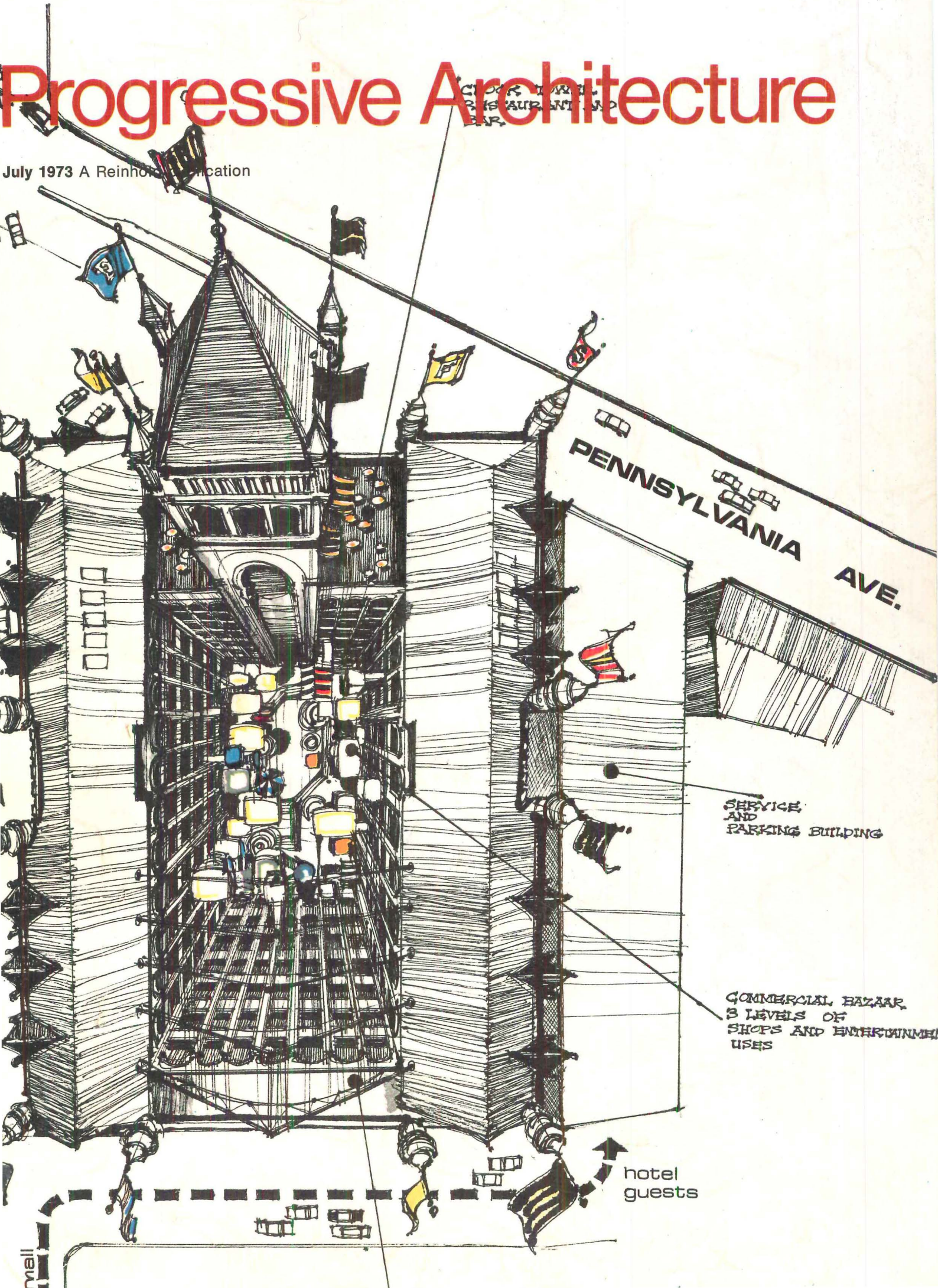
Progressive Architecture

July 1973 A Reinhold Publication



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Azrock vinyl asbestos tile is the best buy in flooring, because it serves more shopping center and store requirements better than any other type of flooring. Yet it costs less than half of what it did 20 years ago. Here's why you can specify Azrock with confidence:

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More vinyl asbestos tile is used in retail stores, shopping centers, and chains than any other kind of flooring. Make shopping pleasant for customers and cut maintenance and replacement problems with low-cost Azrock vinyl asbestos tile—the best buy in flooring.

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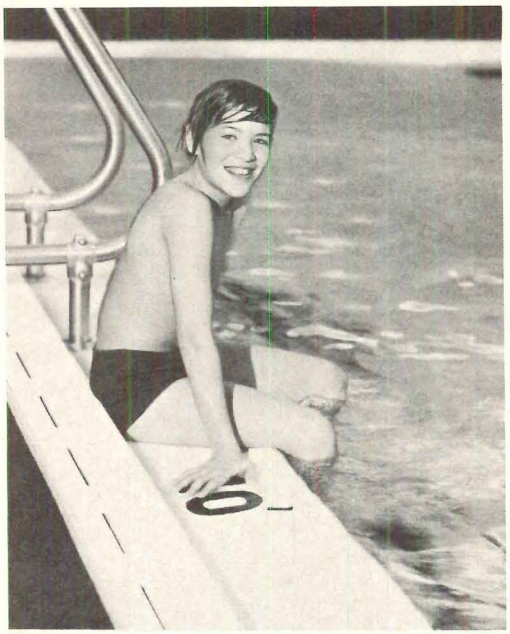

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ABP ABC

July 1973

Progressive Architecture

Cover: The old Post Office building on Pennsylvania Ave. in Washington could have a new life as a tourist hotel. In the cover drawing, Arthur Cotton Moore (p. 68) depicts some possibilities of that transformation.

The Wilson Art Look in laminated plastics.

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A one-source supplier, Ralph Wilson Plastics Company offers you perfect coordination of walls, doors, furniture and fixtures — with Wilson Art for every esthetic and functional requirement. Plus the best back-up service in the laminated plastics industry.

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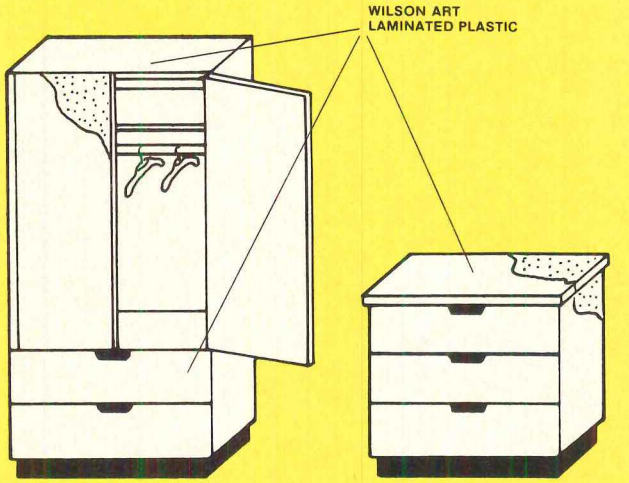

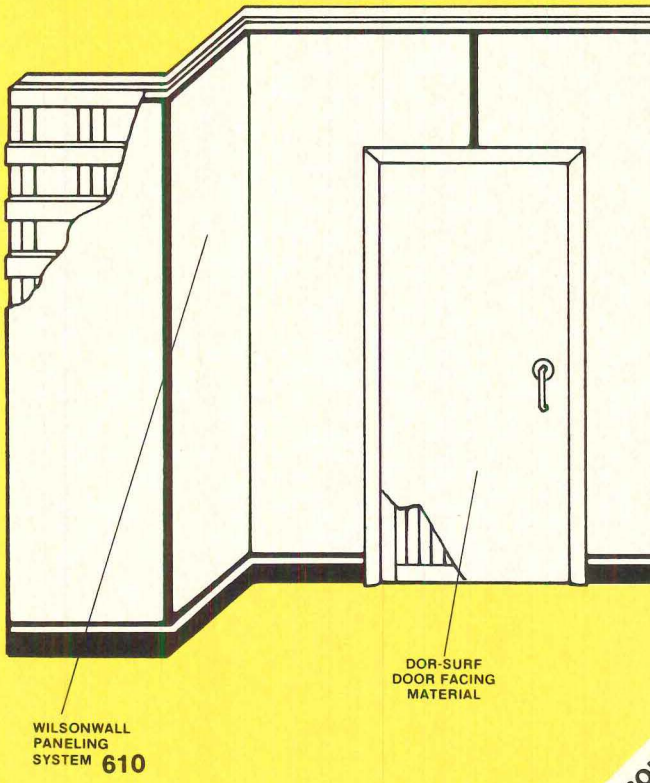

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eople in P/A

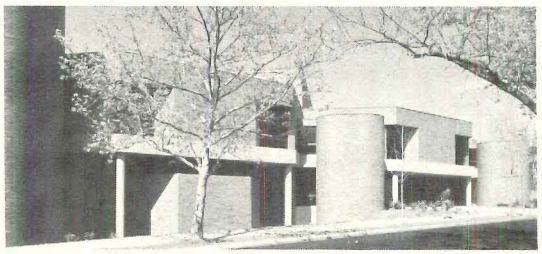
man/Saur & Associates

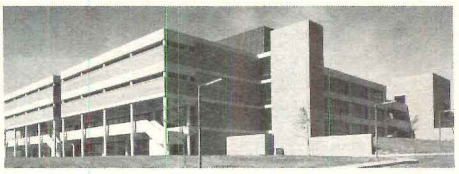
ost architects whose work has been ished in P/A know, the task of supply- acts, drawings, descriptions and mate- lists to the editors can be somewhat idable. Such items have a habit of g long since filed away, and the files a habit of being stored in inconven- places.

r Louis R. Saur, partner in charge of Parkway North Senior High School (p. the task was doubled, as his project is subject of the first P/A Building Cost ysis. This meant bundling up all speci- ions, contract drawings, bid tabulation soil reports, specific unit information, and shipping them to Chicago for ysis by Hanscomb Roy Associates. Be- se this was the first such exercise, it meant several phone consultations een architects and analysts. Happily, experience has been distilled into a precise list of what documents are required and those whose projects follow Saur's as analysis subjects should find the process a bit easier than he did. All in all, Saur reports, it was an "interesting and worthwhile" experience, both contributing to and receiving the analysis.

Hoffmann/Saur & Associates is a young firm, formed in 1967 and now numbering 35 persons. Principals are David L. Hoffmann and Saur, partners, and Peter Ohlhausen and Anthony M. DeMichele, associates. Saur, still in his early 30s, holds an M. Arch. from Washington University, is a member of the AIA national committee on Architecture for Education and chairman of the subcommittee on New Towns, New Schools.

He describes the firm's work as a "diversified practice of comprehensive architecture," further defining "comprehensive" as meaning that consideration be given to budget, time and politics as well as technical competence. Also, he adds, it means "be willing to confront the owner when he is unrealistic."





Two other schools by Hoffmann/Saur & Associates. McCluer North High School, built in 1972 for $26/sq ft (right) and DeMun Elementary (above), $29/sq ft. Robert Pettus photos.

Concrete takes to the air a

If you're in an airport that has its head in the clouds and its feet on the ground, you'll know you're at Kansas City International.

It's as down-to-earth as the surrounding prairie country, but as visionary as any airport in the world.

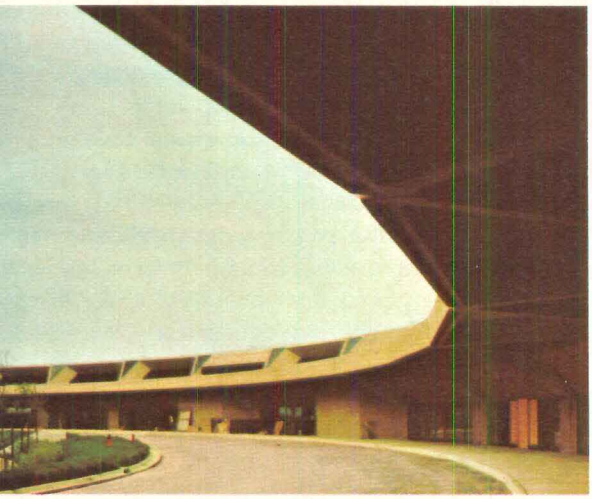
The architects of this new airport building complex had a brilliant concept, and it didn't come out of the blue. It came out of concrete.

They designed three separate terminals, each with its own 900-car parking lot so that passengers could drive up to within feet of their gates.

Concrete is ideal for an international airport because it's a worldly kind of building medium, yet it's warm and down-to-earth.

It's so versatile that it permits variety in casting, molding, and texturing with minimum expense. And the sky's the limit with its possibilities.

There's a pedestal base and sloping screen wall of precast panels in a heavy ribbed texture around the administrative complex. They were sandblasted before



Kansas City International.

sh-hammering to emphasize the buff loring and fine detail.

Naturally, *POZZOLITH* polymer-type ad-xture was specified for all the concrete these buildings because it makes con-ete more workable, placeable and dur-le, and assures top performance.

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Owner: City of Kansas City, Missouri. Architect: Kivett and Myers. Engineer: Burns & McDonnell. General Contractor: Del E. Webb Corp. (terminal buildings) and Sharpe-Kidde (control tower/adm. complex)—a joint venture. Mix Design: Architectural Concrete Consultants, Houston. Ready-Mixed Concrete with POZZOLITH Admixture: Botsford Ready Mix.

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Views

Not complaining, but . . .

It's never a good idea for an author to complain about a critical notice, but Professor Sam Davis's review in your April issue, of ADHOCISM by Charles Jencks and myself is so weird that I should try to expose it, since his actual argument doesn't seem to be merely with us. First, he asks (twice), why write this book?

Well, ADHOCISM, subtitled *The Case for Improvisation,* is about the powerful creative resources that can be found when you use an available system or deal in a new way with an existing situation, to solve a problem quickly and efficiently. It's a principle at least as old as man, but it usually has been unappreciated, even scorned, in favor of purism waiting for the perfect moment of "proper" approach. In architecture particularly, we've had 50 years of Bauhaus and design-school influence making us think that the only way to get a perfect doorknob is to ignore all previous doorknobs and start designing from scratch. In order to deny this and similar tragic nonsense, we wrote a book full of trivial and sweeping examples, speculations, possibilities for the future and war ings. If Professor Davis believes the dus jacket, our reason was to aid the medita tions of anyone who thinks that our polit cians, planners and designers should cc centrate less on the rulebook approach problems and get back to some basic fa about the way we actually do things.

But behind Davis's "why write this book?" is real terror, as he makes abundantly clear. He doesn't want to he about the ad hoc; he's afraid to specula about improvisation. That jinxes the mag making it "self-conscious" instead of in- tuitive as it should be (presumably there ought to be no art criticism either, no books on philosophy of science or poet- ics). Jencks and I are "presumptuous" t trying to "legitimize" improvisation at all far better if the book was an album of pic tures without text. In other words, impro sation is not discussable to the extent th it is creative and expressive, we already know all we need to know, to know more would spoil our "feel" for it.

But then, why do we still have urban re newal instead of articulate renovation? Why "master plans" instead of more ser tive and accommodating contingency plans? Why merchandising centers inste of consumer demand centers? Why gov- ernments that concentrate power instea of representing plural interests? Adhocis has to do with all these things that we st don't know enough about, and the lesso hasn't even crossed Professor Davis's threshold. Perhaps he thinks he's defen ing the artist's or inventor's autonomy b insisting that such things shouldn't be d cussed. His position is just that of any a intellectual who reaches for his club wh ever questions of sensibility come up.

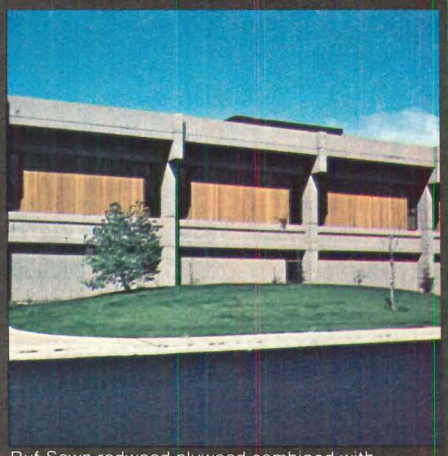
Nathan Silver RIBA
London, England

Follower?

"Dis.ci.ple: an adherent of the doctrines another; a follower."

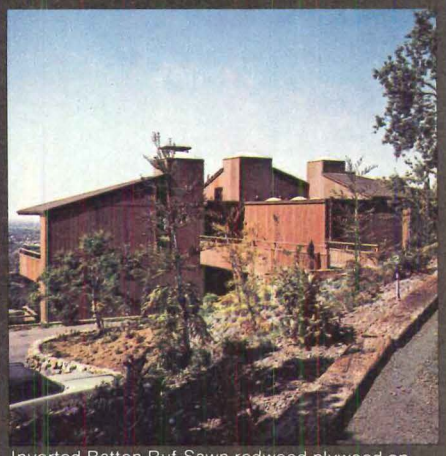
Le Corbusier is dead but his worst tra live on in Seligmann—arbitrary order an compartmentalized and monolithic spat attitude. "European Hill Town?" Well, it built on a hill, all right.

John R. Duggar
Berkeley, Calif.

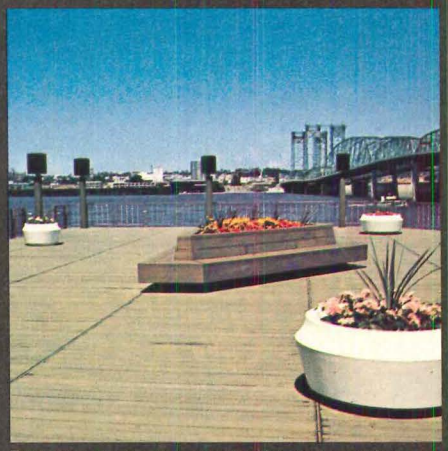


Ruf-Sawn redwood plywood combined with architectural concrete

Traverta ceiling tile provides fire safety and noise control



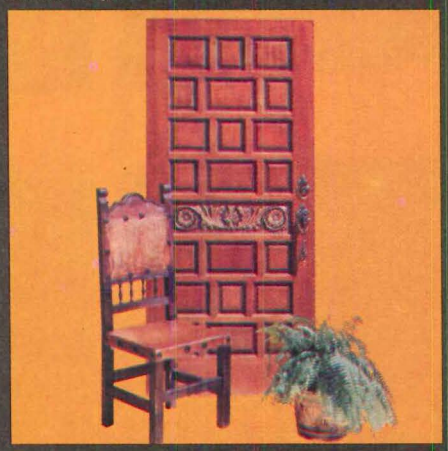
Inverted Batten Ruf-Sawn redwood plywood on custom residence



Redwood lumber for commercial decks, patios and stairways

Recessed edge, non-directional fissured Pyrotect ceiling

Redwood lumber siding lends lasting warmth to office buildings



Castillo pattern entrance door from the International series

Ruf-Sawn 316 was the answer for low-income housing project

Innsbruck pattern entrance door from the International series

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Steel-framed office designed and built within 10 months

"Fast-track" construction and steel framing shave design/building schedule by eight months

The United Way of America National Headquarters Building, Alexandria, Va., serves as administrative center for thousands of volunteers across the country dedicated to helping people in their local communities. Occupied in late 1971, the 4-level structure stands as symbol to the "spirit of voluntarism which marks America as unique."

The 60,000 sq ft building was designed and constructed within 10 months at a cost of $24.46 per sq ft. By using the "fast-track" construction method, the contractor was able to begin and continue construction as the architect released various design phases.

The architect reported that the fast-track method saved eight months design and construction time.

The result: substantial savings in construction costs, rent at another location, and construction money interest.

Why they switched to structural steel

Originally, the office was to be built of reinforced concrete, but poor soil conditions requiring a lighter frame and a tight construction schedule, swayed the decision to steel. Furthermore, steel's inherent advantages were well-suited to the fast-track construction method.

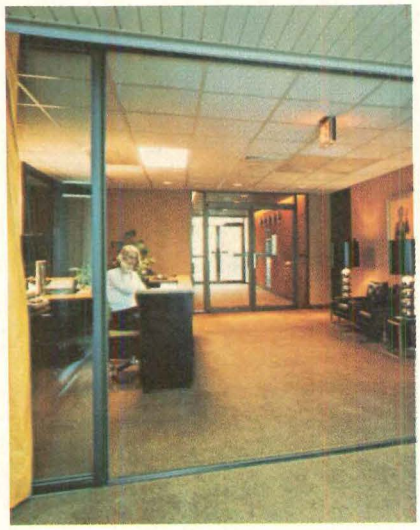
"Erection of a steel frame requires much less on-site labor than a reinforced concrete frame in the early stages of construction," commented Edward G. Grafton, A.I.A., President of Ferendino/Grafton/Spillis/Candela. "Our designers, who were literally designing the building while it was being built, were able to increase design quality and decrease costs by making adjustments through early insights into field conditions. Steel framing also allowed greater flexibility during the design/construction process.

"We also found that early installation of the roof, using steel decking, provided a great accommodation to the workmen and assisted in protecting the building materials which demanded early delivery to the site."

In addition to office space, the 107-ft by 145-ft structure contains conference, computer, and audio visual rooms, a print shop, and a coffee shop. The central service core houses two elevators, mechanical and utility equipment, and two stairwells.

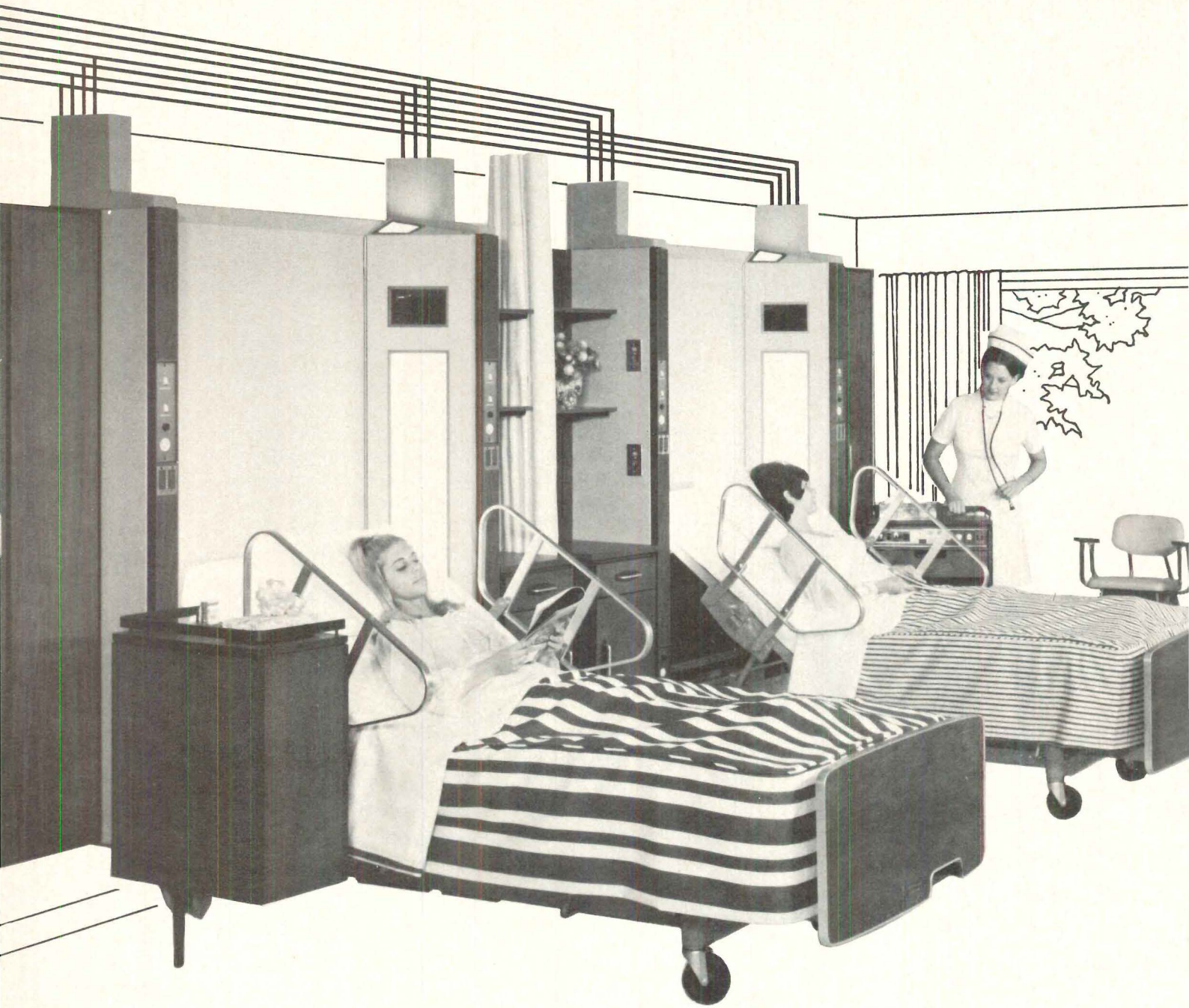
Steel framing is versatile, adaptable, economical. And it can provide long clear spans for maximum freedom of interior arrangement.

Want more information on structural steel framing for buildings? Just get in touch with our sales engineer at the Bethlehem Sales office nearest you. Bethlehem Steel Corporation, Bethlehem, PA 18016.



An open-air balcony, surrounding the building at the 4th level, cantilevers 7½ ft beyond the center line of the perimeter columns.

Bethlehem BETHLEHEM STEEL



The Enviro-Care™ System

Simplifies the design, installation and hookup of patient care services for the architect and contractor. The costly complexity of permanent headwall services is replaced with a prefabricated and factory-tested Core Module of mechanical and electrical services. The Core Module merely hangs on the wall, as do all its supporting furniture modules, thus externally locating all hookup points for simplified installation.

Organizes patient care services after installation for efficient day-by-day operation by the hospital staff. Random placement of fixtures and outlets on the headwall no longer create costly inefficiencies. By permanently locating the bed, all patient room systems . . . lighting, electrical, grounding, medical gas/vacuum, communications and storage . . . function together to provide increased patient care, safety and convenience.

Eliminates the fear of built-in obsolescence found in typical headwall construction. Additional patient care services can be adde to the Core Module, or the Core Module can be removed and rehun without upsetting the aesthetics o the room or the efficiency of existi services. Planning can begin immediately to upgrade the patient room, but need be implemented on when economically feasible.

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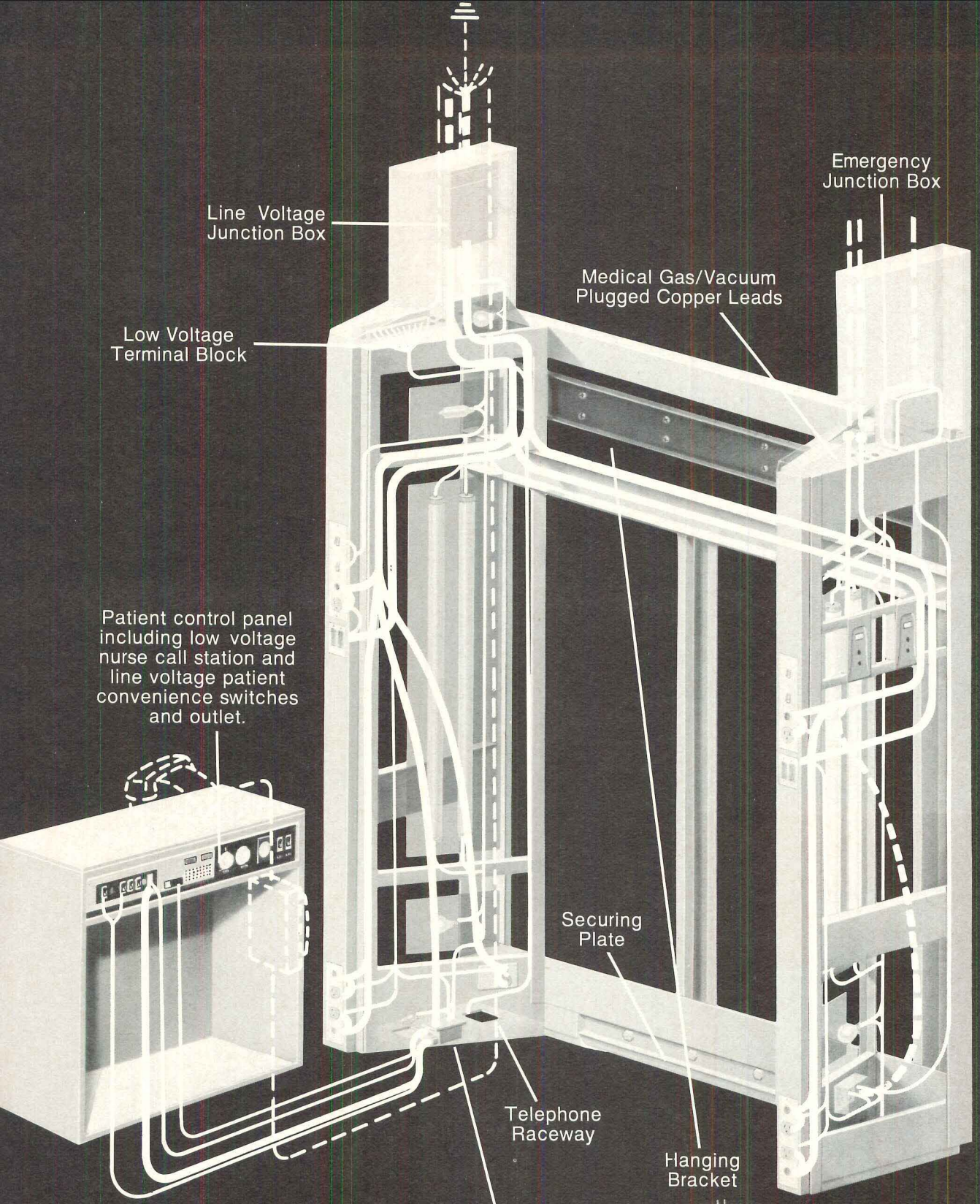
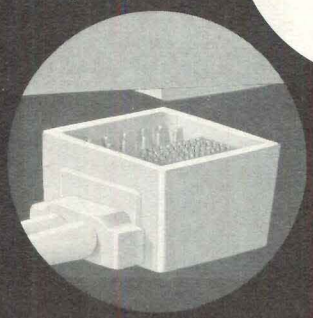


50 Core Module

efabrication of the Core Module mplifies the design and installation of hospital's central power, communication, ounding and gas distribution systems to the patient room. The costly omplexity of a permanent headwall stallation is replaced with the conomical simplicity of hanging a Core odule on a bracket mounted to a plain all, and externally locating all terminal oints of the prewired and preplumbed ore Module for simplified hookup nd installation.



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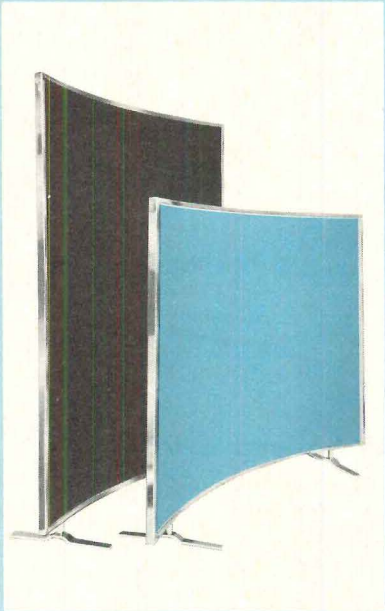

The moment you unpack The Sound Swallower screen it happens. The first thing you notice is your voice sounding a little different . . . muffled. Then the clicks and clacks that you always thought were a necessary office evil somehow don't seem so loud. You open another carton, and the difference is even more noticeable. Now it's *really* getting quiet. So you open another . . . and another.

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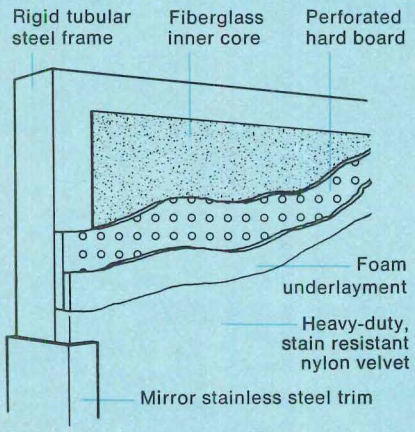
There's really no magic to our screen. We've just engineered the materials of today into this most efficient sound sponge.



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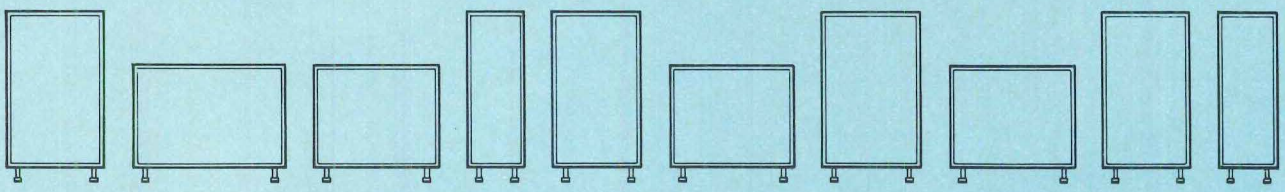

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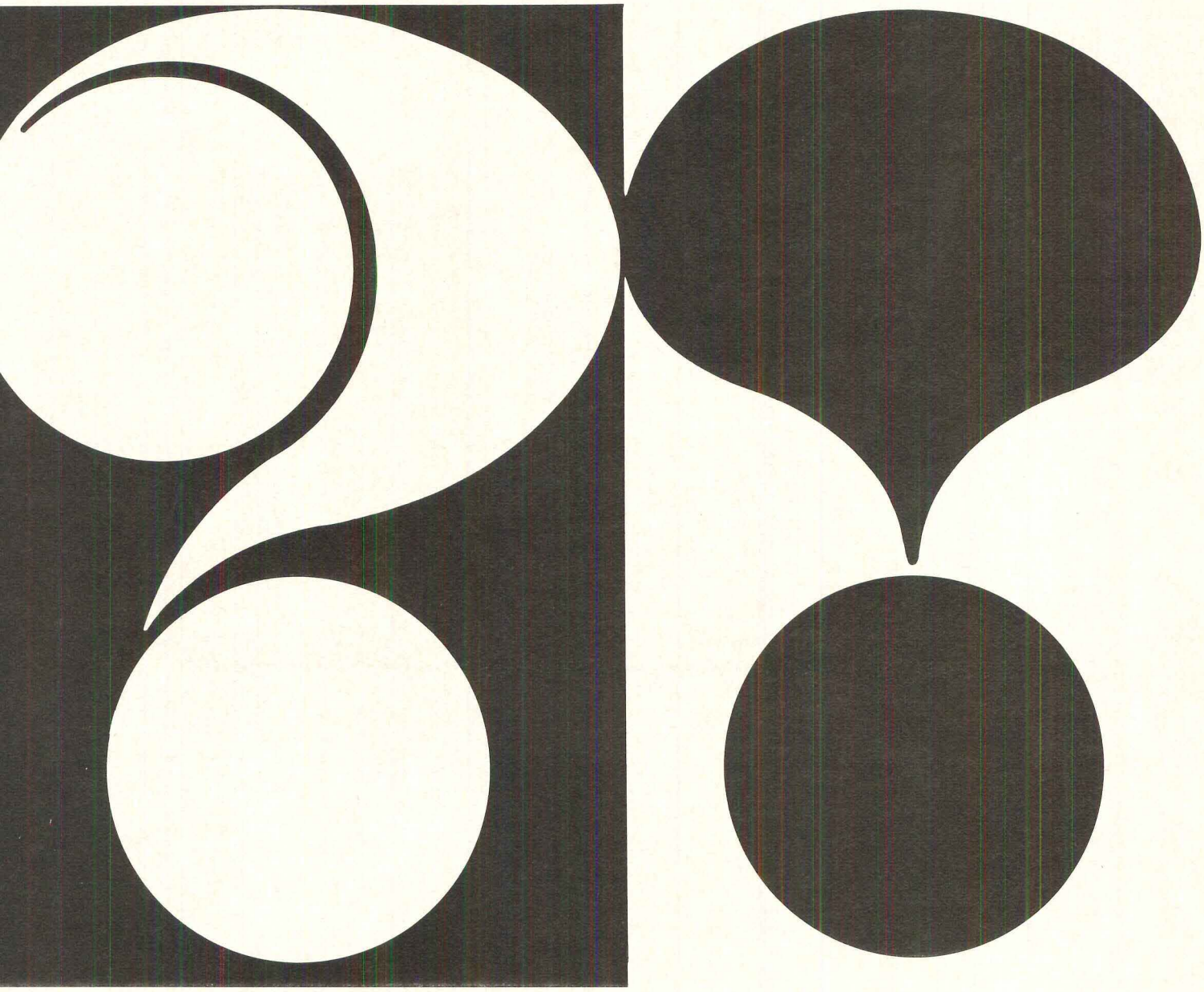
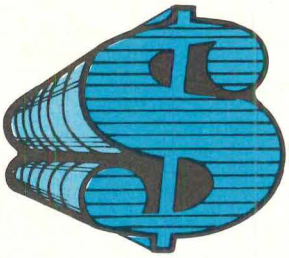
The Barrett Roof Inspection & Service Program.

Questions & Answers



The Barrett Roof Inspection & Service Program. Questions & Answers

The Celotex Corporation conducted a series of interviews with architects all across the country to determine their awareness of the advantages and benefits the Barrett Roof Inspection and Service Program offers to building owners. The questions and answers on the following pages represent a composite of these interviews. We hope they will be helpful to you.



How does the Barrett Roof Inspection and Service Program differ from the 20-year bond plan which has been so widely specified for so many years?

The most important difference is the amount of liability which Celotex assumes. The old standard 20-year bond limits the manufacturer's liability to a total of $10 per square during the entire 20-year period. Under the new program, there is no limit to the amount Celotex will pay, during the entire period of the contract, to correct leaks due to causes covered in the contract.

Let's use a practical example to illustrate the difference. You have a 20,000 square foot roof. A series of leaks develops and it is determined that the roofing manufacturer is to pay the cost of repair. Under the old bond plan, our maximum liability is $2,000. When that $2,000 has been expended, there is no further monetary liability, regardless of the bond issue date. Under the new contract, Celotex would pay for repair of all leaks covered, during the full period of the contract.

This program also differs from the old bond plan in period of coverage, in cost, and offers additional inspection service.

What is the period of coverage under this program?

The contract covers a period of 10 years. It also gives the owner an option to renew for an additional 10 years, if he makes recommended corrections and preventive repairs to the structure and to the roof, which our inspector determines are necessary to put the roof in satisfactory condition for continued good performance. This feature provides a valuable service which the bond did not offer: at no cost, at the end of 10 years, the building owner receives a roof inspection and recommendations which conceivably could help him avoid costly trouble. He can then elect to renew the contract.

$3/10

What does the building owner pay for coverage under your program?

Cost for the initial 10 years is $3 per square. Cost to renew the contract for a second 10-year period will be two-thirds of the charge for the initial 10-year period in effect at that time.

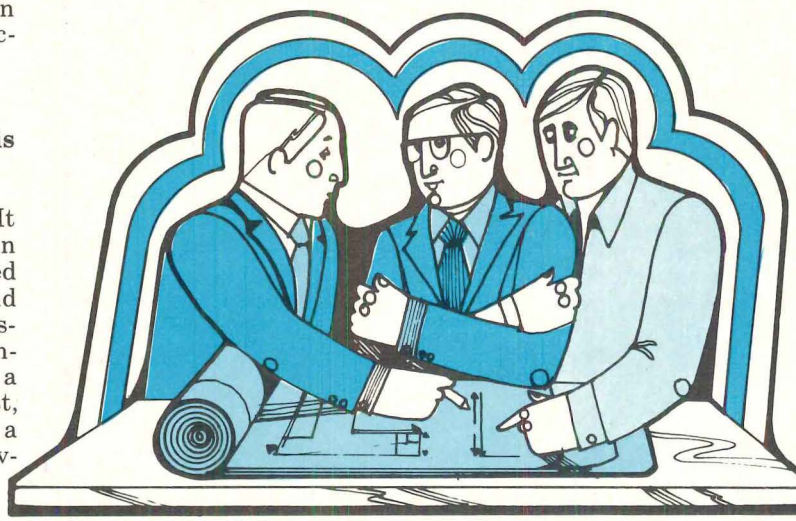
Cost of the program, for the initial period, is the same as the current cost of the old 20-year bond—yet this plan provides additional inspection service and has no monetary limit on leak-repair costs. When compared to the cost of the bond and to the cost of independent inspection services—which do not provide monetary guarantee in case of leaks, or continuing inspection service—our program is obviously the best investment of all.

How does the owner benefit by renewing the contract for a second 10-year period? Why not just make recommended repairs, if any, and save the cost of renewing?

If no problems are indicated, he may be saving money by not renewing. If he renews, however, he gets all the original benefits for another 10 years: unlimited manufacturer liability in case of leaks due to covered causes; free inspections should leaks occur; and free inspection and recommendations, on request, when alterations or additions are contemplated.

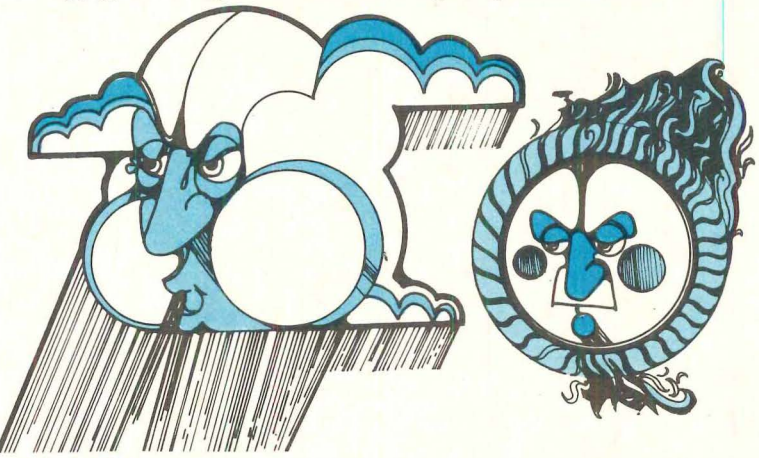
What other services and inspections are included in the program?

To begin with, on request, a qualified Celotex representative will review plans and specifications, attend pre-job meetings, and make recommendations. During application and after completion, inspections will be made and notice of inspection will be sent to the architect or owner. When the roof is two years old, another inspection will be made. And we'll make the 10-year inspection and recommendations, if requested, at no charge, even if the contract is not renewed.



Does the Celotex liability apply to repair of leaks caused by faulty application, as well as to leaks due to defective roofing materials?

Yes. This contract clearly states that Celotex will pay all costs of repairs necessary to correct roof leaks resulting from errors in workmanship of roofing contractors in applying Barrett roofing membrane and flashing materials. It also covers leaks due to failure of those materials resulting from usual and ordinary wear and weather. This liability does not apply, however, to errors in building design or construction.



Does your guarantee include expansion joint covers?

Yes, it includes the Barrett Expansion Joint Shield when installed in conjunction with a roof that is covered by our contract. It does not guarantee any other expansion joint cover even though that cover is installed by a Barrett Approved Roofing Contractor on a roof where Barrett roofing membrane and flashing are bonded. To our knowledge, Celotex is the only manufacturer offering a guarantee-type plan that includes an expansion joint cover.

If I specify a reputable brand of roofing materials, and the general contractor retains a reputable roofer, isn't that sufficient assurance of good roof performance? Why should my clients spend the additional $3 per square?

It is true that under those conditions you minimize the risk of leaks due to faulty materials or application. Our roofing materials are produced totally by machine under quality control methods, and there is very little risk of their failing. On the other hand, application of these materials is largely manual and the chance for leaks due to human error is far greater.

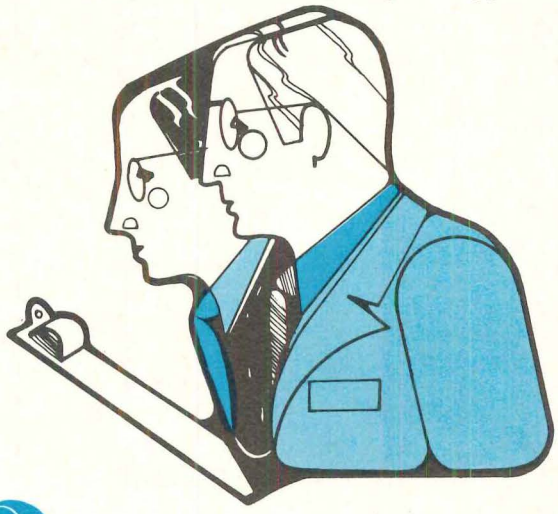
No matter how good the roofing contractor's reputation is, or how dedicated he is to doing a first-class job, one of his workmen can make an error, or fail to follow an instruction, or neglect to follow some requirement of the specification, and a leak can result. The Barrett contract protects the owner against cost of repairing leaks resulting from this situation.

As with most types of insurance, the buyer hopes he will not have to collect, but the nominal cost makes it a wise investment in protection.

Celotex

Does your on-the-job inspection insure proper application and adherence to specifications?

While no inspection can include every minute of time for every workman and every square foot of the roof during application, the purpose of our inspections is to assist the contractor in making sure the roof is being applied as specified. An error can occur on any roof, no matter how diligent the inspector. Under our program, chances for these errors are minimized in two ways: (1) the two-party inspections, ours and the contractor's, (2) the fact that only Barrett Approved Roofing Contractors are authorized to apply our guaranteed roofs. Contractors must meet the highest industry standards to qualify for approval.



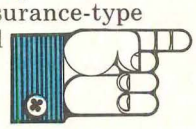
Why should the building owner buy an inspection and service contract to protect against the possibility of leaks due to faulty application? Doesn't the roofing contractor bear a responsibility for good workmanship?

In some localities the roofer has a written obligation to repair leaks due to faulty application during the first two years after completion, but no liability of any kind after the first two years. Some roofers accept responsibility for their work for two years or even longer, but do not enter into a written agreement. In short, there is no standard industry practice. During a 10-year period, a roofing firm may change management and policies.

Experience has proved that the most reliable protection for the building owner is a long-term guarantee by an established roofing manufacturer. Barrett introduced the roofing bond in 1916, and all major manufacturers adopted the same type of plan. The Barrett Roof Inspection and Service Program is an updated version of the bond plan, with additional owner benefits.

One of our large clients has thousands of squares of built-up roofs installed annually. Wouldn't it be to his advantage to set up a $3 per square reserve fund for possible repairs, rather than buy your inspection and service contract?

It could work out that way. He may never have to spend any money for repairs due to faulty application or materials, and he would have saved the contract fee. On the other hand, one serious leak problem could wipe out his entire fund. What you are suggesting amounts to an underwriting plan with very little leverage. There would be no opportunity to spread repair costs against fees from a large number of owners as is normally done under insurance-type programs. Being his own underwriter could end up being a very uneconomical choice.

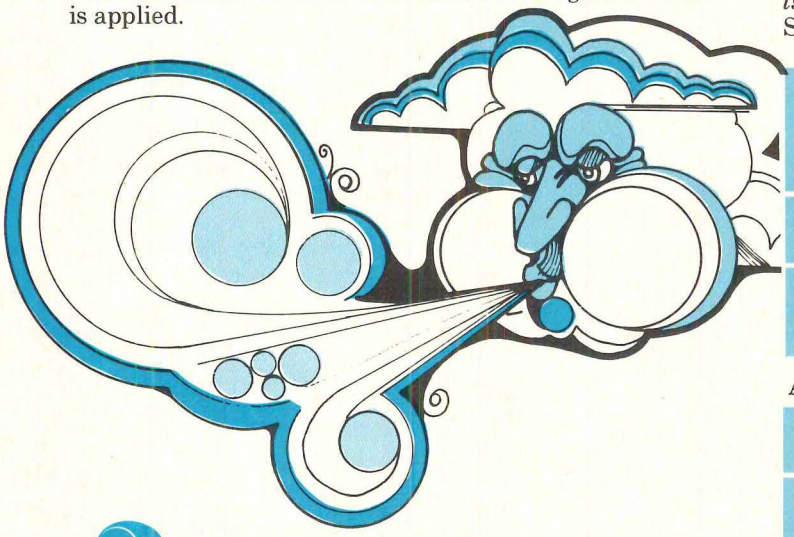


(SEE PRECEDING PAGES)

The Barrett Roof Inspection & Service Program. Questions & Answers

What types of leak problems are not covered by your contract?

The contract plainly states that Celotex is not liable for leaks or damage caused by: natural disasters such as hurricanes, hail or windstorms; or by structural failures; or by changes in building uses unless approved in advance by Celotex; or by additional installations on or through the membrane, or repairs to roofing or flashing membrane, after completion, unless accepted by Celotex. Nor is Celotex responsible for damage to interior, building contents, roof insulation or deck over which roofing membrane is applied.



How will it be determined whether a leak is due to errors in application, faulty materials, structural movement or other causes?

When we are notified that a leak has occurred, a Celotex representative will inspect the roof. The architect and owner may be present or represented. In most cases, the cause of leaks will be readily apparent. For example, leaks through openings in the plies in an area where there is no evidence of structural movement, or leaks through blisters which may have ruptured due to drying out, would be ascribed to improper application and cost of repairs would be paid by Celotex. If the trouble is due to structural movement, evidence is usually equally apparent. If a flashing has broken away from a wall in which there are severe cracks, the cause is obviously building movement and is not covered.

Do other roofing manufacturers offer this new-type contract?

While a number of other major manufacturers offer inspection and service contracts that are close to the Barrett contract, the Celotex guarantee is the only one, to our knowledge, that includes an expansion joint cover—the Barrett Expansion Joint Shield.

Does Celotex still offer the old-type roofing bond?

Yes. Even though we strongly feel that our new Barrett Roof Inspection and Service Program is a far better program for building owners, we will continue to offer the bond as long as necessary from a competitive standpoint. Also, many existing specifications calling for "bonded roofs" werw written before the new program was developed, and Barrett Approved Roofing Contractors must be kept in position to bid these jobs.

