aluminum pivoting windows (offices): Amelco Window Corp. Steel pivoting stair: William Bayley Co. Stainless steel and glass entrance doors: Ellison Bronze Co. Lock sets (stainless steel): Corbin. Elevators: Westinghouse. Office lighting (fluorescent): Edison Price. Residence lighting: Tsao & RAB. Tubs: Crane. Water closets and lavatories: American Standard.

San Francisco State University, San Francisco, Ca (p. 66). *Architect: Paffard Keatinge Clay, San Francisco.* Prestressing steel: Stresstek Corp., Wheeling Steel. Precast con-

[continued on page 134]

In this flammability test, the chairs with VONAR 3 interliner were not consumed.

Time: One minute into the test.
Identical ignition sources nearly half consumed.

Time: 3 minutes.
Standard chair (left) involved.

Time: 8 minutes, 30 seconds.
Chairs with VONAR 3 are out.

Chairs used for this test commercially available from Thonet Industries, Inc.

Test Results

Two sheets of newspaper crumpled in a paper bag were placed on each cushion touching the back cushion, then ignited.

After three minutes, the paper fires were out, but the standard chair continued to burn, producing large quantities of flame, heat and smoke. The chairs with VONAR* 3 were only slightly involved in flame.

At eight and one-half minutes, the standard chair was consumed. The fires in both chairs with VONAR 3 had gone out. As a result, those chairs sustained relatively little fire damage and produced far less heat and smoke.**

Comfort and Flammability Performance

The chairs for this test were identical except for the use of VONAR 3 and fiberfill. All were made with identical wool/nylon upholstery fabric, standard polyurethane foam in the seat and back cushions, and wood structural parts. But the left and right-hand chairs had a layer of polyester fiberfill directly under the fabric for added comfort. The center and right-hand chairs were constructed with a layer of VONAR 3 interliner as an envelope around the polyurethane foam in the seat and back cushions.

As the flames heated the VONAR interliner, heat-absorbing moisture and flame retardants were released. Then the VONAR formed an insulating char on the chair parts in contact with the ignition source. Result: in limited ignition situations such as this, VONAR prevents or reduces the likelihood of ignition of upholstered furniture as a unit. Should ignition occur, VONAR reduces the burning rate.

To determine what a difference VONAR can make in your furniture or future specifications, use the coupon or write: DuPont Company, Room 36062E, Wilmington, DE 19898.

*DuPont registered trademark for interliner made by licensed manufacturers according to DuPont specifications.

**The test described here does not demonstrate that all furniture using VONAR interliners will perform in this manner or will not burn under all actual fire conditions. The test was not conducted to assign "numerical flame spread ratings" to any material involved. The results show only that specific types of chairs, which used VONAR interliner properly, performed as indicated under the test conditions. Since DuPont does not make furniture or make or install interliner, we assume no responsibility for furniture performance. Consult your furniture supplier for flammability information on a specific furniture style.

Mail to: DuPont Company, Room 36062E, Wilmington, DE 19898.

VONAR Interliner

Please send me:

- ☐ further technical data and test results.
- ☐ a list of furniture manufacturers using VONAR.
- ☐ a list of licensed manufacturers of VONAR.
- ☐ have salesman call.

Name_____ Phone_____

Title_____ Company_____

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City_____ State_____ Zip_____

Application_____

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Monokote® Fireproofing delivers everything it promises.

MONOKOTE Fireproofing meets or exceeds all recognized criteria governing the use of safe, dependable fireproofing material in modern steel frame buildings. The American Iron and Steel Institute* says quality fire protection material should have:

☐ *"thermal protective capability when tested in accordance with the Standard Fire Test—ASTM E119."*

MONOKOTE Fireproofing, tested and classified by Underwriters Laboratories, Inc. in accordance with ASTM E119, has fire resistance ratings from 1 to 4 hours in over 50 individual UL classifications.

☐ *"product reliability giving positive assurance of consistent and uniform protection characteristics."*

MONOKOTE Fireproofing is as permanent as the structure itself. Each bag contains the UL label verifying compliance with UL quality control inspection program and the appropriate fire resistance ratings. In-place characteristics can easily be verified for thickness and density.

☐ *"availability in a form that permits efficient and uniform application."*

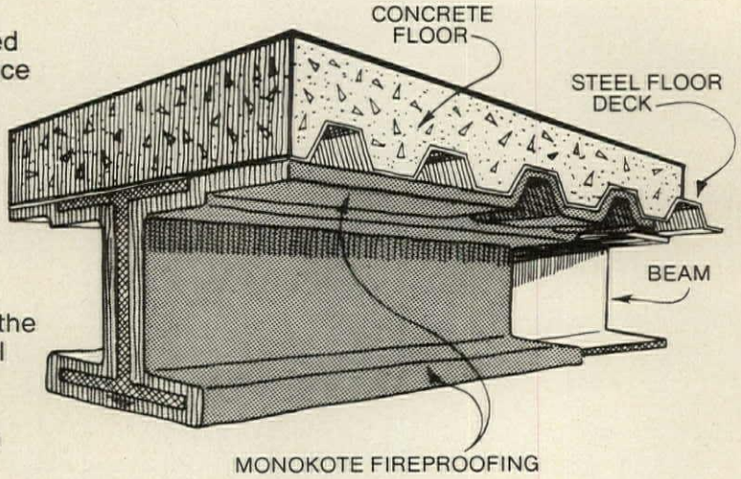
MONOKOTE Fireproofing requires only the addition of water at the job site, is spray applied and sets to a uniform and consistent monolithic coating.