FREE

If Roof Inspection And Service Programs Were Free. . . chances are that architects and building owners would insist they be included in *every* specification. Therefore, the added cost would seem to be the determing factor in deciding whether or not guarantee-type coverage should be specified. *What is the added cost* of the Barrett Roof Inspection and Service Program in relations to total building cost?

	School 2 floors 100 MSF	Hospital 6 floors 180 MSF	Factory 1 story 100 MSF	Office Building 10 floors 200 MSF
Sq. Ft. Cost of Building	$24.	$45.	$14.	$18.
Total Cost of Building	$2.4 million	$8.1 million	$1.4 million	$3.6 million
ADDED COST FOR 10-YEAR BARRETT PROGRAM*				
Total of $3 per 100 Sq. Ft.	$1,500	$900	$3,000	$600
Per Sq. Ft. of Building	1½¢	½¢	3¢	3/10¢

*10-YEAR BARRETT ROOF INSPECTION AND SERVICE CONTRACT PROGRAM

The actual added cost for the Barrett Roof Inspection and Service Program is small. It is relatively insignificant in the total sq. ft. cost of the building. When consideration is given to the period covered (10 years) and the no-monetary-limit feature, the program is indeed extremely low-cost protection.

We'll welcome your request to have a Celotex representative tell you more about the Barrett Roof Inspection and Service Program and supply you with data on Barrett roofing products and systems . . . "everything from the deck up."

Celotex*
BUILDING PRODUCTS

The Celotex Corporation
Tampa, Florida 33607
Subsidiary of Jim Walter Corporation

THE CELOTEX CORPORATION

BARRETT
ROOF INSPECTION AND SERVICE CONTRACT

NO. C000

THE CELOTEX CORPORATION, UNDER THE PROVISIONS STATED HEREIN, WILL PROVIDE INSPECTION AND REPAIR SERVICE TO THE BARRETT ROOF DESCRIBED BELOW FOR A PERIOD OF TEN (10) YEARS FROM DATE OF COMPLETION.

Owner: _____

Building Description: _____

Location: _____

Roof Specification No.: _____ **Flashing Specification No.:** _____

Area of Roof Under Contract: _____

Lineal Ft. of Flashing Under Contract: _____

Date of Completion: _____

Roofing Contractor: _____

COVERAGE

The Celotex Corporation will pay all costs of repairs necessary to correct roof leaks resulting from the following causes:

1. Deterioration of Barrett roofing membrane or Barrett base flashing resulting from usual and ordinary effects of wear and weather.
2. Errors or mistakes in workmanship of roofing contractor in applying the Barrett roofing membrane and Barrett base flashing.
3. Blisters, bare spots, buckles, wrinkles and ridges, in the roofing membrane.
4. Splits in roofing membrane or base flashing except as excluded below.
5. Damage to roofing membrane or base flashing resulting from extreme fluctuations in temperature.
6. Breaks in flashing strips over gravel stop or other metal flanges.
7. Slippage of roofing membrane or base flashing.

EXCLUSIONS

The Celotex Corporation will not be responsible for leaks or consequential damage caused by any one or combination of:

A. Natural disasters including but not limited to floods, lightning, hurricanes, hail, windstorms, earthquakes, tornadoes.

B. Structural failures such as settling, shifting, distorting, splitting or cracking of roof decks, walls, girders, partitions, foundations, etc.

C. Improper application or failure of any component underlying the roofing membrane or base flashing such as deck, roof insulation, vapor barrier, etc.

D. Changes in the original principal usage to which building is put unless approved in advance in writing by Celotex.

E. Erection or construction of any additional installation on or through the roofing membrane or base flashing after date of completion unless installed in a manner prescribed and accepted by Celotex.

F. Application of or repairs to roofing membrane or base flashing after date of completion unless done in a manner prescribed and accepted by Celotex.

G. Under no circumstances whatsoever shall Celotex be liable for damage to interior, contents of building, roof insulation, roof deck or other base over which roofing membrane or base flashing is applied.

ACTION

In the event leaks from any cause should occur, owner shall notify Celotex promptly, confirming such notice in writing. Celotex will inspect the roof, and if cause of leak is within the coverage as stated above, Celotex will arrange for repairs to be made at no cost to owner. If cause of leak is not covered, Celotex will not be responsible for cost of any repairs.

RENEWAL OPTION

At the end of the initial ten (10) year period, the owner shall have the option to renew this contract for an additional (10) ten years under the following conditions:

During the tenth year of this contract, if the owner of the building so requests, Celotex will make an inspection of the roof and issue to the owner a report on the condition of the roof outlining any and all maintenance work that should be done. This inspection by Celotex is free of charge and without obligation.

If the owner elects to exercise his option to renew this contract, he shall have the maintenance work described in the report performed at his cost by a roofing contractor acceptable to Celotex and will notify Celotex upon the completion of this work. Maintenance work required must be completed no later than 90 days after expiration date of this contract.

Upon payment of a charge which shall not exceed ⅔ of the then current initial service fee being charged by Celotex, the roof will be reinspected by Celotex and, if found to be acceptable, this contract will be extended for an additional ten (10) year period.

Celotex makes no guarantees of any kind, express or implied, except as herein stated.

By E. H. Franklin
Attorney-in-fact

The Celotex Corporation • 1500 North Dale Mabry • Tampa, Florida 33607
Subsidiary of Jim Walter Corporation

Genon® with Tedlar®. The ultimate wall covering.

Shielded Genon with DuPont TEDLAR has everything. Everything a wall covering needs in just about any commercial or institutional interior.
It has *cleanability.* An invisible TEDLAR shield protects the wall covering from virtually all stains: oil, grease, ball point ink, lipstick, crayon, food stains, chemical agents. Cleaning is easy, and strong detergents and cleaning materials won't harm it.
It has *appearance.* Not a dozen or two, but 111 of the newest, sharpest colors and textures you've ever seen, in seven trendsetting patterns.
It's *available.* Right now! Off-the-shelf delivery! No delays for custom orders!
Our new 8-page Shielded Genon sample card is now available. For your free copy, just write on your company letterhead to: Contract Division, The General Tire & Rubber Company, 979 Third Avenue, New York, N.Y. 10022.

SHIELDED
genon®
vinyl wall covering

GENERAL TIRE®

Contents

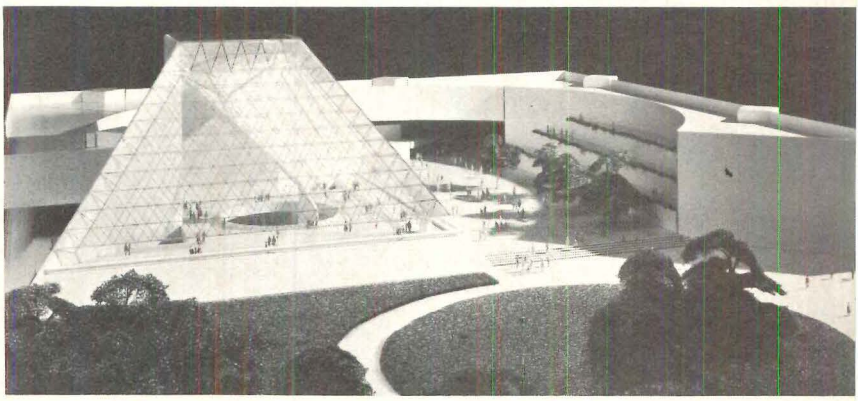
News Report

Kennedy Library finally to get under way

Stymied for years because the Metropolitan Boston Transit Authority couldn't find a place to put its carbarns, the John F. Kennedy Memorial Library may now finally become a reality. A design was announced and a model displayed on the 56th anniversary of the late President's birth; the library complex is expected to open three years hence—to the day.

The library will be housed in a glass-enclosed pyramid 75 ft high. The low curved building that partially surrounds it will be the presidential archives and Harvard's Institute of Politics, part of the University's School of Government. Cost is put at $27 million.

With the carbarn question out of the way finally, the only real controversy surrounding the library project is one that has been around for awhile. Local residents, Cambridge officials and civic groups fear that the library, once completed, will draw tourists and sightseers, causing serious traffic-flow problems in the immediate vicinity. That's a real problem, and one that the library's backers say is being given continued thought and study.



JFK Library: at last

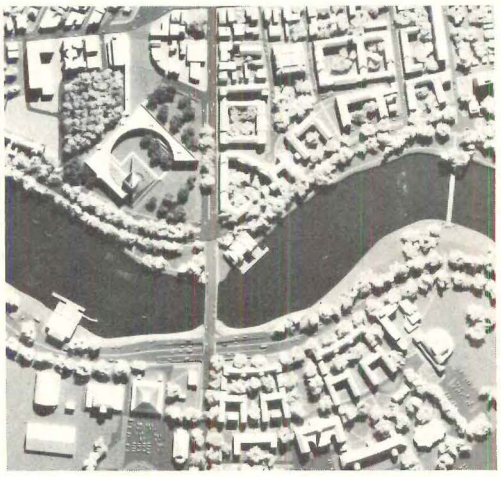
Go-ahead on Boston's Faneuil Hall Markets redevelopment

There's a bit less than two years to go before Boston opens its Boston 200 Bicentennial Celebration on April 19, 1975, and that's how long The Rouse Co. and Benjamin Thompson & Associates have for their plan to restore the Faneuil Hall Markets area (P/A, Sept. 1971, p. 157 and Jan. 1973, p. 39). The Rouse-Thompson team was selected by the Boston Redevelopment Authority in March.

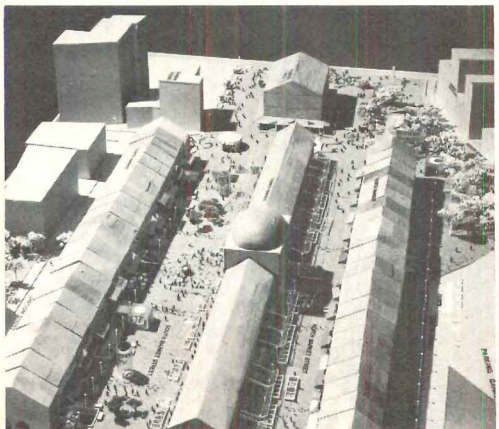
Plans call for turning the three-block, six-acre area into an integrated around-the-clock market district. The market buildings, more than 500 ft long, would be restored to their historic physical condition and also returned to much the same uses for which they were built in 1825.

The market will be essentially a place for pedestrians providing an array of places to eat, drink and shop. In the more than 400,000 sq ft of space, there will be no major department stores or chain operations; instead, the plan calls for small shops owned and operated by local people. Food sales will be emphasized: over 50 concessions will offer just about everything from mussels to mangoes, to take home or devour on the spot. Night spots, book stores, flower stalls and space for

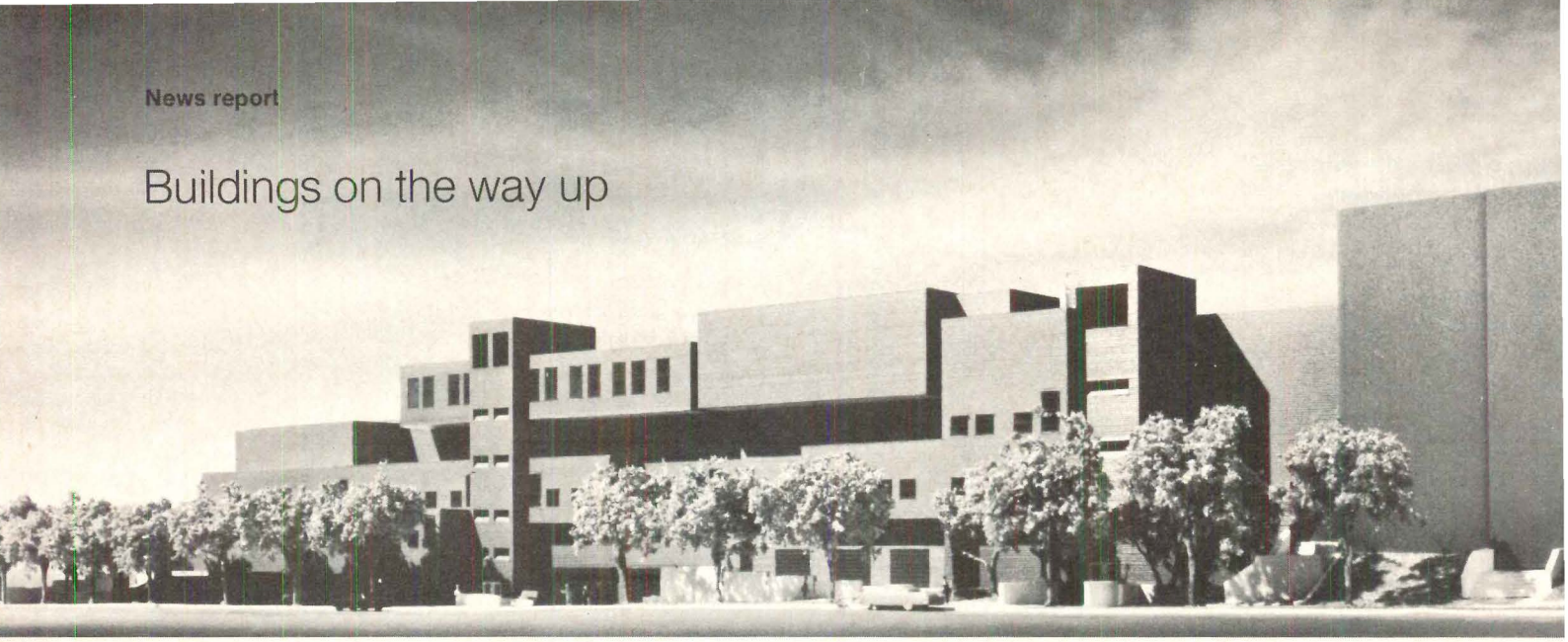
[continued on page 28]



Faneuil Hall Markets: green light



Buildings on the way up



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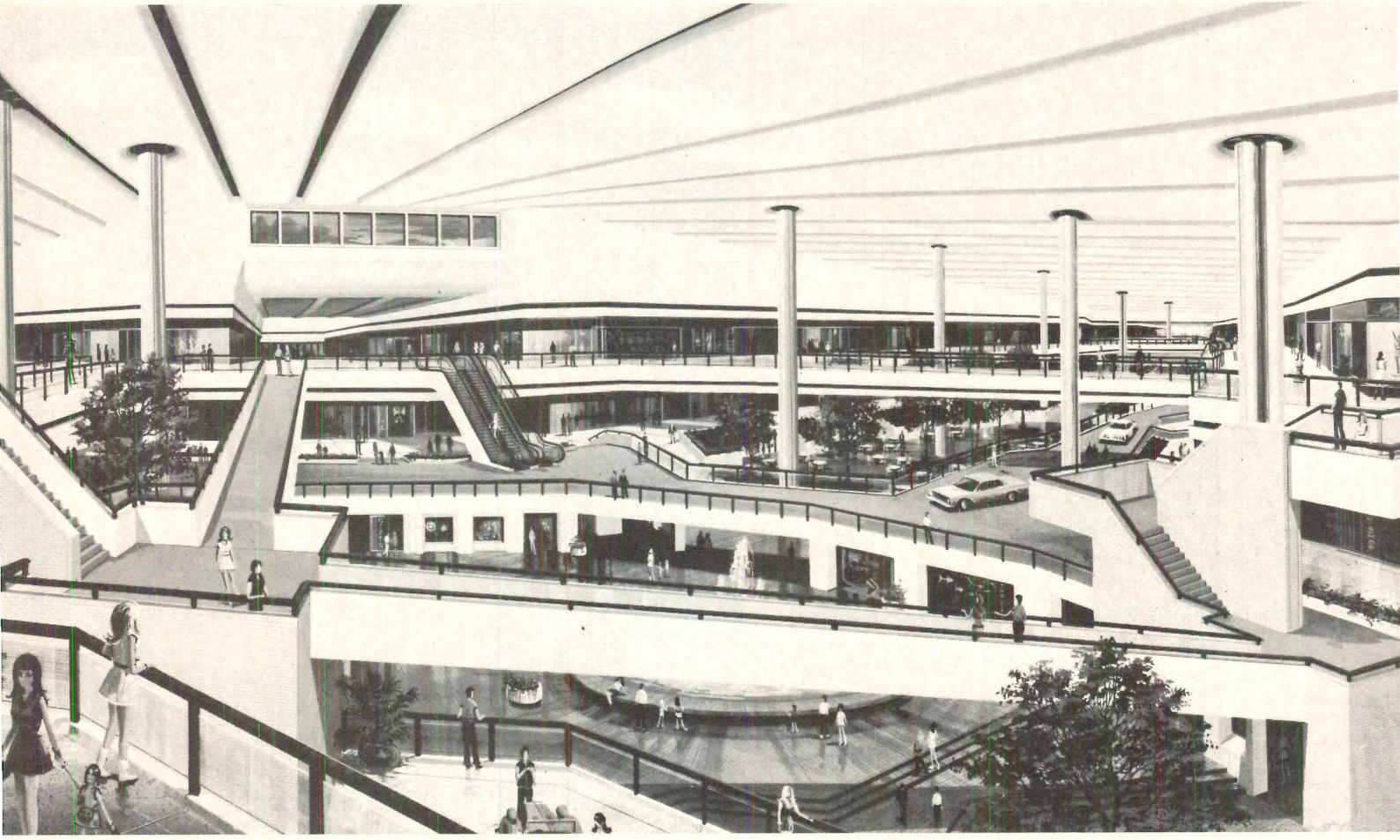

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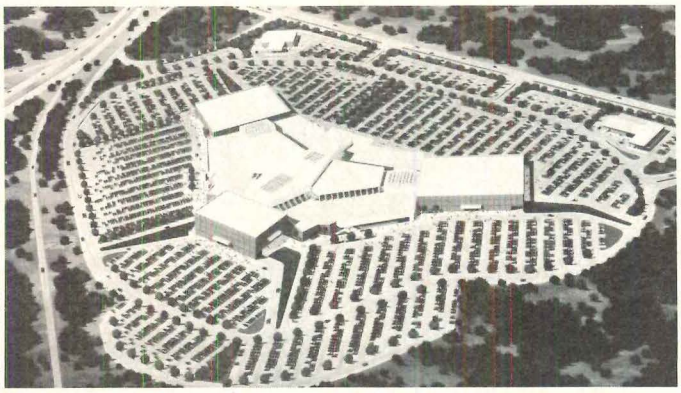

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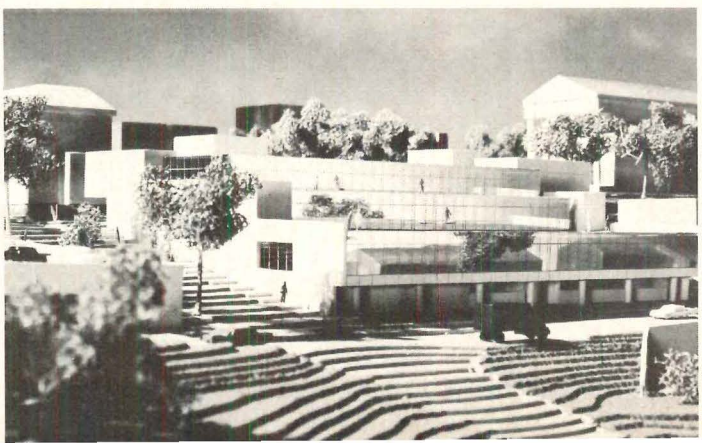
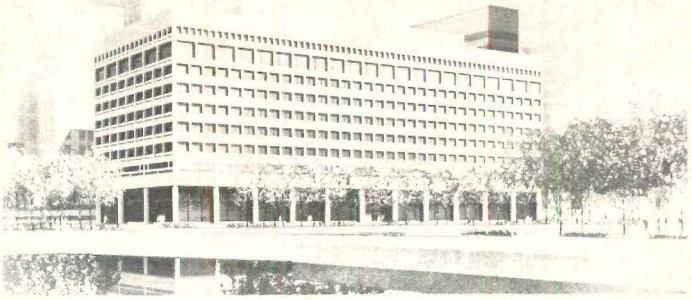


1 Cafeteria, library and administrative office open onto central courtyard created when South Side High School in Newark, N.J., was renovated and enlarged. Courtyard will also serve as amphitheater, lounge and community space for meetings, dances and other events. School lot is not fenced, making open areas outside building accessible to community as well as students. Brick exterior relates to existing school building and surrounding neighborhood; it is also used as facing for all corridor walls and some classroom walls. Architects are the Office of Stanley L. Horowitz, with Steven Miller in charge.



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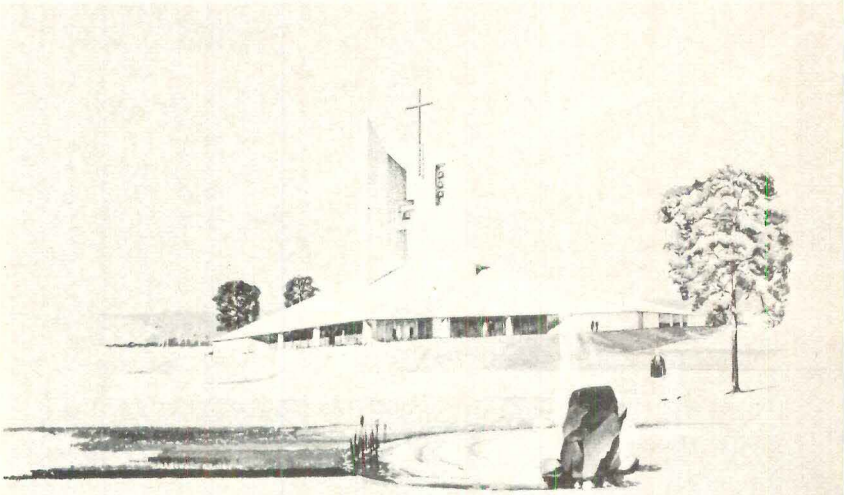
2 A giant court is at the heart of Independence Center, Independence, Mo., making any of the 140 store fronts visible from almost anywhere in the mall. The multi-level, climate-controlled mall, 1 million sq ft in area, was designed by Architectonics, Inc. Anchoring it are a 130,000-sq-ft Sears store, designed by Gordon, Sibeck & Associates; a 165,000-sq-ft Macy's, by Marshall & Brown; and a 180,000-sq-ft Stix, Baer & Fuller, by Chaix & Johnson. Developer Homart Development Co. plans to add a theater, office buildings, restaurant, skating rink and other facilities. The cars shown in the rendering are on display, not driving through the mall.

5

3 Public library and board of education offices are combined in New York State Urban Development Corp. project in Newburgh. Stepping down a sharply sloping site, the building will be an important part of the Courthouse Square Development, part of a larger urban renewal parcel. Cost of the 60,000-sq-ft (gross) building is put at $3.6 million; architects are Hugh Stubbins & Associates, Inc., with Fleming & Silverman, associated architects.

4 Number 20 for Baltimore's Charles Center-Inner Harbor urban renewal area is a branch office building for IBM designed by Emery Roth & Sons and Pietro Belluschi, associated architects. Windows will be deeply recessed in the precast concrete building; façade will be exposed aggregate panels. Attached to the 10-story 300,000-sq-ft building will be a 4-level 700-car garage, of cast in place concrete. Building is the 20th new building in the 33-acre area since work started in 1959, and the 5th in the Inner Harbor area itself.



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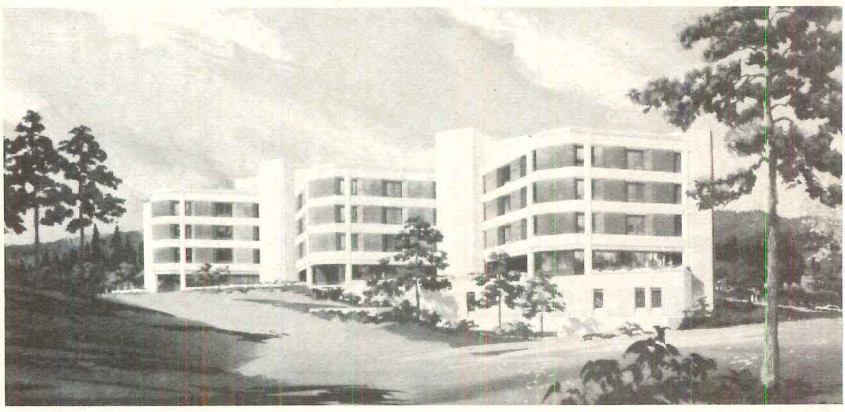
5 Poured in place concrete walls will support the tallest (so far) buildings designed for Washington, D.C. suburbs. The two 36-story condominium apartment towers will be part of a Hyattsville, Md. complex known as Prince George's Center. Parking for the 580 apartments has been placed underground, and the garage roof will be landscaped with gardens, putting greens, skating rinks and swimming pools; eventually there will be a subway station linking the complex to the Washington Metro system, now under construction. Architects are Vosbeck Vosbeck Kendrick Redinger.

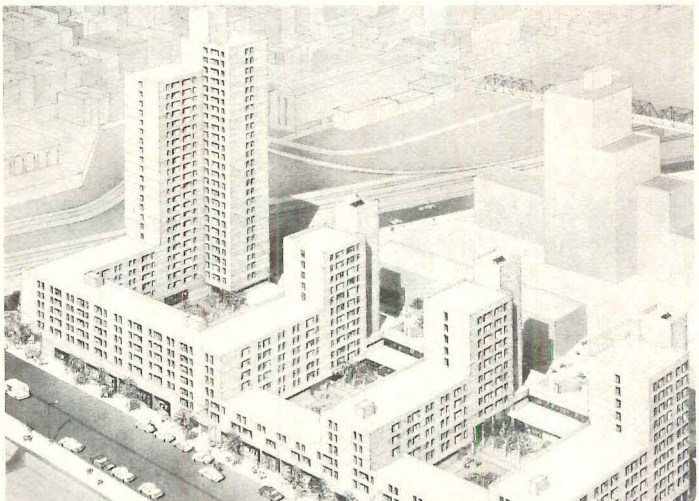
6 Single-story multi-purpose Church of the Resurrection in Solon, Ohio makes use of movable partitions to provide a varying array of spaces. Sanctuary can be varied from 35 to 700 seats, or when not fully in use, can be divided into classrooms, meeting rooms or social areas. Six-sided structural steel and precast concrete building is capped by sloped roof of marble chips. Set on a 5-ft-high mound, the church takes up only one-third of its 15-acre site. Richard L. Bowen & Associates are architects.



7

7 Modular pods, each containing about 22 beds, are the basic elements of Good Samaritan Hospital in Corvallis, Ore. The beds are in double and single rooms, grouped around a central nursing station in each pod. Structure is cast-in-place sandblasted concrete; exterior finish will be brick veneer panels. Parking for 350 cars will be provided on site. Architects are the Portland office of Skidmore, Owings & Merrill.

8 Besides 500 low- and moderate-income housing units, Bronx, N.Y. residential project for New York State Urban Development Corp. will include commercial and office space, a 24-hour day care center, a youth services center and outdoor recreation space for tenants and the public. Apartments are organized around courtyards for use of tenants; public open space will be shared with a project slated for an adjacent site. Large family apartments and units for the elderly and handicapped are in the low-rise sections of the structure, where they have easy access to courtyards and shopping. Architects are Weiner Gran Associates; Jarmul & Brizee are associated architects.



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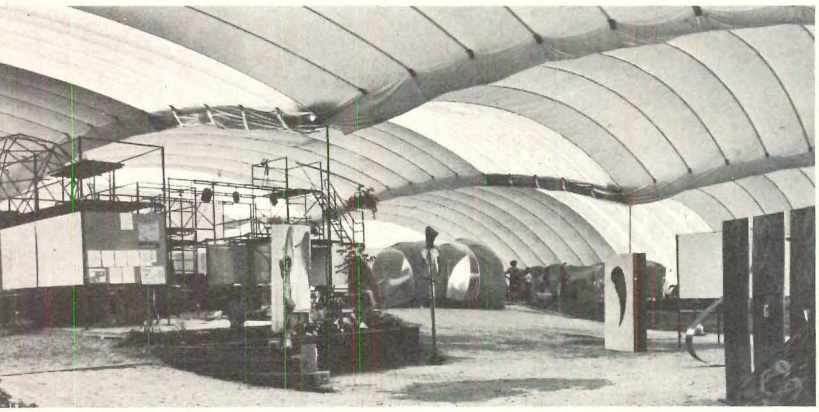
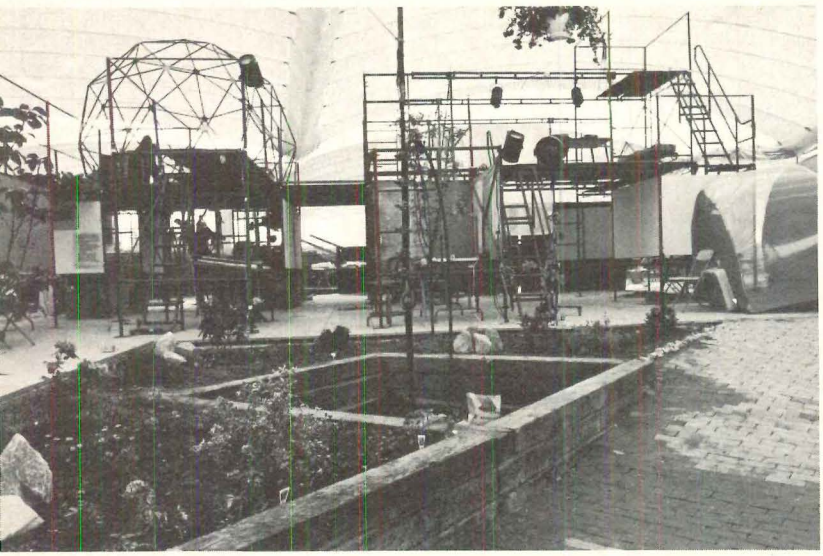
News report continued from page 25



REDE's interior architecture . . .

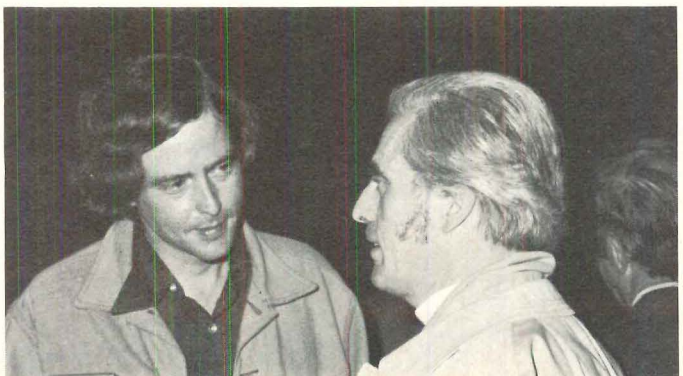


makes Antioch bubble work

Cedric Price

Reception under the bubble

P/A's Jim Murphy, Dr. Frei Otto



street fairs and flea markets are planned. Total budget for the project is $18 million, including a $2.2 million grant from the U.S. Department of Housing and Urban Development for restoration work already underway on the original façades (Stahl Associates are the architects).

This is the second time around for the Thompson plan for the area. It had been selected in an earlier competition by BRA, but the developer member of that proposal later withdrew. When Thompson interested Rouse in the plan, an enlarged proposal was drawn up, submitted and approved.

Antioch's bubble stars at conference

If Antioch College was making news in May and June, the general public probably heard only the bad side. Like an almost unbearably ironic "good news-bad news" story, the school also marked a victory in late May that could yet be eclipsed. While strife continues at the Yellow Springs, Ohio home campus, the college's branch at Columbia, Md. had completed its air-supported campus.

On May 22, the bubble was the scene of a reception that began an air structures conference jointly sponsored by the Educational Facilities Laboratories and the Building Research Institute (EFL had provided the money that first started the Antioch/Columbia design process).

Charles Tilford and Rik Ekstrom spoke specifically about the Antioch bubble in detail. Tilford is credited with many of the technical and practical aspects of building the bubble, and he noted that the technology of its construction had to be made to fit the abilities of the students who were building it. Ekstrom, a Columbia architect who led students of both Antioch and the University of Maryland through the three-year ordeal of getting the structure built, stressed that the main focus of the Antioch work was not a building, but a continuing process of education. That philosophy is summed up in the name given to the building by the students, "Prototype 4," leaving no doubt that it is seen as a transitory element in an ongoing sequence. There is a problem, however. Ekstrom feels that it has not yet been possible to get newer students involved with the bubble's future potential. To the extent that they are, they lack the feeling of having participated in the program's birth. Coupled with the homefront difficulties in Ohio, low morale could threaten the effective in-depth studies that were so much a part of the Antioch philosophy from the beginning. The bubble should become the laboratory it was meant to be, to study and measure virtually all aspects of life under a bubble.

The BRI/EFL meetings included talks on those aspects as well as the technical discussions. Prof. Sean Wellesley-Miller of MIT, certain that technology will make large encapsulated spaces a reality, called for more intensive studies involving environmental physics and micrometeorology. "Let's try in advance to spot what some of the difficulties are going to be, to see what we can do about them instead of discovering them after the event," he proposed, commenting on the possible formation of clouds within structures, and on the missing parts of the spectrum in artificial light.

Dr. Otto discussed the studies of his Institute for Lightweight Structures on natural membrane configurations. In the light of those studies, he feels that a great deal more could be derived from investigating structures that occur in nature, forming cells, tissue and bodily organs. "Pneumatic forms in

[continued on page 32]

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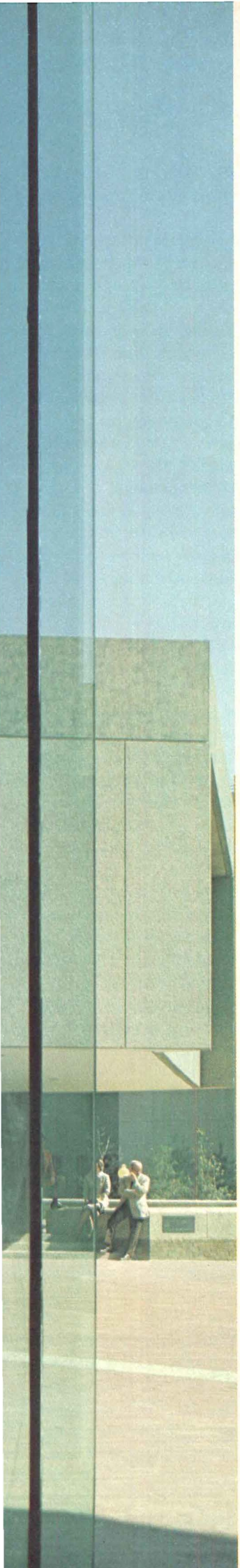

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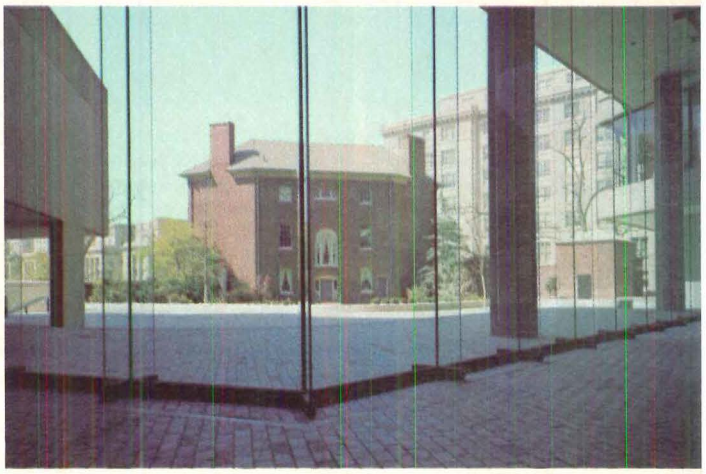

The new AIA Headquarters Building shares the site of its historical counterpart, The Octagon House, to make a contrasting but complementing architectural statement.

Focal point of the new structure: a two-story Total Vision System by PPG in the center of the plan.

This totally transparent section integrates reception area, a grand staircase, and second-floor social gallery without seeming like an enclosure.

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Total Vision Systems are available as a single-source construction package from PPG. Complete information on glass recommendations, installation techniques, glazing details, test results, and other data is contained in the TVS™ Data Folder. Contact your PPG Architectural Representative or write PPG Industries, Inc., Technical Services Department, One Gateway Center, Pittsburgh, Pa. 15222.

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New report continued from page 28

nature are the precedent," he said. "They are the key to understanding, because all other structures are derived from them."

Cedric Price, the keynote speaker, reinforced the conference theme of education, pointing out that it is not enough to think of air structures as a cheap alternative to static buildings. Nor should we be satisfied with the first stage usefulness of our educational institutions, he feels. "Over and above the obvious benefits of the service they provide, they should be seen as generators for a great range of vehicles and containment and systems," Price says. "It's farcical that we should have to wait for a war or a shortage of warehouses or a new method of transportation to get the air structures industry moving. It's not only farcical, it's wicked. Learning can, and should, become a generator for the technology."

The Research and Design Institute (REDE), which was responsible for the interior architecture at the Antioch bubble, has been pleading for a more sensible use of technology for some time. In their presentation, REDE's Ron Beckman and Howard Yarme showed examples of mass-produced stock items which can help define interior patterns of use. The bubble itself was obviously their most convincing display.

REDE is trying to eliminate wasteful, limited-use products, and recognize dysfunctions that occur between lifestyles and the environments that house them. Other presentations, notably those of Mark Fisher, of Air Structures Design (London), Jeffrey Shaw of Eventstructures Research Group (Amsterdam), Day Chahroudi of Zomeworks (N.Mex.), enlightened the audience with applications of air structures to uses beyond the simple encapsulation of space. The apparent hit of the conference, at least graphically, was a film about air structures by Graham Stevens of London.

About two years ago in Chicago, the BRI sponsored a meeting with similar intent, minus the educational implications. There is little comparison beyond that, however. The EFL and the BRI should be proud to have brought this conference together. It was an opportunity for a broad cross-section of people to share ideas. The communication between designers, educators, industry and students reached significant proportions this time around, making the meetings, appropriately, learning sessions.

4th EDRA Conference bombs in Blacksburg

The Fourth International EDRA (Environmental Design Research) Conference was held at Virginia Polytechnic Institute in Blacksburg on April 16–18. Over 200 papers largely dealing with research in progress were presented to more than 500 conferees. John Zeisel, assistant professor of the sociology of design at Harvard's Graduate School of Design, quickly estimated that the total cost of the conference, in terms of human effort and time, was probably around $500,000. Was it worth it? The only honest answer has to be no.

While there were certainly some highly intelligent presentations indicating that some researchers were surely on the path to future contributions of great value, too many of the papers dealt more with the methodological problems of research than with problems of the environment. Many of the researchers were so heavily involved in rationalistic-behav-

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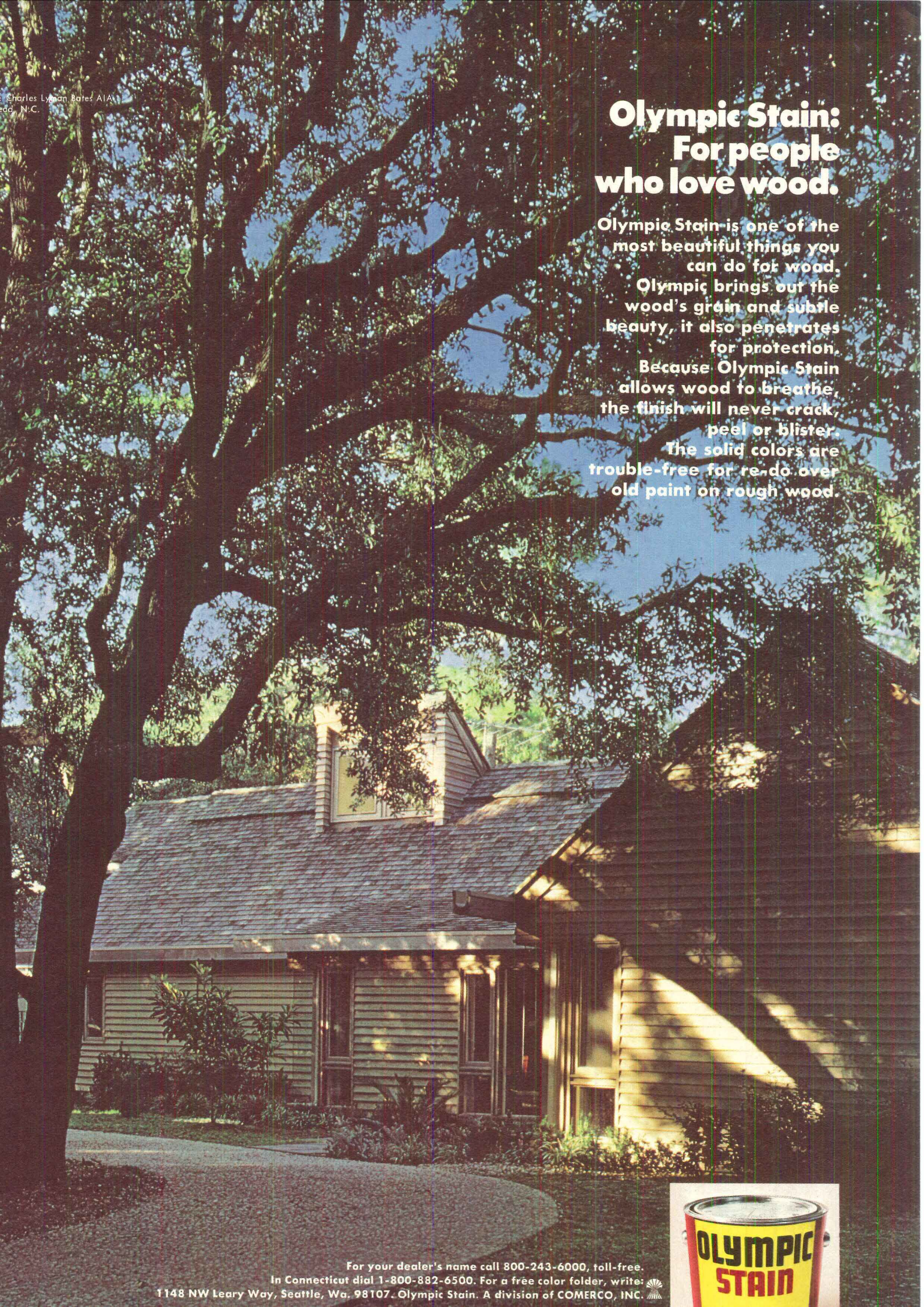
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News report continued from page 32

ioristic methods of research they seemed to have forgotten something John Betak of McMaster University reminded them of on the last day of the conference when he said "It's the problem that's interesting, not the method." They also seemed to have forgotten that "It is intervention with sensitivity that is crucial, not computers," as Dean John Eberhard of the State University of New York at Buffalo reminded the audience in his closing summary of the conference. But perhaps the most telling critique of all came from T.S. Eliot and Wallace Stevens as quoted by Dean Patrick Quinn of Rensselaer Polytechnic Institute: "Rationalists wearing square hats think in square rooms" (Eliot) . . . [while] "dreaming of systems so perfect that nobody needs to be good" (Stevens).

University of Tennessee sets up memorial lectureship

In honor of Robert B. Church III, second dean of the School of Architecture at the University of Tennessee, the University has set up the Robert B. Church Memorial Lectureship. Contributions will be permanently invested by the University to provide income to support a series of classroom lectures and seminars, to be given by invited professionals, for students, alumni and architects.

Church had joined the University in 1967, and was named dean in 1970; while in private practice, Church won a total of five P/A Design Awards. He passed away suddenly this year at the age of 42. The lectureship series begins in September, with Louis Kahn as the invited speaker. Contributions should be sent to J. Barry Brindley, University of Tennessee, 118 Henson Hall, Knoxville, Tenn. 37916.

ALSC opens awards program

Steel-framed buildings designed by registered U.S. architects are eligible for entry in the Fourteenth annual Architectural Awards of Excellence program sponsored by the American Institute of Steel Construction. Buildings must have been completed between Jan. 1, 1972 and Aug. 25, 1973.

Jury for this year's awards program includes Pietro Belluschi, William W. Caudill, Archibald C. Rogers, Ambrose M. Richardson and engineer Victor O. Gray. Entries must be postmarked before Aug. 25 and sent to Awards Committee, AISC, 101 Park Ave., New York, N.Y. 10017.

Board fireproofing: victory for the environment

Instead of spraying on asbestos fireproofing, which is now banned in several cities, builders can now protect structural steel with fireproofing that is welded on. The new system, developed by Johns-Manville Corp. consists of mineral fiber boards, which are applied to steel beams and columns with the help of a stud welding gun.

The boards come in a variety of thicknesses to meet varying fire resistance requirements; and in lengths up to 10 ft; widths are determined by the size of the steel to be protected. Wire studs are pushed through the boards and welded to the steel with the stud welder; a friction washer is then pushed over the exposed end of the stud.

First test application for the system was in the construction of a New York building being put up by the Tishman Realty & Construction Co.; the first real use of the system is the 50-

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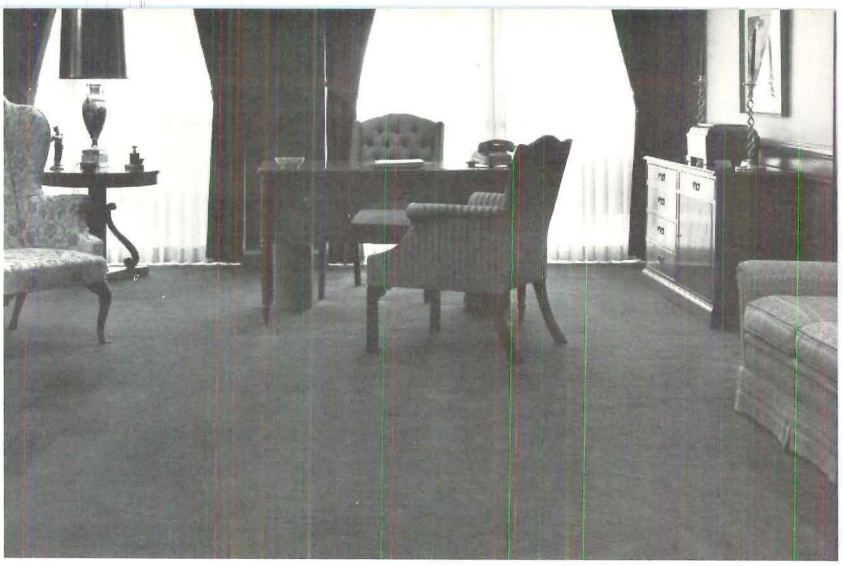

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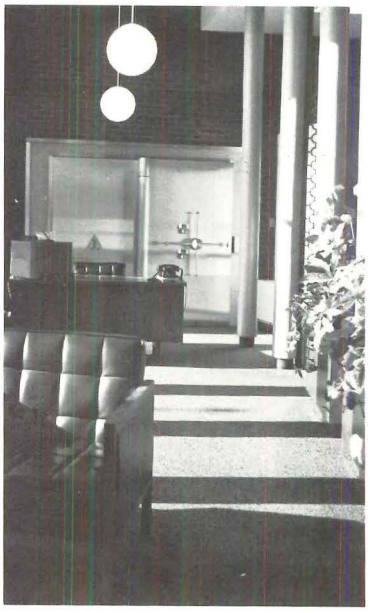

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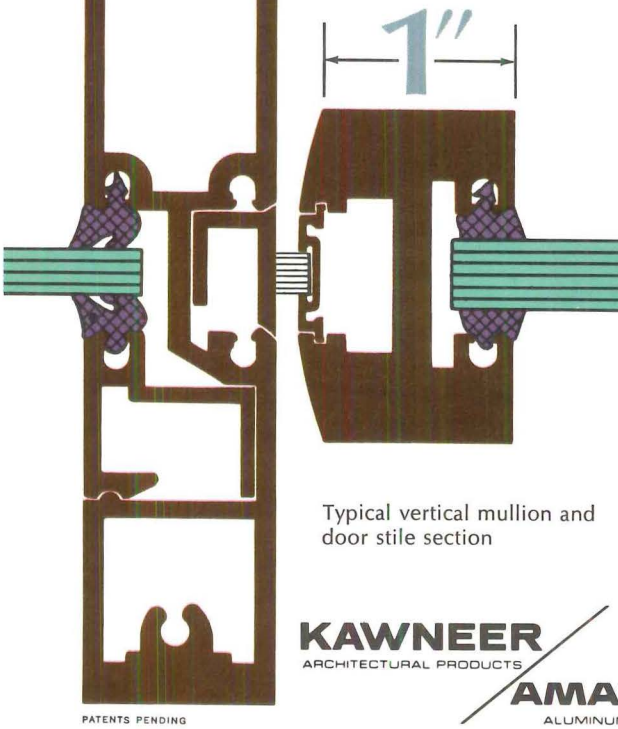

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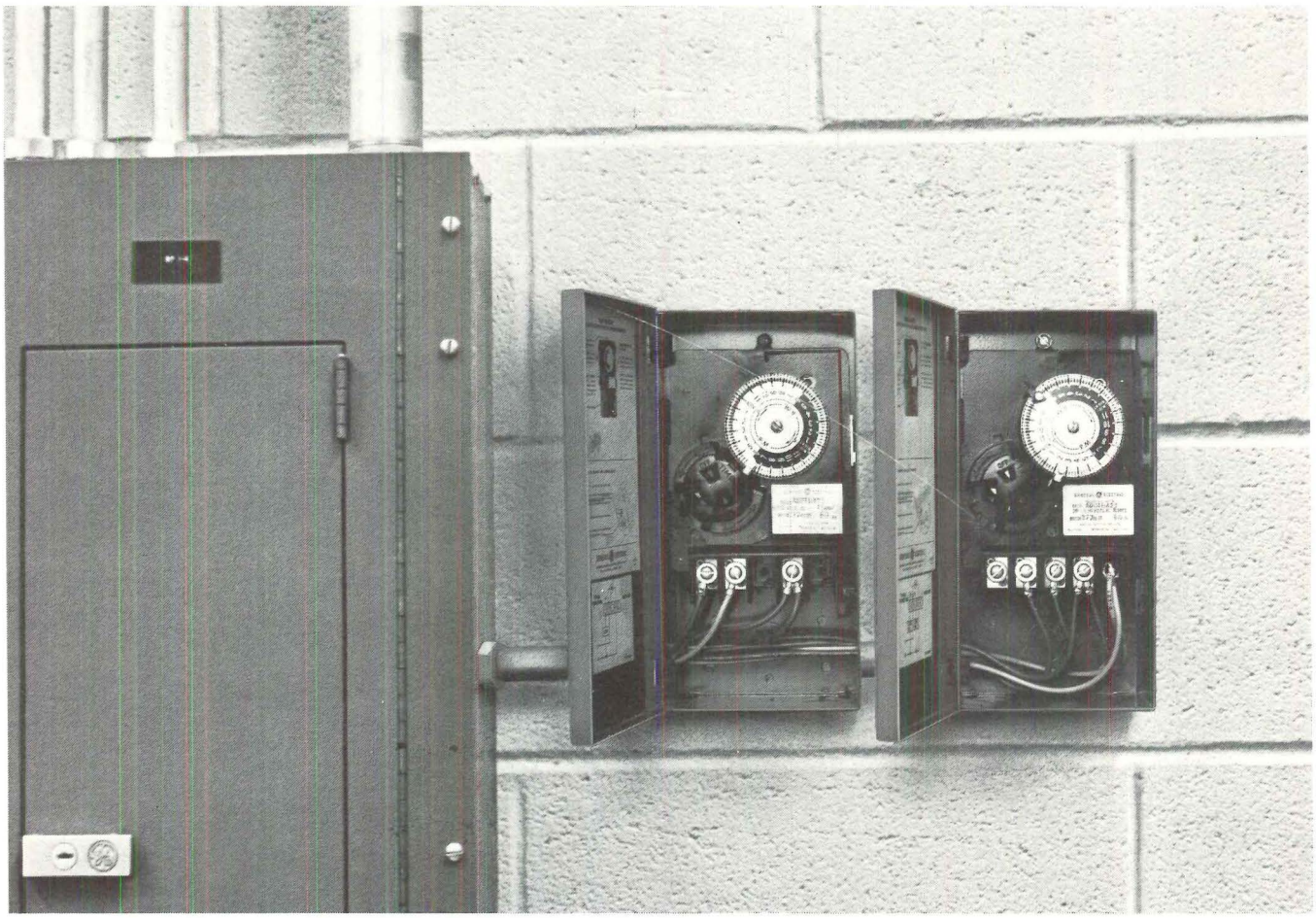

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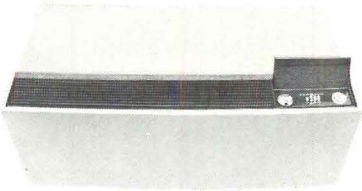

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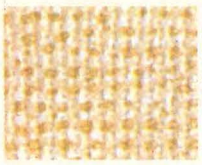

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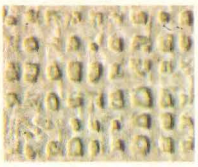

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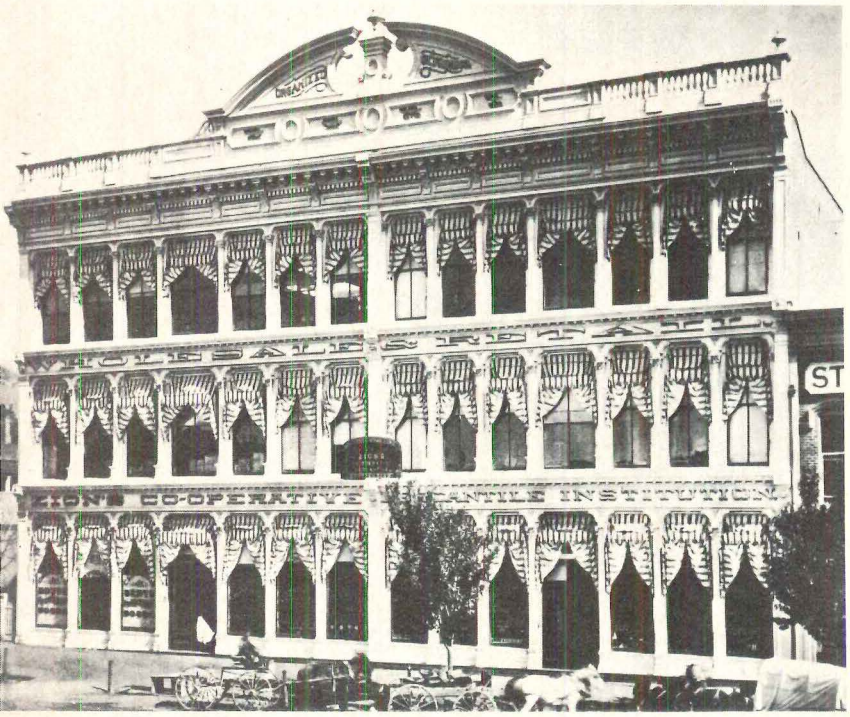
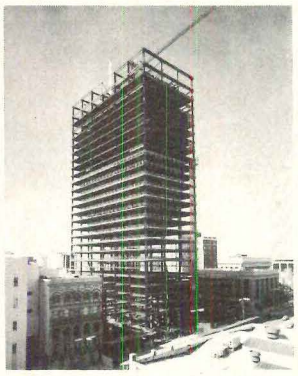
News report continued from page 34



1880 façade will be part of ZCMI Center



story Olympic Tower on Fifth Avenue, for which Tishman is the construction manager.

Development of this substitute for sprayed asbestos took Johns-Manville and Tishman Research Corp. about two years. The results of their work were hailed by Herbert Elish, head of the New York City Environmental Protection Administration as a "victory for the total environment."

Saints preserved

It's often referred to as America's first department store, particularly in Salt Lake City, but Zion's Co-operative Mercantile Institution started out as just what the name implies—a group of merchants pulled together in a co-operative venture under a directive from the Church of Jesus Christ of Latter Day Saints. The establishment opened for business in 1876; by 1976 the old store will have been replaced by a thoroughly modern retail and office complex known as ZCMI Center.

The complex, designed by Gruen Associates, will include a 27-story office tower, a two-level shopping mall with 300,000 sq ft of shops and six levels of parking. Existing buildings occupy the corners of the block, and the building is set back from them at the corners.

Serving as the main entrance will be the 97-year-old cast iron façade that has been a Salt Lake City landmark for years (it is officially a landmark, as well: both the Historic American Buildings Survey and the National Register and Historic Places list it). Inspired, no doubt, by the work of James Bogardus, the façade is made of prefabricated cast iron elements, stacked and fitted together to create a three-story store front, first erected in 1876 and then enlarged in 1880. In 1902 another three-story addition was put up, this one with a sheet metal replica of the original façade; show windows and a canopy were put across the entire lower level of the front.

It is the 1880 double façade that is being preserved under the direction of architect Stephen T. Baird, a Salt Lake City preservation expert. While the task is simply one of dismantling the façade and re-erecting it as part of the façade of the new building (it will be set off in a lighted niche), it is not the easy task it might seem. The sheet metal section can't be saved, and the original cast iron elements of the lower level are gone Missing elements must be replaced, damaged ones repaired, to match the existing parts; topping the whole thing will be the graceful Palladian pediment that has been there since 1880.

Besides Gruen Associates and Baird, other firms involved with the project are Chaix & Johnson, who are doing the interiors for the ZCMI Department Store, and Store, Matakovich & Wolfberg, mechanical engineers. The two-level shopping mall will be sandwiched between levels of parking, ruling out much use of natural light; instead, light will be provided by lighted glass ceilings, railings and soffits.

[continued on page 44]

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News report continued from page 40

Solar climate control—new industry?

The best way to get people to stop talking about solar energy and do something about it is to make it a successful business venture. That, at least, is the reasoning behind a program recently announced by technical and management consultants Arthur D. Little, Inc. Their aim is to find ways to create a market for solar climate control, eventually leading to large-scale use of solar energy for space heating and cooling and water heating for buildings.

ADL sees itself as the catalyst in the process, coordinating the development of technical and economic information and marketing approaches. Support for the project comes from some 20 major companies, each kicking in $15,000. For them, ADL foresees a sizeable industry: new markets for solar climate control systems might well approach $1 billion worth of equipment over the next 10 years, according to ADL. The equipment list would include solar collectors, heat storage systems, sources of auxiliary equipment.

Discussing the program at a recent conference in New York, Dr. Peter E. Glaser, a vice president and head of engineering sciences for ADL, emphasized that the program was not one of pure research, but one to "develop practical applications in heating and cooling . . . solar climate control promises to be technically and economically feasible."

During his presentation, Dr. Glaser outlined the present development of solar climate control and noted that for a number of reasons the time probably had come when there could be action as well as talk. Among the factors he cited: the fact that up to now "we just haven't believed that we are at an end of an era of energy abundance and low power costs"; the rising awareness of life cycle costs, rising fuel costs, public pressure for environmental conservation; and increased government interest in solar energy programs.

That there have been some constraints to the development of solar climate controls and that some clever thinking may yet be needed to overcome them was pointed out by D. Elliot Wilbur, head of ADL's building and construction group. Wilbur noted that one reason solar climate control has gotten no further has been its marginal economy—so far. Now that cooling can be part of the system, he said, the collector is more quickly amortized and the economics get more favorable. A second point, he said, is that so far solar energy has been looked at as a technical problem: "I think we have to make a business, not an R&D exercise." A third point dealt with "the reality of housing and construction," which is money. By depreciating fixed costs of solar heating and cooling equipment over longer periods of time, the fixed costs "per year, per month or for BTU go down very significantly." Wilbur also noted that despite rumors to the contrary the construction industry is maturing, and a more sophisticated industry could be induced to look favorably on solar climate control. His final point was that the solar climate system could not be allowed to predetermine the design of structures: "This product must be designed to fit into the present consumer acceptance pattern."

A final speaker at the New York seminar was Alan Morgan from the Massachusetts Audubon Society, who came to talk not about birds, but about the solar heating and cooling system that is to be part of an addition to their Lincoln, Mass. headquarters. The collector (at 3500 sq ft, it's reasonably large) will face south at an angle of 45 degrees as the shed roof of the addition. Somewhere between 65 and 75 percent of the total seasonal heating load of the building should be provided by solar heat; and a 15-ton lithium bromide water-cooled adsorption machine driven by the solar collector should supply a substantial part of the air-conditioning needs. Cambridge Seven Associates, along with Arthur D. Little have done the initial planning studies.

Washington report

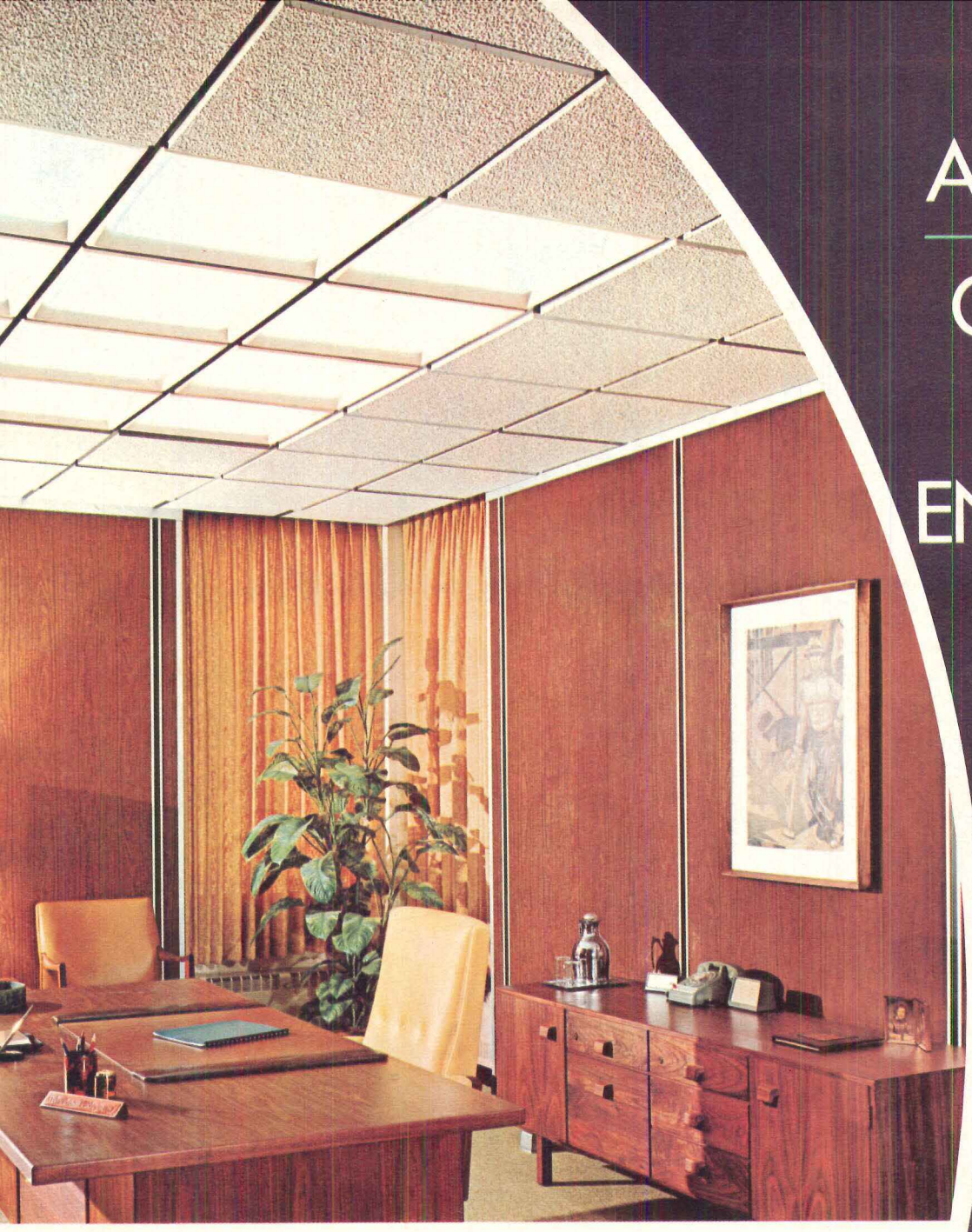
Meanwhile, business as usual

Though obscured by official Washington's preoccupation with political charges and numerous investigations of them, there were important professional developments to be reported from the capital.

One was the endorsement by some 15 major engineering and scientific societies of "Guidelines to Professional Employment," including recommended employment practices in recruitment, terms of employment, professional development, termination and transfer. The product of several years of consultation between the professional societies, the "Guidelines" are unusual in that they spell out employee responsibilities to their employers, as well as employer obligations. They attempt to treat the problem of possible conflict between professional ethics and job requirements in handling of details and information; go into such problems as economic advancement, inclusion in pension programs "providing early vesting rights," and make it clear that the professional employee "shall not be required to accept responsibility for work not done under his supervision." One other emphasis: "It is inappropriate for a professional employee to use a time clock."

The societies hope that their "guidelines," which will be revised from time to time, will be adopted nationwide, to provide generally uniform conditions for their members, regardless of their geographical location. Details of the guidelines can be obtained from any of the societies' headquarters (ASCE, AIChE, ASME, EJC, etc.). Notably, neither Consulting Engineers Council nor AIA are included in the groups that worked out the guidelines. At a press conference to announce them, spokesmen said that "employer groups in general (and they included AIA because they said that more of its members are self employed or members of partnerships than any other of the societies) have been advised but have not been included in the formulation" of the guidelines.

On the same professional level, CEC and the Professional Engineers in Private Practice furiously protested the announced intention of Environmental Protection Agency to permit "turnkey" (EPA likes to call it "design/construct") construction of wastewater treatment plants and facilities. CEC, in fact, threatened to file court action against EPA, if it proceeded to include such permission in its regulations—on grounds that such action ignores the capability of consultants, does not assure the best design or construction, sets up a dangerous precedent that can be extended to procurement of professional services on all types of government-financed construction. [Ed. note: The CEC convention in New Orleans voted unanimously to proceed with legal action.] In fact, CEC [continued on page 48]



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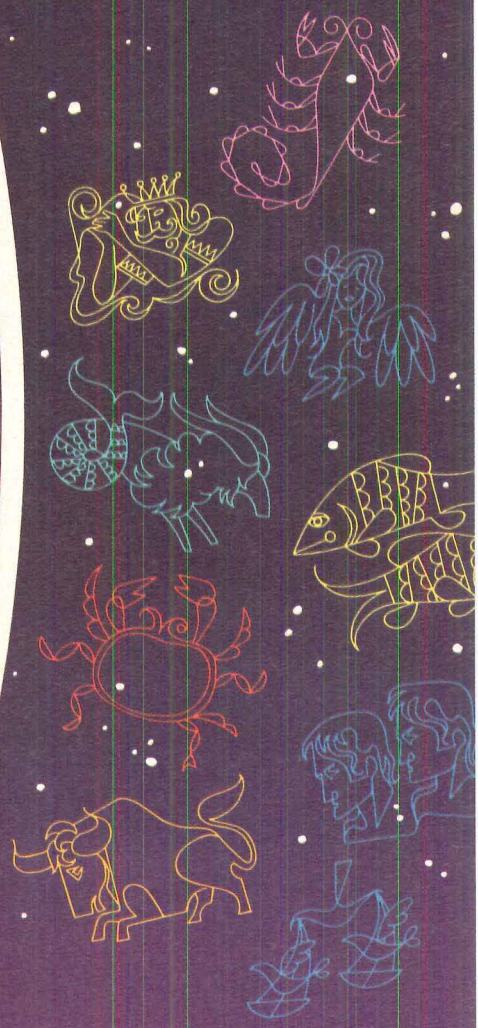

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ve made improvements, Added automatic closers our fire rated access doors. eased the light penetration a of our skylights. Moved springs on our popular 3′ x 2′6″ roof hatch so the opening is completely clear. And according to intelligence dispatches, other new developments are in the works.

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News report continued from page 44

openly accused EPA of "perpetrating a sham" in conducting public hearings on the turnkey proposal two years ago, requesting further written comments—and then paying no attention to the comments made.

Incidentally, there was also the announcement that CEC and the American Institute of Consulting Engineers (AICE) had agreed to the details of a formal merger of the two organizations (to form a new "American Consulting Engineers Council") as of July 1. CEC's current president becomes president of the new group, AICE's president goes on the board of the merged organization. There was some grumbling in CEC; AICE members become "fellows" of the new organization, thus gaining, in the opinion of some in CEC, an "edge" in prestige.

On the ever-controversial question about what to do about the West Front of the U.S. Capitol, there was more argument, this time from a Task Force named by the National Society of Professional Engineers.

The NSPE group discounted the idea that the existing wall could be repaired for the $15 million that Congress had set as limit, on grounds that (1) even if restored, the wall could be expected to continue to settle and crack and would require constant maintenance; (2) they thought it doubtful that any construction firms would bid under the stated conditions; (3) repair wouldn't answer congressional needs for more space. On the other hand, the Task Force didn't think too much of an AIA proposal that added space be provided underground, without disturbing the present building. They argued that no cost, soil or other studies had been made (P/A May 1973, p. 26), and thus there was no real evidence that this would be a proper or cheaper answer.

At an industry level, there were also some activities of major interest to architects. One was a simultaneous (but apparently not coordinated) move by two key contractor organizations to halt the rising trend of labor violence and vandalism on construction jobs—factors that have contributed heavily to rising costs. The Associated Builders and Contractors (an open-shop group) filed suit before the National Labor Relations Board in seven eastern cities, against AFL-CIO Building Trades department union, and the department itself, seeking "cease and desist" orders against coercive, violent actions. And the powerful Associated General Contractors approved a donation of $50,000 toward a fund (added money will come from state and local chapters) from which to pay rewards for information concerning perpetrators or instigators of such actions, and might even fund employment of private investigators to obtain evidence for court actions.

Both organizations cited numerous instances where labor violence, often triggered by inter-union disputes not involving the employer, has resulted in beatings and personal injuries along with vast damage to machinery, equipment and materials on the construction site. Both pointed out that apprehension, prosecution and conviction of perpetrators is extremely rare, despite the losses and delays that are a consequence.

Finally, as June began, there was a threat to a very large part of the plastics industry, particularly as it affects construction: cellular or foamed polyurethane and polystyrene used in the construction and furnishing of buildings. The Federal Trade Commission said it would charge 26 major petrochemical firms and two respected standards-setting groups (the Society of the Plastics Industry and the American Society for Testing and Materials) with failing to disclose serious fire hazards involved in use of such materials, using invalid tests, and failing to take proper precautionary measures. [E.E. Halmos]

Calendar

Through Aug. 19. "Low Rise-High Density Housing," Museum of Modern Art. Exhibit of two projects in New York City designed by the Institute for Architecture and Urban Studies as commissioned by the Urban Development Corporation.

Through Aug. 28. "Streets" exhibition, Museum of Modern Art, New York City.

Through Sept. 10. "The Arts and Crafts Movement in America 1876–1916," Renwick Gallery of the Smithsonian Institution, Washington, D.C.

July 2–6. World Congress of the International Solar Energy Society, UNESCO Headquarters, Paris.

July 8–12. Annual meeting of the American Society of Landscape Architects and the National Council of Instructors in Landscape Architecture, Grand Hotel, Mackinac Island, Mich.

July 21–Aug. 18. Exhibit of the Italian Art and Landscape Foundation Inc., Phoenix Art Museum, Phoenix, Ariz.

July 29–Aug. 2. Fourth annual seminar on noise control engineering at Colby College, Waterville, Me.

Aug. 12–15. Eighth annual conference of the Society for College and University Planning, Toronto.

Aug. 12–Sept. 23. Exhibition of drawings and prints by Ettore Sottsass, Jr. and Superstudio, Walker Art Center, Minneapolis.

Aug. 15–27. Annual meeting and foreign tour of the Society of Architectural Historians, Cambridge University and London.

Aug. 19–24. Forty-third annual meeting of the Institute of Traffic Engineers, Radisson Hotel, Minneapolis.

Aug. 25. Deadline for entries to American Institute of Steel Construction Awards of Excellence, New York City.

Aug. 28–31. Annual conference of the Urban Regional Information Systems Association, Atlantic City, N.J.

Aug. 29–31. "The Design Activity," international conference, Polytechnic of Central London, London, England.

Aug. 31. Deadline for entries to P/A Design Award Program.

Aug. 31. Deadline for entries to Energy Conservation Awards Program sponsored by Owens-Corning Fiberglas Corporation, Toledo, Ohio.

Sept. 1. Deadline for abstracts of papers for the third international symposium on lower-cost housing problems, Montreal.

Sept. 4–14. Ninth triennial meeting of the International Organization for Standardization, Sheraton-Park Hotel, Washington, D.C.

Sept. 8–11. Annual convention and exhibit of National Office Products Association, Conrad Hilton Hotel and McCormick Place, Chicago.

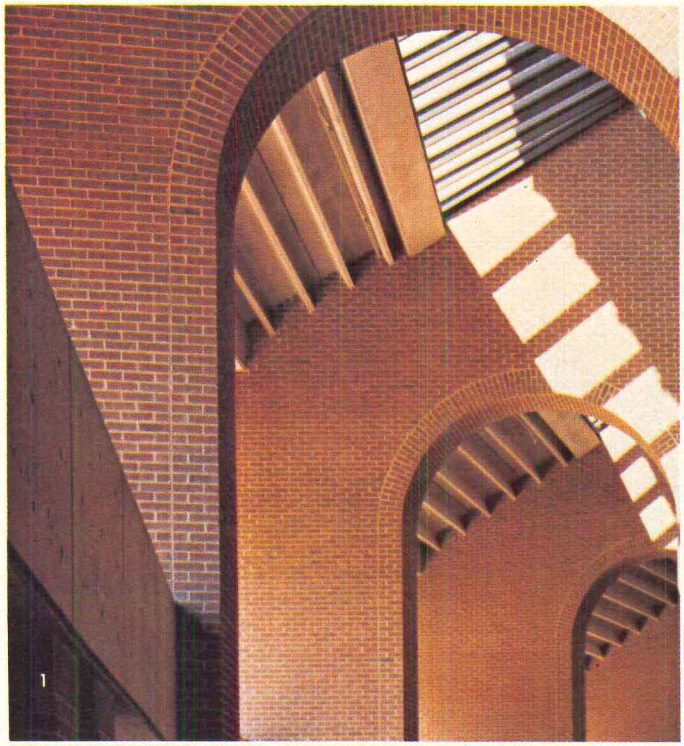
Sept. 9–12. Conference on legal aspects of zoning sponsored by the Pennsylvania State University College of Arts and Architecture, University Park.

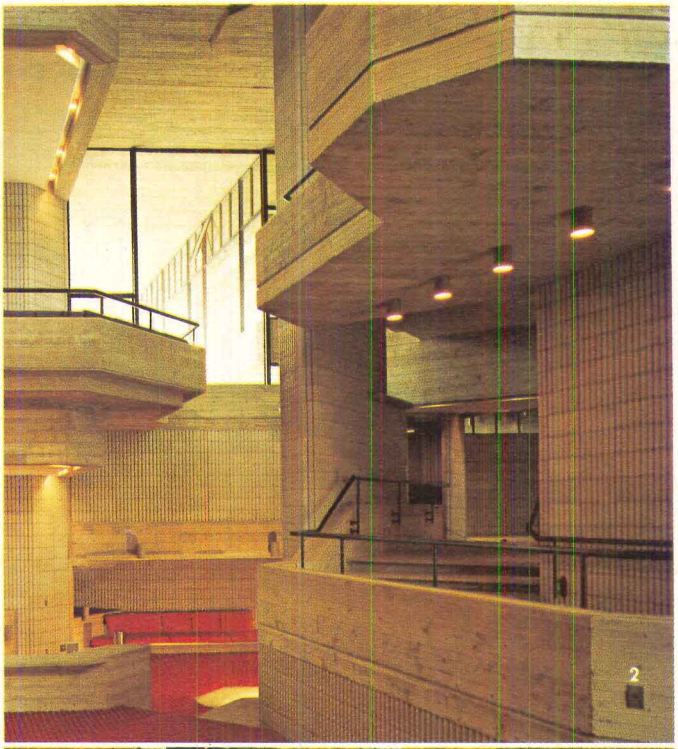
Sept. 9–13. Fourth annual apartment conference of the National Association of Home Builders, Regency Hyatt House, Atlanta.

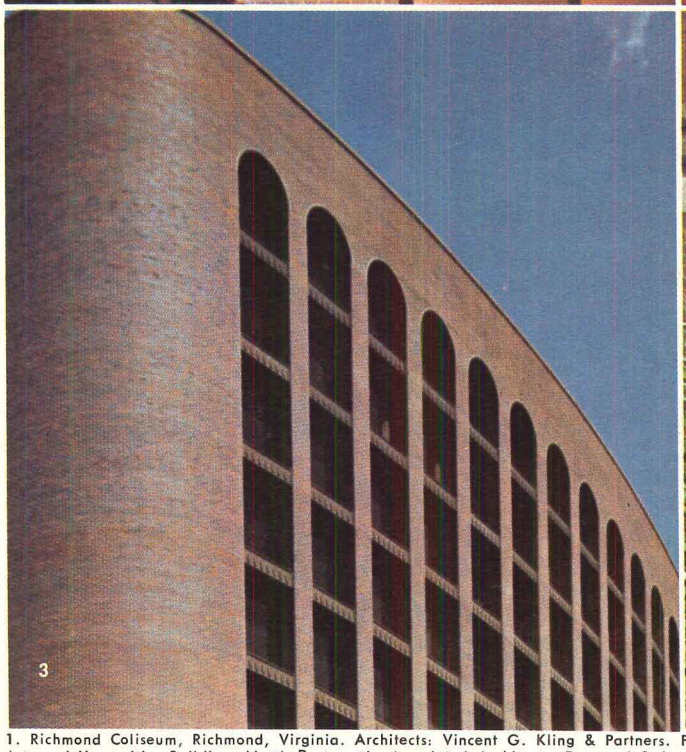
Sept. 15–20. International Public Works Congress and Equipment Show, Currigan Hall, Denver.

Sept 18–21. Third conference on psychology and the built environment, University of Surrey, Guildford, Surrey, England.

Sept. 19–21. Fall meeting of the Electrical Generating Systems Marketing Association, "Our Power Future," Mayflower Hotel, Washington, D.C.







1. Richmond Coliseum, Richmond, Virginia. Architects: Vincent G. Kling & Partners. Photo courtesy Brick Institute of America. 2. Southeastern Massachusetts University, Arts and Humanities Building, North Dartmouth. Associated Architects: Desmond & Lord, Inc., and Paul Rudolph, FAIA. Interior Consultant: Bill Bagnall Associates, Inc. 3. Public Service Alliance of Canada Building, Ottawa. Architects: Schoeler Heaton Harvor Menendez Associated Architects. Photo courtesy Brick Institute of America. 4. Executive Headquarters and Nassau Center Office. Hempstead Bank, Garden City, Long Island. Architects: Bentel & Bentel, AIA.

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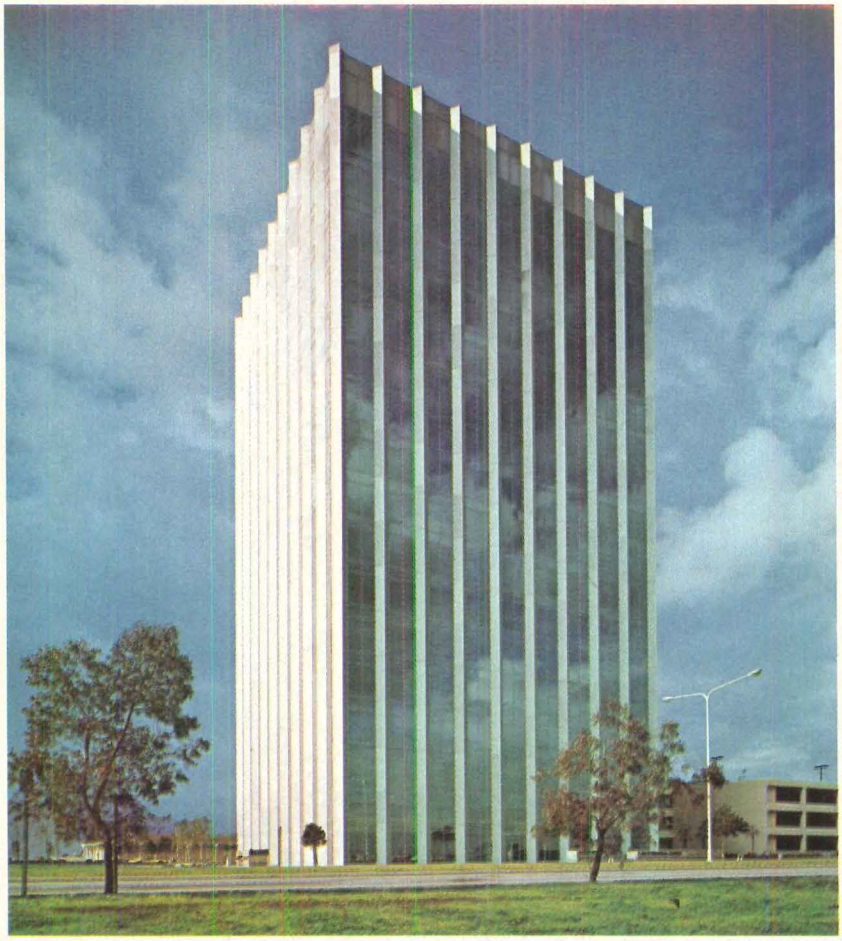

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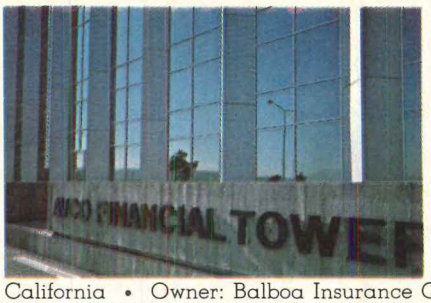

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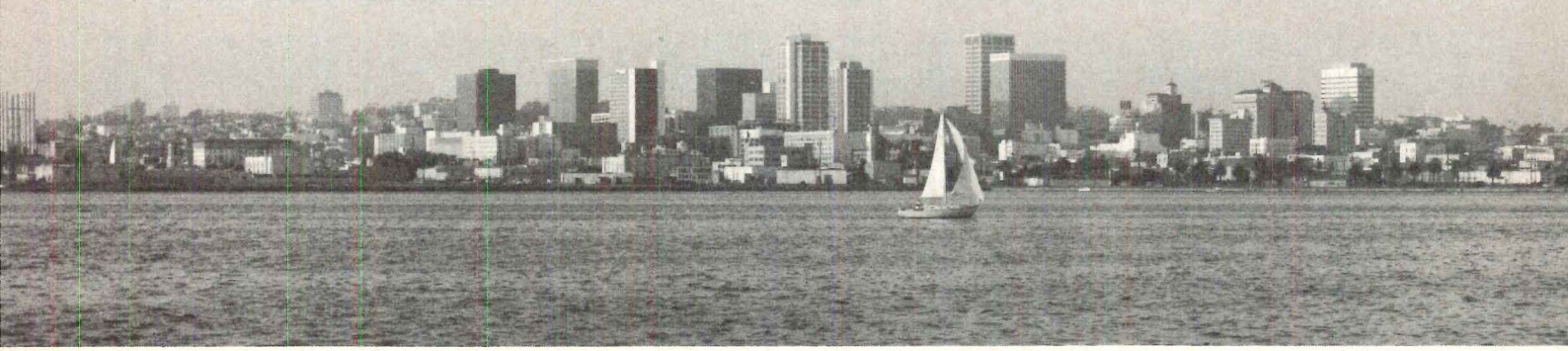
LOF

Architecture west



Mar

San Diego's downtown core had only a faint pulse in 1949. Decentralization, parking difficulties, poor transportation and increased building costs had debilitated it, and the end of the single tax method of assessing downtown property precluded a transfusion from speculative building. The most recent skyscraper at the time was the 14-story San Diego Trust and Savings building on Broadway, built in 1928. There was surplus office space in 1949, so no radical treatment was prescribed. The buildings along Broadway, the spine of the commercial core, were refurbished, but beyond this the patient got only bed rest.

"Historically," says Robert Moser of Moser Drew Watson Associates, "we have always been a Garden of Eden that no one came to. We didn't do much so we didn't make many mistakes. But the need was there."

During the 1950s the city core grew horizontally rather than vertically, but by the end of the decade there were three tall buildings on the boards. The land being acquired for new towers was pushing the center to the north of Broadway and to the south into residential districts, dooming the Gothic and Italianate wood mansions. But the first of the tall buildings, the 20-story Home Savings Tower at 7th and Broadway, was still on the right side of the tracks in 1962. The architect was Frank L. Hope & Associates.

Between 1962 and 1972 the core exploded. From Coronado across the bay you have a view of nine towers concentrated in a six by seven block area. Still the best of the buildings is the 1966 First National Bank designed by Tucker, Sadler & Bennett, a 25-story slender tower with a precast concrete exterior wall system. The latest building to appear in what has now become the new financial district is the work of the same firm, the 18-story Security Pacific National Bank. Triangular columns faced with panels of brown aggregate project beyond bronze solar glass.

The structure completes the final quarter of the Community Concourse two-square superblock. Arranged artlessly around the concourse are the Civic Theater, convention center, City Administration Building and a fine 11-level parking structure, also by Tucker, Sadler & Bennett. The closing of a street and the addition of a raised plaza around the new bank define the space and make it work. But the concourse isn't much fun: a fountain but no place to sit except on the steps; foundation planting but no trees. A disappointment to Hal Sadler who says, "One of the prides of being an architect is to walk through one of the spaces you have created and see people enjoying it."

A block away is the old center of the city, Horton's Plaza, which swarms with life day and evening. The lack of seats along the concourse is generally attributed to the fear of attracting literers from the plaza, which has about it the sense of the *zocalo* of a Mexican city. Irving Gill, in a rare classical mood, designed a fountain for the plaza based on the Choragic Monument to Lysicrates, very pretty among the palm trees.

Now San Diego has a secondary chance. The redevelopment of a 13-block area including Horton's Plaza is in the planning stage. The architects who are critical of the concourse had been reminded that when the "train left the station they weren't on it," so for the replanning of the old plaza they are waiting at the depot.

A design board was set up and consultants sought—San Franciscans Gerald McCue, Charles Bassett, Peter Walker and Rai Okamoto. James Amos of the planning firm of ROMA is heading the team doing the master plan of the 13-block area.

The anchor at the south edge is the new federal courthouse, by Frank L. Hope and Richard E. Wheeler, now under construction. The north anchor will be Moser Drew Watson Associates' 18-story Central Federal Building.

Moser says that, in following the criteria set up by the design board, only 49 percent of the land will be covered. The ground level is available to pedestrians, and under and around the structure will be tables, vending machines, benches and alcove seating which are bound to attract the Horton's Plaza regulars. Moses hopes they'll like it.

San Diego is lucky in having what Hal Sadler calls "a gutty new mayor," Peter Wilson, whose strong stand for controlled growth sprang from San Diego's bitter experience in housing projects unrelated to schools and parks. "What he's doing will begin to show very soon in the quality of the environment," Sadler says.

Little history remains in the downtown core. The existing adobes are all in Old Town, the first city center. There is a Gill church and his plaza fountain; a Spanish Colonial revival Santa Fe Railway station is on the list to be preserved. The most haunting building is the 1913 U.S. Custom and Court House which has a classical revival colonnade flanked by Spanish Colonial towers. Recently it was documented for the General Services Administration Public Buildings Service with a thought of transferring it to a local public body. Although the plan has been butchered, the Spanish Colonial volumes are a splendid foil for the new towers. [Esther McCoy]

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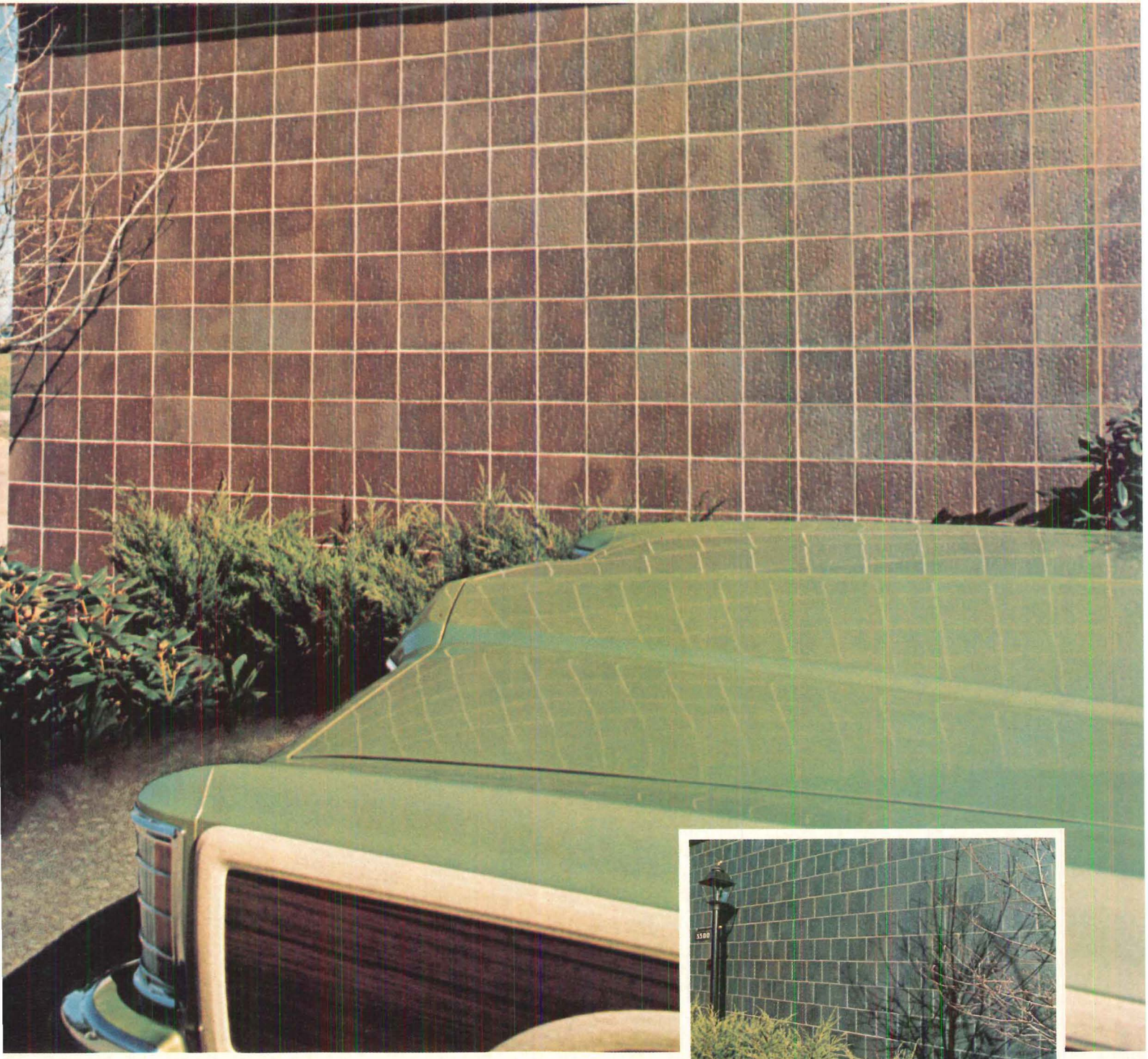

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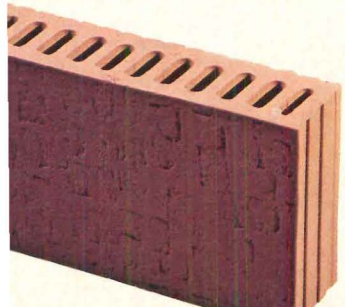
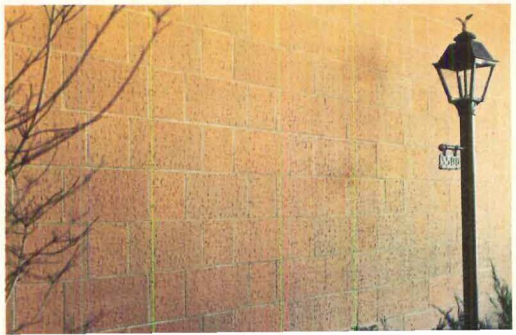
Above: Mica Black 8" x 16" Scored Units, Running Bond

Below: Natural Tan 8" x 16" and 8" x 8" Units, Flemish Bond





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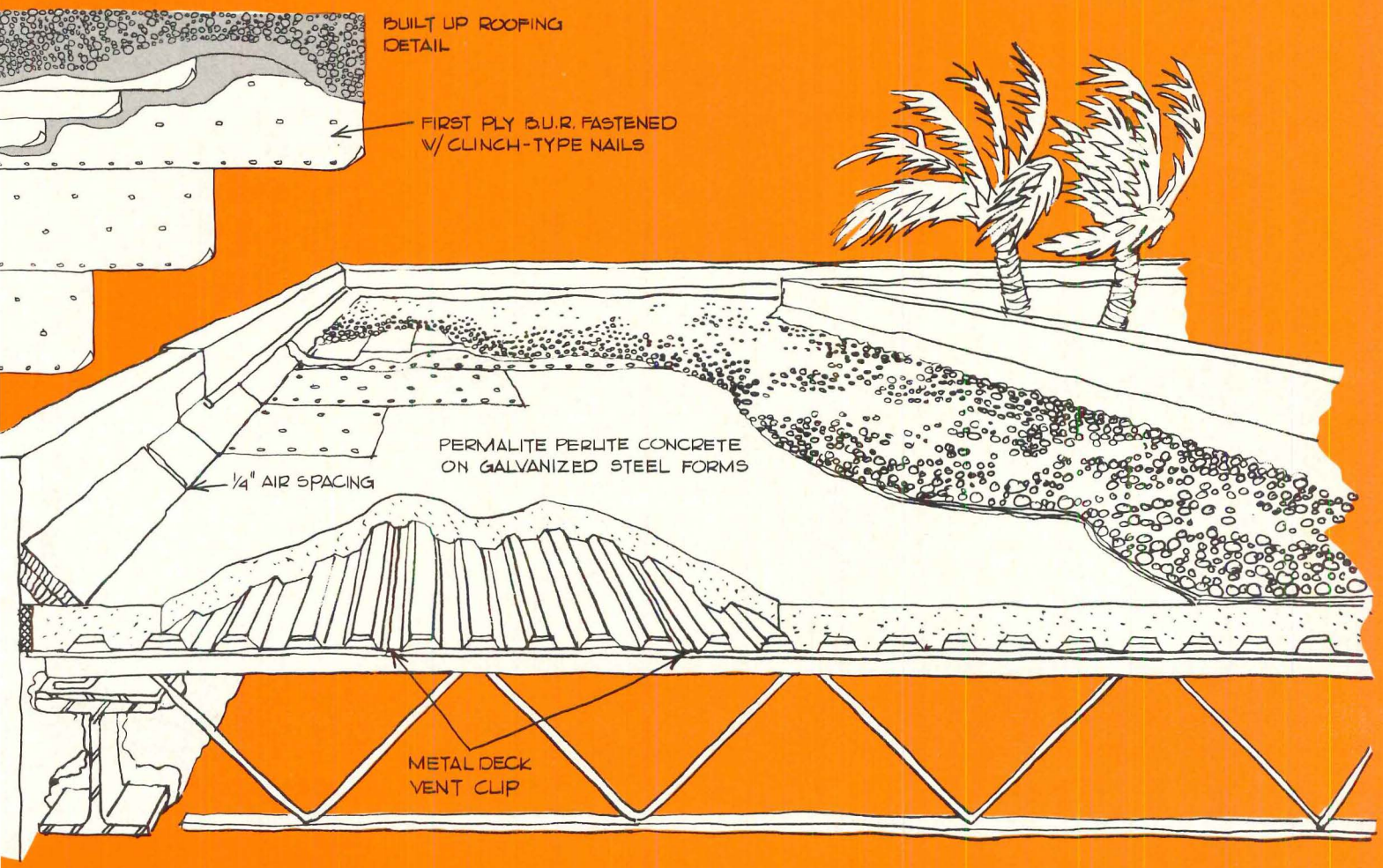

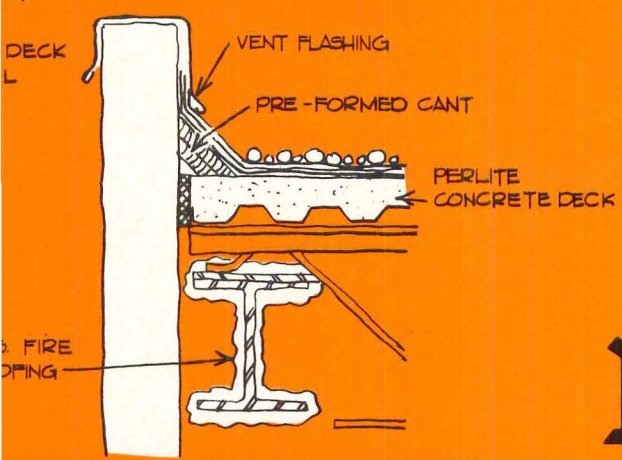

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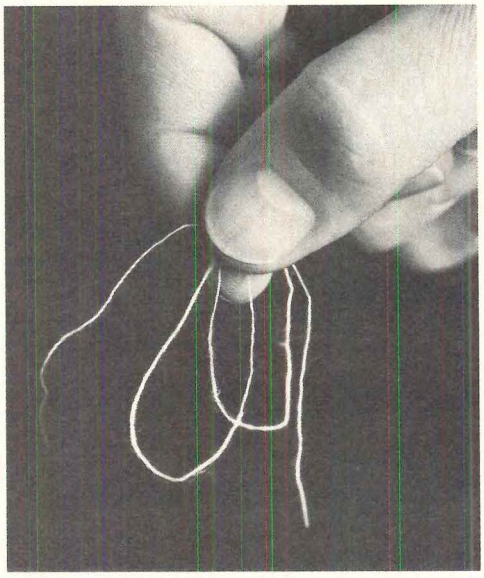

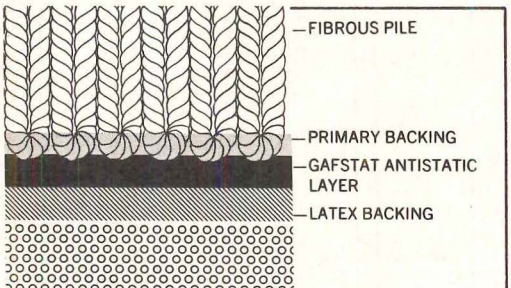

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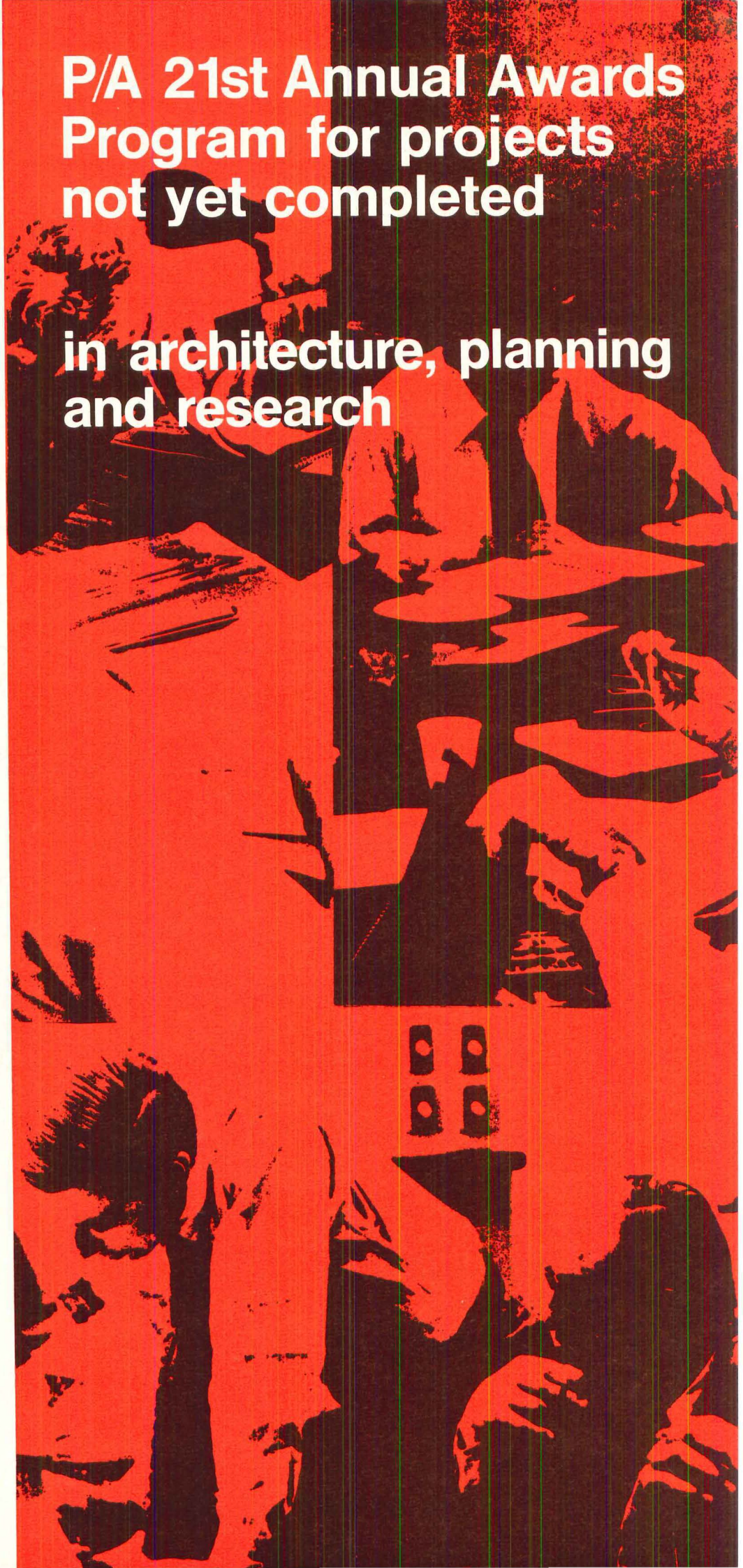
P/A 21st Annual Awards Program for projects not yet completed

in architecture, planning and research



Progressive Architecture announces its Twenty-first Annual Awards Program. Awards will be made to U.S. and Canadian architects, designers, urban planners, other professionals and their clients for projects now in the design stage and scheduled to be under construction in 1974. Any building, group of buildings or urban planning project illustrating definite building proposals will be eligible. *In addition* entries in *applied research for a client* will be accepted from architects or others *if they are applicable to the design or realization of specific facilities or programs and are scheduled to be acted upon within the calendar year 1974.* Qualification of entries in any category depends on the fact that the work is commissioned by a specific client.