☐ *"sufficient bond strength and durability to prevent either dislodgement or surface damage during normal construction operations; and resistance to weathering or erosion resulting from atmospheric conditions."*

MONOKOTE Fireproofing meets, and in most cases, exceeds GSA requirements for adhesion, corrosion resistance, deflection, bond impact, surface hardness, air erosion resistance and damageability resistance.

☐ *"noncombustibility and the added attribute of not producing smoke or toxic gases when subjected to elevated temperatures."*

MONOKOTE Fireproofing, tested and classified UL, Inc., in accordance with ASTM E84, shows: flame spread 10, fuel contributed 5, smoke developed 0.

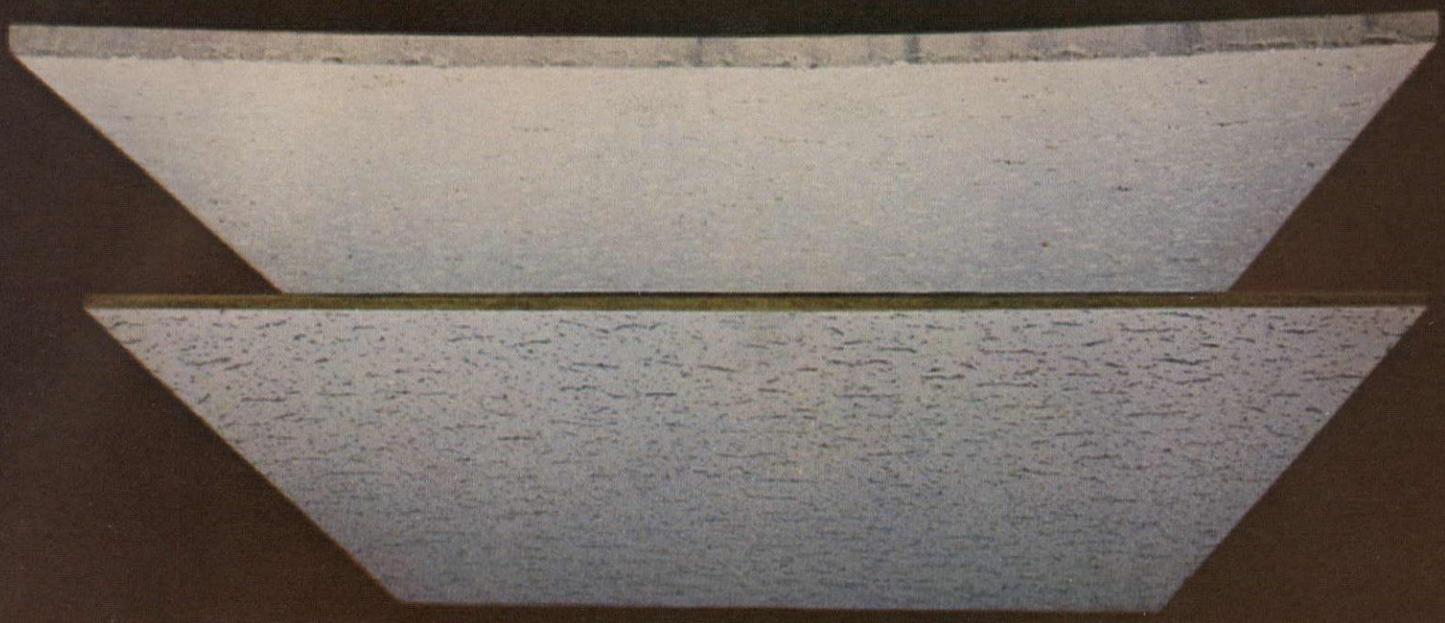


In addition, Monokote Fireproofing is available in all major markets, offers high production from readily available, reliable equipment and the in-place cost is more than competitive. Monokote . . . is there any other choice?

For more information contact W. R. Grace & Co., 62 Whittemore Avenue, Cambridge, Massachusetts 02140. In Canada, 294 Clemens Road, Ajax, Ontario L1S 3C6.

*1974 AISI "Fire-Resistant Steel Frame Construction," second edition, p. 12.

GRACE



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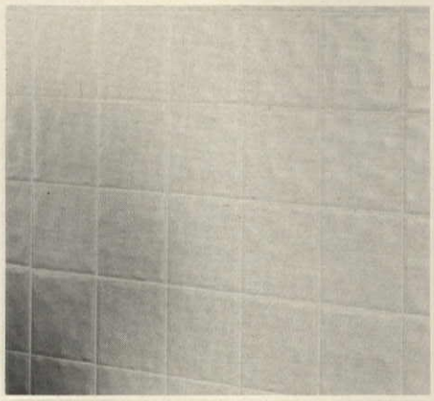
Products and literature

Penny rounds



Potter's Touch ceramic tile

Ceramic tile products

The items below specifically relate to the technics article beginning on p. 94 and are grouped here for the reader's convenience.