Purpose of the Awards Program is to recognize, at the critical early stages, outstanding examples of work being done in the fields that most directly affect the built environment. Recognition will be given to both the entrants and their clients.

First award, award and citation designations may be given by the jury in any or all of the three broad categories: research; urban design and planning; architectural design. Entries will be reviewed for such factors as response to a client's program, site use and development, design excellence, conceptual advances, materials selection and methods of implementation.

The jury: for the Twenty-first Awards Program, P/A has invited the following respected jury members: **Denise Scott Brown,** Partner, Venturi & Rauch, Philadelphia; **John P. Eberhard,** AIA, President, AIA Research Corporation, Washington, D.C.; **Joseph Esherick,** FAIA, President, Esherick Homsey Dodge & Davis, San Francisco; **Herb Greene,** Architect, Professor, College of Architecture, University of Kentucky, Lexington; **Paul Kennon,** AIA, Director of Design and Senior Vice President, Caudill Rowlett Scott, Los Angeles; **Barton Myers,** MRAIC, Partner, Diamond & Myers Architects and Planners, Toronto; **Jaquelin T. Robertson,** AIA, Commissioner, New York City Planning Commission, New York; **John Zeisel,** Assistant Professor in the Sociology of Design, Department of Architecture, Harvard University, Cambridge, Mass.

Judging will take place in Stamford, Conn., during September 1973. Winners of awards and citations will be notified immediately (confidentially) after the judgment.

Public announcement of the winning projects will be made at a presentation in January 1974 at a location to be selected. Winning projects will be featured in the January P/A. As in the past, P/A will arrange coverage of winning entries in news media, particularly in those localities of the award and citation winners. Winners must agree to provide illustrations reproducible in the press.

Submission requirements

1. All submissions *must be firmly bound.* Original drawings, actual models, or mounted

Entry form

Progressive Architecture 21st Annual Awards Program

(Typewriter only, please)

Please fill out *all* parts of this form and submit with your entry. A copy of this complete form may be used when submitting multiple entries.

Entrant:
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exhibit panels will not be accepted, anc material is to exceed 11″x17″ in size. E project is to be submitted under separa cover; 8″x10″ binders are preferred.

2. Submissions must be accompanied *entry form,* to be found on the *left side o. this page.* Each entry must have a sepa form; reproductions of the form will be accepted. Please fill in (typewriter only, please) *all* appropriate spaces on the fc noting that four parts are required for each entry.

3. No identification of the entrant may a on any part of the submission, except concealed in an envelope attached insi back cover of binder; entries will be kep anonymous until judging is completed.

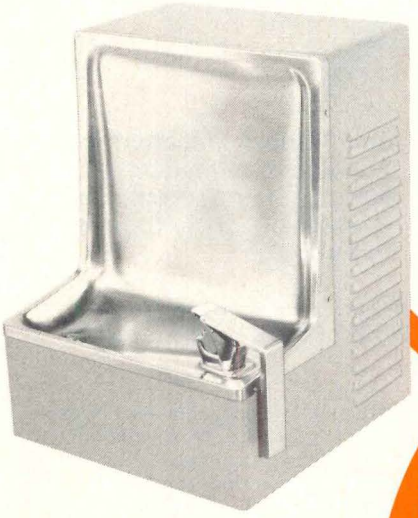
4. In addition to the form, please includ following: a brief statement of the progr your solution, description of and reasor your selection of materials and construc methods, site considerations or other influences on the final proposal (for pla and research submissions, it is importa summarize, in one page, the intent and e of the work); a statement that the projec not yet completed, and that constructior scheduled to begin before the end of 19 (or, in planning and research submissio that the proposals or studies are to be a upon in 1974); a statement that submiss of a proposal gives P/A first rights to pu both the design and the finished project wins an award or citation (in the case o research studies, first rights to publicati the results) in the architectural press.

5. Graphic submissions should also inc pertinent drawings such as site plans, representative floor plans, sections, det perspectives and/or model photos.

6. For purposes of jury procedure only, projects are to be classified *by the entra* in the appropriate space on the entry fo Awards and citations will not be given b categories, but submissions must be di into comparable groups for judging. Fo reason, you are asked to list your subm as one of the following: *Education (Hig Education (Secondary), Education (Prir or Early Childhood), Housing (Single Fa Housing (Multiple Unit), Commercial (La Scale), Commercial (Small Scale), Indu Religious, Recreation, Health Care, Plar and/or Urban Design, Applied Researc* If no category is listed for your submiss please write in MISC., and it will be plac with comparable entries. Mixed-use ent (part commercial and part housing, for instance) should be classified accordin the larger function.

7. Any entry not conforming to the abo requirements may be returned to the en without being judged.

P/A will guard and return all submitte material. Deadline for mailing is Augu 1973. Address entries to Awards Editor **Progressive Architecture**
600 Summer Street, Stamford, Conn. 06



Model HWC-6

Easily installed, mounts at a drinking height comfortable for wheelchair users. Compact unit with special easy-to-operate lever-action bubbler valve for convenient use by all people. Valve positioned to the front of the stainless steel receptor operates from either top or side.

Model HWC-6GF – Same as above, except glassfiller faucet in place of bubbler.

Model 1118

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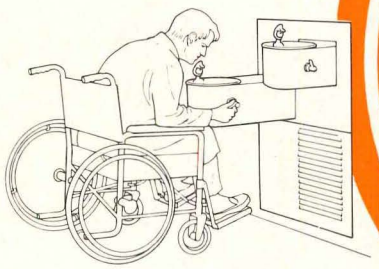

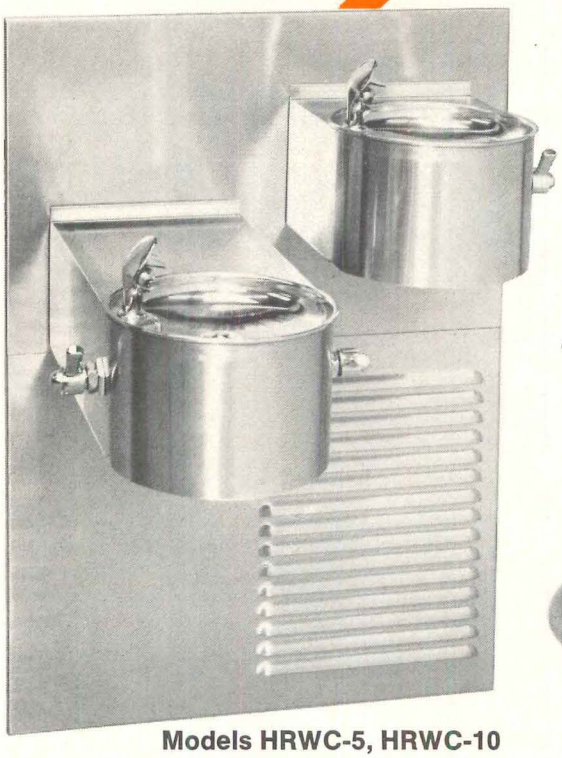

Models HRWC-5, HRWC-10

Same as Model 1108 but with an electric water chiller. Fountain, backplate and grille are stainless steel. HRWC-5 rated for 68 persons an hour, HRWC-10 for 124 persons.

Model 1108

Dual stainless steel. fountain. Lower fountain features extended receptor with handles on both sides for either-hand operation. Other fountain is installed at standard height.

Model 1116

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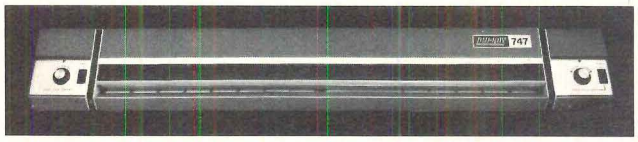

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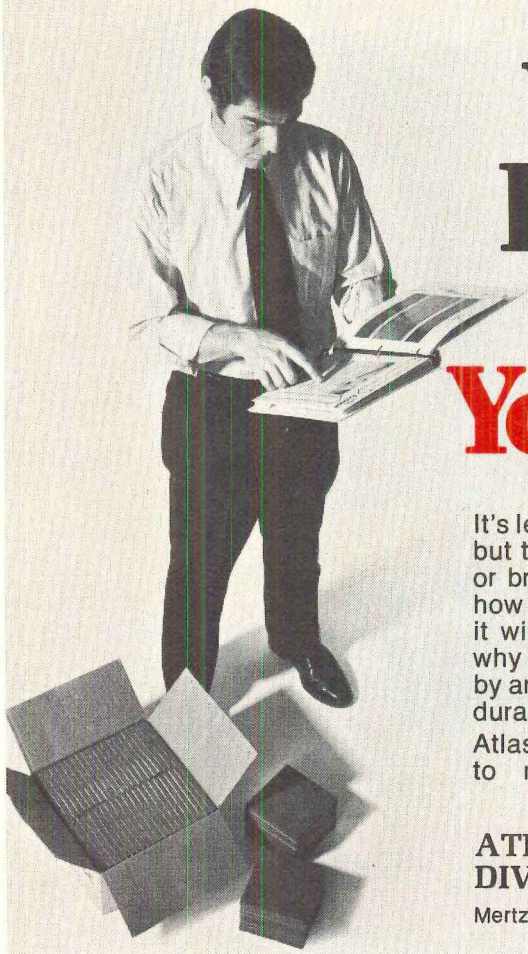

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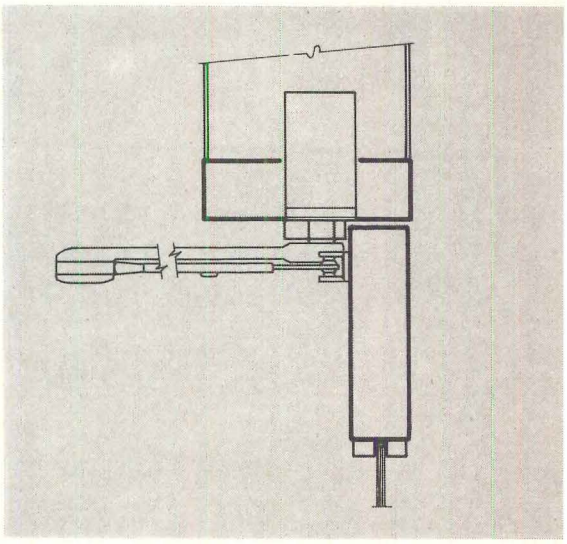

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The 21st P/A Awards Program

July 1973

Every program worth its salt must be re-evaluated from time to time, and maybe changed to better suit its stated purposes. The history of the P/A Design Awards program contains a number of changes, as last month's issue pointed out, because definitions of "architecture," "planning" and even "design" have broadened. Some have called into question the very use of such terms, given the ambiguity of their meaning in new contexts. Recognition of constructive change is fundamental to the design professions and that recognition has often come from P/A juries over the past 20 years.

It is not surprising, then, to see yet another change in our program—the inclusion of applied research in the competition. It is important to realize, as the juries have in the past, that buildings and physical objects are *not* always the answer to a programatic need. There has been an increasing emphasis on problem definition in the past few years, as it has become evident that so-called "intuitive" design sometimes falls short in understanding just what is required. This year, therefore, P/A is inviting research projects that establish design programs, procedures, criteria or prototypes for other professionals to follow—"applied" research projects in that they must, like all P/A submissions, have been commissioned by actual clients in connection with specific building efforts.

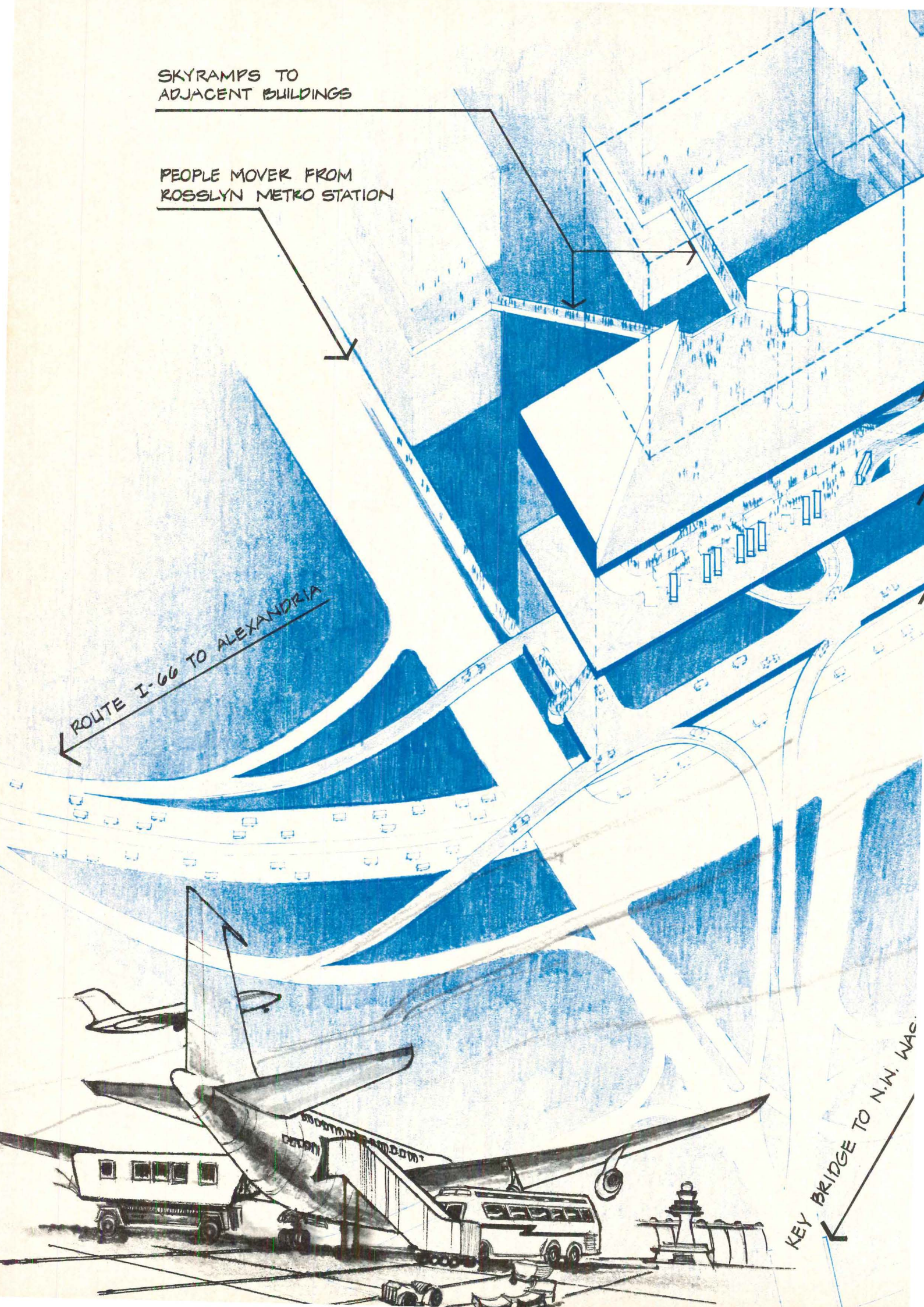
Research, like "systems," has entered the scene as a tool unfamiliar to many of our professionals. As such, it may provoke defensive put-downs in the name of professional pride. The fact is that properly conceived research can be an invaluable aid to responsible and responsive solutions. It is time to recognize that atelier methods will work only after we have every shred of understanding available to us for solving a given problem. Welcome the researchers, in whatever state of infancy. At the very least they can give us more intensive knowledge in areas of concern that have been glossed over for too long. Their maximum impact can't even be guessed at, and won't be felt until the early efforts mature.

It is exactly that aspect—early recognition of creative effort—that P/A has been supporting through our awards program. In order to better reflect the expanding scope of work of the professions involved, structural changes in juries have been needed. When planning and urban design entries got too heavy for traditional jury processes in 1970, another specialized jury was empaneled. That step set the pattern for similar juries in 1971 and 1972. Another restructuring comes with the addition of research this year. But instead of merely working in three parallel teams, this year's jury will regroup to work as one unit in selecting the winners. After initial screening by those best qualified to consider the three types of submissions, entries chosen as candidates for awards or citations will be brought before the entire jury for final deliberation and selection. To review the research submissions, we have invited John Eberhard and John Zeisel; for planning and urban design, Denise Scott Brown and Jaquelin Robertson. Architectural design entries—by far the greatest in number—will be evaluated in the first round by four architects: Joseph Esherick, Paul Kennon, Herb Greene and Barton Myers. All of these people were chosen with confidence that each one will bring valuable insights to the consideration of all types of entries. (For fuller identification of jurors, see announcement on page 59.)

Once P/A has assembled jurors with credentials equal to their task, they are on their own. Aside from handling the mechanics of submissions and judging, P/A's job is to stay out of the jury's way until decisions have been reached. Up to now, those selections have been a barometer of professional concerns to a degree that is nothing short of startling.

Only through constant awareness can any program, or indeed, any profession, grow. The main purpose of the P/A awards program is the encouragement of ideas at the critical early stages—ideas that can teach and generate thought. One side effect of teaching *may* be copying, and evidence of that can always be seen to follow awarded projects. If that is an evil, as some suggest, it's a pretty benign one. Even if imitation reduces a smashing concept to a less stirring level, the second generation stands a chance of being better than it might otherwise have been.

These are some of the reasons we believe in our program and thank you warmly for its support. It will continue to change as the need arises. It will, no doubt, continue to include both controversial departures and "acceptable" design standards. Our professions, like all of society, are changing through exposure to new solutions. Our experiences should tell us that, historically, that's the way it's always been. [JM]


SKYRAMPS TO
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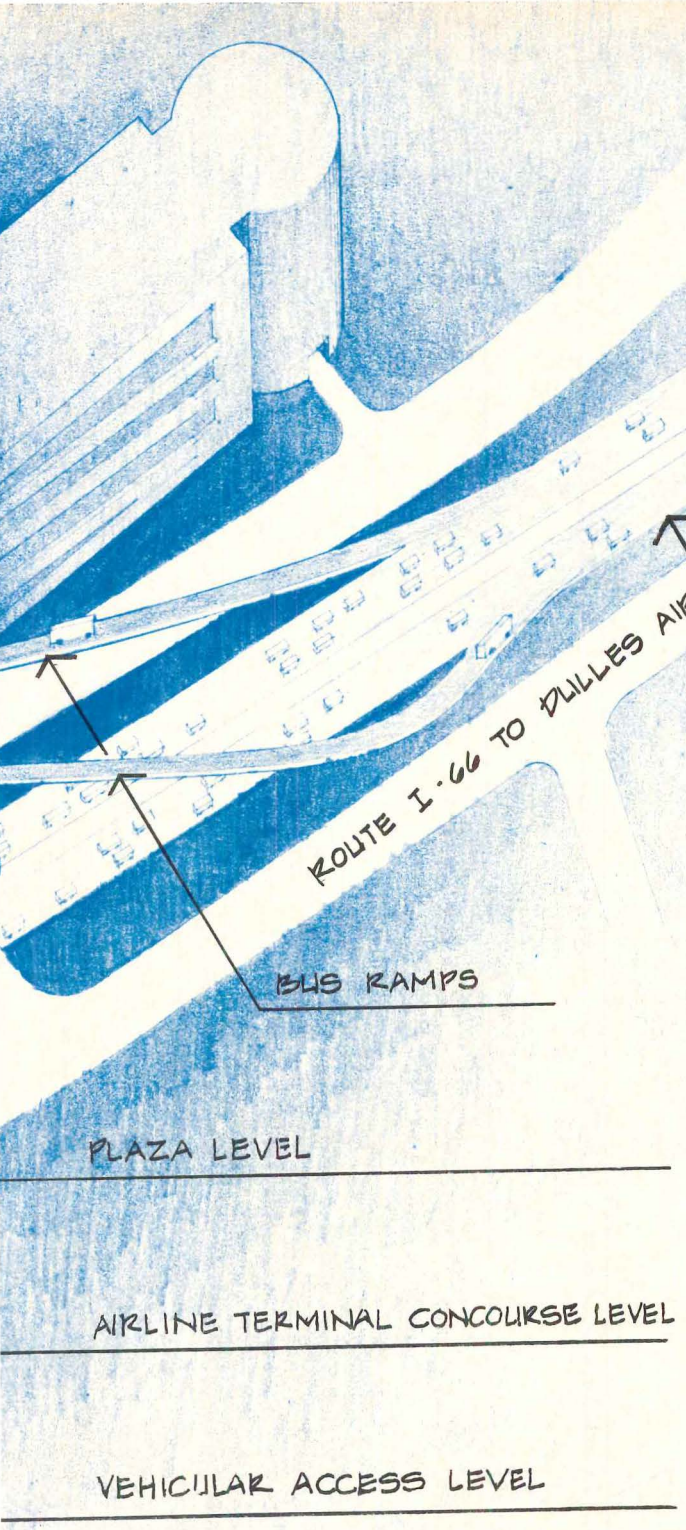


·oposal to phase out Washington's National Airport by providing ground ansportation terminal in Rosslyn, Va., with bus routes direct to flights Dulles Airport. Although the scheme was enough to stop a major job of modeling scheduled for National, the middle-of-town airport is still ıusing noise, pollution and safety hazards to the area. Major pressures r the retention of National include those from Congressmen and Senators ıo would balk at losing in-town airport convenience for their trips home.

Profile: Arthur Cotton Moore & Associates

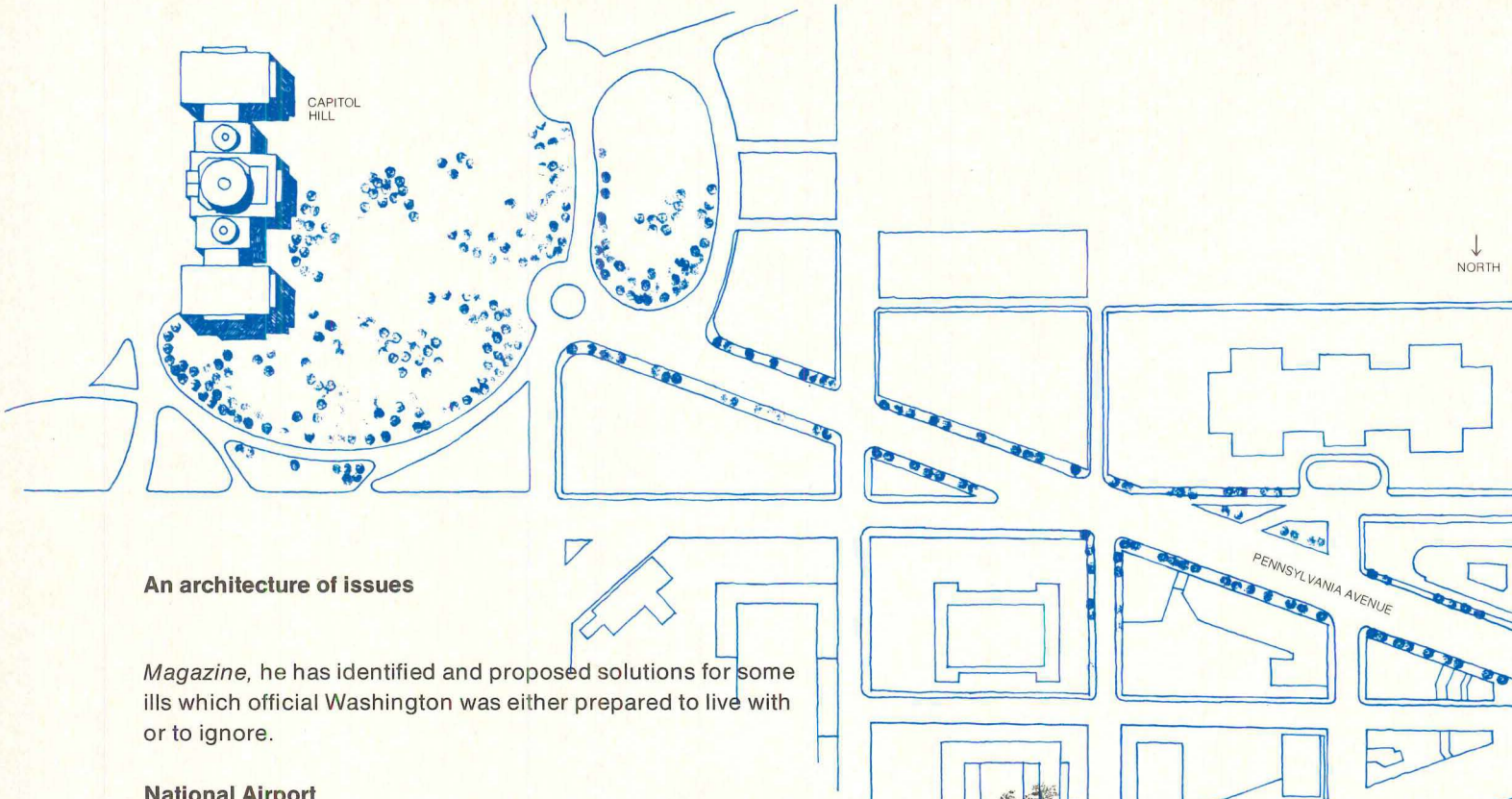
An architecture of issues

By learning what forces control the destiny of their projects, this Washington firm has gained a very useful tool as well as an improved chance at artistic freedom

Despite a growing reputation as savior and defender of nearly lost opportunities and enlightened causes, Arthur Cotton Moore & Associates' front door doesn't really lead to an ivory tower. Moore, instead, is a realist. Especially in Washington, he feels, "you've got to know the territory." The territory is, in effect, administered by a maze of governing bodies ranging from Congress, the General Services Administration, the Department of the Interior and HUD down through local fine arts commissions, resident groups and business coalitions.

All or some of the above would be enough to make most people consider a practice in Iowa or Montana. Even though Moore grew up in the Washington area, he feels that "growing up here is to ignore the power that exists around you. You get the feeling that it's over there somewhere, and you're separate from it." That part of Moore's education began in 1965, when he opened his office in Georgetown. It has been "tremendously" costly in terms of time, but he has learned his way around. By no means is he just a Washington architect, though, having done work across the country and in the Bahamas. His work at Georgetown's Canal Square (P/A, April 1971), however, is a good example of how he has put his design skills together with business and development acumen.

One dimension of his practice—the *pro bono publico* work—is allied with his abilities in searching out how to make things happen. "Other architects could do this as well," Moore says: "see a potential problem or a fundamental issue or malaise in a city. Whether it's a transportation problem or another kind of need, an area which is in dire straits and going downhill, an architect can do more than identify a problem. A lot of people can do that. They scream and holler and carry placards. But the government is used to that—the negative is easy to come by. What the architect can do is to prepare the positive alternatives to the problem first. Government isn't used to seeing something that may, in fact, be a decent solution, resolving a difficulty in a way that doesn't sabotage people who live in the area." Washington at least has been aroused by, if it has not yet benefited from, a number of Moore's proposals. Writing articles for *The Washingtonian*



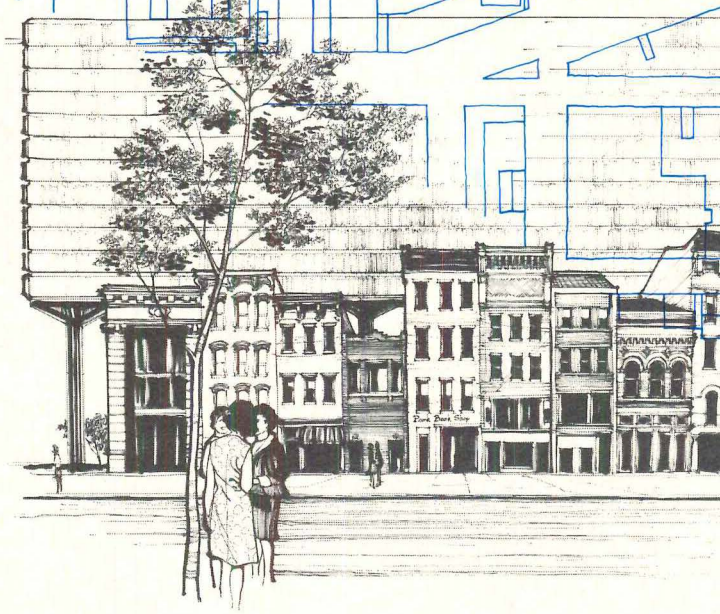
An architecture of issues

Magazine, he has identified and proposed solutions for some ills which official Washington was either prepared to live with or to ignore.

National Airport

For years, Washington's National Airport and Dulles Airport have suffered different crises. Dulles is "inconvenient" to reach and underused, while National, though handy, is overcrowded, undersized, antiquated and dangerous from safety, noise and pollution standards. In the fall of 1966, Moore heard a rumor that the FAA was going to spend $200 million (more than it cost to build Dulles) to modernize National. After investigations proved the rumor true, a counterproposal was made, along with his December blast in *The Washingtonian.*

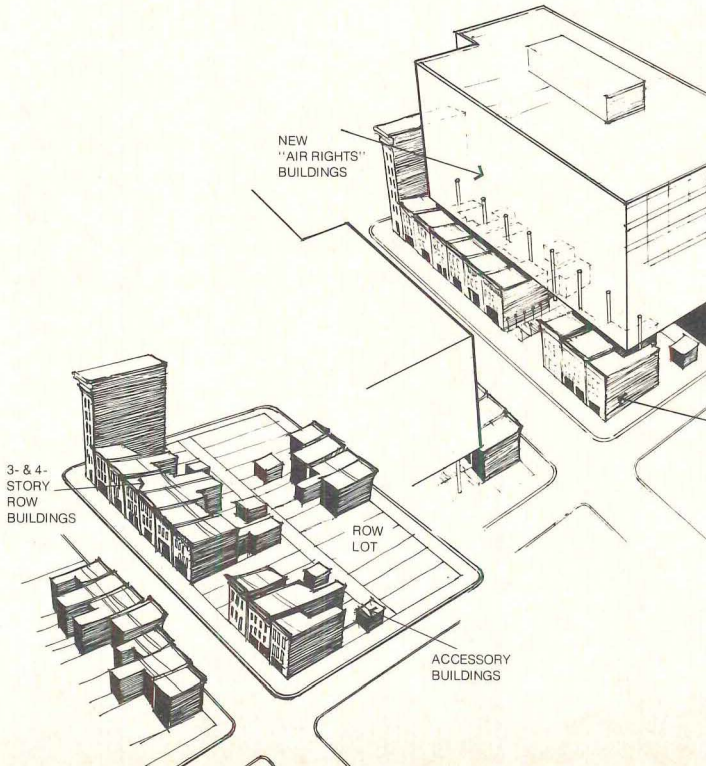
Borrowing from Saarinen's mobile lounge concept for Dulles, Moore suggested an in-town terminal, served by buslike vehicles which would connect directly with flights, not terminals, at Dulles. Other faster alternatives such as fast rail transportation were also proposed. The expensive boondoggle was stopped, but National still lives as a monument to status quo blindness and Dulles starves. That is not a victory, Moore feels; a continuing wrong is not a viable alternative. Some flights have been shifted to Dulles, but airlines are not anxious to get into the point-to-point transportation business, and congressmen and senators won't hear of alterations to flight schedules on their routes home. That's Washington.

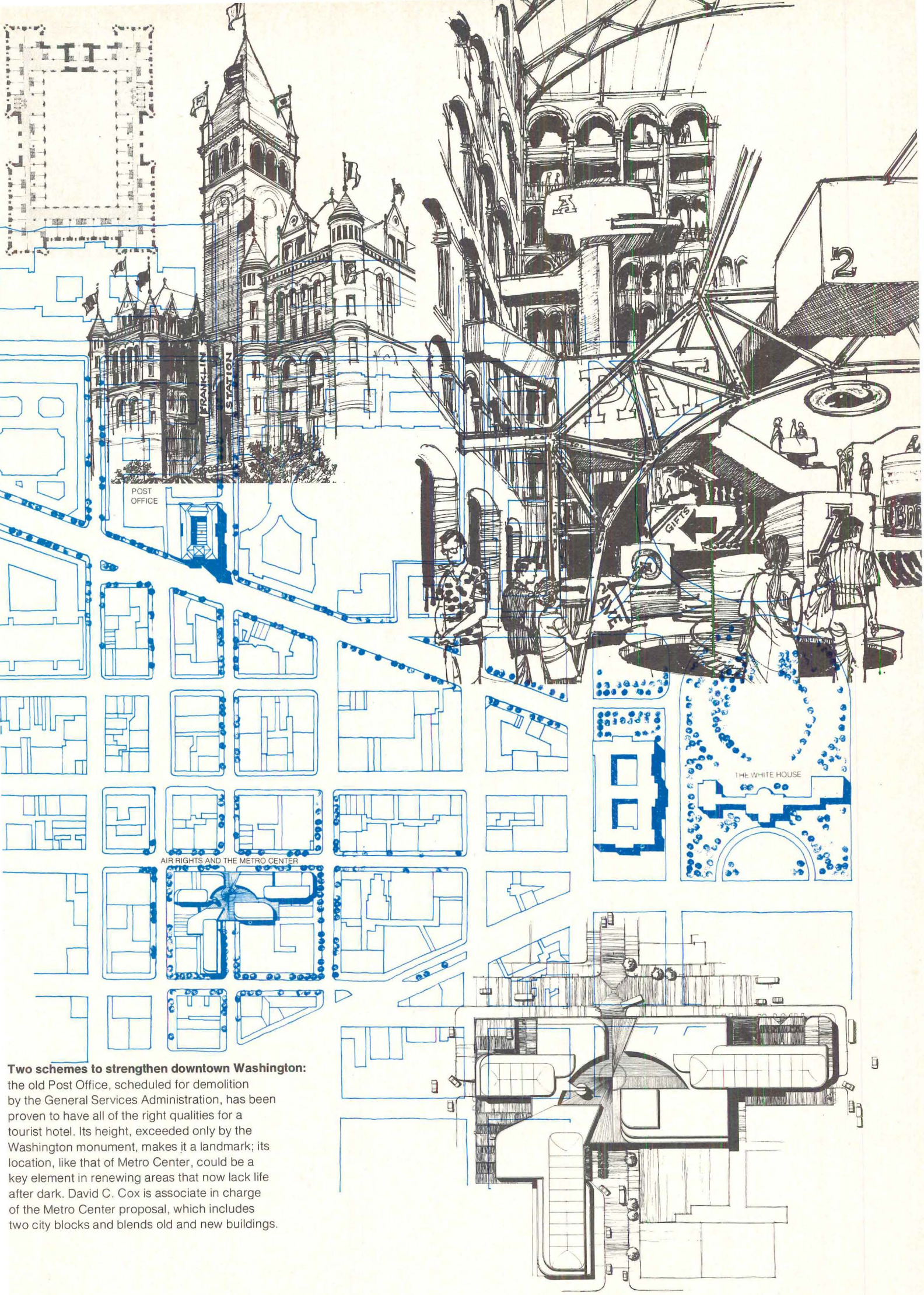


Downtown revival and permissive discontinuity

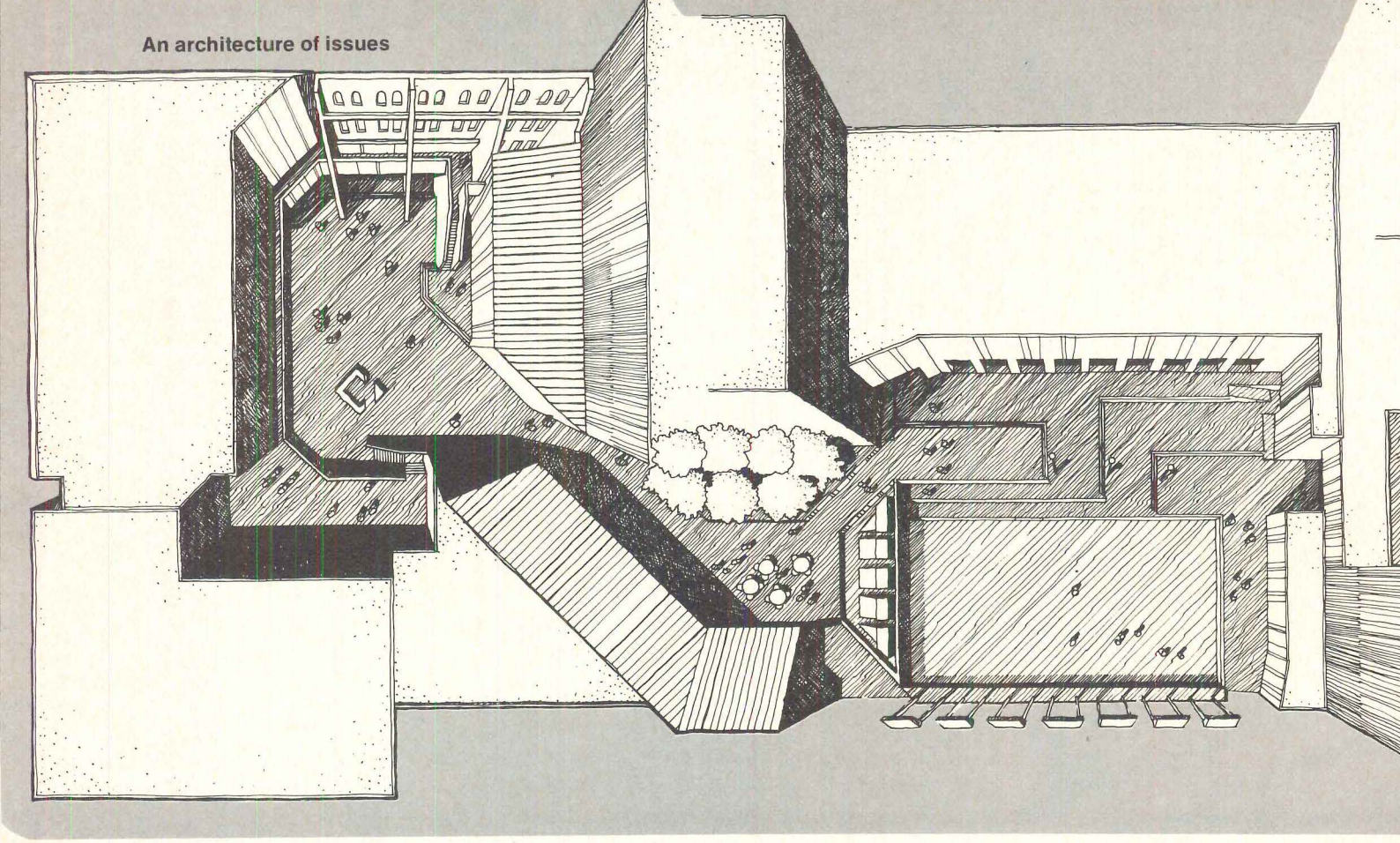
Yet another D.C. malaise: downtown Washington is dying. Three proposals, two physical and one a broader-based concept, have come from Arthur Cotton Moore & Associates. Recognizing that the middle class flight to the suburbs has afflicted Washington in unique ways, Moore also notes another paradox. There is The Mall, with its millions of visitors, and downtown, separated from the tourists by the government "wall," the bleak, cheerless blob of official buildings that line the blocks north of The Mall. At 5 p.m., when official Washington goes home to Maryland or Virginia, the wall loses all life and downtown is left knocking at the back door.

In the middle of the wall is the old Post Office, once doomed by the GSA to the wrecker's ball. That was pre-Moore. The old building is considered aggressively ugly by some, as opposed to the "beauty" of the heavy federal archi-





Two schemes to strengthen downtown Washington: the old Post Office, scheduled for demolition by the General Services Administration, has been proven to have all of the right qualities for a tourist hotel. Its height, exceeded only by the Washington monument, makes it a landmark; its location, like that of Metro Center, could be a key element in renewing areas that now lack life after dark. David C. Cox is associate in charge of the Metro Center proposal, which includes two city blocks and blends old and new buildings.



tecture accepted as government issue elsewhere. GSA had painted the skylight glazing over its full-height central space black and the square doughnut building was declared unusable. In Europe, Moore noted, tourists are not chased from empty city streets to suburban motels. If the Post Office were retained by giving it a new private economic use as as inexpensive tourist hotel, maybe not everyone would leave Washington at night.

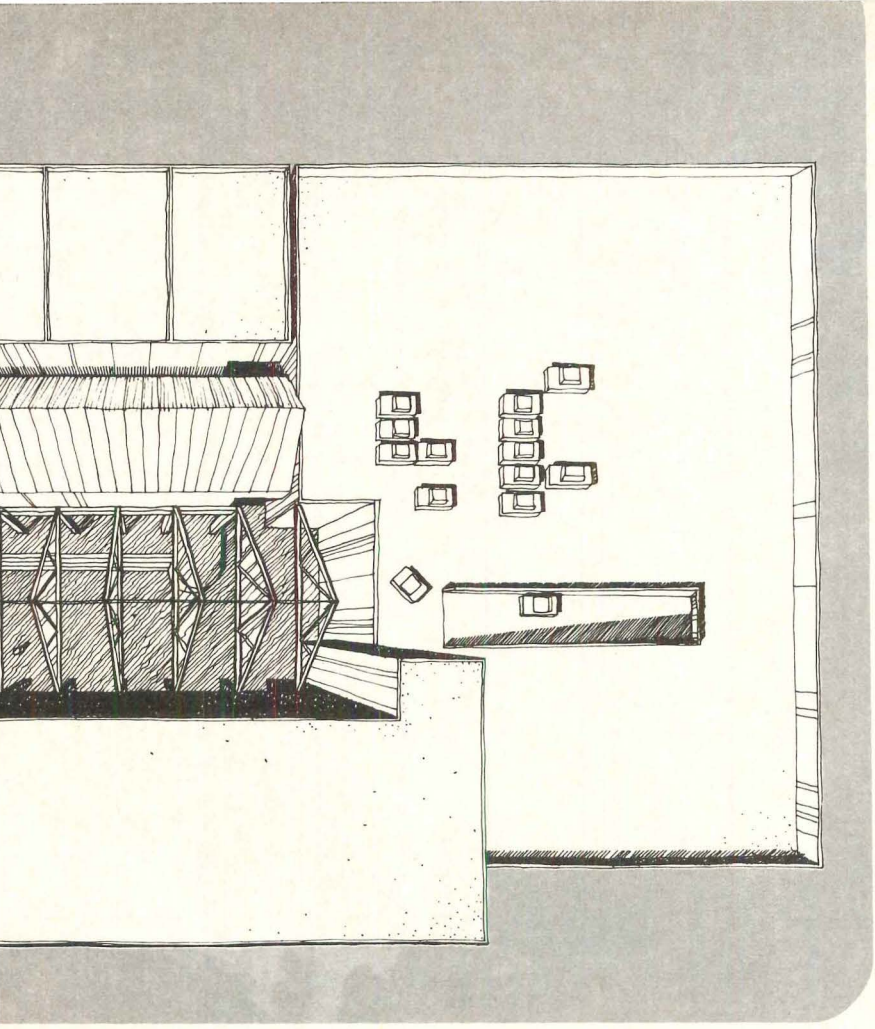
Rather than rely on architects' standard words about great spaces or important old buildings, Moore catered to his audience. Senators and administration officials could only be expected to respond to a developer approach, so in addition to preliminary architectural sketches the architects did a room count, cash flow studies and cost estimates. Then they got expressions of interest from two respected developers. With that package, the presentation made sense and the destruction was stayed; the job of getting positive action going on the reuse of the Post Office is still under way.

Although not connected in fact, another of Moore's proposals in behalf of small, established downtown businessmen is related in intent. Threatened by bulldozer urban renewal, some thriving businesses were going to have to relocate. "Thriving" in a small business still leaves little financial room for losses by relocation. Ironically, the new Washington subway system had just spent a substantial sum to underpin these buildings, wiping out front accesses during construction. Moore advanced the idea that, through block infill and air rights construction, economic demands of the properties could be met without ousting the businesses. By building over and behind the old stores, new facilities could be constructed with far less disruption than the subway caused.

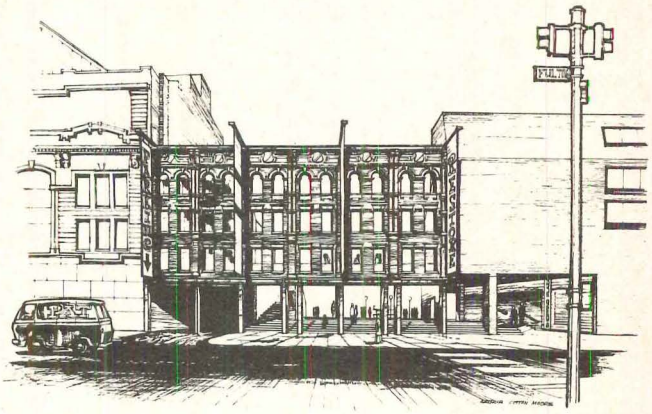
The third suggestion is a concept, applicable to other cities as well as Washington, Moore feels. Some of the inherent attractions of nightlife in a city like New York stem from the choice to do what one wants. Moore's admittedly liberal proposal is for a planned reduction in the established taboos that have grown into the city's fabric. If a wide enough choice of activity exists, he reasons, people will again find downtown attractive. His concept of "permissive discontinuity" is the heart of a city's uniqueness and, while expecting to raise a few eyebrows with proposals for things like gambling establishments, Moore has not let that stop him. He sees the potential benefits of legalizing some activities that have been considered slightly illegal, immoral and vaguely sinful, as something cities should recognize. Social needs, above and beyond providing people with a place to go, could be financed through licensing or taxing newly permitted uses.

Bedford-Stuyvesant

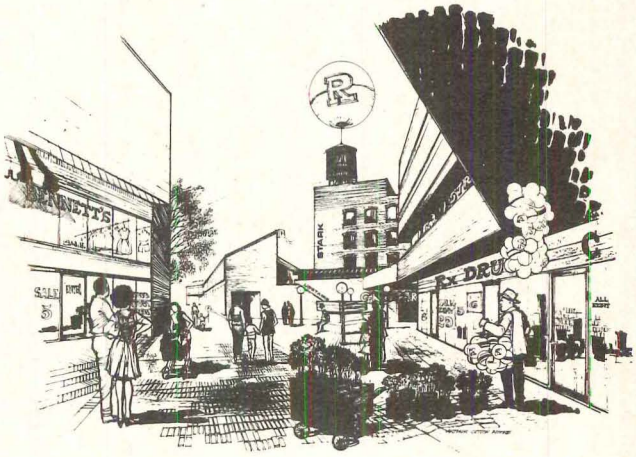
Like many depressed areas, the Bedford-Stuyvesant section of Brooklyn has no real center of activity. It offers little that would encourage an inflow of business, with its resulting financial support. Sponsored by the mostly black Bedford-Stuyvesant Restoration Corporation and the white Bedford-Stuyvesant Development & Services Corporation, a new Moore project that may change the situation is under construction. It is a logical sequel to the firm's Canal Square project in its use of middle-of-the-block spaces and its reuse of existing elements. Before Moore was commissioned to do the project, one building was already being renovated on the block. A selective process of evaluation was carried out to determine which buildings on the remainder of the block should be saved. Due to the sensitivity of dealing with the black community, political and social factors entered into the building evaluations as well as economics, structural soundness and feasibility for reuse. (It was also deemed reasonable that the



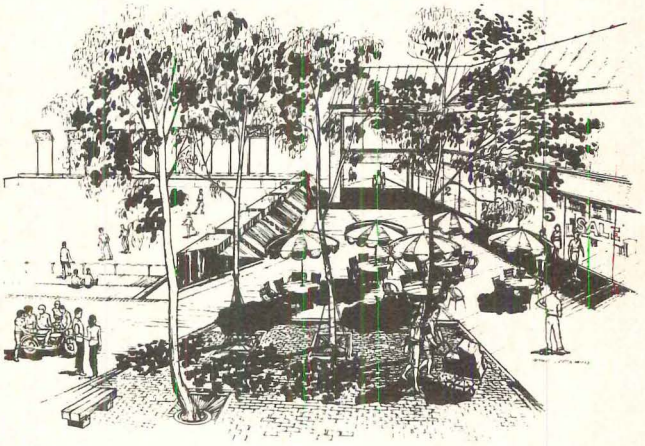
Bedford-Stuyvesant Commercial Center Paul Childs, associate in charge David C. Cox, job captain



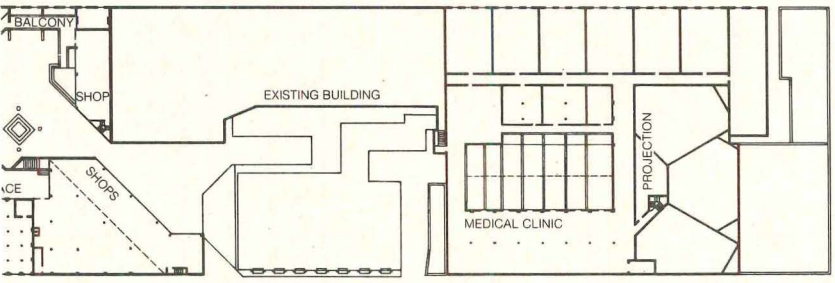
Fulton Street facade

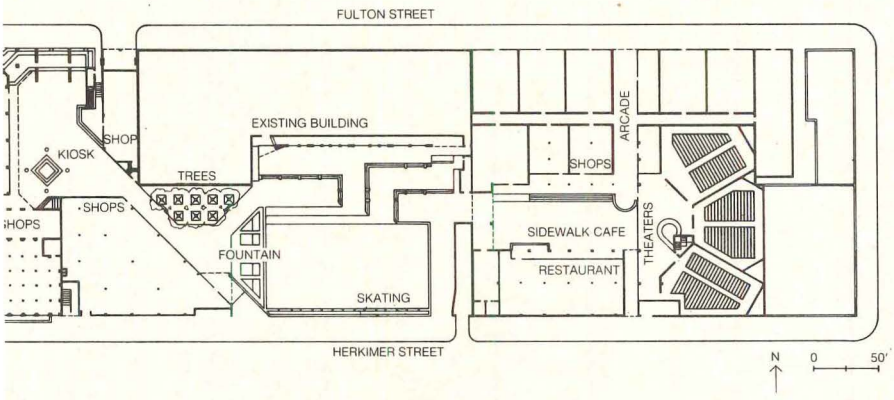


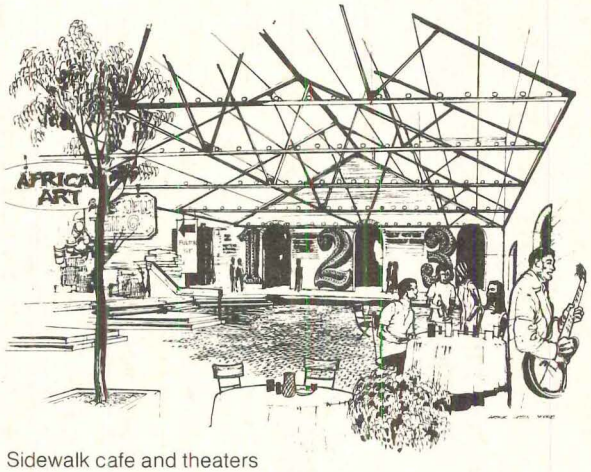
Two connected shop levels



Area bordering skating rink



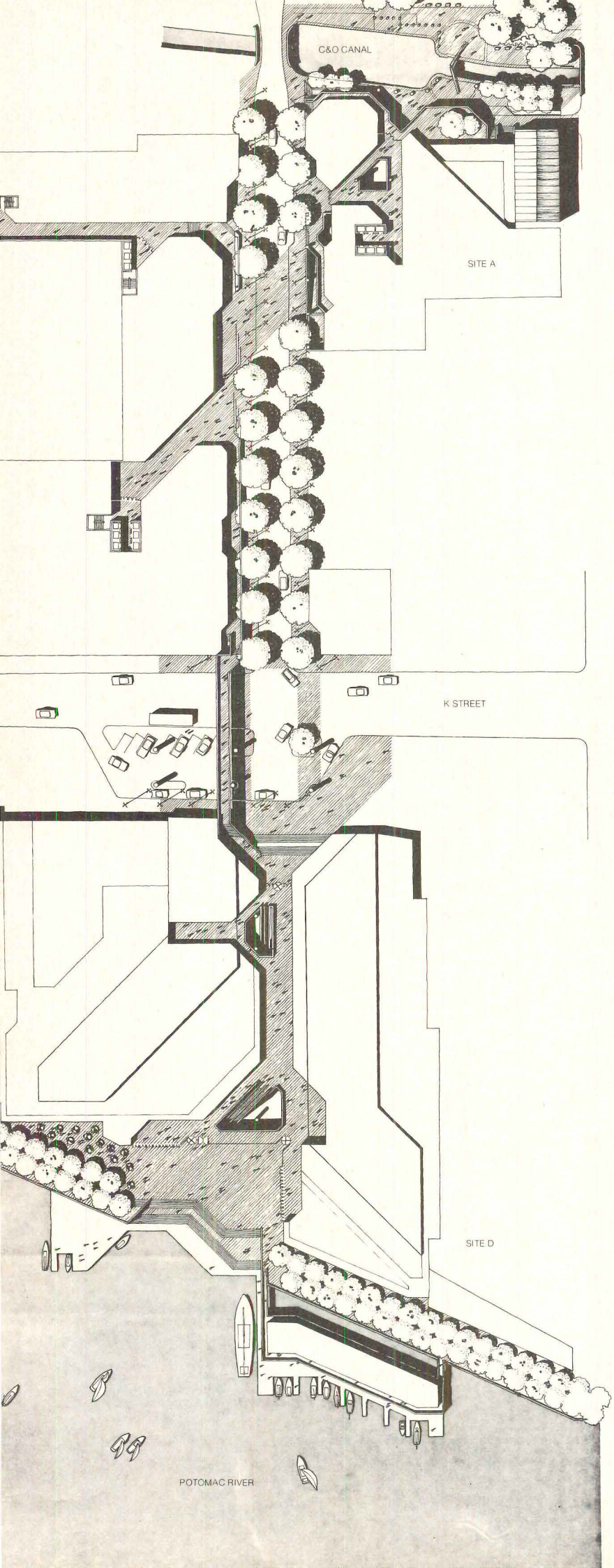


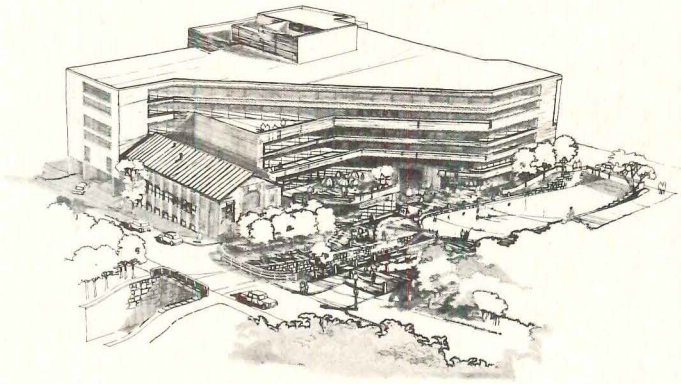


Sidewalk cafe and theaters

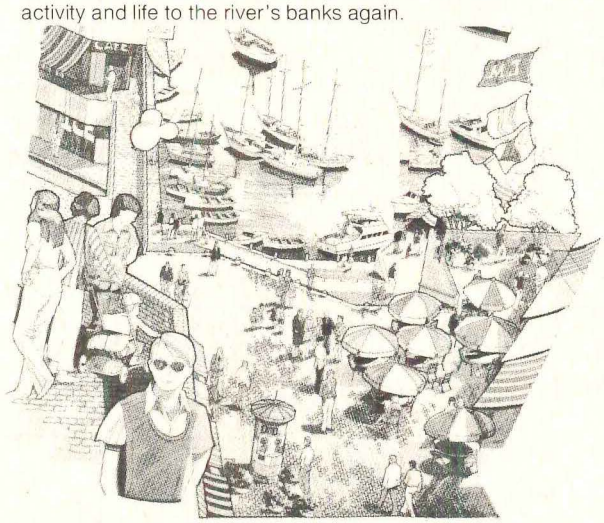
two boards govern the work; the black board to oversee project expenditures from funds arranged for by the white board.)

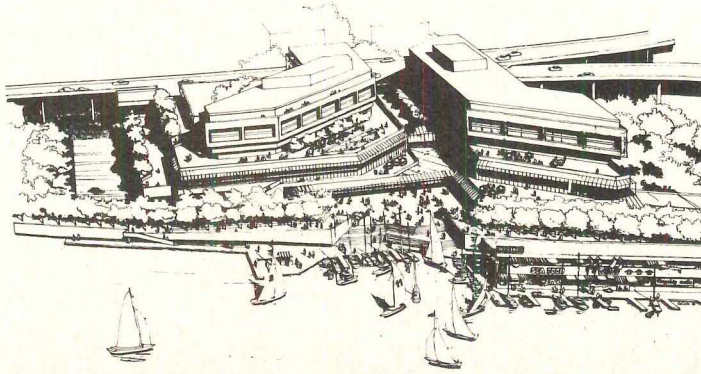
Some buildings were saved because of an existing community use, while others will be replaced. The entrance to the project from Fulton Street will be through a "gate" formed by saving the front wall of an existing building. The façade has been steadied by poured pilasters behind the wall, and wall openings have been left to form a perforated screen without removing a familiar sight. Commercial spaces inside the block will adjoin an outdoor skating rink. At the opposite end of the series of central spaces, an ice cream plant was discovered to have a good open central space of its own. In this third segment, Moore hopes to see the inclusion of some "permissive discontinuity" uses—maybe a mix of a good bar, a theater and arty shops. The vitality and money that might otherwise





The Georgetown Waterfront project for Inland Steel Development Corporation is linked by a pedestrian circulation system from site A, near the C&O canal (above), to site D (below) on the Potomac. In incorporating schemes to bury the elevated expressway that currently afflicts K Street, the concept would bring commercial activity and life to the river's banks again.





go elsewhere for swinging entertainment are important, in the broadest sense, to the Bed-Stuy community.

Not formalistic

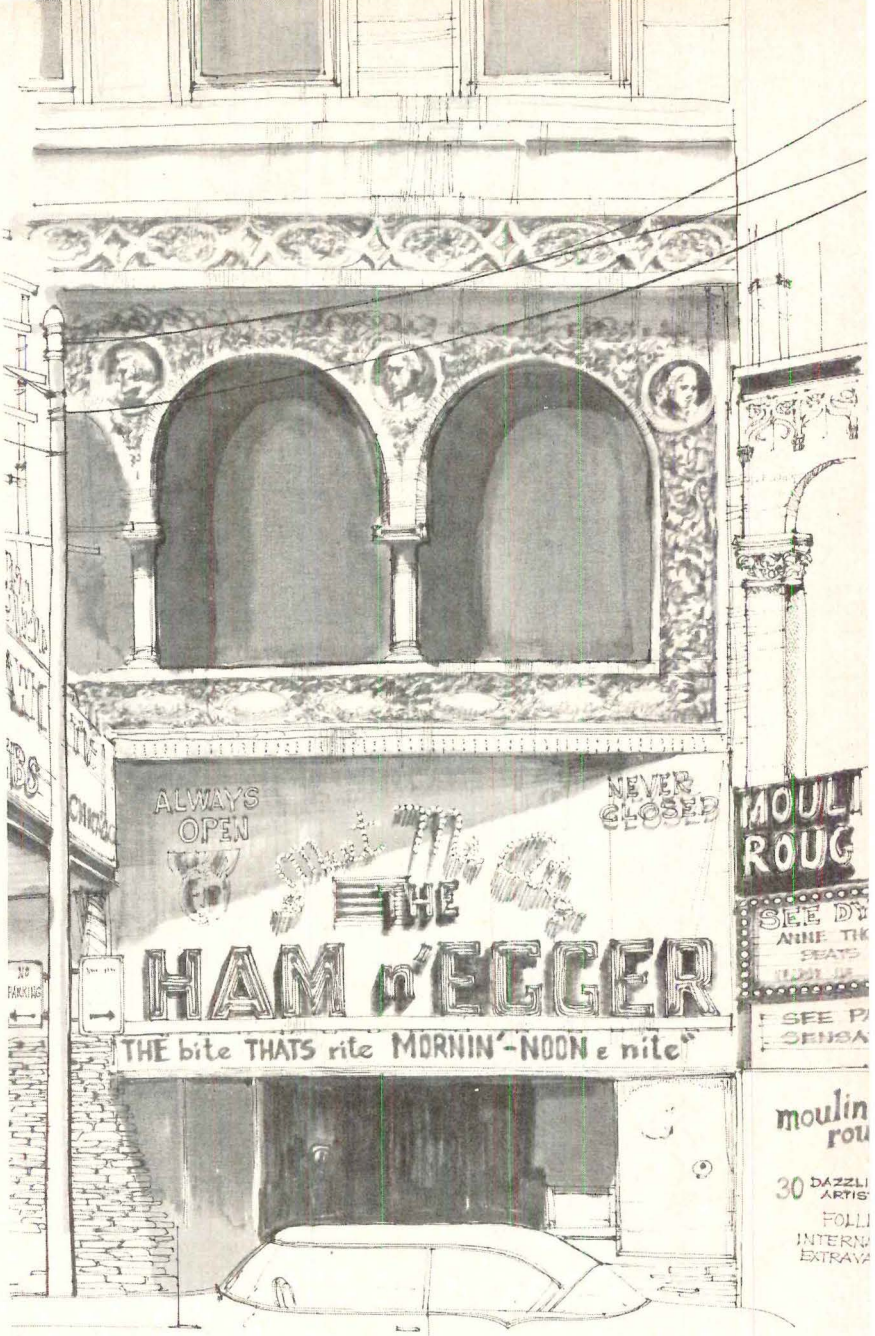
What seems to be emerging from projects like these is an expertise at reusing old buildings with sound commercial reasoning. "It's important for us to think of old buildings as resources," says Moore, "and to develop a new economic use for something that would otherwise expire." But there is more to Moore than that. Lessons learned from the political gauntlets run, and from dealing with existing building configurations and constraints, have applications to all-new work as well. After working with irregularities built into the Canal Square, Bedford-Stuyvesant and downtown Washington projects, it has become apparent to Moore that the odd, unexpected spaces often add a character that most new projects lack. Not that oddity has become the design standard for new projects in the office, but neither has formalism. "I doubt if anyone comes to our office knowing what they're going to get," Moore muses, "we're not formalistic." While the image of imaginative reuse is a strong feature of the practice, the other facets are not slighted.

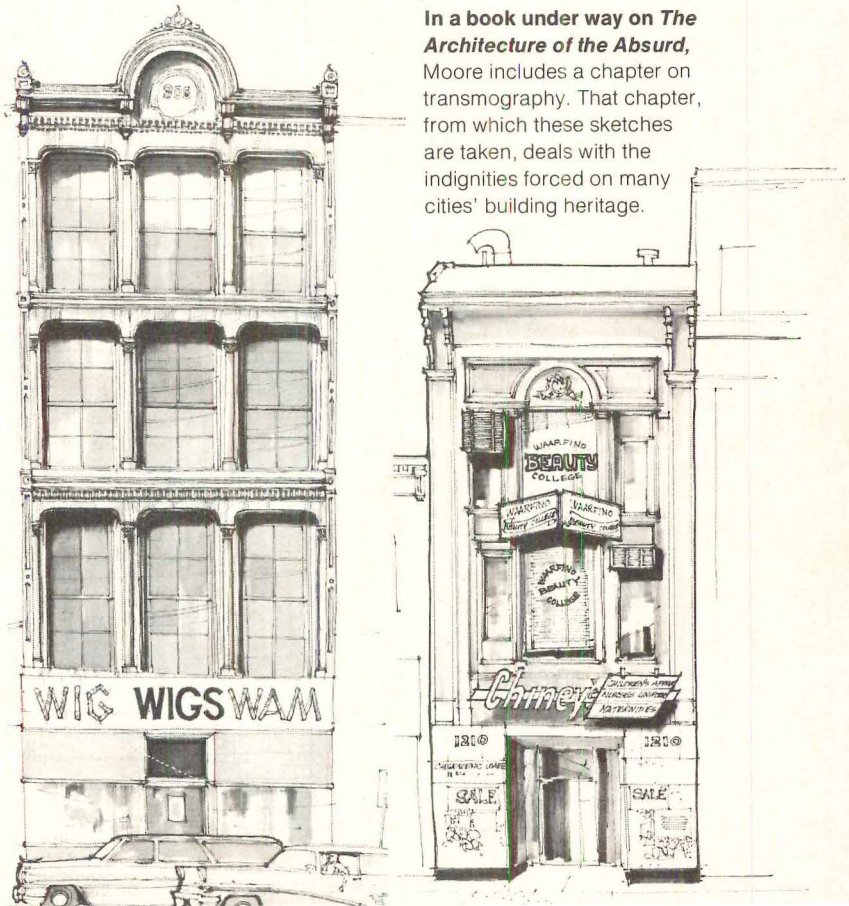
Georgetown waterfront

If there is one project that embodies, in degrees, most aspects of the firm's approach, it might well be the Georgetown waterfront redevelopment. There are two Georgetowns: the well-known residential area above "M" Street and a once commercially active waterfront, more recently a declining mixed bag. If the thought indicated by planners of the elevated expressway along "K" Street is any precedent, lower Georgetown will stay on "the other side." That is another battle fought by Moore, along with other local architects.

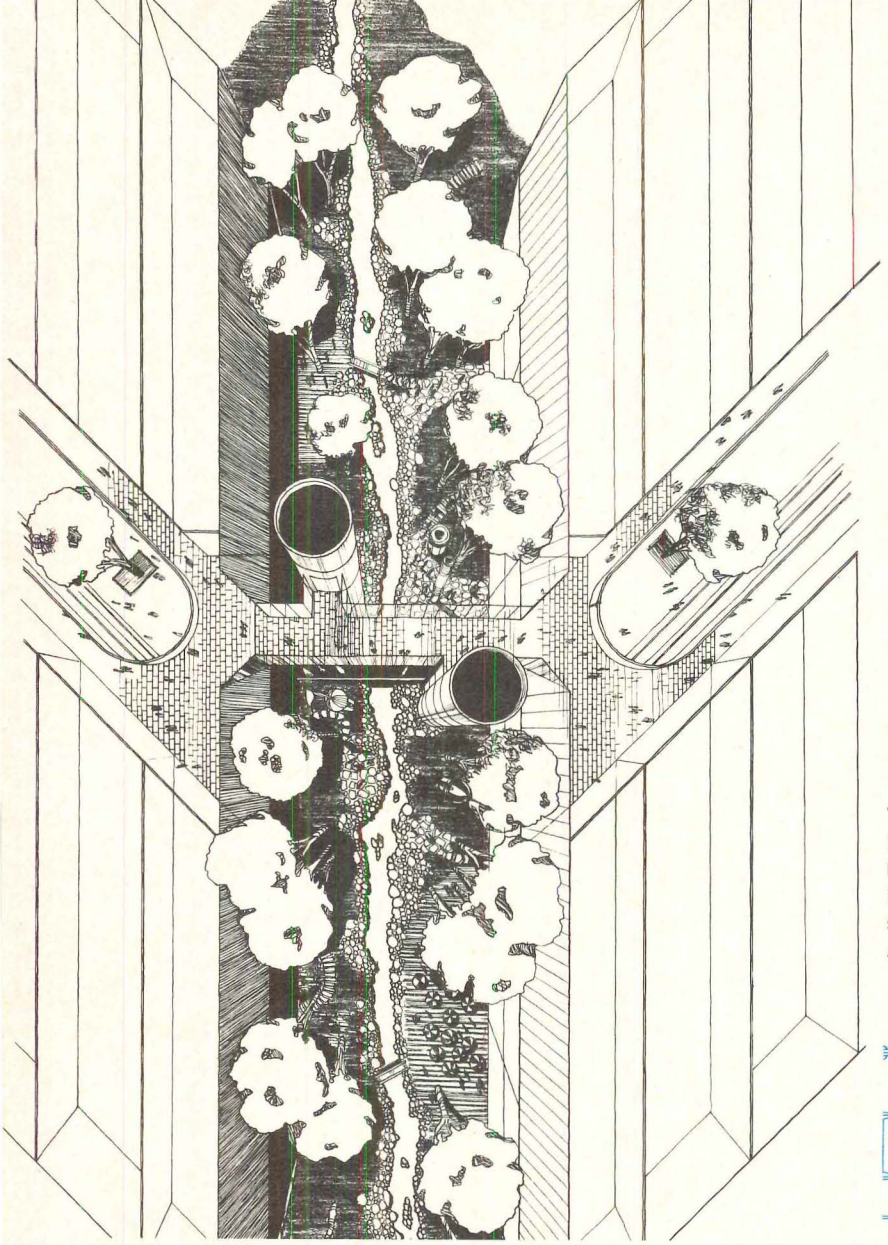
When ISDC, a development subsidiary of Inland Steel, virtually bought the Georgetown waterfront, Moore was naturally part of their plan. A mutual consortium was formed, Arthur Cotton Moore & Associates in association with architects Elbasani/Logan/Severin and Sasaki, Dawson, DeMay Associates with the Moore group assuming the executive architect title. In its present form, lower Georgetown almost rates its under-the-bridge status. Moore and others had developed alternatives which would submerge the freeway, provide a local street at grade and reconnect the two sides of "K" Street. Citizens' feelings on the proposal were positive. But highway interests, Moore points out, didn't want to set any precedents of having to give in to local situations. Still, the logic was with the architects' scheme, and it will probably win out, after all.

On the development of the Inland property, though, there were opposing views. Given that infamous pair of neighbors, the Watergate complex and the JFK Center, some citizen groups opposed building anything on the adjoining Inland plot. However, as Moore noted from his earlier study of waterfronts in six cities, Washington had never promoted the use of the Potomac by people. Reverting to grass and trees in Georgetown would be a cop-out, he felt. "The District has something like 44 miles of river frontage which has all been taken to what I consider to be the lowest common denominator; that is, the only thing we can agree on is grass and trees. I'm certainly not against grass and trees," he observes, "but we already have so much of them that the entire city of Washington could eat outside at once." There were also those who suggested covering the site with housing, which Moore

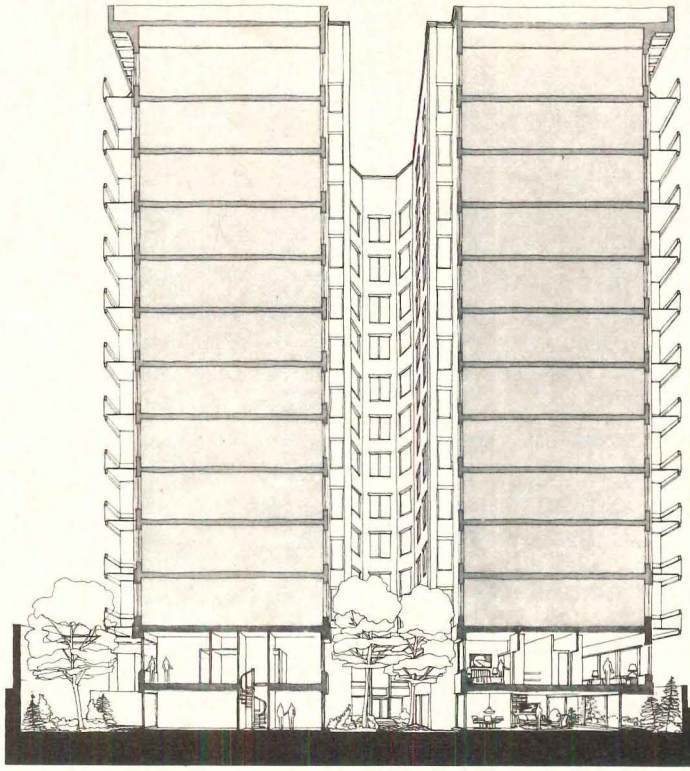




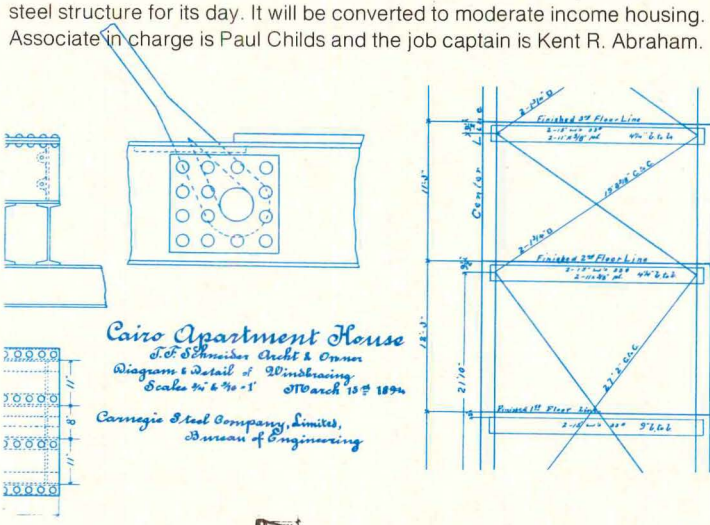
In a book under way on *The Architecture of the Absurd,* Moore includes a chapter on transmography. That chapter, from which these sketches are taken, deals with the indignities forced on many cities' building heritage.

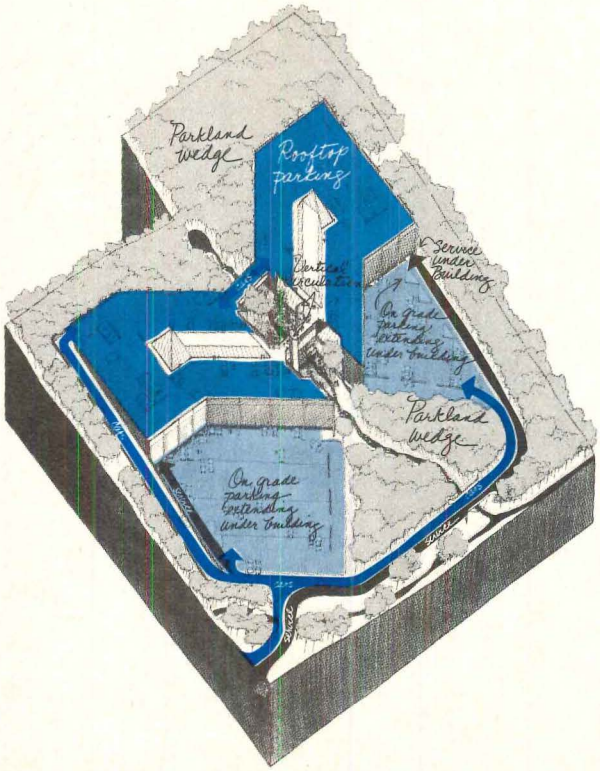


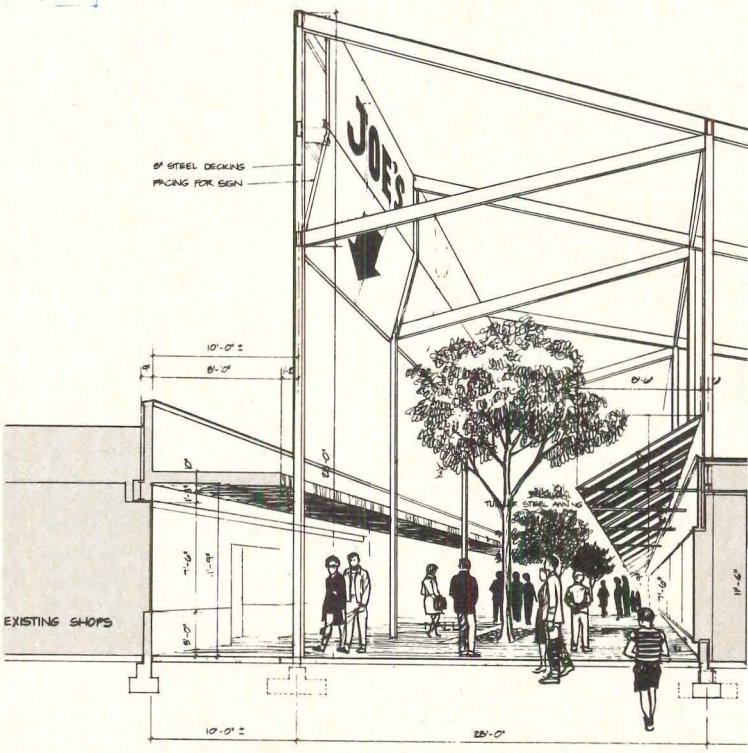
Gwynbrook Mall in suburban Maryland is designed to disturb as little of its steep, wooded site as possible. Parking has been designed for rooftop and lower levels, avoiding the typical asphalt sea. Instead of creating gardens inside, the architects have made natural features of the setting the focus. David C. Cox is the associate in charge of the mall project.



The Cairo Hotel was built in 1894, and so outraged Washingtonians by its height that an act of Congress followed, giving the District its renowned building height limitations. Its less-than-successful application of freely interpreted Egyptian detailing masks the fact that it was a very advanced steel structure for its day. It will be converted to moderate income housing. Associate in charge is Paul Childs and the job captain is Kent R. Abraham.





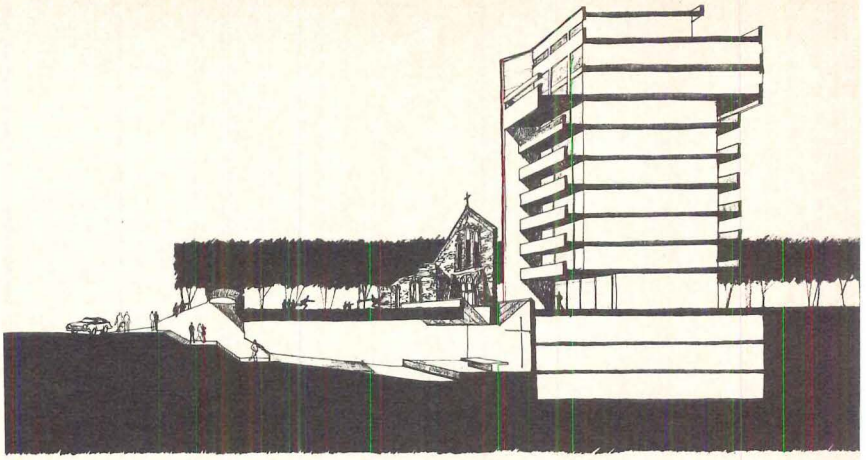


agrees that Washington needs. Economic reality, however, would have covered the waterfront with very expensive condominiums, Moore says, not housing for those who need it most. Besides that, housing is not a legal use for that site at present. In very oversimplified terms, these were the major considerations leading to the last Inland proposal which was finally approved by the Fine Arts Commission. "Now that we've gotten over the Marlon Brando notion of the waterfront, the whole idea of bringing people back down to the water seems very appealing," he says. "Washington presently has an almost non-use of the river."

The mixed-use development for Georgetown could alter that, at least to some degree. By locating the combined commercial-office-hotel project on the banks of the Potomac, Moore hopes to restore the use of that portion of waterfront to the people. Granted, benefit would also accrue to private interests as well, but the land is already privately owned. The Georgetown project would make use of the same type of logic that shaped the Post Office presentation: everyone can gain if the economics are right. Instead of another temple on the Potomac, maybe some people for a change.

Other fronts

Planning studies make up another large portion of the firm's activities. An expansive study of waterfronts in six cities, *Bright Breathing Edges of City Life,* was conducted for the U.S. Department of the Interior. In it, proposals were made for returning people to the waterfronts in Washington, Boston, Buffalo, Oakland, New Orleans and Louisville. Another study in Annapolis was to establish guideline regulations that that Maryland port could follow to preserve its good qualities through periods of development. Moore also did a comprehensive study for the Bahama Islands to determine power needs there, and how to cope with complexities of supply for the 700 out-islands. Still other planning studies have been carried out for several towns in Arkansas. Because of the nature of planning studies, none of these efforts can be shown here in depth. They are, nonetheless, impressive.

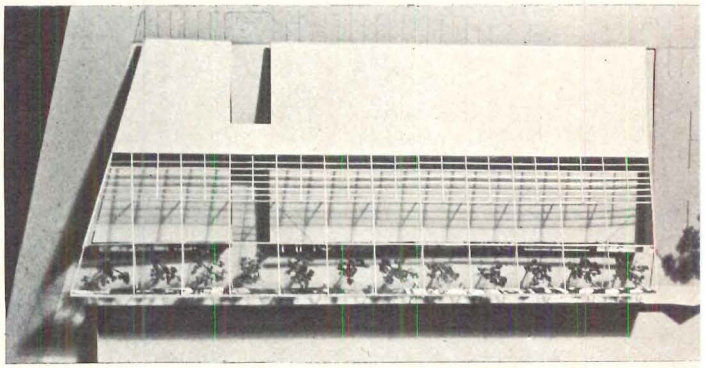


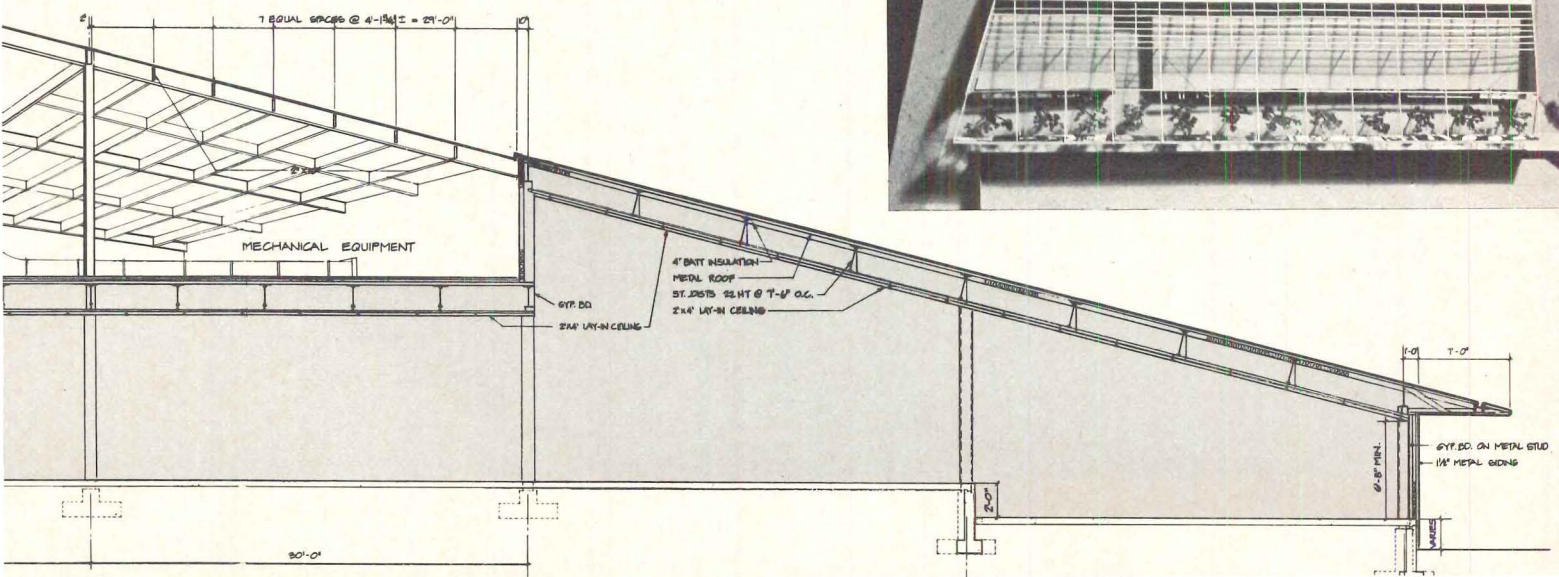
After a fire demolished a city church in Washington, the community welcomed the resulting open space. A design proposal would rebuild the church under a park on grade and transfer development rights to an adjoining property. Apartments built next door would then become a source of church revenue.

As an outgrowth of these planning efforts, again working with other procedural lessons learned in other projects, Moore is looking ahead. "We'd like to get a better perspective on the whole notion of urban economics and accounting," he says, "the whole planned unit development thing. Lawyers and courts design far too many developments today. In the Georgetown project, for instance, there was the anti-growth, environmentalist faction versus the corporation. We'd like to work out a formula for measuring development. It would be a matrix through which others could measure the hard facts of a situation and approximate the intangibles. That way, we'd be able to avoid a lot of 'legal' design caused by knee-jerk response to a problem. We'd have some indisputable guidelines that each faction could depend on, and respect."

If "architecture," in the traditional sense, seems less important to Moore and his associates than issues, it's probably due to the fact that Moore doesn't separate the two. The skill with which the issues are confronted can be shown graphically. The process cannot. The designs shown for two shopping centers, the proposed underground home for a burned-out church and a scheme for Washington's Cairo Hotel are results of similar processes, responding to different problems. Moore wants his firm, now at 11 architects and supporting staff, to grow in as many directions as possible. He doesn't want to be categorized. It seems unlikely, given the diversity of the firm's practice, that any label would stick for long. [JM]

Woodlawn Shopping Center in Virginia will be enlarged by the addition of a large shed form. Counteracting the existing strip character of the center, the wedge shape is topped by a trellis of steel holding a huge billboard. Associate in charge is Paul Childs and the job captain is Sheldon Joe Bell.

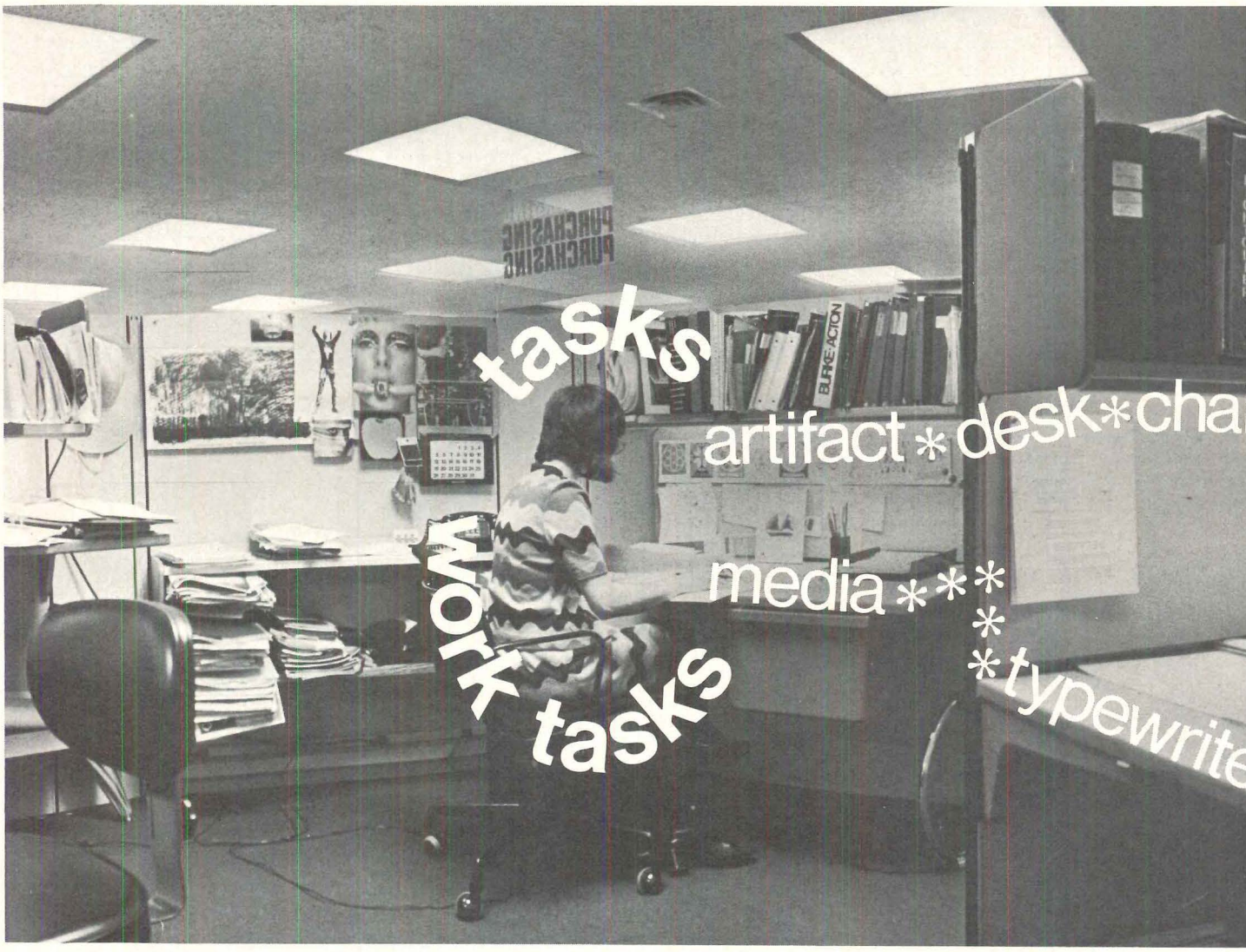




The TV generation turns on the office

Open office planning, a concept begun in the early 60s, has fostered many preconceptions in the products it has generated. An analysis of its present status suggests other ways to define the process of work and the structure of the office, and what this might mean for present hardware. A second part, a transformation of work through the use of highly automated electronic devices, shows the effect that new media may have in physically changing the workplace and the office.

Open office planning proclaimed the liberation of the file clerk, the socialized, revolutionized, non-hierarchy, windows-for-everyone environment. No longer did the corner office necessarily belong to the Chairman of the Board; no longer were the clerks lined up at neat rows of desks recalling the fantasies of Fascist Germany. The concept of open planning was first implemented with individual pieces of traditionally defined equipment, freely arranged in space, separated by

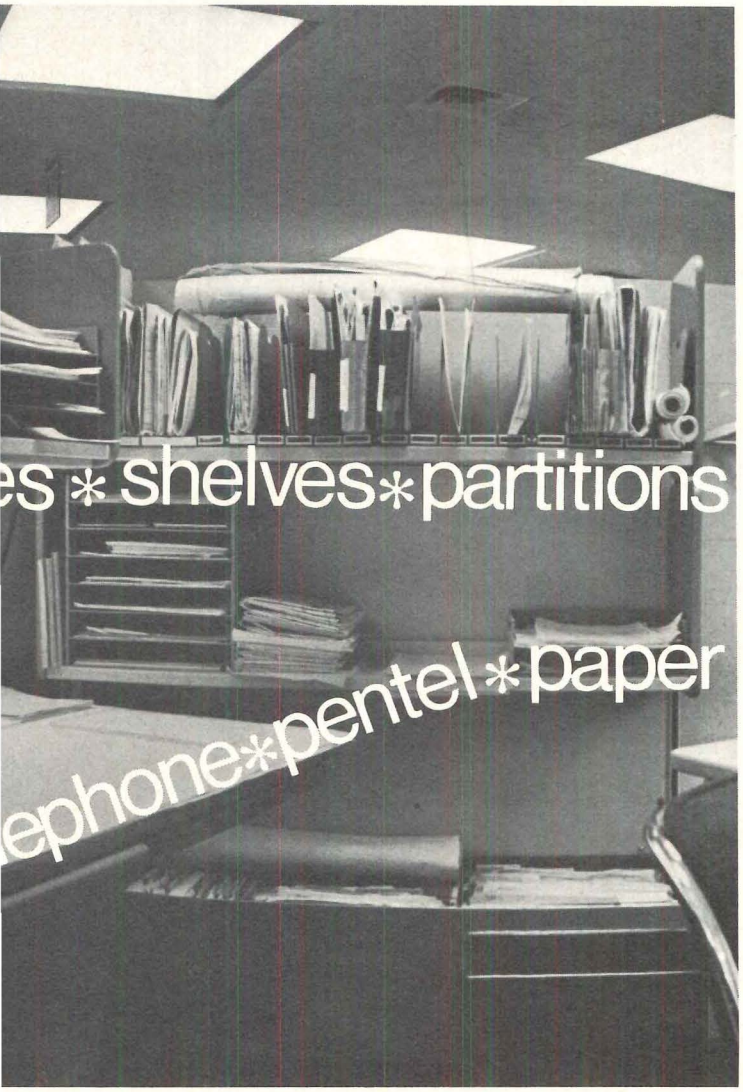


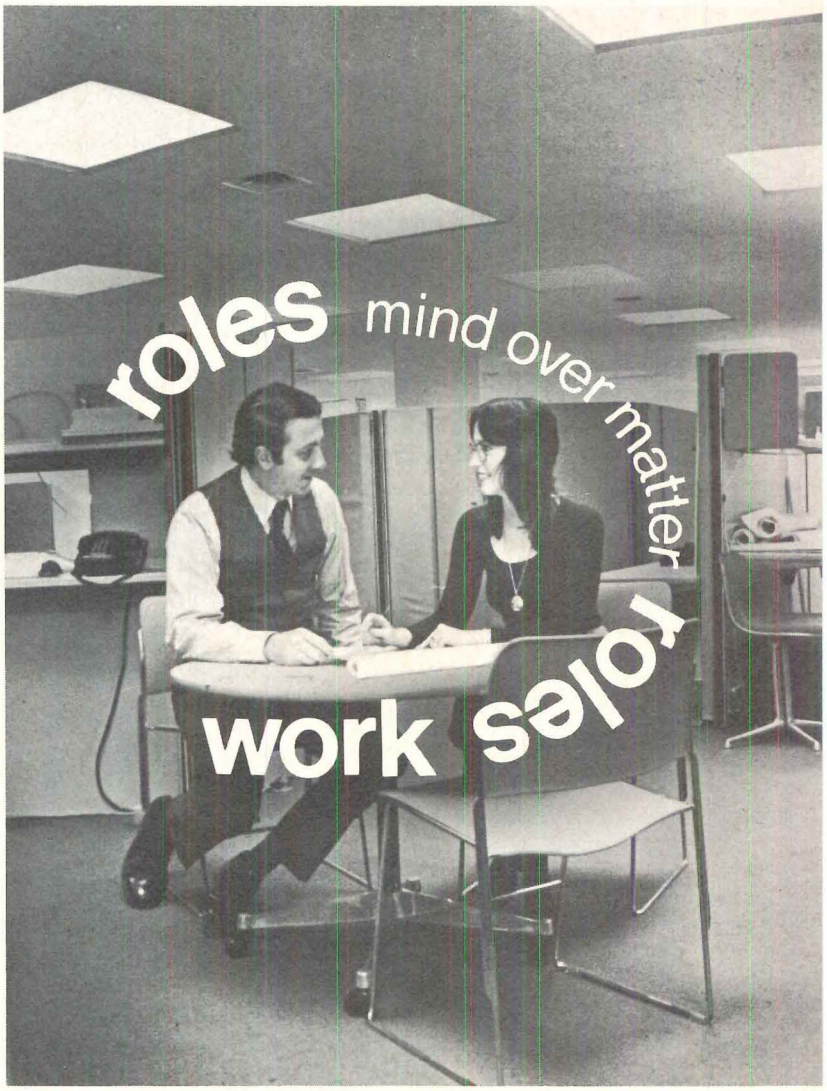
screens and plants. Since the open office was a new concept, there were no ready-made, freeze-dried, just-add-water-and-use items to rubber-stamp on a floor plan. While well-intentioned space planners hailed the open plan as a major advancement toward a better environment, the first open office furniture system on the market, Action Office I, failed. It was priced out of reach of everyone except the executives and they had not been convinced of the advantages of the proletarian paradise.

It didn't take long, however, for the manufacturer to grasp where the market was. AOII soon replaced AOI, and other manufacturer's systems have, in their cost and materials, tried to corner their own segments of the office population. The range is from the low-cost, informal-image systems like Haller or Christian, to the high-powered, walnut and teak executive-image systems, like Task Response Modules or the Stevens System. But what, in the meantime, has become of the social scientists' proclamation that the environment affects behavior? Just what does affect people positively or adversely? Does it lie in the physical surroundings or in the attitudes of the corporation? Where is the evidence that productivity is, or can be, increased through design? With no measurable data and no methodology for finding it, speculation becomes myth and social purpose becomes obscured in the stampede to the marketplace.

One of the conceptual aspects of AOII was to increase productivity of the individual by providing a series of choices concerning the workplace—many types of modules, in different relationships, at varying heights. This was the first, and perhaps the last, gesture in recognizing the individuality of work attitudes, habits and needs: the individual reigned in his domain and the ghost of the corporate dictum was, for the moment, muffled in the closet. The choices provided, however, were token; the manipulable objects were still traditionally defined "work" furniture. The individual could have what he needed so long as it was part of the system and wherever he wanted it so long as it was where the planner had said it should be. The emphasis on individual choice produced options no larger in scale or scope than that.