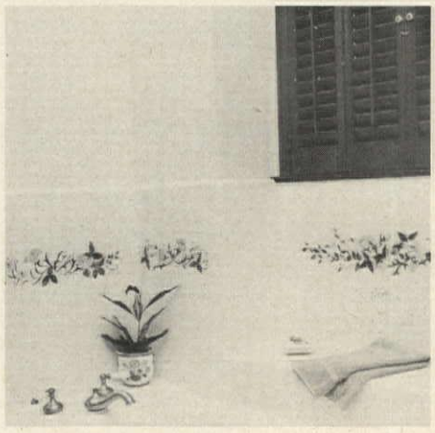
Penny rounds. Both glazed and unglazed tiles are supplied back-mounted on 12" x 12" nylon mesh. Two-in. rounds are similarly available. Company also makes a wide selection of floor, wall and hand-painted tiles in various sizes. Hastings Tile & Il Bagno Collection.
Circle 100 on reader service card

Custom tiles/murals. Tiles that range in size from front-door signs to bigger-than-life murals are custom designed and hand painted. Barbara Vantrease Beall Ltd.
Circle 101 on reader service card

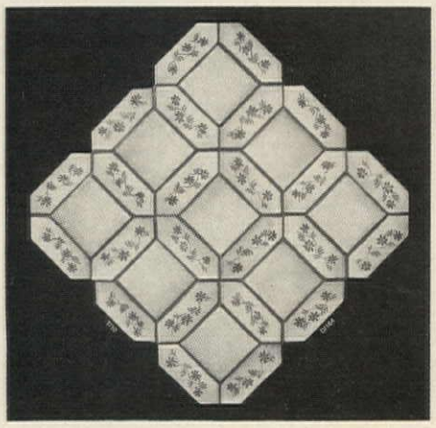
Ceramica Anna floor and wall tiles are a hard body bisquet quarry product that have a rustic hand-made look. A wide choice of colors and designs are available in any size and shape. Philip Chialvi.
Circle 102 on reader service card

Welsh Quarry Tiles. A harmonious combination of natural earth brown tones that have been fired from the Welsh Marl Clays. Shapes include square, rectangle, and hexagon in 4" x 4", 6" x 6", 6" x 3", and 8" x 4" sizes. Shep Brown Assoc.
Circle 103 on reader service card

Latex ceramic tile adhesive. CMC–77, is a synthetic latex-based adhesive designed for application of mesh or dot paper-backed glazed mosaic tiles, quarry and slate tile, and pavers to structurally sound floor surfaces. The product is said to be easy-spreading, freeze-thaw stable, and water-resistant. It has an open time of 30 min, an initial set time of one to two hours, and a final set time of 24–48 hours. CMC AR–20 acid-resistant color-toned grout comes in nine colors which may be used to complement or contrast slate, glazed, unglazed, and quarry tile. Durabond Products Company.
Circle 104 on reader service card



Custom tiles/murals



Ceramica Anna floor and wall tiles

Sealer. Product is an all-purpose finish, sealer, protector, and polish for the care of marble, terrazzo, slate, quarry tile, unglazed tile, flagstone, and brick. Watco-Dennis Corporation.
Circle 105 on reader service card

Protec-Tile. A clear, heavy bodied liquid protective coating specially formulated to coat paver, quarry, slate, and other ceramic floor products temporarily prior to grouting them with either standard cementitious grouts or heavy-duty grouts such as acid-resistant and epoxy types. ProSoCo, Inc.
Circle 106 on reader service card

Potter's Touch ceramic tile has handcrafted look. Line includes six highly glazed earth-toned colors and four flashed (high-lighted) coordinated colors. Florida Tile.
Circle 107 on reader service card

'Coggyria' is a ceramic wall tile manufactured by Cedit of Italy. Two patterns of the design plus a matching solid-color tile can be used as an overall, border, or random design. It comes in black and gray, black and red, and white on white. Agency Tile, Inc.
Circle 108 on reader service card

Romany® Sea Foam tile. In addition to a 4¼" x 4¼" tile, the line includes 6" x 6" size, which is particularly suitable for counter and vanity top installations. The six color choices are blue, olive, gold, beige, bone, and white on white. United States Ceramic Tile Company.
Circle 109 on reader service card

Bath-shower accessories. Soap dishes and corner shelves are designed in one solid shape and have high-fired glazed finish. Both require $^{5}/_{16}$-in.-deep wall opening. Towel bars and rings are also available. New Jersey Porcelain Co.
Circle 110 on reader service card

'English Tudor' ceramic tiles are a recent addition to this company's product line. Tiles are $^{5}/_{16}$ in. thick, have raised ribbed backs, and acid resistant surfaces. They are said to be suitable for interior floors and walls not subject to freezing and thawing conditions. Choice of colors. Robertson-American Corporation.
Circle 111 on reader service card

Ceramic tile pavers. Paverstone is said to be suitable for both indoor and outdoor residential or commercial use. The slip-resistant tile is available glazed and unglazed in a choice of seven colors, three textures, and three unit sizes (4" x 8", 8" x 8", and 8" x 16") with coordinated bullnose and cove base trim units. Normandie tiles blend light, medium, and dark shades—from orange to burnt umber and red browns. Sizes range to 10" x 20" and tiles are available both in unglazed and glazed. Metropolitan Ceramics.
Circle 112 on reader service card

Handpainted wall tiles from Mexico are characterized by a glossy surface, slightly pillowed shape, and clear primary colors. Slight variations in size and shade are result of handcutting and handpainting methods. Handmade terra-cotta pavers range in color from pale terra-cotta to amber and are available in presealed nylon epoxy finish or natural. Ceramic Design.
Circle 113 on reader service card