The underlying concept of all systems was flexibility in re-

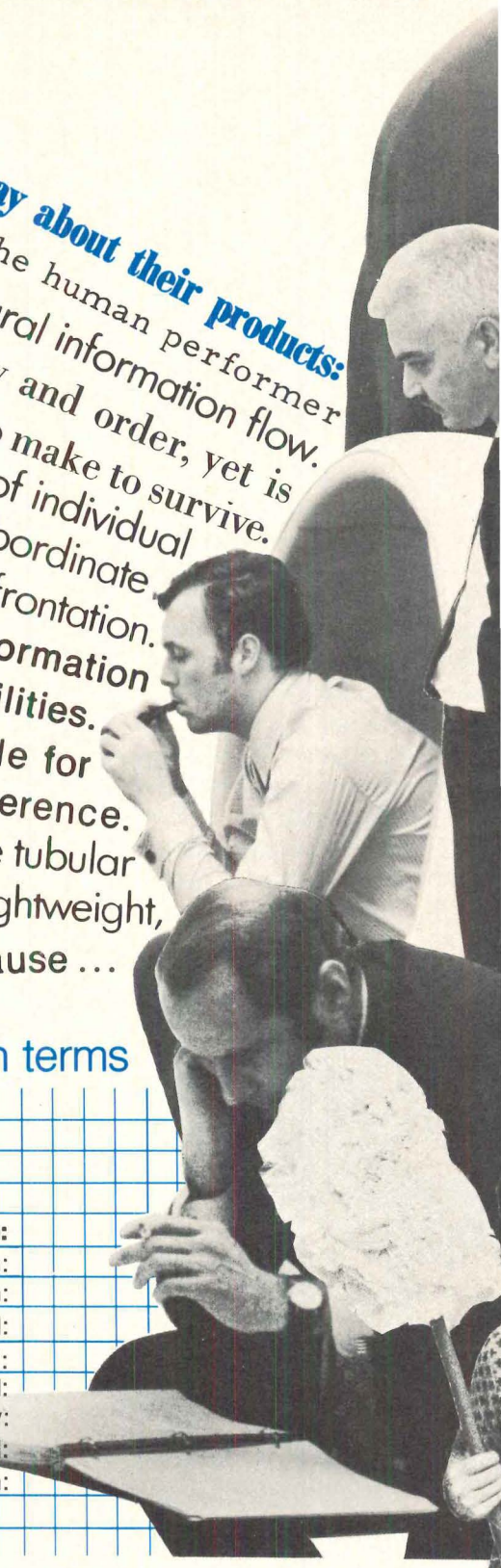




This article was written in collaboration with Stanley Thomasson, whose drawings appear on pp. 82, 83, 84, 85; Douglas Nicholson, President of JFN Associates, Spaceplanners; Morgan Johnson, President of Symmetry Automated Workplace Systems, Inc.

what manufacturers say about their products:

a work station for the human performer
is committed to the free form of natural information flow.
which satisfies his deepest needs for beauty and order, yet is
flexible enough to respond to the changes he will have to make to survive.
Its mobility and transparency create a motivating sense of individual
involvement, with leader and subordinate
in frank and mutually inspiring confrontation.
Component mobility gives far-reaching, information
management and paper-flow control capabilities.
components which in application provide for
extreme flexibility as well as rigid and formal coherence.
softly rounded contours and interchangeable tubular
bases, are designed for their specific tasks... lightweight,
Because ...



existing systems must be analyzed in their own terms

Characteristics:

Individual:	**Units (workplace):**
range of components:	ease of change, addition:
range of modules:	modification:
universality of components:	environmental control, territorial:
universality of modules:	visual:
ease of modifying modules:	acoustical:
	range of flexibility:
	interdependency, total unit, self contained:
	additional elements outside system:

sponse to that architectural wonder of "universal" space. There was some thread of logic in that development, for after maximizing the rental space, refining the high art of façade, and developing a catch-all formula for mechanical services distribution, what could be more necessary than to reduce the interior to the same level of standardized thinking? Based on the newly acquired knowledge that offices change and grow, the systems provided investment in equipment rather than space and an inexpensive method of reorganization.

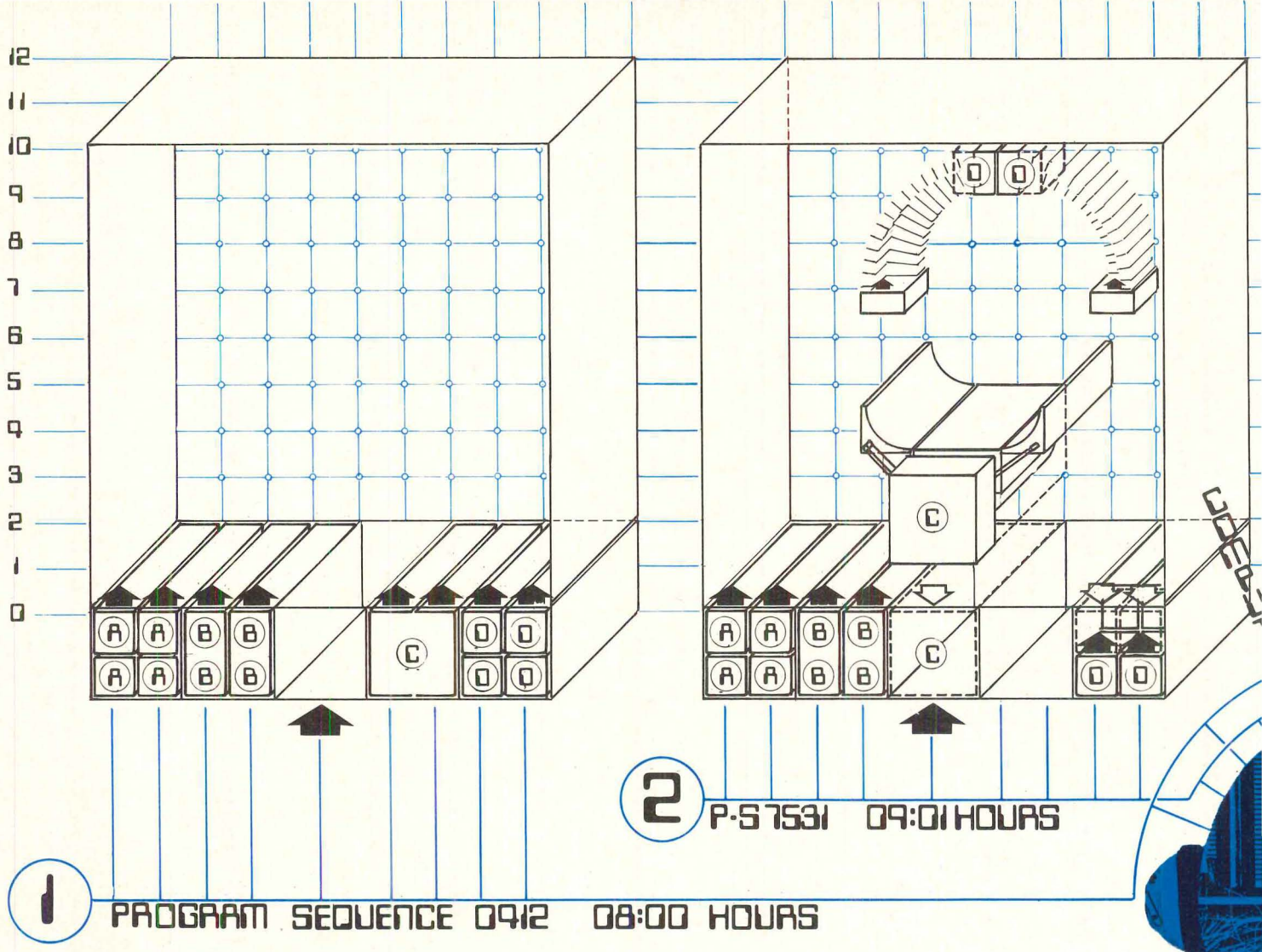
Why then, if the systems were based on a concept of flexibility for change, has the office not evolved further in its structure? It is perhaps because the systems are still based on the traditional definitions of "work" as measurable tasks and their supposed flexibility is within this context only. Change, in terms of these systems, is moving walls or adding storage. New ideas are not needed—only a hex wrench.

What began as a concept of spatial and managerial organization soon became an end rather than a means. The system became simply the hardware; with the handy little pocket grid provided by the manufacturer, any maintenance department felt it could lay out the system. The criteria for design, based on work-flow, adjacency studies and flexibility for change could be adequately satisfied by the available systems; they were designed at the scale of the individual, on the basis of

tasks to be performed, with the greatest flexibility at the scale of the workplace or smaller. The conceptual development of the office had begun and ended here.

What happens, however, if the definition of work as tasks is changed? Work is a role, a process of thought, of decision-making, of accessibility to information, of processing and dissemination of data and of feedback. Does the necessity of a desk as work surface remain? If the office is viewed as a totality, comprising sub-sets made up of individuals, an office existing at all scales simultaneously, then a system should allow, even encourage, open-end growth not just at the individual level but at the scope of the entire office. What type of system can function at these several different scales, clarifying the relationship of people to information, and reducing redundancy? What happens to the traditional concept of office when electronic media for information storage and communication no longer demand that an office exists at one address from nine to five, five days a week? What becomes of the building as universal envelope if hardware and flexibility for change no longer demand that we make hard choices?

What becomes of the structuring of our daily lives when "going to the office" is no longer necessary? What becomes of the role of the designer/planner when the choices of use are made by the occupants? If we accept as new criteria the



THE AUTO-

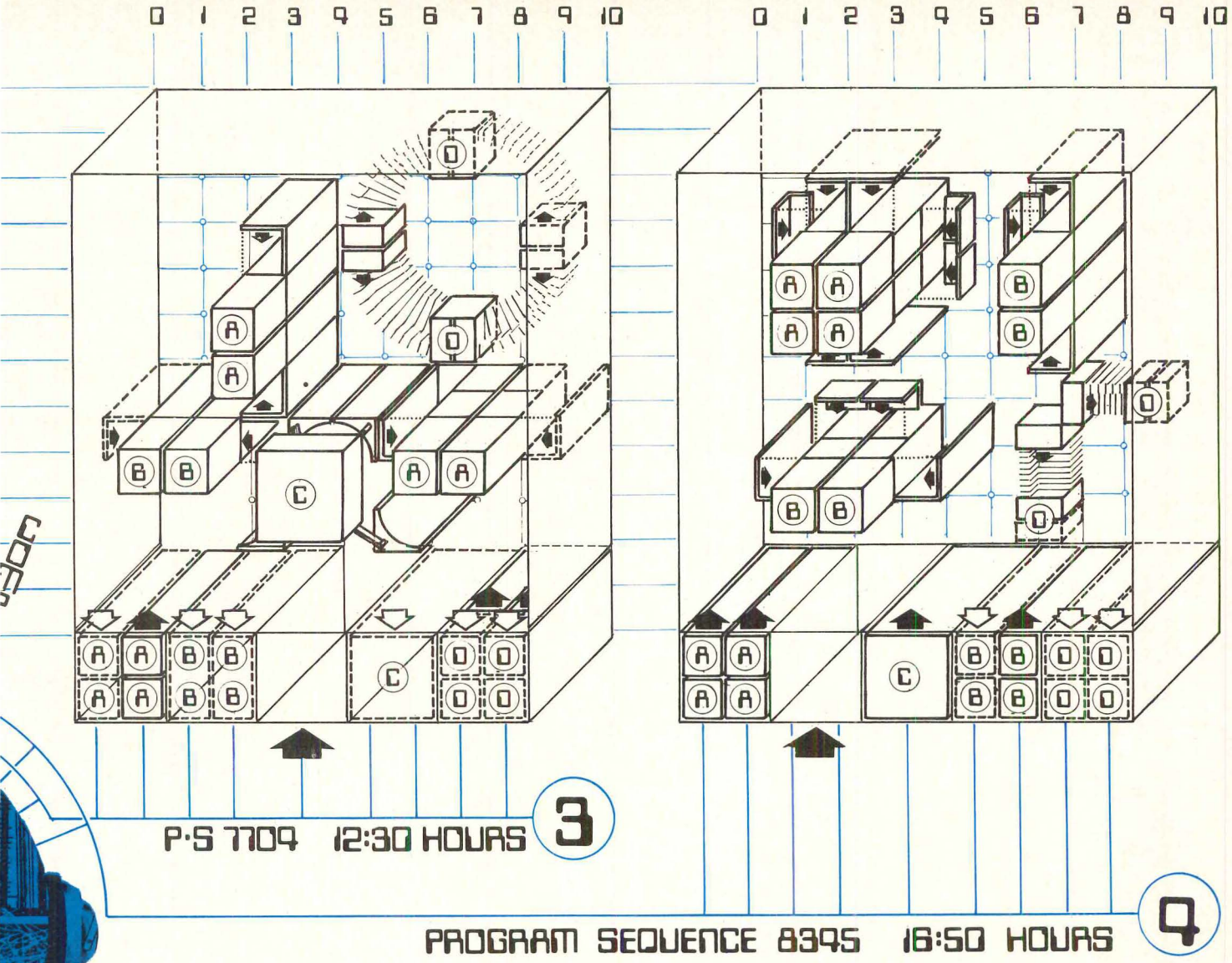
idea of disposability when information or artifact is obsolete, if we demand workplaces free of built-in preconception of use that can allow a restructuring to occur in a continuum, if we demand a system as software rather than hardware, if we plug people into electronic circuitry instead of cubicles, what are the consequences?

The automated age: A transformation in one act

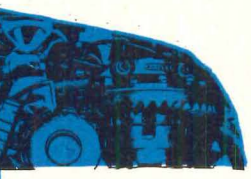
Through the days of future past, the panoramic, living color transistorized sunset, the 4″ façade of Hollywood illusion and the Sesame Street TV educator-babysitter, the curtain rises on the workaday world of Mr. Planner and Mrs. Wife:

Mrs. Wife arrives in the kitchen to find the children already scrubbed, dressed and eating their breakfast. She punches the appropriate buttons for two orange juices, two black coffees and one rye toast with marmalade. Mr. Planner, freshly shaved and dressed in the clothes he had requested the previous night, arrives to find his breakfast ready. The children, already finished, grab their mini-computers and portable video screens, jump into their miniature capsules and are whisked off through pneumatic tubes to the local resource center. Their father, taking his breakfast to the table, turns on the video screen to see instant replays of the news. Before the news is finished, his transit car arrives, attaches itself to the house and signals that it is time to depart. Mr. Planner punches a button, grabs his print-out of the news and his coat, kisses his wife good-bye and jumps from his Megacity Co-op into his waiting vehicle. "Have a nice day at the office," murmurs the wife.

Once inside the vehicle, Mr. Planner inserts his business card into the starting slot and the vehicle is in motion toward the park in Megacity office park. Simultaneously, he is con-



-MATED AGE

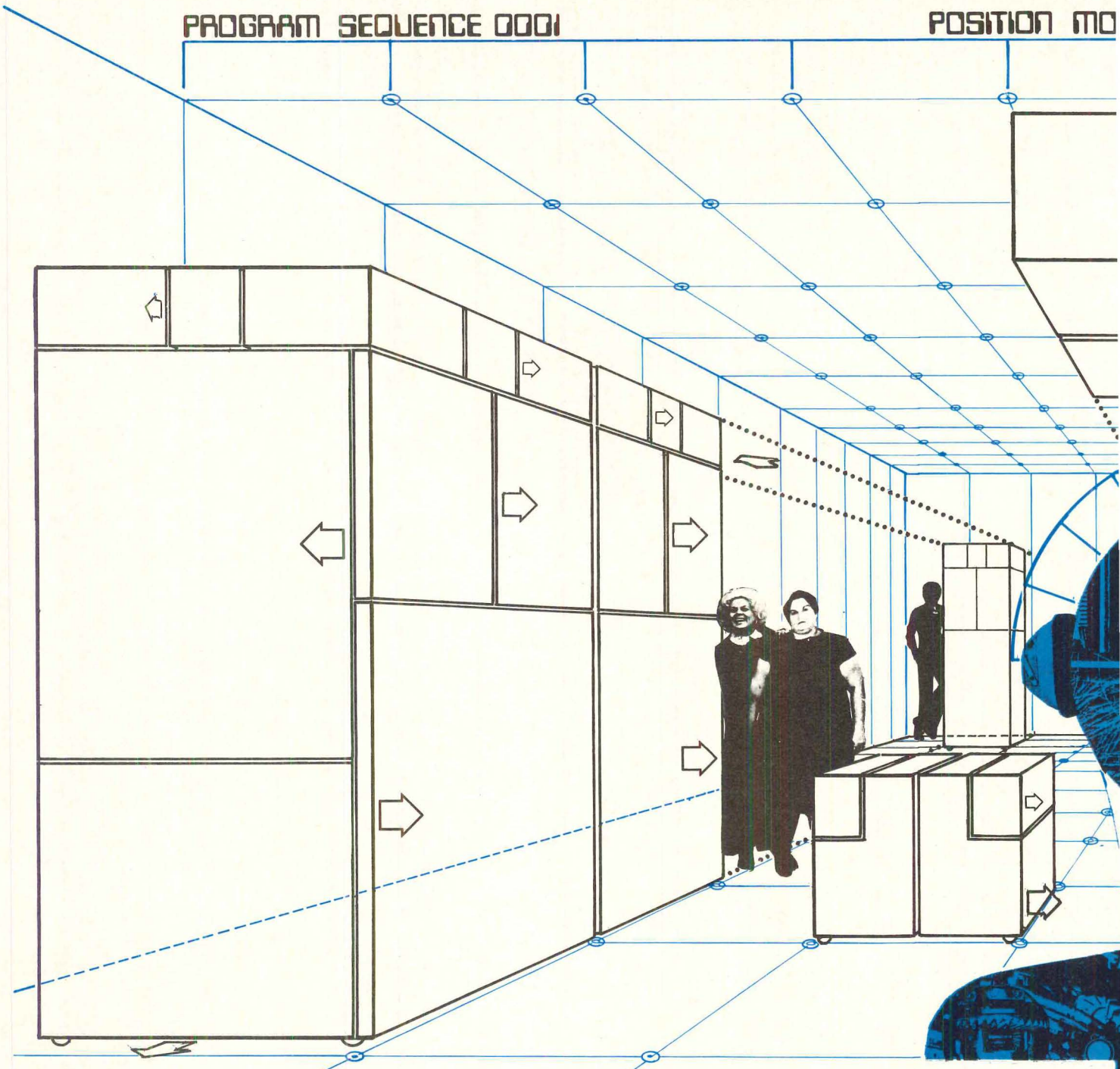


nected by videoscreen to his office and is given a complete briefing of the day's schedule. As the vehicle moves to its preprogrammed slot in the Megacity garage, he instructs the office about the information he will need, the associates he will want to confer with, and the presentation media he will use in conferring with clients.

The office computer, keeping a record of the day's schedule from all associates as it is transmitted, schedules his day by coordinating conference time with others involved.

The elevator doors open and Mr. Planner enters into the vast expanse of undifferentiated space known as his office. Walking to the computer terminal and inserting his business card into the slot, he views his agenda on the videoscreen and quickly programs the types of spaces he will need. Panels come out of floors and ceilings, surfaces rise and fall. The environmental control system is activated and monitors adjust the temperature and humidity. As he walks toward his newly programmed space, photoelectric cells turn on and adjust light levels, acoustic sensors adjust louvered absorption surfaces. As more associates appear, the office begins to take form for the day's activities.

The video phone is now flashing; punching another button, Mr. Planner is connected to an associate at a jobsite who is having an argument with the contractor over a detail. After viewing the detail in question, Mr. Planner reaches for his punch card files and, selecting the appropriate one, inserts it into the video phone. The drawing appears on both his screen and the portable unit on the jobsite. A print-out is now in the hands of the contractor, whose self-righteous determination fades as he confronts the facts, and he agrees to make the necessary changes. Punching a new card, the contractor alters the factory production process and begins pro-



ducing the right detail.

Meanwhile, back at the Megacity offices of Universal Spaceplanners, a voice from nowhere reminds Mr. Planner that it is time for his conference with his client, Mr. Developer.

"A change of scene is required," thinks Mr. Planner. "It just won't do to have any distractions. Everything must appear ordered and proper." By pressing a series of buttons on a console, he makes all video screens disappear. Looking around, he decides that the image is not quite right and pressing another button, holographic projections create a traditionally defined office.

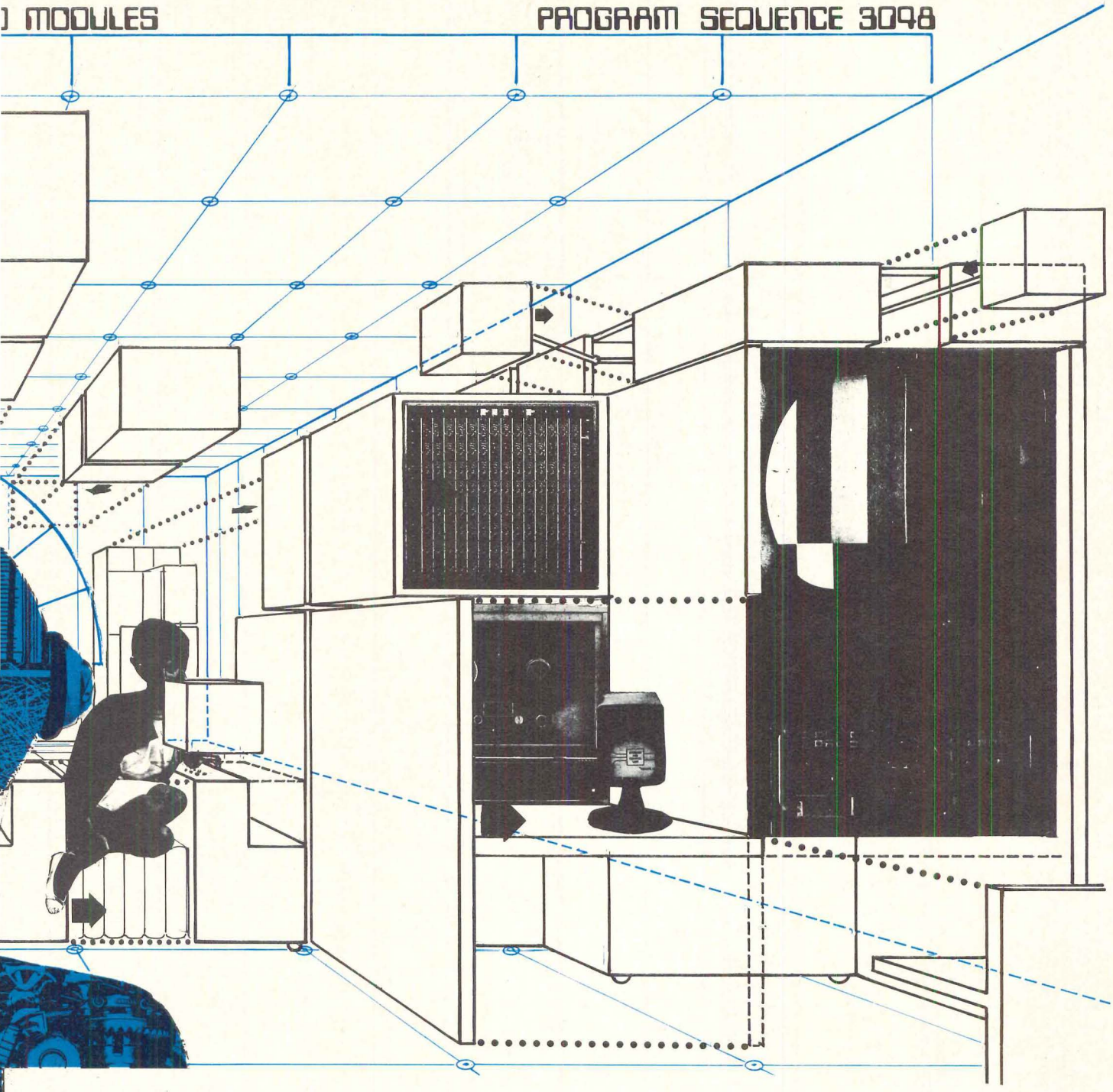
"It was never quite this easy with AOII," muses Mr. Planner. Contented with his setting, he turns on the video phone for his conference with Mr. Developer. After simulating various land development policies, discussing and projecting the implications, Mr. Developer, with a complete set of print-out projections and alternatives in hand, turns off.

A voice from nowhere announces the arrival of Mr. Stockbroker for a presentation.

Mr. Planner greets Mr. Stockbroker in the waiting area. They walk over to the computer terminal where Mr. Planner punches a series of buttons. The waiting area disappears, the secretary disappears, the simulation area and presentation media are ready.

Turning on three monitor screens, Mr. Planner begins the presentation by outlining the process of information gathering. On the three screens are replays of Mr. Stockbroker's office. He briefly explains the general assumptions made after many days of viewing, collecting and tabulating the roles and interactions that were taking place. Based on this, Mr. Planner continues, the office needs so much of one type of communications system, so much of another type, so much programmed space and so much unprogrammed space. What this means in terms of floor space, he continues, is this, pointing to a large projection screen.

Mr. Stockbroker, heretofore calm and unruffled, suddenly becomes visibly agitated. "But," he exclaims, "that's not as much space as we have now and at the rate of growth we an-



ticipate, the size space that you are recommending is absurd."

Mr. Planner smiles knowingly and prepares to explain, again, this new idea of non-redundancy planning. "You see," he begins, "when you came in we had a waiting area, but when we don't need it, it isn't there. Because we are now working here, my former work space has been altered and is in use by someone else. Since we no longer maintain a nine to five day, we overlap hours. In order to use all the space efficiently all of the time, we have installed a universal, automated, computer-controlled grid system which allows instantaneous transformation of use, eliminates redundancy and waste."

"The grid system is completely controlled by our main computer which sorts the various demands for different communications setups, programs use, allocates space and time, and coordinates meetings with other individual's schedules."

"Of course, I realize in your business," continues Mr. Planner, "that some of your clients demand certain other settings where they can act out more traditional roles with you. These options are also available in the office I've created for you. By a simple method of projection, you can change your space to Louis XIV, or simulate the action office so popular in the 60s and 70s. With our new universal system, nothing is exclusive and change is as easy as pushing a button; aesthetic as close as the tip of your finger. My role as space planner is not to design your space but to program our system to include all the diversity you desire."

By way of making the point visibly clear, Mr. Planner pushes several buttons and transforms the presentation space into three separate communications areas. Mr. Stockbroker, annoyed at being thrust out of his comfortable surroundings and rather perplexed, wanders away in search of the waiting room he so vividly remembers. Finding no such space, only an open elevator door, he steps in and disappears.

Mr. Planner, distressed at having blown another job, pushes a button, cancels the office for the day and catches the first elevator to his waiting transit vehicle. [SLR]

The case for the private patient room

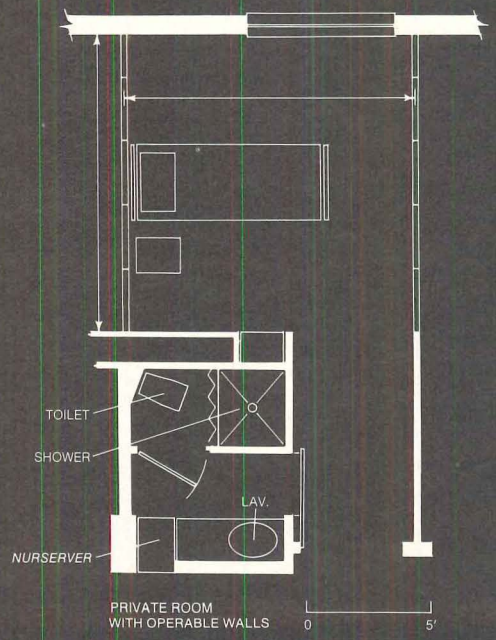
Gordon A. Friesen

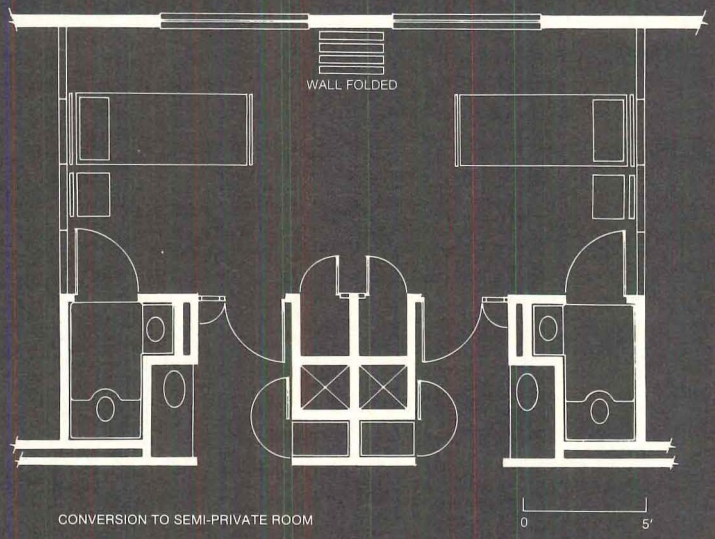
The private hospital room is no longer a luxury; if designed so that patients receive more in-bed care, their efficiency can help reduce institutional costs

The basic function of the patient room has changed little since the first hospital was built. But its design is evolving to meet a broader role as the center for various activities directly related to the treatment and well-being of the patient.

For the hospitalized person, the room is the environment in which he eats, sleeps, receives visitors, is nursed and undergoes some medical treatment. For this reason, each room should contain at least the basic necessities to meet medical needs and also provide a pleasant, morale-building setting (communications equipment, medical gas and suction apparatus, examination light, reading light, window curtains, etc.). Every room also should have a shower and toilet—two necessities provided each occupant of even a fourth-class motel.

Beyond these minimum needs, several design concepts can add to the well-being of the patient. One of these is the stress upon private rooms—each of which, in effect, becomes a living and treatment unit at a cost comparable to that of





Typical plans show variations of the basic room design.

semi-private (two or more bed) rooms. In the past, hospital rooms have held as many as 50 patients. Despite a gradual evolution toward fewer and fewer patients per room, the semi-private room—with two, three or four beds—remains the norm.

There is little argument that private rooms benefit the patients. They provide better control of infections, greater opportunity for rest, privacy between patients and visitors, doctors and nurses; they reduce the number of times a patient must be moved to meet medical and nursing needs.

In the words of one hospital administrator: "Because of the intimate nature of many procedures performed on patients, and because sickness is a time of great stress, privacy should be considered a factor to which all patients have a right without consideration of their financial ability to pay." Furthermore, adds Dr. Raymond Alexander, chairman of the board of Southern Illinois Medical Center in Mt. Vernon, "We have proved that patients get well faster in private rooms."

The higher per-bed construction cost for private rooms can be largely offset by increased occupancy. Because patients are separated by sex, age, type of treatment, the danger of cross-infection and other factors, an 85 percent occupancy is high for semi-private rooms. The hospital with all private rooms, by contrast, can maintain the highest level of care while operating at an occupancy rate of 95 percent or more. Another economy follows a reduction of the number of times patients in private rooms must be moved. One study shows each move to cost $18, largely because of the additional paperwork involved.

The use of single rooms also adds flexibility, as two or more rooms may be quickly and easily converted into a special care unit by means of an operable wall system which allows walls between rooms to be partially or completely folded back. With outlets for electricity, vacuum and medical gases suspended from the ceiling, beds in combined rooms—or in rooms being used for some special purpose—may be placed to meet the demands of medical treatment or preferences of patients.

This flexibility may be extended to patients who, for various social or psychological reasons, may not wish to be alone, or those whose medical needs require constant monitoring. Two patients may share common quarters, a relative or nurse can sleep in the combined room with a patient, or special equipment requiring added space may be installed temporarily.

Also adding to the patient room as the focus of health care is what we call the *Nurserver*, double-door, pass-through supply cabinet built into the wall between the nurses' alcove in each room and the adjoining corridor. This cabinet, vertically divided into "clean" and "soiled" compartments, in effect serves as a miniature supply room containing charts, medications (stored in a locked drawer) and replacement stocks of linens and other items. These are immediately available to the nurse without her leaving the patient's bedside.

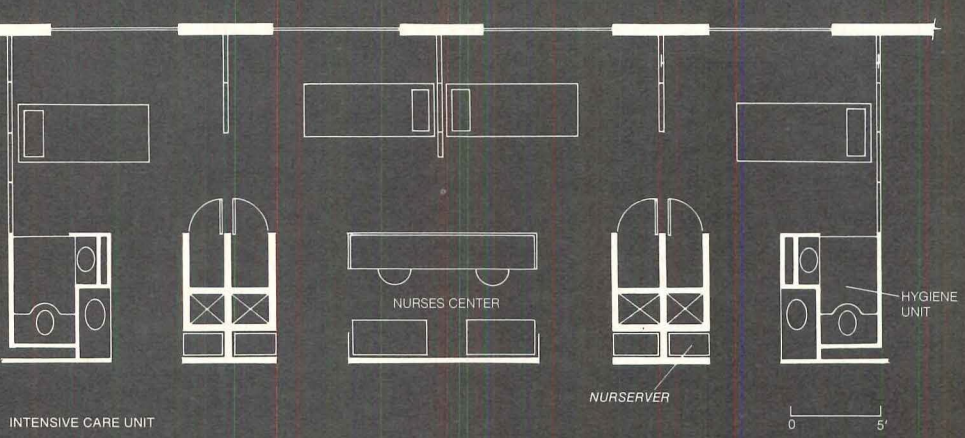
The *Nurserver* is part of the nursing alcove designed into each patient room. Here are located facilities—communications console, vanity shelf, ideally a pneumatic tube outlet—to support functions traditionally carried out at other locations, including medical charting by the doctor and nurse. This arrangement, plus an end to the traditional nurses' station in hospital corridors, enables nurses to spend up to twice as much time with patients as in traditional hospitals, where they carry out administrative duties in hallways.

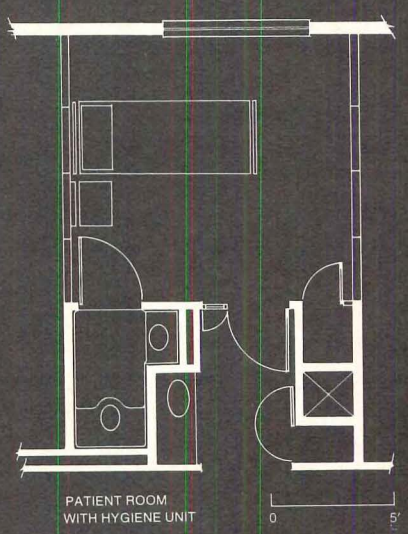
In an effort to further improve patient care and reduce costs, these concepts continue to be revised. For example, space requirements may be further reduced with a combined hygiene unit in each room that has a fold-down seat over the toilet. After showering, a patient merely turns on an infra-red light which completely dries the unit in minutes.

Another way of providing all-private rooms without inordinately increasing costs is to prefabricate standard elements, such as the hygiene unit and nursing alcove. This also increases flexibility by permitting, for example, the hygiene unit to be removed from a patient room or, if desired, relocated as an exterior hall bathroom.

These concepts are intended to provide patient-centered care that too often is lacking in the design of hospital rooms. They can transform the patient room from little more than a bedroom into the focus of health care, fully integrated into the planning and operation of a hospital.

Author: Gordon A. Friesen heads Gordon A. Friesen International, Inc., health care consultants of Washington, D.C.





Building costs: myths and realities

Brian Bowen

With this issue, P/A publishes the first installment of the Building Cost File, a series that will provide readers with a basic framework for acquiring and using their own data. The introduction discusses the myths and realities of cost data and cost analysis (there is no magic formula, says the author); the second article describes how the P/A File is put together; a third section presents a high school by architects Hoffmann-Saur, together with P/A's first cost analysis. Future articles will show how this data can be retrieved and recycled from one project to another, regardless of building type, geography or time.

Contributing editors for the Building Cost File are Hanscomb Roy Associates, Inc., whose Chicago office will prepare analyses of several projects each year, adding data to the File. Author of the first two articles is Brian Bowen, vice president of Hanscomb Roy Associates, Inc., Chicago, and a partner of Hanscomb Roy Associates of Canada. A quantity surveyor and construction economist, Bowen is an associate of the Royal Institution of Chartered Surveyors and a member of the American Association of Cost Engineers. In addition to the U.S. and Canada, his firm also operates in Nigeria and maintains affiliations with offices in the United Kingdom, Italy, Greece, Jamaica and Australia.

A great deal of nonsense is written and spoken these days about building costs and estimating. Most of it seems to be designed to tell architects what they want to hear—that the unpleasant problems of estimating and cost control will disappear if they use this computerized estimating system or that costing formula or price book.

I once taught a class of fourth-year architectural students on construction economics. We discussed all kinds of basic fundamentals affecting and influencing building costs, cost control and estimating methods, techniques and so on. As the sessions wore on, it became evident that while they were taking notes and listening politely, they were all waiting patiently for the final revelation, in which the secrets of the cult would be revealed to them. No amount of argument and dissuasion would shake their faith that such secrets existed. I suppose they just thought I was protecting a vested interest.

In fact, there is a great deal of mysticism about construction costs and estimating, largely fostered by the erratic inconstancy of actual costs vs estimates and the legendary ability of some estimators to hit it on the nose, seemingly through intuitive sixth sense.

How often, too, are the vocabulary and rites of gambling evoked (the office sweepstake on bid results). Others contend that any form of deliberate estimating is useless, citing the wide swings and variances between the bids of those in the industry who are supposed to know better—the contractors and subcontractors. Things are not as arbitrary as they sometimes seem, but then neither is there anything finite or absolute about building costs. As with all successful methods of prediction or forecasting, a great deal depends on reliable methods of experience feedback and recycling.

It is easy to agree with the concept of feedback. The form that the feedback will take is not quite so simple to define, although it must provide the kind of information at the right level and in the right form to enable rational re-use.

Building cost information required by the architect during the design stage will help define the recycled information on costs needed:

a. *Proposal stage.* Single unit costs based on broad accommodation parameters (cost per apartment, per hospital bed, etc.), and cost/sq ft of gross floor area or cu ft of volume. Conversion factors for transforming net to gross areas would also be useful, together with cost/sq ft of net usable area.

b. *Programming stage.* In addition to the above, cost/sq ft of functional floor area, i.e., costs related to the functional activities programmed for each space. There is a very clear identification between these functions and costs as the former dictate, in large measure, the basic criteria and parameters which will be followed in the ensuing building design.

c. *Conceptual design stage.* Broad elemental unit costs for each building subsystem to permit outline cost comparisons between different conceptual solutions and for preparing approximate cost estimates and cost plans.

d. *Preliminary design stage.* More detailed elemental subsystem costs to permit selection of component and system specifications and for preparing more detailed estimates.

e. *Working drawing stage.* Composite unit rates for a wide range of construction components, assemblies and systems, for finalization of material and specification selections and for preparation of more defined estimates. Detailed unit rates are often required at this stage, for pre-bid estimates, final cost checks and contract administration during construction.

The demand for this data is met in a variety of ways. Published material concentrates almost exclusively at the detailed unit price level, represented by the plethora of unit price books from the ubiquitous R.S. Means to local publications. A further intrusive sort of pseudo-building cost information is represented by the appraisal manuals, marketed primarily to the appraisal profession but having a steady sale in the construction industry. These profess to provide a solution to the problem of building cost estimating through the use of a kind of "tax form" approach to building up an estimate, which can be very appealing. I am always amused by the way these publications use the ugliest architecture in the country to decorate their manuals. Notwithstanding this, it is quite possible to see in architects' and engineers' offices a selection of these books and manuals, which often represents $200 or more in annual subscriptions. Many feel security in numbers or perhaps they figure that surely one of them must be right.

There are, however, serious gaps in the coverage by the

1 Comparative lists of elements

Canadian Institute of Quantity Surveyors	State University Construction Fund (New York)
1 Substructures (a) Normal foundations (b) Basement excavation (c) Special foundations	**1 Structural** (a) Foundations (b) Floors on grade (c) Floors above grade (d) Roof deck
2 Structure (a) Lowest floor construction (b) Upper floors construction (c) Roof construction	**2 Exterior walls**
3 Exterior cladding (a) Roof finish (b) Walls below ground floor (c) Walls above ground floor (d) Windows (e) Exterior doors and screens (f) Balconies and projections	**3 Interior walls and partitions**
4 Interior partitions (a) Permanent partitions (b) Movable partitions (c) Doors	**4 Finishes**
5 Vertical movement (a) Stairs (b) Elevators and escalators	**5 Vertical circulation** (a) Stairs (b) Elevators
6 Interior finishes (a) Floor finishes (b) Ceiling finishes (c) Wall finishes	**6 Specialties**
7 Fittings and equipment (a) Fittings and fixtures	**7 Equipment**
8 Services (a) Electrical (b) Plumbing and drainage (c) Heating, ventilation and air conditioning	**8 Plumbing** **9 HVAC** **10 Electrical**
9 Site development (a) General (b) Services (c) Alterations (d) Demolition	**11 Site**
10 Overheads and profit	

2 Elemental categories for building cost analysis

100	**Foundations**	
	110	Normal foundations
	120	Basement excavation
	130	Special foundations
200	**Building shell**	
	210	Structure
	211	Lowest floor construction
	212	Upper floors construction
	213	Roof construction
	220	Roof finishes
	230	Exterior cladding
	231	Basement walls
	232	Exterior walls above grade
	233	Windows
	234	Entrances and storefronts
	240	Stairs
300	**Interiors**	
	310	Partitions and doors
	320	Interior finishes
	321	Floor finishes
	322	Ceiling finishes
	323	Wall finishes
	330	Specialties and equipment
	331	Specialties and fittings
	332	Equipment
400	**Conveying systems**	
	410	Elevators
	420	Moving stairs and walks
500	**Mechanical and electrical**	
	510	Mechanical
	511	Plumbing and drainage
	512	Fire protection
	513	HVAC
	520	Electrical
	521	Distribution
	522	Lighting
	523	Special systems
600	**General conditions and profit**	
900	**Site development**	

commercial press of the cost information needs of the architectural-engineering professions, principally the form of cost information required at early project stages (a., b., c. and d. above). The reasons mainly involve economics, unavailability of cost data and a lack of imagination. As estimating, cost planning and cost budgeting become more sophisticated during these early stages, a greater demand will be established for the information. (It is of course debatable which comes first, the information or the techniques for using it.) Perhaps, the main deterrent to making this information readily available is the cost of doing so. Any feedback or recycling of actual building costs into forms suitable for reuse during early project stages is bound to be expensive, although one suspects that the cost-benefit ratio is definitely on the positive side.

Translating the data

Data on actual building costs obtained from the bidding and contracting process is in the wrong form and despite the natural reluctance to expend time or energy on feedback of anything, must be translated into the language of design to be of any use. Cost data available from the prime contractor and the subcontractors is in a trade format, the industry is organized along these lines, the specifications are written in this way, construction is handled in these administrative units. Many of the trades are anachronisms, but we still cling to them because we are forced to, or because the prospects of changing them are too formidable. In any case, the trade divisions, which seem so logical for writing specifications, do not provide a sensible or logical framework for cost planning or accumulating cost data for use during the design stage. The cost analysis format recommended by the Uniform Construction Index (which supersedes the old CSI format) may be good as a cross-reference to the specifications and to the construction trades, but it is a forced and unwieldy categorization for costing purposes, especially at early design stages. It is heavily material-oriented, rather than component- or system-oriented, with the possible exception of divisions 15 and 16 (mechanical and electrical). For efficient and effective cost control procedures, a far better framework is required, tailored to fit the language of design. It should be

3 Description of elemental categories and units of measurement

Element content	Exclusions	Unit of measurement for cost analysis
100 Foundations		
110 Normal foundations		
Excavation or fill to reduce or raise levels	Slab on grade (211)	Sq ft—gross area on plan measured to outside face of perimeter walls or to outer extent of foundations
Excavation, backfill, concrete and masonry for wall footings, columns bases and caps, grade beams, pile caps	Excavation for basements (120) Basement walls (231) Caissons and piles (130)	
Foundation walls up to level of slab on grade	Excavation and backfill for mechanical and electrical services (511 and 521)	
Drainage tile		
120 Basement excavation		
Additional excavation and backfill required for construction of basement	Basement walls (231)	Cu ft—Volume of basement below grade measured to outside face of perimeter walls and underside of grade slab
130 Special foundations		
Caissons and piles	Pile caps (110)	According to special conditions (e.g. piles in Lin. ft)
Extra cost of excavation in rock		
Special shoring		
Special dewatering		
Any other special foundation conditions		
200 Building shell		
210 Structure		
211 Lowest floor construction		
Slab on grade	Final finish to slab (321)	Sq ft total area of 211, 212, 213, 230
Suspended slabs over crawl space		Sq ft total area of 212 and 213
Fill below slabs		Sq ft—Gross area of slab measured to outside face of perimeter walls
Waterproofing, skim coat, vapor barriers		
Small sump pits and trenches,		

Element content	Exclusions	Unit of measurement for cost analysis
Construction and expansion joints		
Curtain walls and window wall systems		
Balcony railings and upstands		
Exterior finishes to overhangs and projections		
Exterior sunshades		
233 Windows		
Window frames including mullions and transoms	Curtain walls (232) Window working equipment (322)	Sq ft—Area of windows
Glazing		
Hardware		
Lintels, sills, stools and special surrounds		
Fly screens, storm windows		
Louvers		
Damp-proof courses and caulking		
Painting and finishing		
234 Entrances and storefronts		
Exterior doors and entrances		Sq ft—Area of entrance openings, screens and storefronts
Glazing		
Overhead doors and shutters		
Storefronts and entrance screens		
Revolving doors		
Hardware and operating devices		
Lintels, sills and special surrounds		
Damp-proof courses and caulking		

Beams and joists	Applied and suspended ceiling finishes (322)	measured to outside face of perimeter walls	Stringers and supporting framework	
Sub-floors, slabs and decks	Roof construction (213)		Balustrades and handrails	
Fireproofing	Exterior load-bearing walls (231 and 232)		Finishes to treads, risers, landings and soffits	
Base plates and anchor bolts	Ramps (240)		Painting	
Balcony floor construction			Steps and ladders	
213 Roof construction			Ramps	
Columns and interior load-bearing walls	Roof finish (220)	Sq ft—Gross area of roof measured flat on plan	**300 Interiors**	
Beams, joists, rafters, purlins, trusses	Insulation, cants, flashings (220)		**310 Partitions and doors**	
Slabs, decks, boarding	Roof drains, eavestroughs, rainwater leaders (511)		Interior partitions and non-load-bearing walls	Load-bearing walls (212 and 213)
Canopy construction	Exterior load-bearing walls (232)		Interior glazed partitions and borrowed lights	Applied finishes (323)
220 Roof finishes			Movable partitions	
Roof finish, insulation, vapor barrier	Parapet walls and copings (232)	Sq ft—Area of roof and terrace finishes	Folding and demountable partitions	
Cant strips, flashings, curbs			Toilet and shower partitions	
Fascias, eaves, barge boards			Interior doors and frames, including glazing, hardware, painting and finishing	
Roof-and sky-lights			**320 Interior finishes**	
Waterproof membranes, patio and terrace paving, traffic toppings			**321 Floor finishes**	
Roof finish to canopies and overhangs			Toppings	Access flooring (331)
230 Exterior cladding			Floor finishes (applied and integral)	
231 Basement walls			Bases	
Enclosing walls below grade level to basements	Finishes to interior face of wall (323)	Sq ft—Total area of 231, 232, 233, 234	Mat sinkages, frames and mats, floor grilles	
Water- and damp-proofing, insulation	Exterior wall construction above grade (232)	Sq ft—Area of basement wall below grade level and above slab on grade	Expansion joint cover plates	
	Foundation walls below slab on grade (110)		**322 Ceiling finishes**	
232 Exterior walls above grade			Applied and suspended ceiling finishes	Special illuminated ceilings (522)
Exterior wall construction	Finishes to interior face of wall (323)	Sq ft—Area of exterior wall above grade level	Bulkheads	
Facing materials			Cornices	
Exterior applied finishes	Balcony floor construction (212)		**323 Wall finishes**	Exterior wall finishes (232)
Back-up construction and framing	Balcony finishes (321 and 322)		Applied interior finishes to walls and partitions	Self-finished partitions (310)
Insulation and vapor barrier				
Parapet walls and copings			**330 Specialties and equipment**	
Damp-proof courses	Chimneys and flues (513)			

Sq ft—Gross area of partitions and walls measured over doors and openings

Sq ft—Gross floor area of finished spaces

Sq ft—Gross area of finished ceilings

Sq ft—Gross area of finished walls and partitions (measured both sides)

P/A Building Cost File: Description of elemental categories and units of measurement

Element content	Exclusions	Unit of measurement for cost analysis
331 Specialties and fittings		
Toilet and bath accessories	Items of equipment (332)	Record costs only on a gross building floor area basis
Cupboards, counters, shelving and cabinet work		
Mirrors		
Chalkboards, tackboards, directory boards		
Access flooring		
Lockers		
Mail chutes and boxes, linen chutes		
Auditorium seating and bleachers		
Telephone enclosures		
Blinds		
332 Equipment		
All items of equipment not included in 331, such as: kitchen, laundry, library, stage, parking, laboratory, athletic, checkroom, darkroom, vault, window washing, security (non-electronic), etc.	Electronic security equipment (523)	Record costs only on a gross building floor area basis
400 Conveying systems		
410 Elevators		
Passenger and freight elevators	Hoisting enclosure (212, 213 and 310)	Stops.—Total number of stops and floors served
Dumbwaiters	Power supply (521)	
420 Moving stairs and walks		
Escalators	Power supply (521)	No.—Number of continuous lifts
Moving walks		Lin. ft—Length of walk
500 Mechanical and electrical		
510 Mechanical		
Controls and instrumentation		
Insulation		
Chimneys and flues		
520 Electrical		
521 Distribution and power		
Power transmission	Service connections (900)	Record costs only on a gross building floor area basis
Service and distribution		
Emergency power generation		
Controls		
522 Lighting		
Lighting fixtures and branch circuits		Record costs only on a gross floor area basis
523 Special systems		
Communications		Record costs only on a gross building floor area basis
Electric heating		
600 General Conditions and profit		
Indirect and site overheads and expenses supervision, site accommodation, site protection, temporary facilities and services, insurance and bonds, permits, site equipment, clean-up, winter conditions, etc.	Subcontractor's overheads and profit to be included in appropriate subdivision	Record costs only on a gross building area basis and percentage of total cost
General contractor's head office overhead and profit, or construction manager's fee		
700 and 800 — Vacant		
Use these open categories to record speical items, such as demolition, alterations, renovations		

	Plumbing fixtures		
	Insulation		
512	**Fire protection**		
	Sprinkler equipment	Service connections and fire hydrant systems (900)	Sq ft—Record costs only on a gross building floor area basis
	Extinguishing equipment		
	Standpipe and fire hose equipment		
	Fire extinguisher cabinets		
	Hood and duct fire protection		
513	**HVAC**		Cu ft—Volume of building
	Heat generation equipment and piping	Machine and equipment bases (211)	
	Refrigeration equipment and piping	Service connections and exterior distribution (900)	
	Heat transfer units and equipment		
	Air distribution		
	Landscaping		
	Paved areas, steps		
	Retaining walls		
	Pools, fountains and decorative site elements		
	Site furniture and signs, flagpoles		
	Fencing and gates, walls, barriers		
	Service connections and distribution		
	Exterior lighting		
	Site drainage		
	Irrigation systems		
	Fire hydrant systems		

based on functional or elemental parts of a building which always substantially perform the same functions, irrespective of the building's construction. As an example, providing for pedestrian nonmechanical access between different levels in a building is performed by steps and staircases; this is irrespective of whether the construction is metal, concrete or wood. Items forming parts of steps or stairs will always be analyzed under the element "Stairs."

These items are often called by different names: subsystems, functional components, elements, features, assemblies, etc. It is not important how they are named, but the concept behind them is. Such subsystem categories as are in use tend to vary considerably and examples of just two are given in Table 1—one at a high level of aggregation (State University Construction Fund of New York) and one in more depth (Canadian Institute of Quantity Surveyors). It is hoped that a standard form or list of elements will some day be adopted. The ideal form would be a list based on a hierarchic structure which permits cost aggregations at different levels of detail, according to the information available or to the requirements of the moment. It would also allow for some form of individuality at the detail level, no mean advantage if you have ever tried to achieve a consensus among more than two of the cognoscenti on acceptable elemental categories.

The lists in Table 1 show why conversion of construction trade costs into this form becomes somewhat expensive. The possibilities always exist for asking bids in such a way that cost breakdowns are provided by contractors in a form which permits rapid reshuffling into elemental groups. This is not very popular with contractors, but perhaps once the usefulness of such cost data is proved, bidders may provide better, more open and more frank cost data to architects and owners. Failing all else, with a little time and effort, it is possible to recast traditional contractors' trade breakdowns into an elemental form, if one is prepared to accept modest error deviations between the parts, if not the whole.

Once costs are recast in this way, the immediate relationship to the design process should be evident. Each building cost analysis should properly provide the cost information required for stages a. through d. noted above. For comparative purposes, it is necessary and convenient to use a simple yardstick of cost which can be applied to a wide range of building types in various designs and forms of construction. Costs expressed per unit of floor area are satisfactory in practice. In addition, elemental unit costs are important in supplementing the cost/sq ft of floor area. Each element should carry a specific elemental quantity related to that element; i.e., window costs would be expressed as "sq ft of window area" to provide an average unit cost for that particular element. The power provided by extensive numbers of such cost analyses for cost planning and estimating buildings at early design stages should now be clear. The system of analysis implies that cost data accumulated from one building, or building type, may be readily transposed to a different building or type, if the design and performance criteria for each are similar. Thus, a structural system of a given span, for given live loads and height, may be transposed from an office building to a university building.

Of course, any building cost analysis is practically useless unless the specification data and performance criteria which the building and its various systems meet is coupled with cost data. The more statistically oriented this data can be, the bet-

ter chance there will be of providing correlations between elemental costs obtained from different buildings. Thus, any detailed cost analysis for partition systems should indicate the height, density in relation to floor area, frequency of doors per hundred lineal feet, the db rating, and so on. There is an increasing trend for building components (and complete buildings) to be specified on a performance basis and it is obvious that, while a wide range of actual solutions may exist, the range of economic costs for each solution is relatively narrow. This leads one to the hypothesis that it is not necessary to specify or design a building in detail to be able to establish realistic cost estimates, providing coherent bodies of cost and performance feedback and rationalized cost data are available to the designer and estimator.

What is needed now is a greater interchange and dissemination of building cost information, not do-it-yourself estimating kits; estimating and cost control success comes from a skilled appraisal of many factors unique to the particular project under consideration.

Analyzing building costs

The P/A Building Cost File is the basic framework within which architectural/engineering firms may accumulate and structure their own cost data. It will be supplemented by cost analyses, which will appear from time to time. The first of these analyses appears in this issue and will be used to explain the various features of the building cost information file.

The file is composed of: elemental categories for cost analysis (Table 2); description of elemental categories and units of measurement (Table 3); floor areas and volumes of buildings—rules of measurement (Table 4); building classification code (to be published in October).

There is no commonly accepted elemental or subsystem categorization in use in this country. Therefore, we have developed one of our own, which we believe adequately suits the principles and requirements of a sound building cost information file. The list is built up on a hierarchic basis, providing summaries of costs at different levels of aggregation, depending on the information available for cost analysis, or on the requirements for its use during planning and design.

Shown as Table 2, the list is used in the first building cost analysis (p. 102). Costs are divided into two major groups: building costs (100 to 600) and site development costs (900). The building costs are subdivided into six major cost centers:

Foundations (100), which broadly includes the cost of supporting the building. These costs are separated from the total structural costs, as they vary substantially according to the site conditions, height of building, number of basements, etc.

Building shell (200), the basic superstructure of the building, including the exterior envelope and roofing.

Interiors (300), all architectural interior finishes, partitions, built-ins, specialties and equipment. The costs tend to be influenced primarily by the functional requirements for building space use.

Conveying systems (400), (400), escalators and the like, with costs being primarily dependent on building height.

Mechanical and electrical (500), all mechanical and electrical system installations, except exterior services (900).

General conditions and profit (600), includes the general contractor's provisions for general conditions, site overheads and his profit. These costs are often buried in the foundation and structural trades in all or part and should properly be separated for cost analysis purposes.

Each of these main categories is then subdivided into one or two further levels of detail. Items which are included and excluded in each and the units of measurement for elemental quantities, are shown in Table 3. This detailed listing will permit an orderly transfer of trade costs to the elemental format in a consistent fashion and ensure comparability between analyses.

In devising the list, several options were examined. Probably the most fundamental was the wisdom of separating items of special cost, such as special foundations, special equipment, special finishes and extraordinary costs arising due to client requirements or market conditions. After some thought, however, it was decided that these special factors should not be separated, but included in the general costs and noted in the outline building specification. While certain special costs are easy to identify and separate, it has been found that the majority tend to become matters of value judgment by the individual preparing the cost analysis. Every building has its special characteristics, and the ability to compare different buildings through a rational method of cost analysis would be inhibited, it was felt, if too much emphasis was placed on the separation of special costs. These costs are therefore included in the appropriate category and identified if necessary in the building description.

A further level of analysis can readily be added, provided the resources and information are available to permit the necessary cost allocations. It was felt, however, that the depth of analysis in Table 2 represented the most suitable in terms of utility, economy and ease of preparation. The objective has been to create a list of elements that could remain reasonably standard for a wide variety of building types and fulfill all the principles discussed elsewhere.

Floor areas and volumes

It is the convention in most countries of the world to use the building floor area and/or volume as a convenient cost yardstick which can be applied to a wide range of building types in various designs and forms of construction. We tend to be familiar and at ease with the resulting unit rates, even if at times they seem to acquire an importance greater than the simplicity of calculation justifies. A comprehensive, standard set of rules for measuring floor areas and volumes is necessary, however, to ensure that the derived unit rates are consistent from project to project. In some countries, for instance, gross floor areas are measured to the inside faces of perimeter walls, rather than to the outside faces as is common here. This could well result in an understatement of floor area of between 5 to 10 percent, with a corresponding effect on any derived unit rate. The AIA has had a simple set of rules for many years, the general intent of which is commonly accepted throughout the industry. The rules are, however, too simple for consistent detailed use. The Canadian Institute of Quantity Surveyors has developed a detailed standard method of measurement of floor areas and volumes,* which was drawn upon in formulating the rules in Table 4. These rules follow the intent of the AIA form, but are amplified to

4 Floor area and volume of buildings: Rules for measurement

Gross floor area General definition:	The sum of all floor areas measured flat on plan to the outside face of perimeter walls, without deductions for any openings (except as noted below), walls, partitions or columns.
Inclusions:	Balconies and mezzanine floors where these occur within the exterior walls of the building; crawl spaces, tunnels, trenches and floor areas with headroom of 6′-0″ or more; penthouses, machine rooms; enclosed connecting links; rooms below grade or sidewalks; areas of projecting columns, dormers, bay windows and the like providing they extend vertically for a full floor height.
Exclusions:	Balconies projecting beyond exterior walls; crawl spaces, tunnels, trenches and floor areas with headroom less than 6′-0″; unenclosed canopies, porches, walkways; unenclosed exterior staircases and fire escapes; exterior steps, patios, terraces, open courtyards and lightwells; roof overhangs and cornices; unfinished roof and attic areas.
Net floor area General definition:	The sum of all usable floor spaces measured flat on plan to inside faces of enclosing walls or to lines of functional space separations.
Inclusions:	All floor areas which may be assigned to or usable for a specific function or activity.
Exclusions:	Circulation and general service areas such as: corridors, lobbies, toilets and restrooms, janitors' closets, mechanical, electrical and elevator service rooms and general storage areas.
Volume General definition:	The enclosed cubic content measured to the outside faces of perimeter walls and from the underside of the lowest floor constructon system to the average height of the surface of the finished roof, including all voids within these delimitations.
Inclusions:	The volume of all spaces included in the gross floor area calculations; chimneys, stacks or other large features projecting above the roof level; bay and dormer windows and other large features projecting beyond the perimeter wall facade; pits, trenches and depressions projecting below the lowest floor construction.
Exclusions:	The volume of all spaces excluded from the gross floor area calculations; enclosed skylights less than 6 ft sq, smoke hatches, fan housings, etc.; interior open courts and light wells.

clarify a number of ambiguous issues. With the diversity of building design, it is difficult to establish firm sets of rules; indeed, it would perhaps be unwise to do so. Generally, these should be treated as guidelines and the intent followed as far as possible. Any unusual characteristics relating to a specific building design should be identified and recorded separately; for example, the volume or area of a glassed-in interior courtyard. The net floor areas of buildings provide the opportunity of testing the space use efficiency of different designs and of converting cost to a unit of net usable area. This data becomes particularly useful at very early project stages.

The building volume measurement also provides the opportunity to translate costs into dollars per cu ft, another commonly used rule of thumb. The ratio of gross floor area to volume gives the average floor-to-floor heights, useful in interpreting unit cost data. The gross floor areas, net floor areas and cubic volumes used in the building cost analyses will be calculated according to the rules stated in Table 4.

Building classification code

Again, no satisfactory and commonly accepted system of building classification appears to exist in this country. We have therefore created our own, which will be published in the October issue. This is correlated with the international SfB classification system, modified for North American terminology and building types; the basic category divisions, however, remain the same. Each analysis should be identified according to this coding system for ease of retrieval and filing.

The cost analysis

The building cost analysis of Parkway North Senior High School, p. 96, has been prepared under the rules already described. The analysis features the following columns:

1 Elemental categories and subcategories
2 Quantities of each element
3 Elemental unit rate arrived at by dividing element cost (column 4) by quantity (column 2)
4 Subelement cost
5 Main element total cost
6 and 7 Element cost in $ per sq ft of gross floor area
8 Element cost as percentage of total cost.

The performance data listed is self-explanatory and attempts to give a broad statistical picture of the building. A number of ratios are listed, such as exterior wall area/gross floor area, which will assist in making comparisons between buildings, rationalizing cost differentials and measuring design efficiency. The specification notes are in outline form only, and are limited by the space available, but give a broad idea of the type and quality of construction. The photographs, text and sketch plans should fill out any missing details. Naturally, where analyses are being added to the file separately, then similar detail or additional descriptive material should be added wherever possible. As has been stated before, no building cost analysis is of any value without this additional interpretive data.

Generally, the analyses will be based on bid prices unadjusted for changes during construction, regional or time variations, unless otherwise stated. The reader may note that a box in the top right-hand corner of the cost analyses, titled 'cost index,' has been left blank. This has been done to allow the user to select, from the many available, the cost index he has found to be the most reliable.

An article in the October issue will explain how the cost information contained within these analyses may be used for cost planning and conceptual cost estimating purposes, including methods for updating and transposing cost data.

*These rules are available from the Canadian Institute of Quantity Surveyors, 8 Colborne Street, Toronto 215, Ontario, Canada. Price 50¢.

A learning experience

Drawing on lessons gained from past school commissions and clients, a young firm demonstrates a thorough knowledge of how to use feedback to improve their work

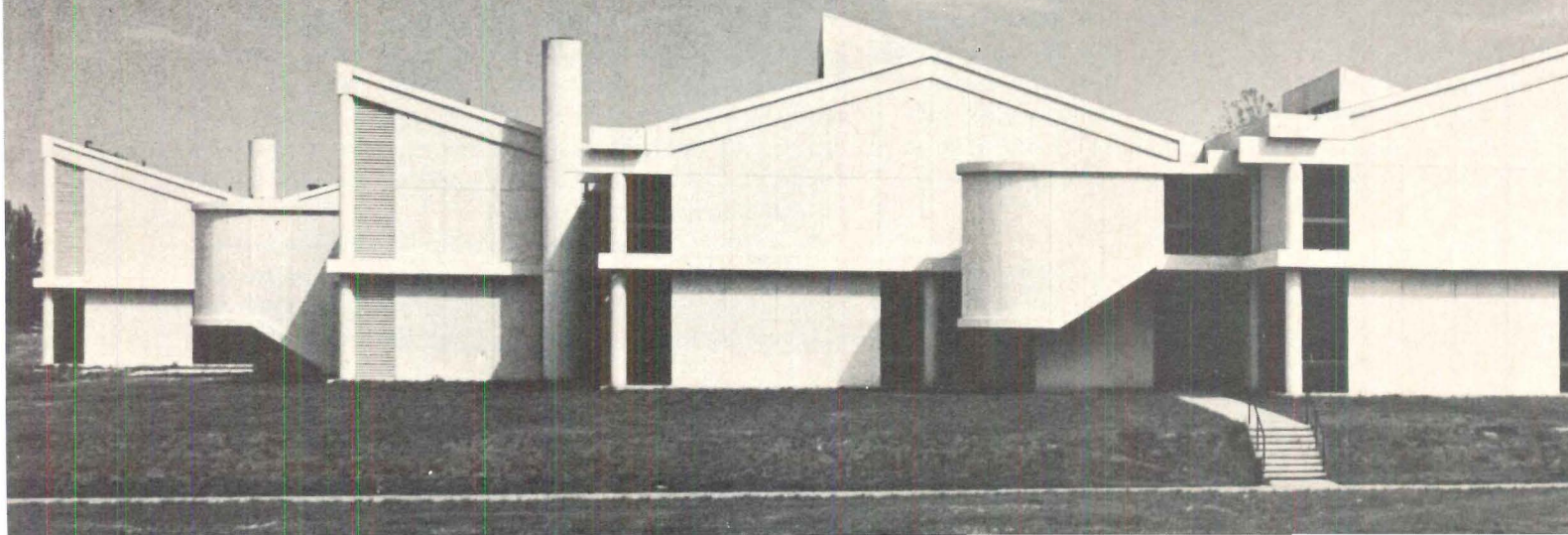
Along with all the data that tells part of any building story, there is also the other part—the how-it-happened side. Depending on the architect and the client, that aspect might be dull routine or lively and vital. Parkway North Senior High School in St. Louis County, Mo. reflects the vitality of a young architectural firm and outstanding clients. Less than five years ago, Hoffmann/Saur & Associates began a practice with a school job and more than average amounts of talent, enthusiasm and determination. In that short time, encompassing some of the worst years in the profession's history, they have continued to grow. Growth meant more to them than numbers; an important part of their plan was to learn as much as possible from each job, in order to apply improved processes to their next commission.

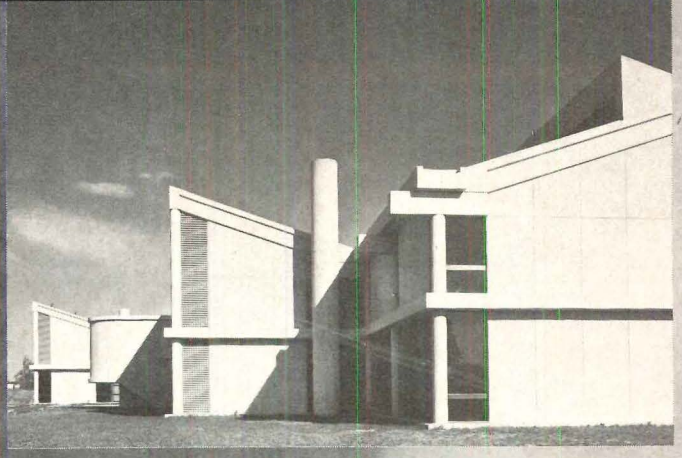
Among the emphases which have been evolved through this period, several strengths were important to the Parkway North process. From the time of their first school, the architects saw the need to develop an acute awareness of the controlling issues—the user's view of his needs, the political and financial limitations and, most important, the people who would *be* the school. Since that time, early architect involvement has been stressed, so that the owner and the school staffs would have ample opportunity to be heard, to hear, and to join a team effort. Extensive discussions, enthusiasm and a progressive administration philosophy led to what architect Louis Saur calls "the humanization of the institutional environment—a people plan." Having learned those segments of the process early, the architects could begin from an advantaged position in subsequent projects. "Plateaus are reached after successfully completing a certain phase to the point that it can be understood, examined and built on," Saur notes.

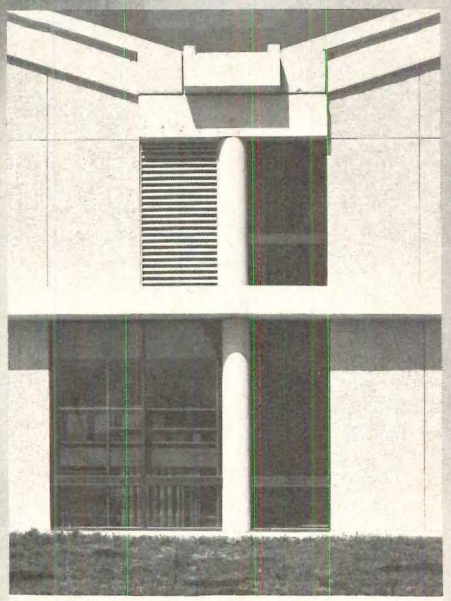
The evolution continued, through refinements and a growing feeling for the interaction of people and their interior environment. The firm has now found the time (and has actively sought) to restudy the earlier jobs, and to bring new clients to higher program and thought levels before "actual" design begins. This feedback pattern has, in turn, led to an intensive follow-through program. With adequate precedent, Hoffmann/Saur have been able to show clients tangible results of their methods, while substantiating the value of additional fees for higher benefits.

That, in oversimplified terms, is the story that led to Parkway North. Without the early efforts of both staff and the architects, the educational philosophy, the use range of spaces and the students' feelings might have remained in the all-too-familiar vague form often passed off as "the building program." Because of the feedback on DeMun Elementary and McCluer North High School—both impressive in their own ways—Parkway is a vital thing; it is not just a place where kids are required to put in their time.

Parkway uses a systems approach, in that its components are repetitive and expansion is easily accomplished. Framing for the second floor rests on columns at 30-ft intervals, while trussed arches span 60 ft for lighter roof loading. Upper spaces are high and, in a number of departments, faculty work areas are located on mezzanine platforms within the spaces. Bold color and graphics were used throughout the



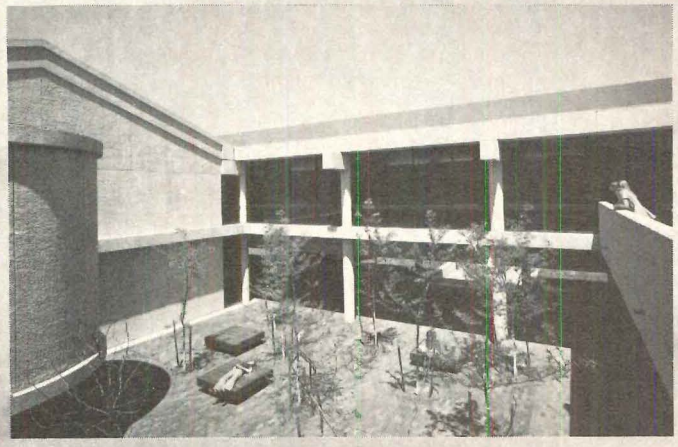




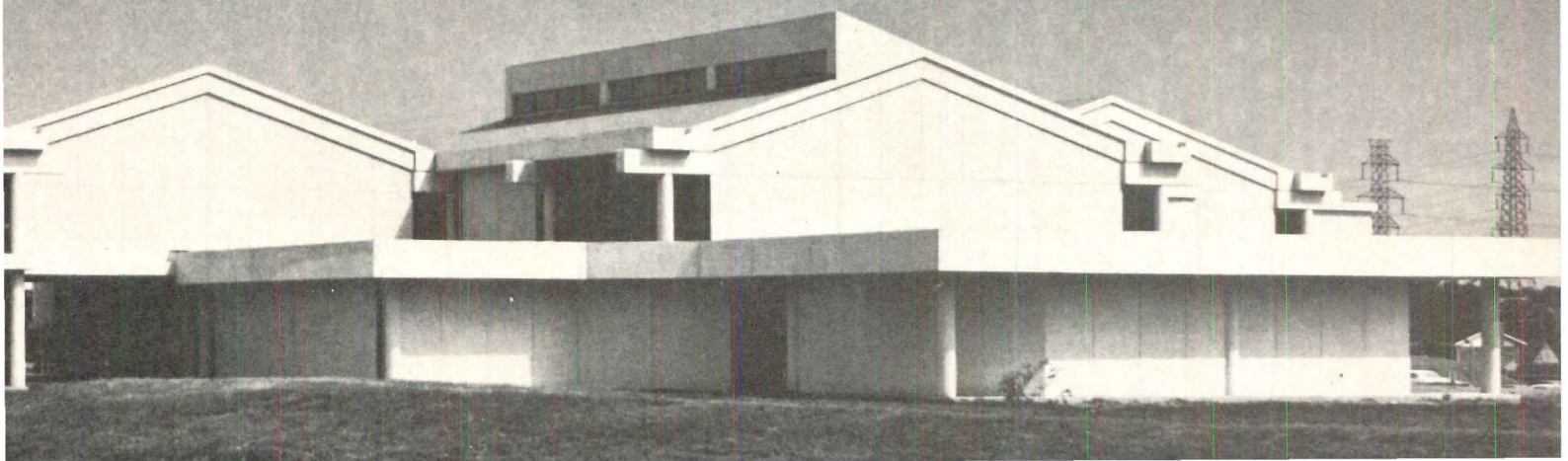
building, adding a spirited quality and visual orientation.

In planning terms, the school was designed for full interaction between Parkway's departments. The main resource area, centrally located on the upper level, is supplemented by department mini-resource centers with teacher work stations, materials and displays. On the lower level, the student commons occupies the central space, openly connected with the guidance area. Students are free to browse in the guidance section, and it is common to see teachers and students in open discussion over a snack in the commons. There are virtually no corridors in the school, and circulation through the spaces helps to break down departmental barriers. Because of fire exit distance requirements, some stairs occur in courtyards which are open on one side at grade level. Main entrances also open onto these courts. Most academic areas are free and flexible, easing change and adaptation to new activity patterns. As in all schools, some spaces have more permanent equipment installations, however, and some are located to isolate noise.

Another important process devised for Parkway was Hoffmann/Saur's furniture and equipment bidding technique. All equipment in the building was bid as a package, partially on performance specifications, making the successful manufacturer a prime contractor. Responsible for all items, the bidders assembled prices for units made by others, as well as for those they proposed. The winning bidder installed the furniture and spent two days showing the school staff how to get the most use of various items. His contract also requires that he return to the school in 12 months to evaluate how well the installation is working, discuss problems and replace any faulty units. The process has given Parkway an extremely

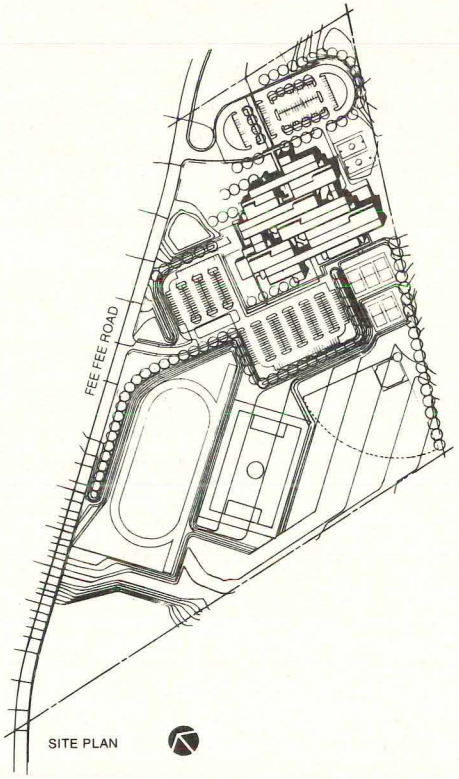


Clear-cut expression of the repetitive concrete building system is visible on the exterior of the building. Infill panels are exposed aggregate cement on metal lath and steel studs. Semi-enclosed courtyards (above) provide visual relief, trees, light and fire egress points for interior spaces.



Data

Project: Parkway North Senior High School, St. Louis County, Mo.
Architect: Hoffmann/Saur & Associates; Louis R. Saur, partner in charge of design; Anthony DeMichele, project manager; Pat Spector, interiors.
Program: school for 2200 students, including a gymnasium and a natatorium.
Site: 39 acres of rolling land located in a middle income residential area. Several sinkholes existed on the site, and the building location was chosen to avoid the extra costs of construction over the sinkholes. Fairly extensive earthwork was done to provide large flat play fields, and to create berms and terraces around parking and athletic fields.
Structural system: poured-in-place reinforced concrete columns rest on drilled piers to bed rock, and foundations are reinforced concrete grade beams. Bay sizes are 20′ x 30′ on the lower level, 20′ x 60′ on the upper level. Lower level floors are slabs on grade, upper level floors are poured concrete on dome pans, and concrete bents and gutter beams span the roof bays. Steel joists span between the main bents, supporting metal roof deck and suspended acoustic plaster ceiling. In the gymnasium and swimming pool spaces, steel trusses carry metal acoustic deck.
Mechanical system: high velocity terminal reheat system, and water-cooled condensing system for air-conditioning chillers.
Major materials: exterior, exposed concrete columns, second floor edge beams and bents, with infill panels of exposed aggregate cement plaster on metal lath and steel studs; interior, acoustic plaster ceilings, vinyl wall covering on most walls, with wood paneling in some locations, carpet, vinyl asbestos tile and ceramic tile on the floors.
Costs: includes all site work, equipment and interiors, excludes land costs and fees. (See cost analysis.)
Consultants: structural and mechanical, James R. Ahart & Associates, Inc.; educational consultant, Dr. Homer M. Johnson; acoustic and theater consultant, Lustig & Associates, Inc.; food services consultant, Ford Equipment & Contracting Co.; natatorium consultant, Ken Williamson.
Photography: Robert Pettus.

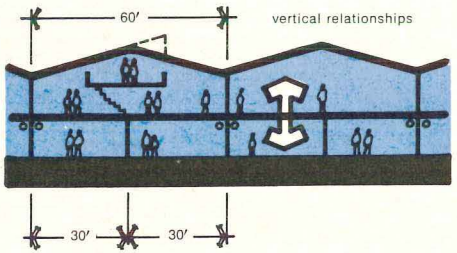


SITE PLAN

utilizing two levels

upper level

50% of building long span (60′-0″). cost is reduced by spanning roof rather than floor. roof load = 30# per sf – floor load = 100# per sf. truss (arch) structurally economical.

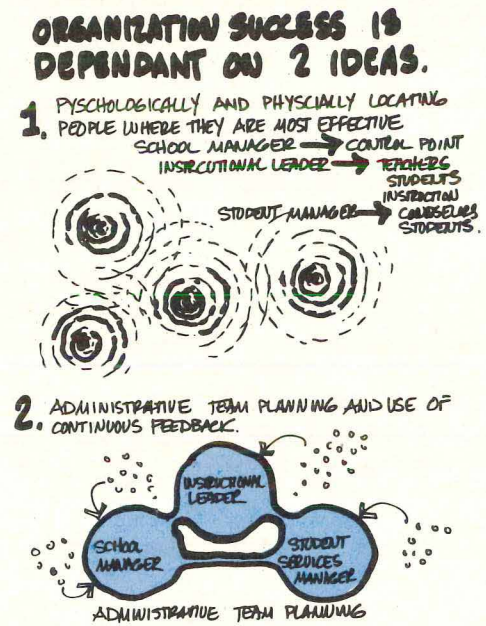


lower level

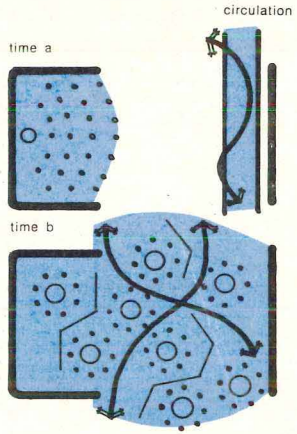
short span floor load. fixed facilities on this level. economical short span for increased floor loading. concrete for fire rating.

"long span – minimize columns which restrict special possibilities"– flexible

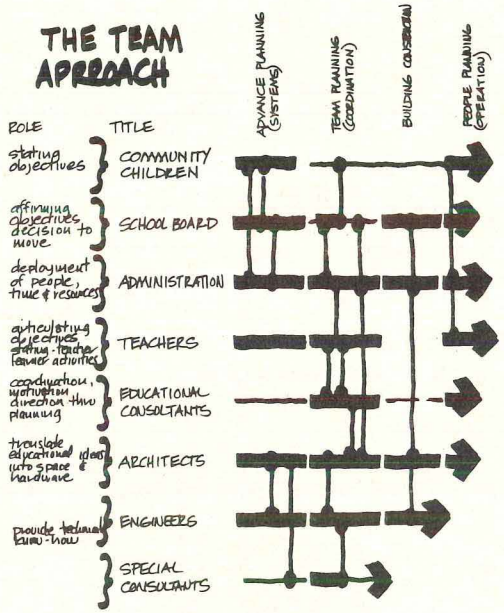
"utilize long span structural properties of the truss to achieve an arch high enough to include small platforms."

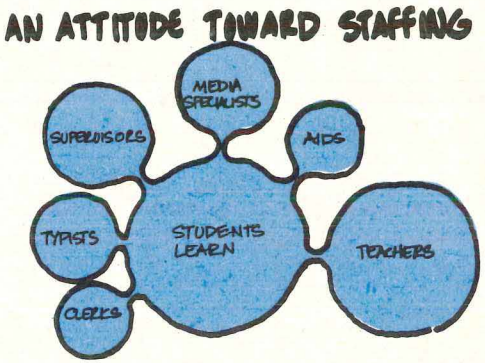


the multi-functioning space

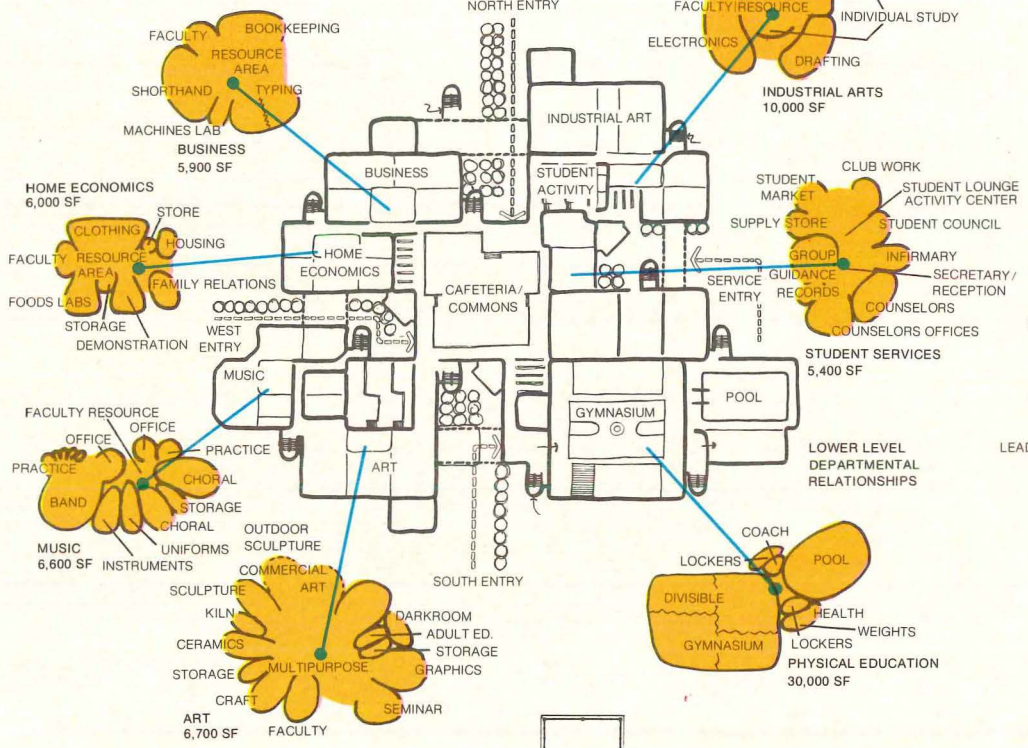


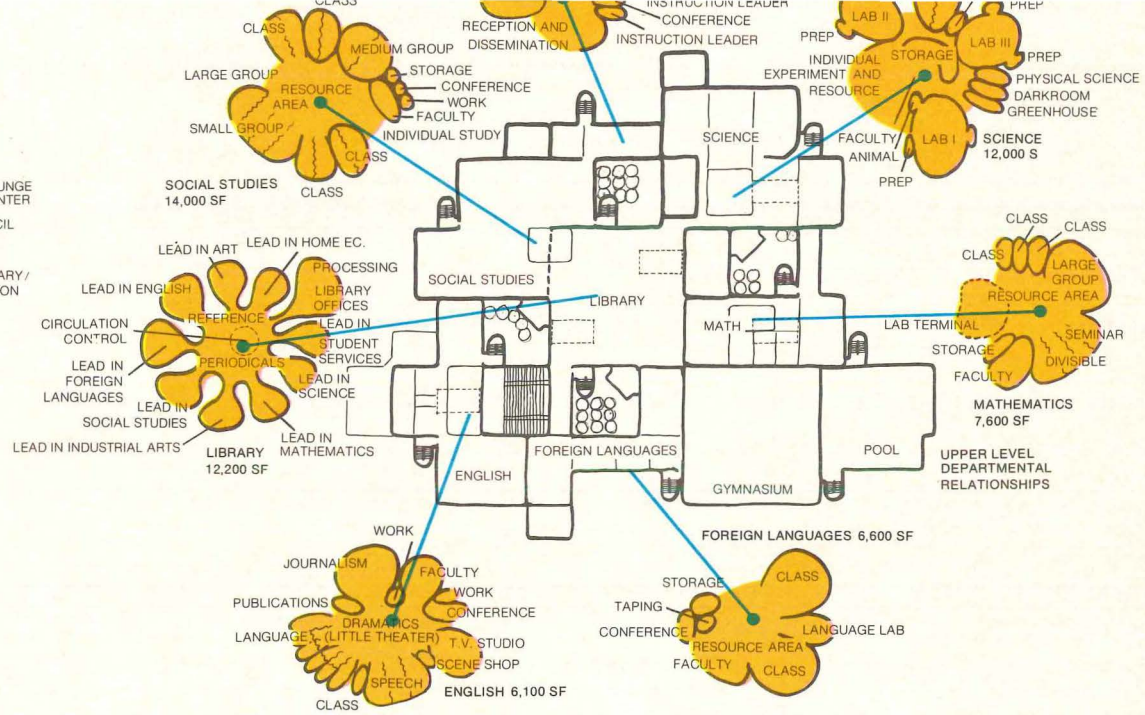
there are good reasons for the multifunctioning room as well as the multifunctioning building. "a room can have many functions at the same time or at different times."
"a gallery can be a corridor and a room at once." kahn

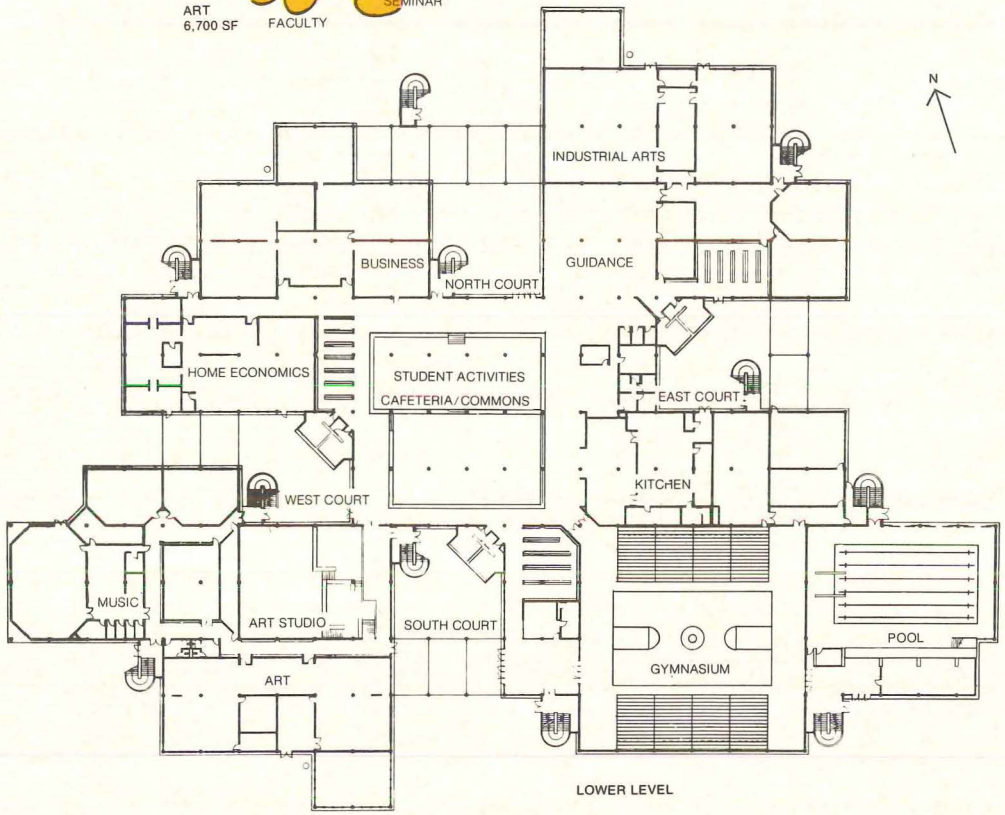




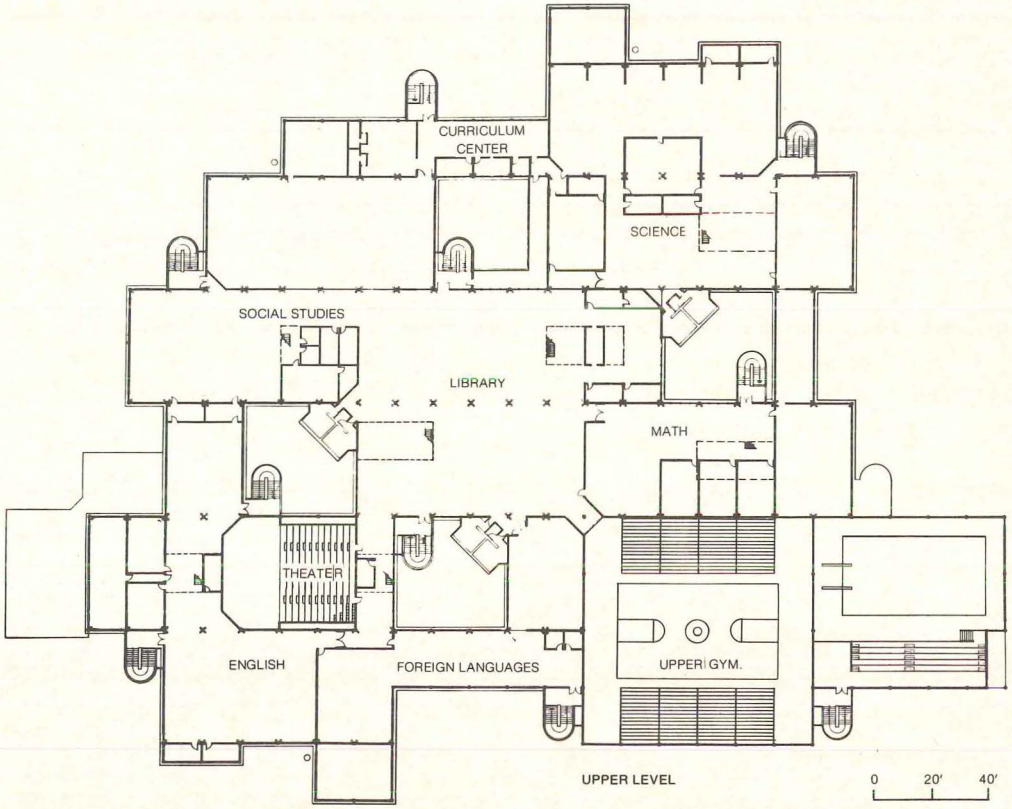
DIFFERENT PEOPLE, TRAINED DIFFERENTLY WITH DIFFERENT TALENTS, ARE PAID DIFFERENTLY TO DO DIFFERENT TASKS.







LOWER LEVEL

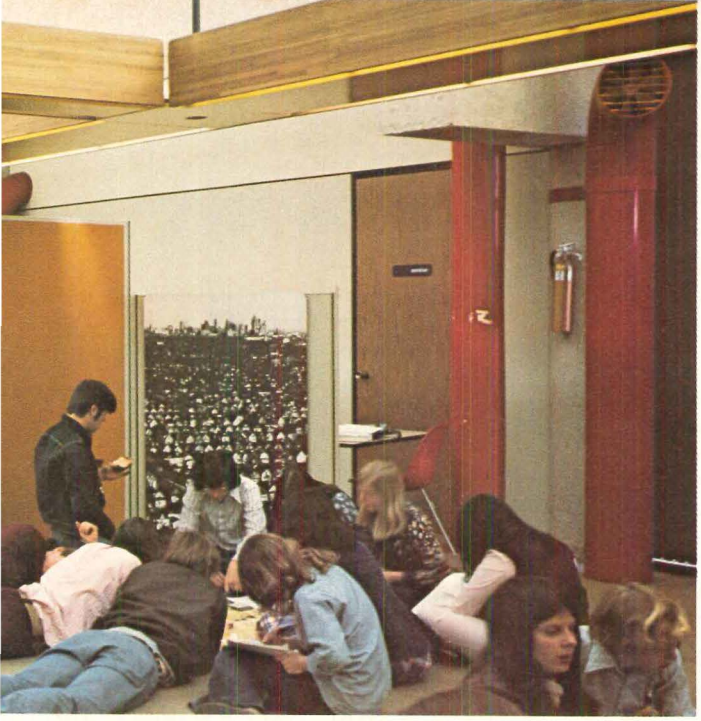


UPPER LEVEL

high level of quality for very reasonable prices.

Sticking to their process, the architects themselves are evaluating the school now that it is in operation. Parkway is not just a building. It is an *experience* that feels like Hoffmann/Saur is doing things the right way. One of the best measures is the students' recognition of the architects when they pay one of their visits. One girl, hearing that the firm had been commissioned to do another school in town, asked Lou Saur not to do such a good job the next time. "I don't want anybody to have as great a school as we have," she pleaded. She will probably be disappointed. [JM]

Because of Parkway's rich finishes and colors, there is no institutional feeling. Student activity is natural and spaces flow together in all areas except special ones, like the theater and offices (opposite page, bottom).




misc paperbacks


english
language
art

P/A building cost analysis

Building type: School – High School

Classification No: 713

Project: Parkway North Senior High School (p. 69)

Location: St. Louis County, Mo.

Architect: Hoffman/Saur & Associates
Owner: Parkway School District
General contractor: Gamble Construction Co., Inc.

Tender date/completion: Mar. 1971 – Sept. 1972
Market conditions: fairly depressed
Cost index:

Elemental Category	Element cost		Element amount		Cost per sq ft		%
	Quantity	Unit Rate	Sub	Group	Sub	Group	
100 Foundations	**116,984 sq ft**	**2.19**		**256,232**		**1.09**	**4.5**
110 Normal foundations	116,984 sq ft	0.13	15,000		0.06		
120 Basement excavation	247,914 cu ft	0.12	30,000		0.13		
130 Special foundations	116,984 sq ft	1.81	211,232		0.90		
200 Building shell	**471,033 sq ft**	**4.17**		**1,964,600**		**8.39**	**34.4**
210 Structure	242,100 sq ft	3.48	1,249,000		5.34		
211 Lowest floor constrn.	116,984 sq ft	1.50	175,000		0.75		
212 Upper floors constrn.	117,116 sq ft	5.41	634,000		2.71		
213 Roof construction	124,984 sq ft	3.52	440,000		1.88		
220 Roof finishes	133,260 sq ft	0.81	108,200		0.45		
230 Exterior cladding	111,949 sq ft	5.11	572,400		2.45		
231 Basement walls	10,826 sq ft	5.99	64,900		0.28		
232 Ext. walls above grade	78,275 sq ft	4.47	349,700		1.49		
233 Windows	18,837 sq ft	5.45	102,650		0.44		
234 Entrances & storefront	4,011 sq ft	13.75	55,150		0.24		
240 Stairs	348 lin ft	100.57	35,000		0.15		
300 Interiors	—	—		**1,022,190**		**4.37**	**17.9**
310 Partitions and doors	118,313 sq ft	3.20	378,700		1.62		
320 Interior finishes	—	—	268,100		1.15		
321 Floor finishes	220,126 sq ft	0.40	88,600		0.38		
322 Ceiling finishes	224,616 sq ft	0.31	70,000		0.30		
323 Wall finishes	356,496 sq ft	0.31	109,500		0.47		
330 Specialties & fittings	—	—	375,390		(1.60)		
331 Specialties & fittings	—	—	217,696		0.93		
332 Equipment	—	—	157,694		0.67		
400 Conveying systems	—	—		**Nil**		—	—
410 Elevators	—	—	—		—		
420 Moving stairs and walks	—	—	—		—		
500 Mechanical & electrical				**1,529,247**		**6.53**	**26.8**
510 Mechanical	—	—	944,517		4.03		
511 Plumbing and drainage	208 No	720.25	149,917		0.64		
512 Fire protection	—	—	6,500		0.02		
513 HVAC	3,167,893 cu ft	0.11	788,100		3.37		
520 Electrical	—	—	584,730		2.50		
521 Distribution	—	—	332,620		1.38		
522 Lighting	—	—	152,670		0.65		
523 Special systems	—	—	108,440		0.47		
600 General conditions & profit	—	—		**498,900**		**2.13**	**8.7**
			Net building cost: $	**5,271,169**	**$**	**22.51**	
900 Site development	**1,592,489 sq ft**			**437,707**		**1.87**	**7.7**
			Total cost: $	**5,708,876**	**$**	**24.38**	

Cost and performance analysis prepared by Hanscomb Roy Associates Inc.

Performance & Specification Data

Areas and Volumes

Gross floor area (GFA): 234,100 sq ft
Net floor area: 175,819 sq ft*
Volume: 3,167,893 cu ft
Exterior wall area: 111,949 sq ft
Roof area: 124,984 sq ft
No. of stories above grade: 2
No. of basement levels: 1
Accommodation units: 2200 students

Ratios

Net/GFA – 0.75:1
Volume/GFA – 13.53:1
Ext. wall/GFA – 0.48:1
Roof/GFA – 0.53:1
Lin ft partitions/GFA – 0.044:1

Capacities

Percent ext. wall glazed: 22.6%
Soil characteristics: medium stiff brown silt, followed by clay & rock
Density plumbing fixt.: 1/1125 sq ft
Heating capacity: 32.04 Btu/hr/sq ft
Cooling capacity: 390 sq ft/ton
Ventilation capacity: 0.99 cfm/sq ft
Lighting intensity: 75 fc (av.)

Outline Specifications

130 3750 psi conc., 24"⌀, 30"⌀ & 36"⌀ caissons drille up to 30'0" depth.
211 3750 psi conc. slab on grade.
212 5000 psi conc. dome pans, slabs, bms, cols and wls Bay sizes: 20' x 30'.
213 5000 psi conc. cols & bents, ss trusses, jsts etc. an metal decking. Bay sizes: 20' x 60'.
220 3-ply built up felt rfg with 1½" rigid ins and met flashings.
231 Conc. walls with cold appl dampproofing.
232 Sandblasted exposed bms, cols and slab edges. In panels of aggregate cement plas on metal lath & st studs, batt ins and ⅝" insulated drywall.
233 Fixed alum wdws mostly with solar glass, tempere solar glass and insulated glass.
234 As 233 but doors.
240 Conc. stairs fin with terrazzo.
310 Steel stud and drywall, wd drs and h. m frames.
321 V.A.T., terrazzo, cer tile, quarry tile, linoleum, wood brick pavers. Resilient base. Carpet N.I.C.
322 Mostly acoustical, drywall and conc. ptd, plas.
323 Mostly drywall painted or with vinyl wall covering, cer tiles, plaster.
331 Mirrors, lockers and locker rm benches, bleachers toilet acc, millwork, ss wall shelves, int signs, audi stg, transformer screen, stage drapes, vert blinds wdw shades.
332 Industrial Arts dust collection system and exhaust food service equip, whirlpool bath, Gym dividers, scorebds, swim pool equip, basketball backstops.
511 C.I. and copper piping, standard for this building ty
512 Fire extinguishers & sprinklers.
513 Htg sys: high vel. terminal–heat. Cooling sys: low high vel air condit.
521-3 Includes p.a., fire alarm, telephone, master antenn exit light, program clock and fire det syst, fluoresc light fixt.
600 General contractors initial mobilization, supervisi overhead and profit. Includes fee for assuming management of the following separate contracts: HVAC, plumbing and drainage, electrical.
900 Landscaping, bituminous paving and track, fencin pole, ext signs, outdoor sports equip, bleachers a press box.