Handpainted wall tiles

Wonder-board® is a concrete glass fiber reinforced backer board for the installation of ceramic tile walls in wet areas and as an underlayment board for ceramic tile floors. Four sizes are available from 39" x 60" to 36" x 72". Modulars, Inc.
Circle 114 on reader service card

Epoxy grout. According to maker, it cures to a hard, nonporous surface and provides resistance to many common acids and alkalies, making it ideal for use in public washrooms, restaurants, food and beverage processing areas and similar locations. Standard colors are black, dark brown, gray, and white. Cambridge Tile Manufacturing Co.
Circle 115 on reader service card

Epoxy grout

Ceramic tile literature

Water-washable epoxy grout for unwaxed tile is available in seven standard architectural colors and in four standard colors for waxed tile. Literature illustrates colors and gives physical properties, installation information, and specifications. Atlas Minerals & Chemicals.
Circle 200 on reader service card

'Distinctive Ceramic Surfaces for Commercial Environments,' is a 20-page booklet which contains a variety of photographs of interior and exterior installations of ceramic tile plus color-illustrated product line and specifications. The booklet is designed for use by architects, designers, and specifiers. Two new geometric shapes in the Terra Form collection of floor tile recently introduced in addition to those shown in booklet are Triangle and Pentagon. Franciscan Ceramic Tile.
Circle 201 on reader service card

Ceramic tile. 36-page color-catalog introduces Renaissance wall tile, which is available in textured 4½" x 4½" plain and scored and 6" x 6" sizes. Colors are copper, bronze, gold, and olive. Shown is complete product line of glazed, ceramic mosaics and quarry tile, new applications of tile in homes, schools, showrooms, stores, and hospitals. It includes architectural specifications, describes color coordination, mural and swimming pool design services. American Olean Tile Company.
Circle 202 on reader service card
[continued on page 128]

Literature continued from page 128

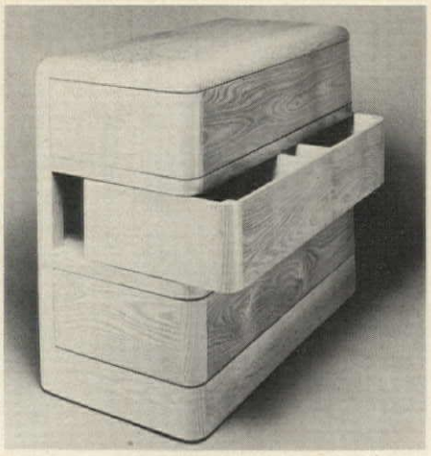
Commercial ceramic tiles. Full-color brochure includes complete line of products ranging from all types of tiles for walls and floors, both exterior and interior, glazed and unglazed, trim charts, and illustrates usage. Dallas Ceramic Co.
Circle 216 on reader service card

Roofing tile. Color leaflet describes and illustrates the various designs of roofing tile that are available, gives specifications and charts. Ludowici-Celadon.
Circle 217 on reader service card

Other products

Watt-miser™ II Slimline fluorescent lamp is a 60-watt, 8-ft unit for lighting stores, factories, offices, and schools. It is rated at 6000 lumens and uses 20 percent less electricity than company's standard slimline lamp, states maker. Average rated life is 12,000 hrs based on 3 hrs per start, or 18,000 hours based on 12 hrs per start. General Electric.
Circle 116 on reader service card

Furniture as sculpture. Each piece of furniture is crafted in hardwoods and veneers. Designer Rinaldo Frattolillo uses plywood, then applies exotic wood veneers. He makes each prototype himself and supervises each step of furniture construction. The complete collection includes a cantilevered stereo and record storage



Furniture as sculpture

cabinet, a stainless steel piece called the Space Bar, and a phone table with attached seat. Shown is the "E" chest which is available in either ash or oak. Cavallon Associates.
Circle 117 on reader service card

Two-handle washerless faucet. Seven antique brass finish models have been added to the line which includes 4-in. centerset lavatory model with pop-up assembly and a widespread combination with pop-up assembly, adjustable from 6-in. to 16-in. centers. Other models include a Roman tub installation, widespread without pop-up assembly and tub and shower conbinations. US Brass.
Circle 118 on reader service card

Coatings. According to maker, Weathering Stain penetrates and protects the wood while letting the natural grain and texture show through and prevents wood from turning brown or black. It should be applied to new, raw wood only. Primecoat is an oil-based wood primer made to provide a base coating when applied over new wood, unprimed hardwood, chalky surfaces, or over bare spots resulting from the failure of a previous coat of paint. Overcoat is the recommended finish coat. Olympic.
Circle 119 on reader service card

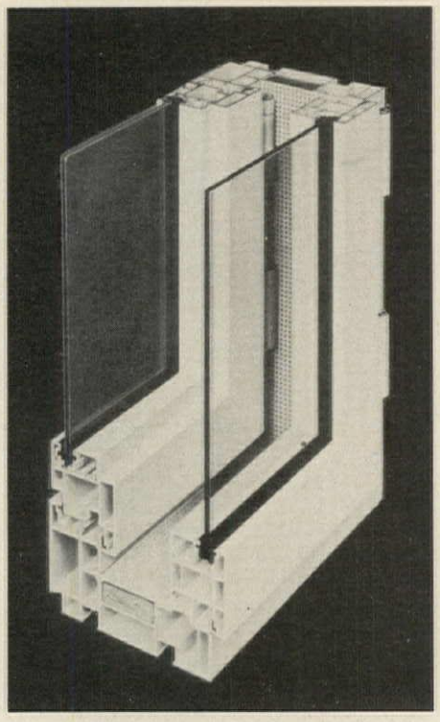
Other literature

Movable acoustical panel system. Full-color 16-page brochure includes typical open-plan systems in remodeling and new construction projects. A ¼-in.-scale diagram layout is provided as a guide in preparing floor plan sketches. It covers complete line of straight and curved connecting panel systems with fabric, vinyl, or carpet surfaces in a wide range of colors. Also features "Accents," a series of multicolored custom panel designs that are imbedded in deep pile carpet. Panels are offered in a variety of sizes with oil-finished hardwood, anodized aluminum, or baked-on acrylic frames. Optional universal slotting accepts vertical storage, work surfaces, and other modular components that use standard cantilever brackets. Full and partial-vision panels are available with clear or smoked glass. Panel Concepts, Inc.
Circle 218 on reader service card

Hollow clay masonry units. A highly fired hollow brick of blended clays, the Ranchero complies with the ASTM C–652. It is said to provide face brick quality, color, and texture; stiff lateral resistance to reduce the nonstructural earthquake damage caused by flexible structures; sound resistance, thermal resistance, and to fulfill the dual architectural/structural function simultaneously. Brochure offers data, design information, stress chart and tables, details, and specifications. Pacific Clay Building Products.
Circle 219 on reader service card

TheWoodBook is a 234-page casebound volume designed for anyone using wood products in residential and commercial construction. It includes design and specification information on materials for floors, walls, and roofs, plus information on treated wood, foundations, heavy timber construction, laminated beams, shingles, shakes, softwood paneling, and siding. In the reference manual, which will be replaced annually, data is arranged according to the Uniform Construction Index. To have firm names added to complimentary distribution list for 1979 volume, request qualification information. Wood Products Publication.
Circle 220 on reader service card

Trocal® multi-chambered PVC window systems. All joints and sections of multi-chambered systems are fused together to form a one piece solid frame and sash. The multi-chambered construction provides baffled internal drainage system, various beads for different types of glass and glazing; allows for insertion of reinforcement into the center chamber when required, and more. A choice of soft brown, black, olive, orange, aluminum, gray, or white are available to blend with the façade. Physical properties and details are given in brochure. Dynamit Nobel of America, Inc.
Circle 221 on reader service card



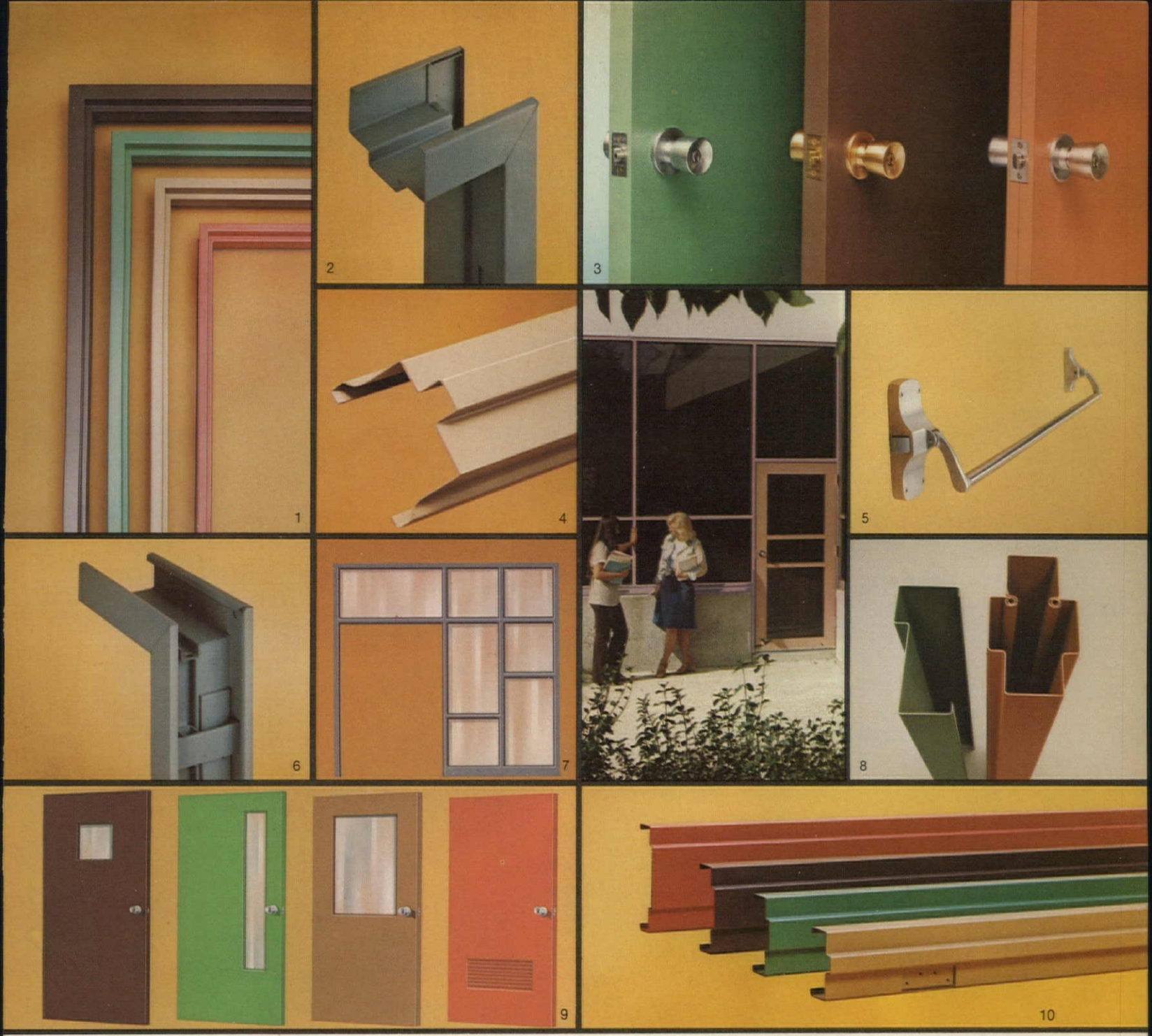
Trocal® multi-chambered PVC windows.

Soundblox. Eight-page 1978 brochure provides information and specifications on sound-absorbing structural masonry units. Load-bearing, they permit sound control to be built into the structure of a building. Brochure includes performance data, and shows in-use application. The Proudfoot Company, Inc.
Circle 222 on reader service card

Jutex™. A white hessian burlap fabric which is pvc-backed. Its flame resistance meets Bulletin 701 vertical Flame Test, E84 Tunnel test, and all other GSA specifications for panel coverings. Finished widths are 54 and 66 in. with a weight of 11 oz per sq yd. Swatches, color cards, and literature are available. Specialty Jute Products & Development, Inc.
Circle 223 on reader service card

Sunglas. Residential glass said to be able to reduce the cost of cooling by blocking the sun's heat. The solar-control glass is available in single-strength, window-glazing thickness. It can be used in any exterior glazing application where single-strength clear glass presently is used. A brochure is available. Ford Glass Division.
Circle 224 on reader service card

Remodeling pamphlet presents accounts of nine renovations of old commercial, industrial, and institutional buildings in which plywood was a major component. Among them are a historic public market building, a church, and an industrial plant. American Plywood Association.
Circle 225 on reader service card



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1. Five face widths: 1, 1¼, 1½, 1¾ and 2-in. 2. Pre-engineered flush frames, knocked-down or welded and ground smooth. 3. Pre-engineered and custom doors, full U.L. and F.M. labeling service. 4. Custom frame profiles. 5. Unlimited finish hardware preparations. 6. Pre-engineered drywall frames with compression anchors. 7. Local fabrication of transom, sidelight and borrowed-light openings using (8.) standard mullions and stick components. 9. Unlimited glass and louver combinations. 10. Jamb depths in flush and drywall frames from 3½ through 12-in. in ⅛-in. increments. For full details, call your Curries distributor. He's in the Yellow Pages under "Doors" or "Doors-Metal". Or see Sweet's 8.2/Cur or write Curries Manufacturing Inc., 251 9th St. SE, Mason City, Iowa 50401. (515) 423-1334.

CURRIES
THE METAL DOORMEN

Bldg matrls cont'd from page 120

crete: Lafayette Mfg. Inc. Plaster metal lath: Western Metal Lath. Vinyl asbestos flooring: Flintkote. Carpet: Armstrong (Passport). Spray-on fireproofing: Zonolite. Monoform waterproofing: Flintkote. Metal partitions: Inryco. Gasket glazing: F.H. Mahoney Co., Fentron Industries. Metal doors and frames: Overly Manufacturing Co. Fire doors: Kinnear. Folding doors: Modernfold. Porcelain-enameled doors: Challenge Stamping & Porcelain Co. Locksets: Schlage. Door closers: LCN. Hinges: Hager. Floor checks, pivots: Rixson. Exterior paint: Fuller, O'Brien. Kitchen grease hood: Gaylord Industries. Cold storage units: Western Walk-ins, Kimeticer, Inc. Toilet partitions: Sanymetal. Dumb waiters: U.S. Elevator, D.A. Maror, Inc. Lighting fixtures: Lightolier, Keene Lighting. Lavatories: American Standard. Flush valves: Sloan. Sprinklers: Reliable Automatic Sprinkler Co. Drinking fountains, toilet accessories: Bradley Wash Fountain Co. Heating control center: Westinghouse Electric Co. Heating controls: Honeywell. Damper registers: Tuttle & Bailey. Fire hose cabinets: Watrous, Inc.

Wellesley College Science Center, Wellesley, Ma (p. 70). *Architects: Perry, Dean, Stahl & Rogers, Boston, Ma.* Structural steel: Bethlehem Steel Co. Windows: Hopes Windows. Translucent fiberglass panels: Kalwall Corp. Carpet: Wellco Carpet Corp. Built-up roofing: Tectum Form Plank, National Gypsum Co. Doors: E.H. Friedrich Co, Walter Balfour & Co. Hardware: Corbin, LCN, Stanley, Von Duprin. Paint: Tnemec Co., Pittsburgh Paint. Public seating: S.G. Furniture Co. Elevators: Beckwith Elevator Co., James Russel Co. Lighting: Lite Control Corp., Metallic Arts of N.E., Lightolier. Electric distribution: Prescolite, Sylvania, Columbia. Plumbing and sanitary: Kohler Co. Laboratory faucets, outlets, fittings: The Chicago Faucet Co. Laboratory furniture system: Hamilton Industries.

Garey Shirtmakers showrooms and Swirl showrooms, New York (p. 76). *Architects: Gwathmey Siegel Architects, New York, NY.* Carpet: Stratford. Polished aluminum ceiling tile: Simplex. Fluorescent and incandescent lighting: Lightolier. Desk chairs: International Contract Furnishings, Ltd. Bentwood chairs: Stendig, Thonet. Venetian blinds: Levolor Lorentzen.

Snyderman Residence, Fort Wayne, In (p. 80). *Architect: Michael Graves, New York, NY.* Gypsum board: National Gypsum Co. Glazed tile flooring: Mid-State Tile Co. Mortar waterproofer: Pittsburgh Corning. Foundation dampproofing: Barrett Division of Allied Chemical. Roof insulation: Owens-Corning. Plate glass: Libbey-Owens-Ford, Pittsburgh Plate Glass. Skylights: Kalwall Corp. Hardware: Sargent & Co. Paints and stains: Benjamin Moore & Co. Spiral stair: Duvinage Corp. Porcelain keyless lampholder lighting fixtures: Pass & Seymour-Alabax, Inc. Threaded stem rocket unit: Swivelier. Surface-mounted track and swivel heads: Lightolier. Minicone downlight: Century Lighting. Recessed round lighting: Prescolite. Toilets, lavatories, tubs: Kohler. Bar sink: Crane. Kitchen sink: American Standard. Shower: Owens-Corning. Sprinklers: Speakman.

Notices

New firms

Cesar Pelli & Associates, 1056 Chapel St., New Haven, CT 06510.

Allen R. Carney, Architect and Land Planner, 6000 Grand Central Ave., Vienna WV 26105.

James Weber + Associates, architects/planners, 530 Howard St., San Francisco 94105.

Suu-dda K.S. Patkar, Architect, 50 Bridletowne Circle, Unit 21, Scarborough, Ontario, Canada.

James Tyler and Stephen Woolley, former principals of Craig Ellwood Associates, have formed **Tyler & Woolley, Architects,** 710 Wilshire Blvd., Suite 401, Santa Monica 90401.

Robert A. Little, Design and Architecture, 5 Pepper Ridge Rd., Cleveland 44124.

Ron L. Jolivette and Douglas R. White have formed **Jolivette/White Associates,** 4455 Lamont St., Suite D, San Diego 92109.

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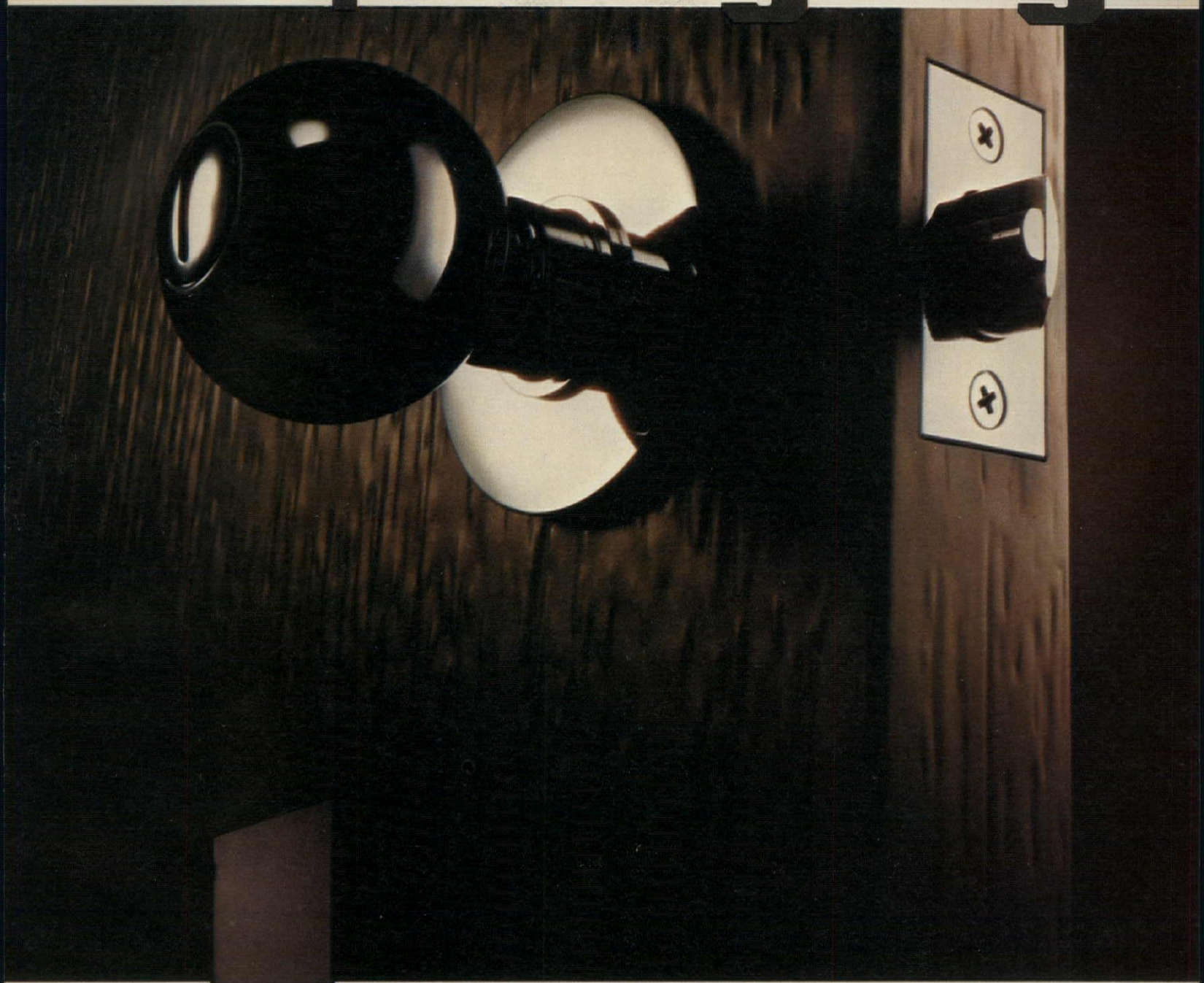

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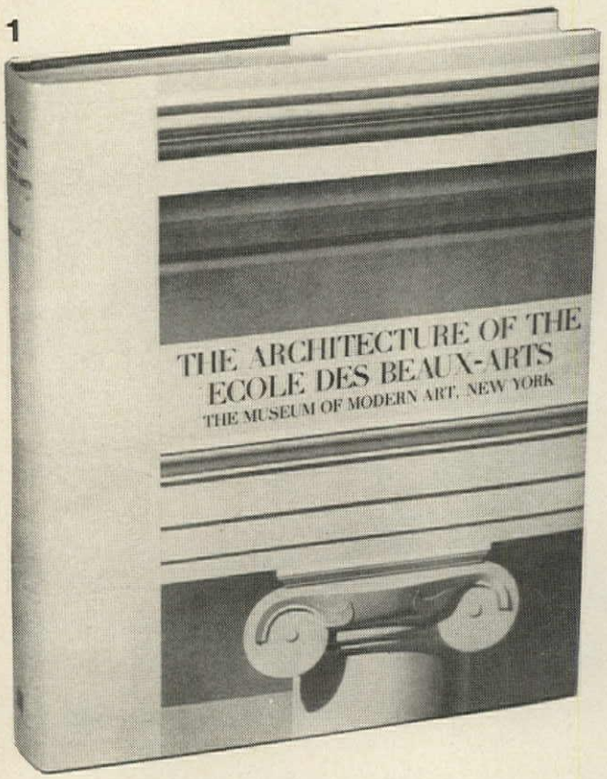

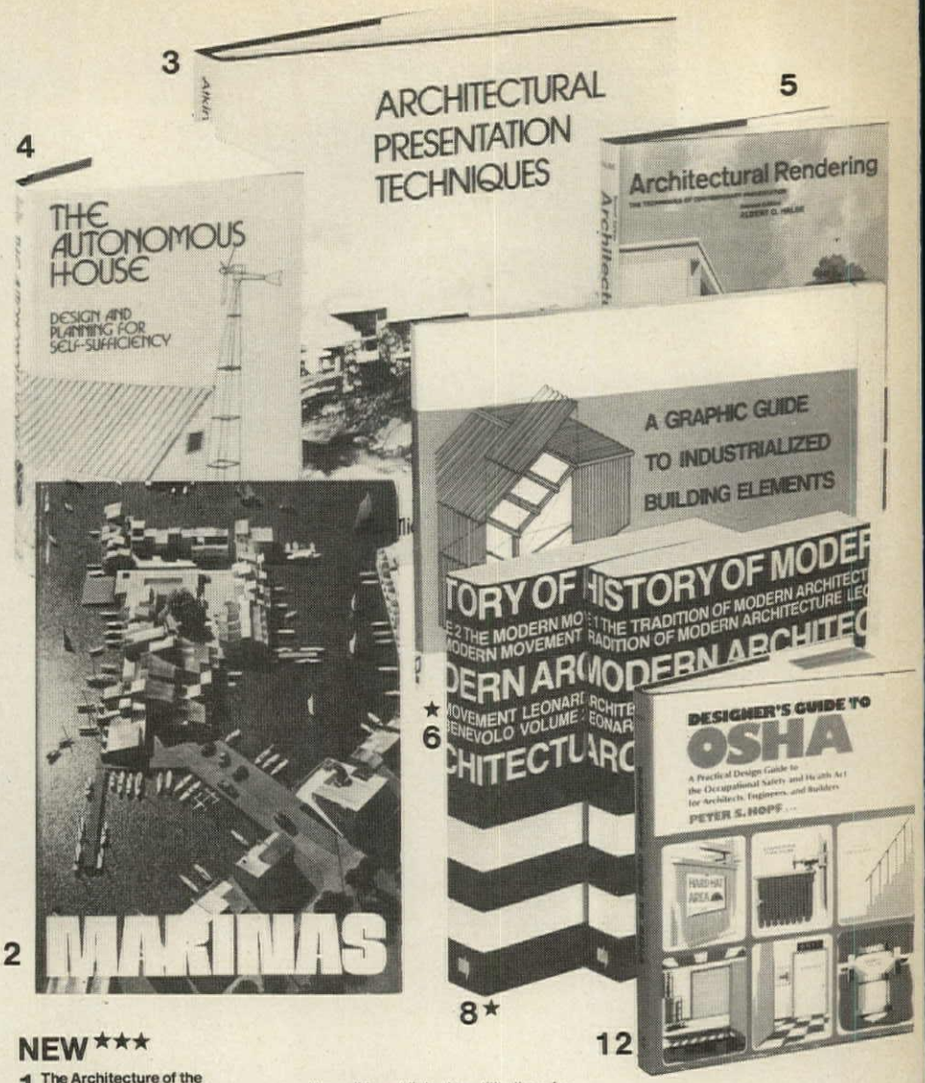

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