Cost per: **cu ft** **$1.80** **student** **$2595.00**

*Assumed corridors deducted from open spaces

Analysis No. 1

Stanley hinges swing

clear

Swing-Clear hinges move doors completely out of the opening in hospitals, convalescent homes.

forever

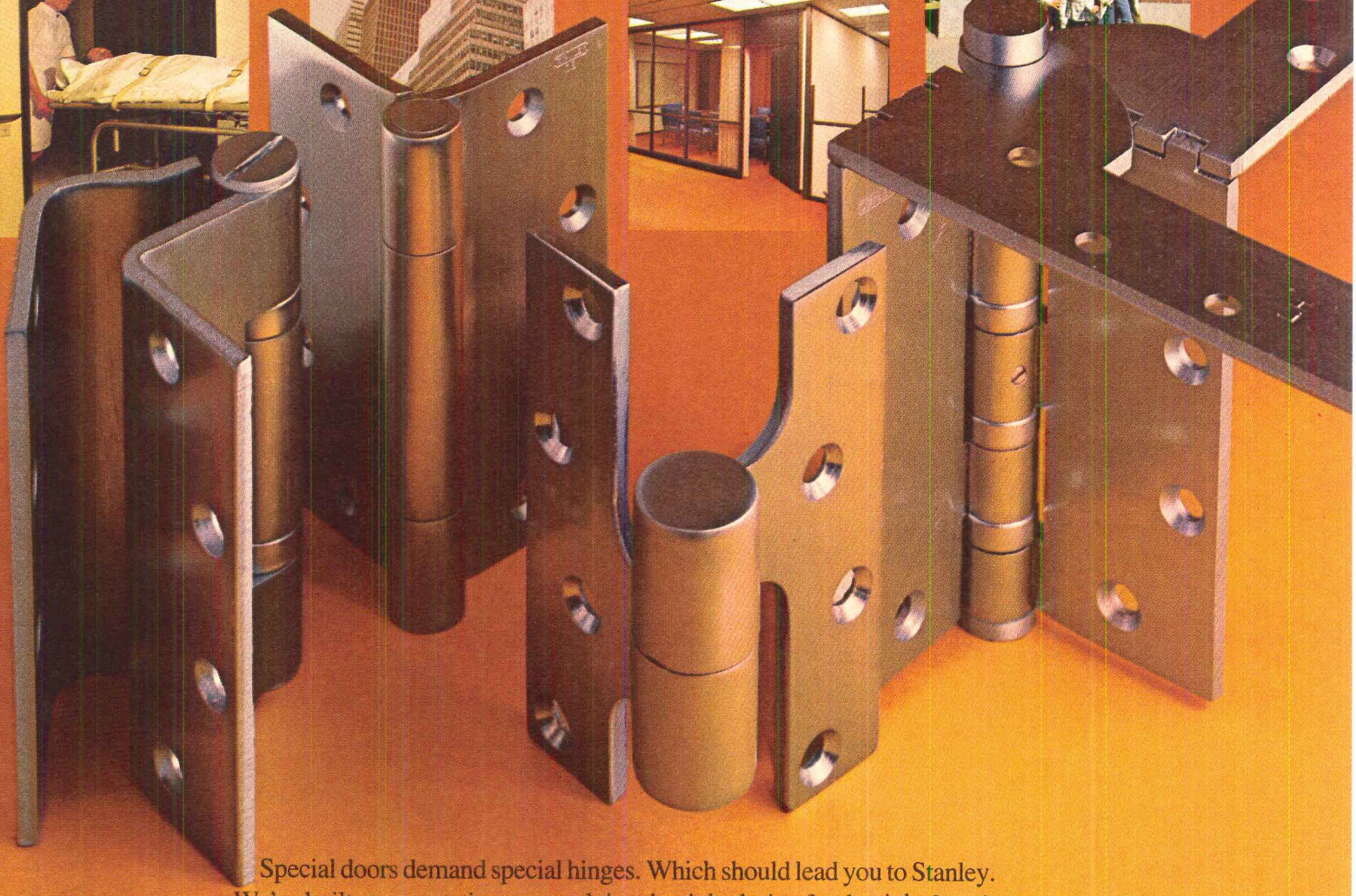
LifeSpan™ hinges have space-age bearings for trouble-free service for the life of the building.

handsome

Paumelle hinges add style and dignity to any executive office area.

strong

Pivot Reinforced hinges for schools are boy-proof, wind-proof, shock-proof.



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Architect: Langdon & Wilson
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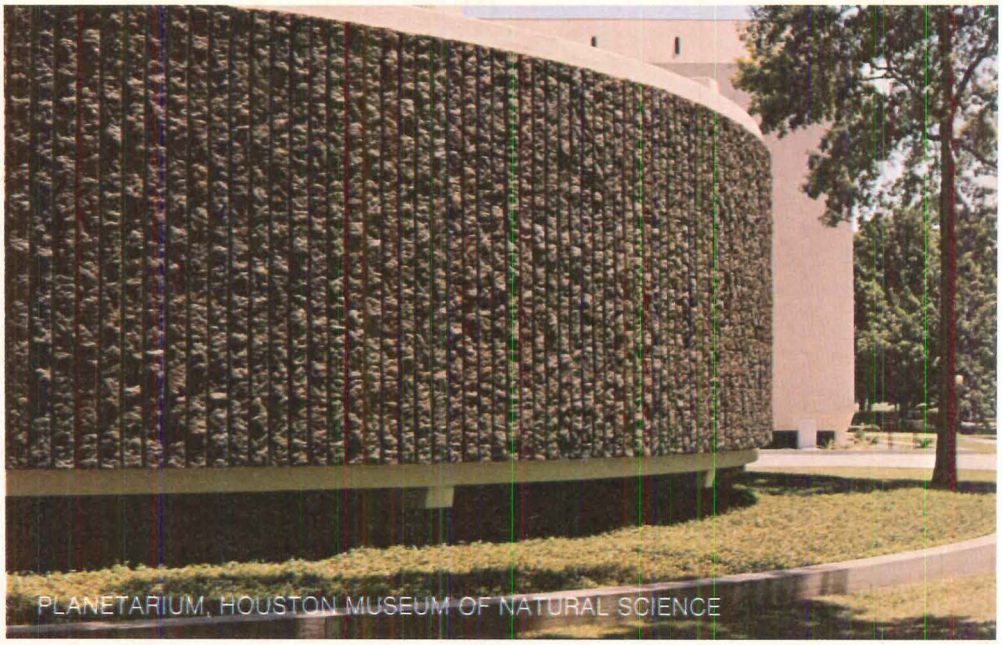
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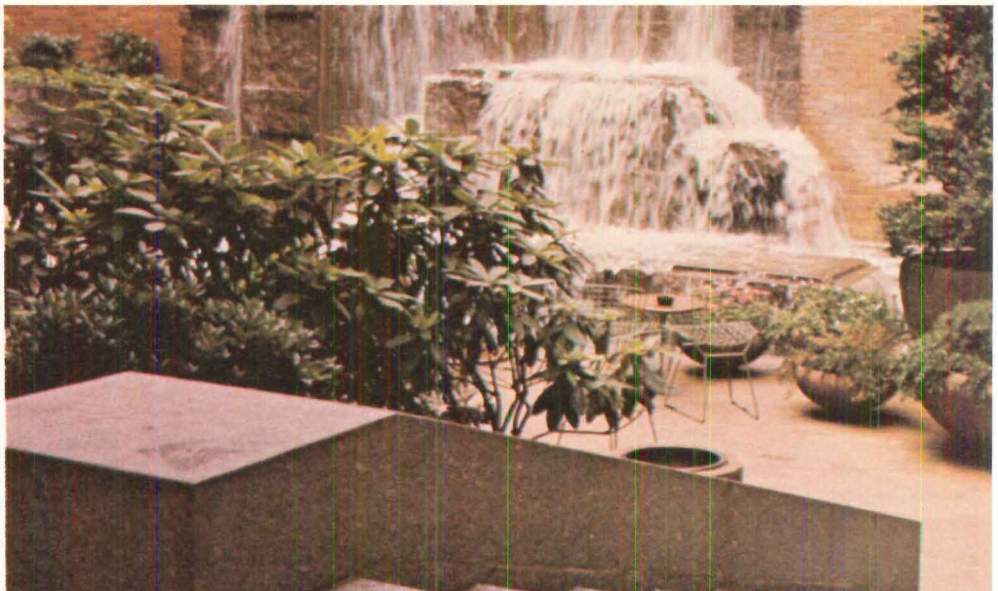


Energy crisis

Clarence Tsung

Forms and availability of conventional energy sources are being considered here as well as conversion methods for these and others still in the experimental stage

For the first time in history, the United States faces an energy crisis. The use of energy is outstripping production, and as a result, we have gone from an era of abundant, cheap energy to a period of serious shortages and rising costs. This article examines the availability and forms of energy sources and conversion methods for the near future. In a field so open to major technological development, forecasts are particularly difficult. However, we can set down trends that seem obvious and point to a number of broad possibilities.

Conventional energy sources are coal, petroleum, natural gas, water power and those forms of nuclear energy release already so well developed that they can no longer be considered unconventional.

Coal. Of all the fossil fuels, coal is by far the most abundant but it offers special problems. It is the worst offender for producing sulphur compounds, thus increasing environmental pollution. Strip-mining regulations, transportation facilities, manpower availability and economic justification are other considerations.

Petroleum. The supply of this fuel, on which the United States' 110 million motor vehicles depend almost totally, is much less abundant. Forecasts of supply and demand indicate that present world oil reserves will last to maybe the middle of the next century, and domestic reserves will be exhausted much sooner than that.

Natural gas. It is the most convenient and cleanest fossil fuel, provides a third of the nation's total energy and a quarter of its electricity, and has the least detrimental effect on our present environment. An increasing percentage of U.S. natural gas requirements are being met by the importation of liquefied natural gas (LNG) which occupies less than 0.2 percent of its gaseous volume. Recently, however, public concern about the safety of LNG storage tanks will certainly delay such installations. And, since most natural gas discoveries are associated with oil fields, the likelihood of enormous findings is small.

Water power. The best hydroelectric sites have already been developed, and future development will not match rising energy demand. The proportion of energy supplied by hydroelectric installations will slowly decrease.

Nuclear energy. The problems associated with nuclear plants are the production of large amounts of waste heat, the difficulty in safeguarding against leakage of radiation from the reactors, and disposing of the radioactive waste the process produces. Furthermore, there is also a shortage of uranium. This low-cost nuclear fuel will probably be exhausted by the end of the century if we continue to build the type of conventional (water-cooled) nuclear plants operating today. One pound of uranium, about the size of a golf ball, stores as much energy as 15 carloads of coal. But in the water-cooled reactor, barely one percent of that energy can be tapped.

Breeder reactor. Development of "liquid-metal fast-breeder reactors" offers our best hope for power in the future. Briefly, this type of reactor "creates" more fuel than it burns via its chemical process of converting uranium to plutonium. If breeder reactors become popular, our uranium supply will be increased a hundredfold! Breeders produce less heat loss and less radioactive waste than conventional nuclear reactors, and since they operate at a much lower pressure, the chance of leakage of radioactive gas is less.

Many new experimental technologies offer the potential for better use of existing energy resources in the distant future, although it is unlikely that any of these processes will be developed sufficiently to alleviate the energy shortage in this century. These new technologies are:

Fuel cells. These cells, used in the Apollo spacecraft, generate power from fossil fuels at higher efficiency than with conventional methods. Disadvantages are that since each single fuel-cell element generates about 1 v., cells have to be "stacked" to produce the voltage ratings and power levels required. Also, associated inverters are required to convert dc to ac for commercial use.

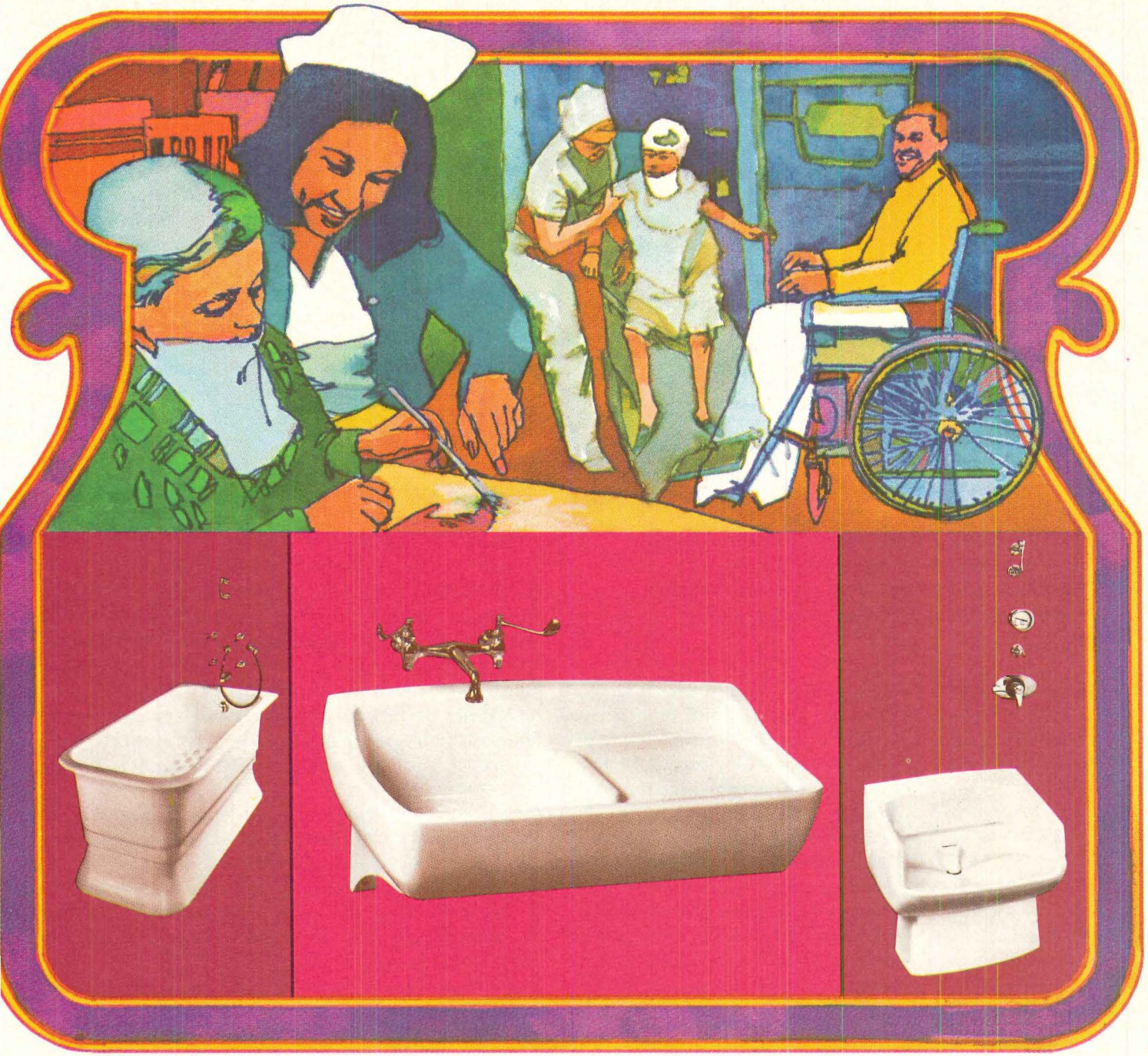
Solar energy. Solar engines that operate on steam produced from solar energy are most useful in areas such as Arizona and Nevada, which have little annual precipitation and an abundance of sunlight. Using solid-state technology it should be possible to design solar engines without much energy loss, and electric energy could be produced with reasonably high efficiency. The solar energy is, of course, pollution free.

Geothermal energy. Hot, dry rock from geothermal sources below the surface of the earth can possibly heat water from underground aquifers. The energy could be used to drive turbines, after which the water would go back into the earth to be reheated.

Solid waste. The solid residue from our affluent society is not solid waste; it is a wasted solid. Although there are technical and economic difficulties, and despite the fact that this material cannot furnish a major portion of our energy needs, it definitely represents a small, low-sulfur portion of our energy resources.

Magnetohydrodynamics (MHD). This potential source uses the principle of ionization of superheated (5500 F) gasses. It is claimed that the efficiency of MHD is 1½ times that of a conventional fossil-fuel power plant.

Author: Clarence Tsung is an Associate with Syska & Hennessy, engineers, New York and Washington, D.C.



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CSI—25 years of evolution

Harold J. Rosen, PE, FCSI

Many changes in the field of specifications writing have been wrought through the Construction Specifications Institute. Its formation and evolution as well as its accomplishments are discussed

In 1948, a group of federal government specifications writers together with some far-sighted trade association members initiated the Construction Specifications Institute. Its goals were to establish a clearinghouse so that similarly engaged individuals could have a forum to express themselves and an opportunity to exchange information.

Until the formation of CSI, individual articles on specifications writing and materials appeared sporadically in some periodicals but with no regularity, no plan of action and no concerted effort. Even within major cities, specifiers never knew their peers, or exchanged information with them. The experience, knowledge and expertise that an individual gleaned from daily involvement in materials failures or successes remained largely unshared.

The emergence of CSI with its early limited goals provided a forum that has led to the development of internationally used standards. One of the early by-products of CSI was the publication, *Construction Specifier*. This periodical permitted some of the major spokesmen for specifications an opportunity to set forth their philosophies and views so that others could benefit from their experience. As the organization grew, its goals expanded. Major technical committees were formed, staffed with some of the most prominent names in the field of specifications writing.

The first major breakthrough came in 1964 when CSI promulgated the CSI Format. This standard was three to four years in the making and was forged by Rolf Retz with input from CSI members and chapters. The CSI Format is a standard that establishes the organization of specifications into 16 major divisions with corresponding technical sections assigned to specific divisions. This standard has achieved universal acceptance by private and public agencies as well as foreign design professionals.

In 1965, Spec-Data was conceived. This document, produced in cooperation with the Producers Council, provides for the standardization of manufacturers' literature. It establishes a format for the presentation of information in a coherent, organized manner so that specifiers can easily assess and evaluate manufacturers' products.

In 1966, CSI in cooperation with AIA, AGC and others evolved the Uniform System (updated in 1972 as the Uniform Construction Index, see P/A, Apr. 1973, p. 122) which correlates specifications, manufacturers' literature and contractors' estimates by means of a common matrix identified by the technical section as the common denominator. In 1969, CSI produced still another major document, the three-part technical section. This is a standard method for presenting information within the technical section.

In the early 1960s, CSI established a technical review board at the Institute level, now known as the technical documents committee, to encourage and foster the development of technical documents at chapter level. Initially this device enabled neophyte specifiers to get together with industry representatives to develop technical documents on specific subjects. It has been refined over the years so that the process is developing more creditable documents that can be used as reference source material.

In 1970, through Stanford Research Institute, CSI developed a software computer program, COMSPEC, designed to handle automated or computerized specifications. Now in 1973, the AIA's PSAE master specifications are being made available to the COMSPEC program so that specifiers without master specifications of their own will have access to a fully integrated computerized master specification program. While other programs have been developed, those enumerated have been milestones which were not envisioned by the early founders of CSI.

The world of building technology grows apace. New materials, new construction techniques and systems building place an even larger responsibility and burden on the specifier. To forecast what the role of CSI will be 25 years hence would be as difficult for us today as it would have been for the founders 25 years ago to state with any degree of certainty what the current role of CSI would be.

However certain things do come to mind for the foreseeable future: Master Specifications will be developed much more fully than they are today as an increasing number of firms begin to use computerized specifications. Performance specifications as applied to systems building will need much more study and evaluation. A system for the evaluation of new building products will be required so that the architect who elects to use them will be less exposed to liability. More emphasis on the education of individuals versed in materials engineering and the science of materials is essential to develop a cadre of personnel who will spend more time in materials research than in actual specification writing.

Author: Harold J. Rosen is Chief Specifications Writer of Skidmore, Owings & Merrill, New York City.

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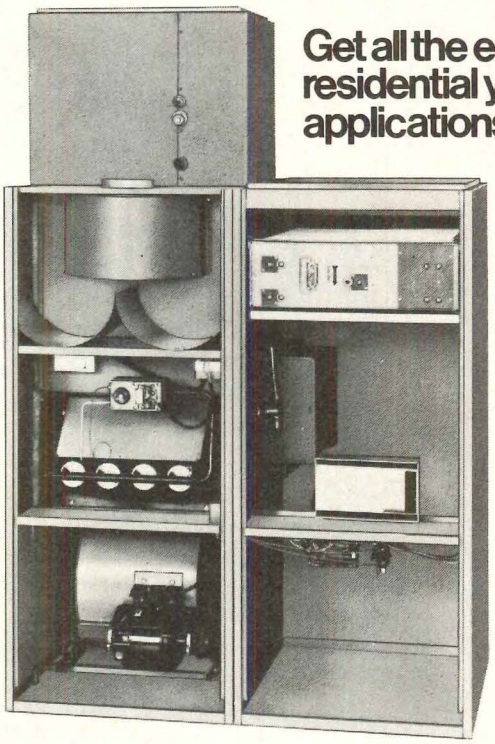

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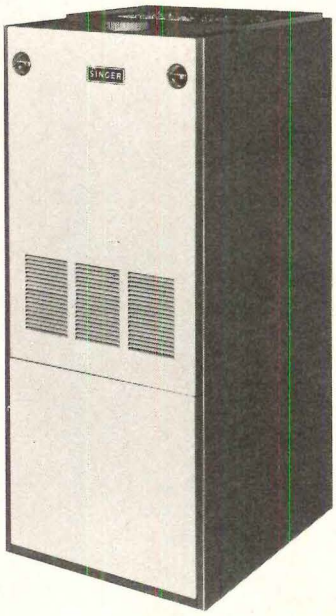

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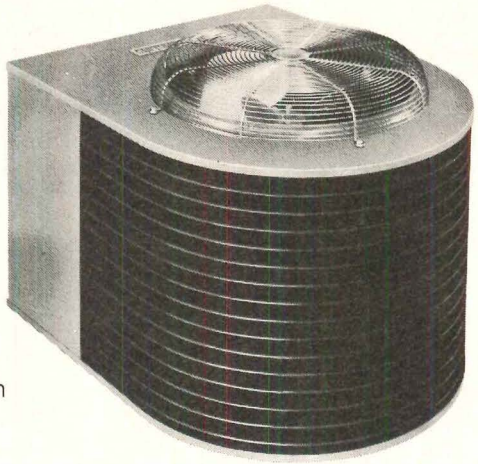

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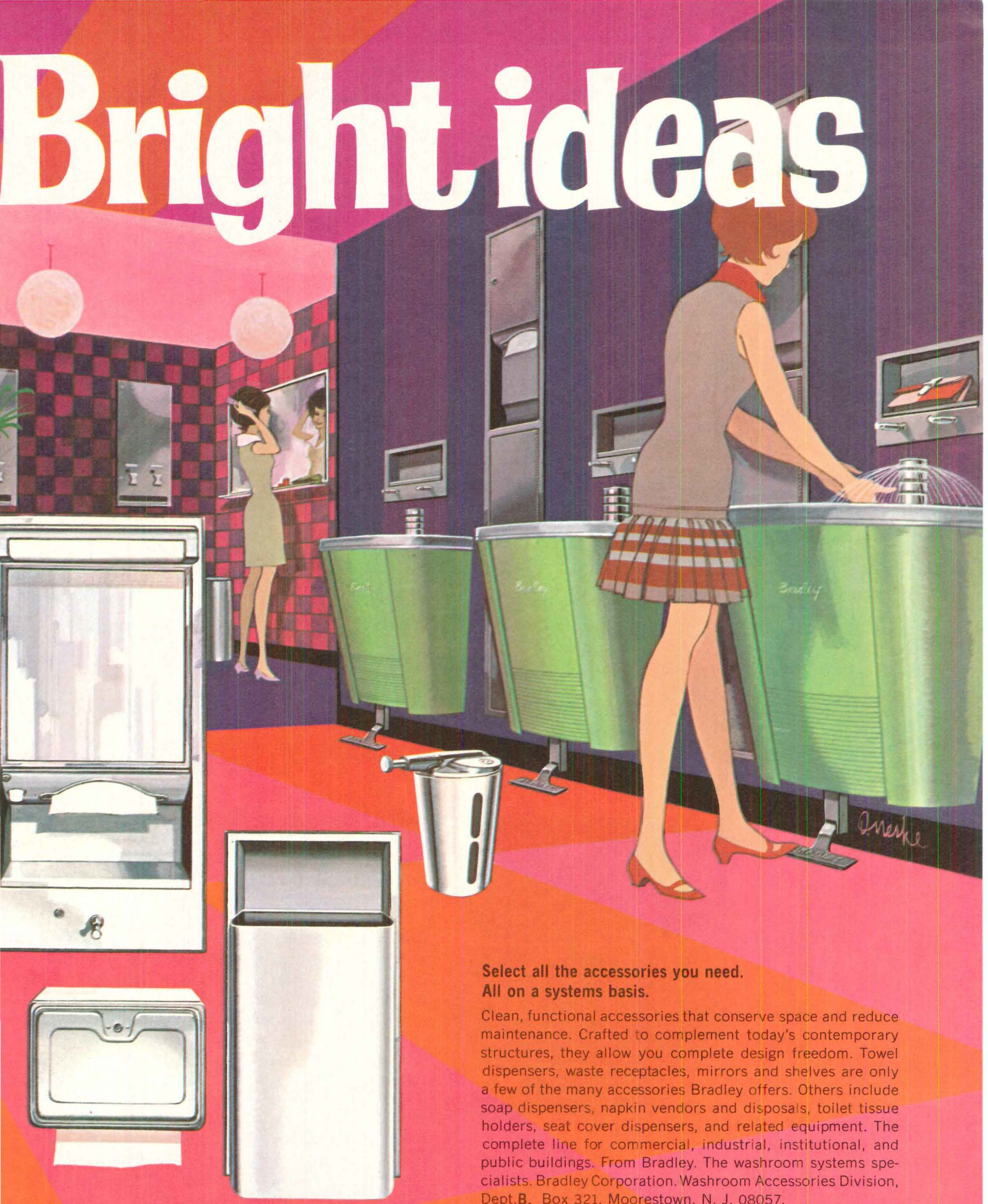
Bright ideas



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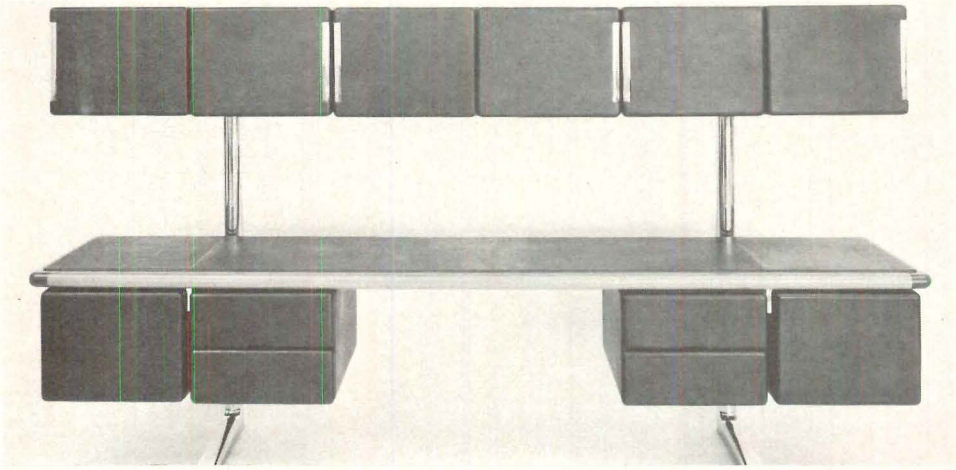
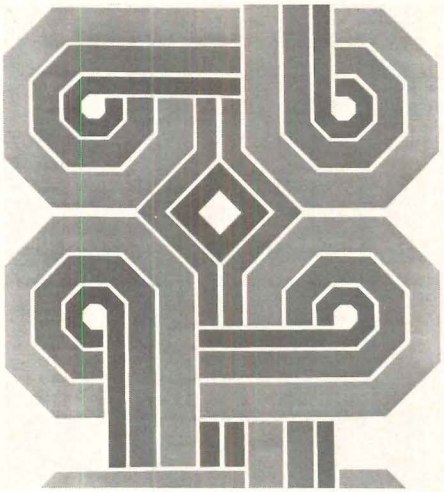
Products and literature

Executive suite. Designed by Warren Platner Associates, the line of office furniture includes interchangeable units comprising desks, conference tables, credenzas, storage units and shelving, supplementary lighting and telephone consoles. Basic design is in oak with natural leather and polished chrome but other materials are available. Knoll International.
Circle 101 on reader service card

Double-stairways. Prefabricated units are designed for indoor-outdoor commercial applications including hotels/motels, apartments, office and industrial buildings. Come in 5-, 6-, and 8-ft widths and in any height up to 10′7″. Stair treads are positioned for less than a 7½″ rise and can be adjusted to level position regardless of pitch of the stairs. Can be assembled in 5 to 6 hours and runs about ⅓ the cost of structural designed steel stairways, according to the maker. Wide range of colors available. Equipto.
Circle 102 on reader service card



Executive suite



Epic I: Martian equation

Epic I. A collection of acrylic coated wallpapers of mostly geometric designs in a variety of colorways. Shown: Martian Equation. Octagonal shapes are extended and interwoven. One colorway with small scale coordinate. Wall Trends, Inc.
Circle 103 on reader service card

Open arm chair. Equally suited to contract or residential use, it has a cradle frame with upholstered slab seat and back. Exposed members are wood with lacquer finish. Choice of fabrics. Scope Furniture, Inc.
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Free-standing screens. Augmenting the Haller program of mobile office furniture, these acoustical/visual screens permit users to form a chain of linked screens without the use of tools. They can be angled up to 135 degrees to provide visual privacy for open plan office; can also be angled for greater sound control which is provided by fiberglass batts held in solid wood frame panels covered with Herman Miller fabrics. Panels are suspended from 60-in. chrome-plated tubular steel end posts and mounted on legs of chrome. Affords visual privacy up to 5 ft yet allows visual communication when standing up. Panels are all 48 in. high and come in 24-, 30-, 36-, and 48-in. widths. Herman Miller, Inc.
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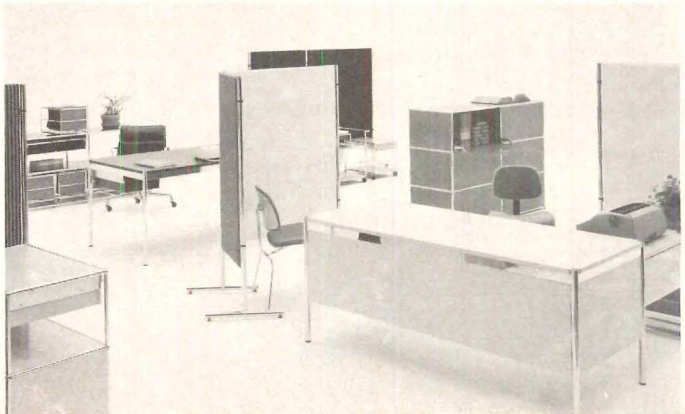
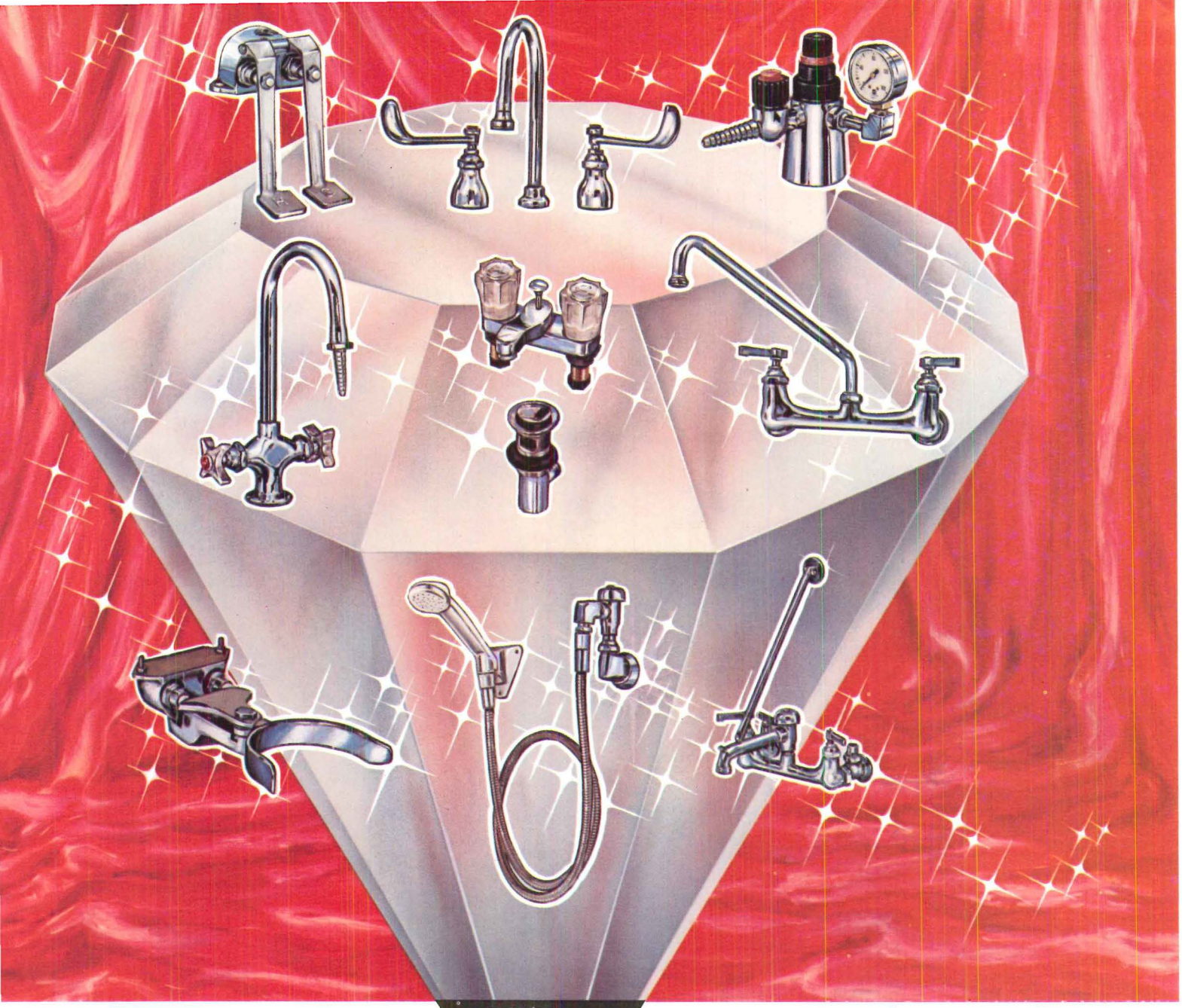
[continued on page 118]

Free standing screens





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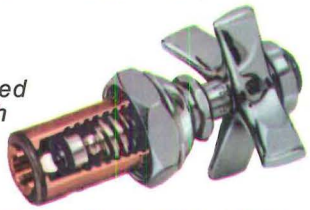

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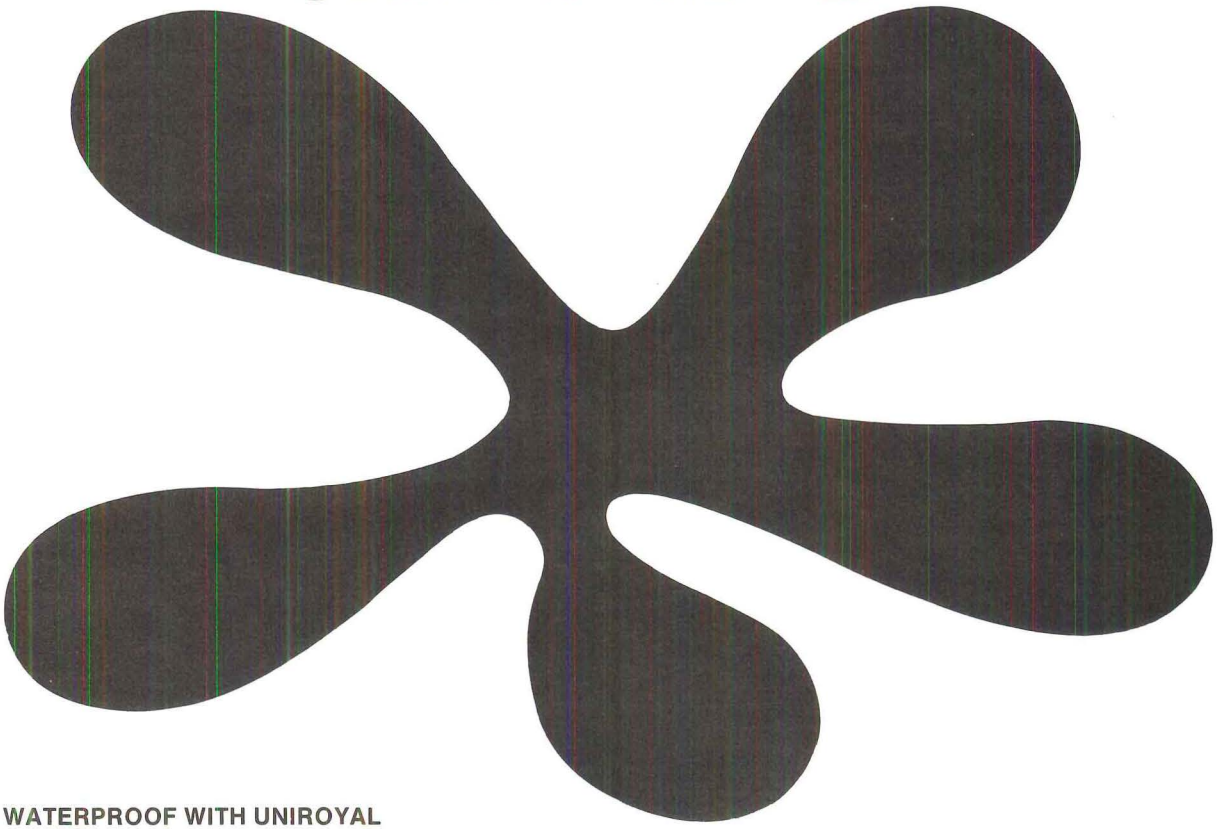

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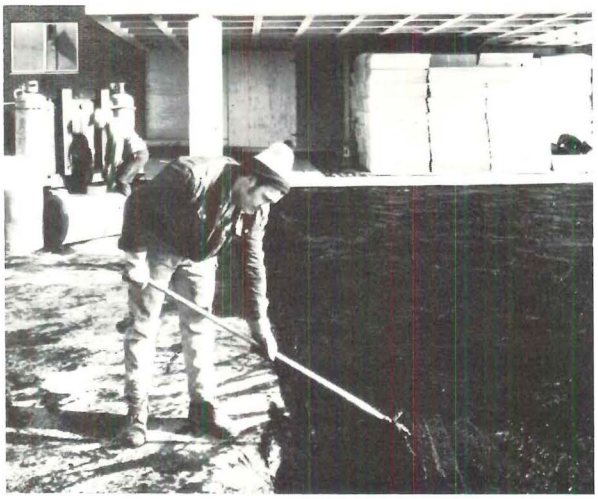

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Summer/Fall 1973 Progressive Architecture

buildings, lighting, parks, interior

August

Outstanding examples of architect-client collaboration. **Richland Jr. College,** Dallas, shows great finesse in sitting, planning and structure. Designed by The Oglesby Group and Perkins & Will. **Olivetti, the corporate patron:** how and why one of the world's staunchest patrons of design maintains its standards. **Unity House:** main building for a labor union resort, by Prentice & Chan, Ohlhausen shows imaginative form as a setting for recreation and ritual.

Interior design: The diverse work of Charles and Ray Eames, discussed by their long-time friend, Esther McCoy. **Office practice:** costs and benefits of breaking in young employees by Herschel Walters. **Materials & methods:** a novel concept for multi-story inflated structures, backed up by a prototype.

September

Lighting: a broad survey of all considerations that go into lighting design today – covering interior and exterior situations, natural and artificial sources, potentials of the latest hardware – this issue will be one to keep as a reference for years to come.

The focus will be on **the lighting designers** – their ideas, their experiences, their practices – with a portfolio of projects that show how theory is put to practice. **The state of the art:** P/A surveyed more than 500 architects to learn how they feel about lighting design, electrical engineering, footcandles, the IES and the lighting designers. Some answers were predictable, some surprising.

Sources: A review of all available lamps, with their technical qualities translated into actual performance characteristics.

Just for fun. What's happened to the plebeian "eats" sign of yesterday? If it's neon, it's sculpture.

October

Parkitecture: An exploration of the architect's increasing involvement with parks at all scales – in programming, locating and planning them as well as designing structures for them.

The architect in the park: where the architect fits into park programs, as seen by some who do. **National Park Service:** profile of one of the nation's biggest design and planning clients, how it operates and what new tasks it is taking on. **The park in the city:** a look at patterns of use and maintenance in some of Frederick Law Olmsted's great parks in Louisville. **Parks portfolio:** nationwide survey of innovative and instructive effo both by architects and landscape architects.

Building Cost Information: second in the series initiated in July, this analysis will complement a full architectural coverage of the P/A-award-winning JFK Recreation Center in Cleveland, by architects Whitley-Whitley Inc.

November

Interiors: The issue will be built on the premise that interior design is (or shoul be) architecture — not just the after-the fact treatment of predetermined spaces

Editorial plans include discussions o the professional roles, education of interior designers, and a historical comparison of space concepts. A portf of current work will illustrate new attitu towards space-shaping and exposure o mechanical elements. P/A profile will explore the broad-spectrum activities o Los Angeles designer Deborah Sussma A trip through a remarkable owner-designed hotel will challenge professio preconceptions.

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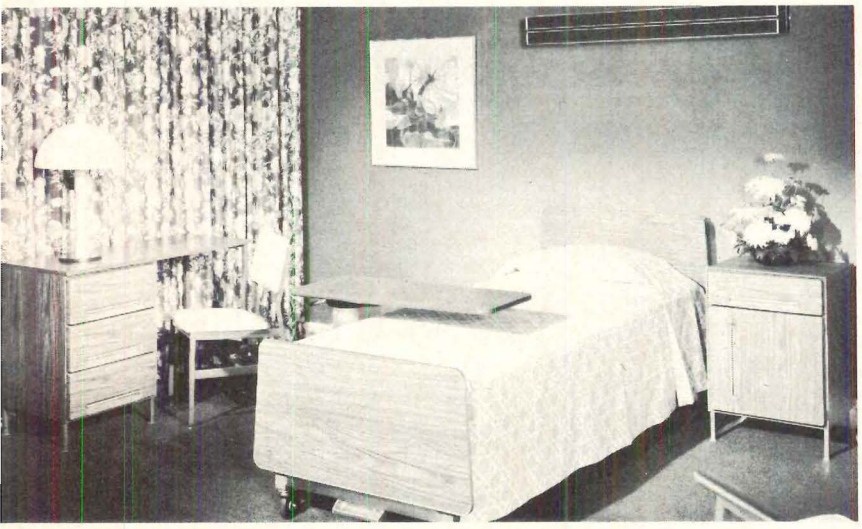
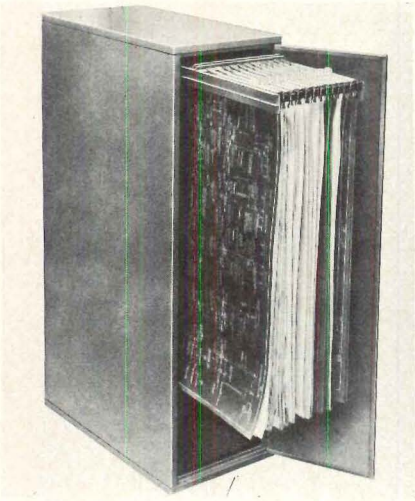
Circle No. 391, on Reader Service Card

Products continued from page 114



Patient care furniture



Combo cabinets

Patient-care furniture. Constructed of welded steel over a solid A-frame, and finished with wood-grained vinyl covering, this furniture is made to order and finished according to individual customer specifications. Several room settings and many interior schemes to choose from. Simmons Company.
Circle 106 on reader service card

Combo cabinets. Filing equipment for plans and prints have slide out racks to which the binders holding the material can be securely attached. Standing 52 in. high, they are dustproof and provide protection for valuable plans and prints. Available in standard office gray or eight custom colors, the cabinets can accommodate sheet widths of 24, 30 and 36 in. in lengths up to 48 in.; hold up to 22 dz individual sheet hangers. Plan Hold Corporation.
Circle 107 on reader service card

Ceramic tiles. Medeira series in five color combinations has tile edges that appear hand formed and patterns that show individual variations. Each tile measures 4"x4"x¼". Undecorated trim is available in three complimentary colors. Summitville Tiles Inc.
Circle 108 on reader service card

Fun fountains in the shapes of an elephant, lion and hippopotamus are suitable for children's recreational areas. Bubblers are located in the mouths of the animals and the trunk of the elephant. They are made of heavy duty construction fiberglass reinforced with steel, have deep pigmented colors that won't chip or fade. Haws Drinking Faucet Co.
Circle 109 on reader service card

Emergency door alarm lock. Features include: releases with less than 15 lbs pressure on crossbar; has a combination of a deadlocking latchbolt to re-latch door on each closing for fire safety, plus a 1 in. throw, saw-resistant 2 in. deadbolt for maximum after-hours security; has a built-in battery-powered twin horn alarm that sounds off whenever the lock's panic bar is pushed and the device is armed to deter unwanted use of the exit. It is offered in anodized aluminum, duronatic medium bronze and dull stainless steel. Suitable for hospitals, schools, libraries. Alarm Lock Corporation.
Circle 110 on reader service card

Lexan 303. A polycarbonate resin for high-intensity-discharge lighting applications, it was designed as a diffuser and shield material. It is said to be vandal- and heat-resistant, have great impact strength, excellent transparency, be self-extinguishing when tested in accordance with UL subject 94, and have a HID service life eight times greater than that of previous UV stabilized grades. General Electric Company.
Circle 111 on reader service card

Noise control. Combining Soundblox units with a facing of two-in.-thick glass fiber and a perforated metal covering is designed to provide a durable and incombustible wall treatment with high sound absorption. Said to have a noise reduction coefficient of .90, it uses just 2 in. of space beyond the structural wall itself. The Proudfoot Company, Inc.
Circle 112 on reader service card

High intensity lighting system for patient examination are gimble ring mounted with dual axis directional control, are safe and easy to adjust. They are designed for use in pairs with patient room fluorescent over-bed lights to provide a range of 100–900 fc. Uses 12 v. 50 w. PAR 36 spot lamps. The Miller Company.
Circle 113 on reader service card

Nevamar. A collection of high-pressure plastic laminates has added two additional patterns. One, Designer's Teak, is a woodgrain design; the other, Natural Cork, has a surface veneer of real cork. Both are suitable for use on cabinets, furniture, wall panels, fixtures, casegoods. Offered in 4'x8' and 4'x10' sheet sizes. Exxon Chemical Company, U.S.A.
Circle 114 on reader service card

Multiple dwelling TV. One indoor push-pull amplifier provides 10 to 1000 units with cable television signals and is suited for motel/hotel, apartment, hospital or department store use. It operates on 117 Vac or cable power and offers a bandpass of 50 to 270 MHz with a 300 MHz top bandpass option. According to maker, this equals 33 to 37 TV channels plus FM signals to the radio. C-COR Electronics.
Circle 115 on reader service card
[continued on page 122]

Anso® nylon's five year guarantee. It means the McCarran Airport carpet won't wear out its welcome.

Visitors mean a lot to Las Vegas. So the McCarran Airport people decided to roll out the welcome mat—"Jupiter Flamegard" carpeting by Commercial Carpet Corporation.

They picked this level loop carpet for its ability to stay new-looking through heavy traffic and countless cleanings. Features that are characteristic of ANSO nylon, and backed up by Guaranteeth—the guarantee with teeth. That's Allied Chemical's assurance that the carpet will not wear more than 10% in five years, or we'll replace it, installation included.

Allied can make this promise because we test every carpet made of ANSO nylon ten different ways to be sure it will stand up to day-in, day-out wear and tear.

ANSO is the second-generation soil-hiding nylon with the solid cross-section that means liquid stains cannot get into the fiber.

So look for the label with the fierce little animal who symbolizes our Guaranteeth. And get the carpet with the five year wear guarantee.

For your free copy of our Contract Carpet Manual, write to: Allied Chemical Corporation, Fibers Division, Contact Dept. PA, One Times Square, New York, New York 10036. Telephone: (212) 736-7000.

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McCarran Airport, 30,000 yards, Jupiter Flamegard, Commercial Carpet Corporation.

Products continued from page 118

Literature

Surgical lighting systems. Centra 360 light system, rotating track system, dual track system, single-source surgical lights, dual surgical lights with X-ray equipment, the modulair general lighting system and optional accessories are shown in color catalog. American Sterilizer Company.
Circle 116 on reader service card

Hospital systems. Intensive care and general patient-room lighting systems catalog illustrates systems for new hospital construction as well as remodeling projects. One brochure contains details and general specifications on modular nurse monitoring station for use in the ICU and CCU areas of the hospital. Brochure and specification sheets with roughing-in drawings and wiring schematics detail closed-circuit audio/visual alarms designed to monitor hospital medical gas and vacuum pipeline systems. Ohio Medical Products.
Circle 117 on reader service card

Hospital cart conveyor brochure outlines principles of automated supply distribution and has detailed description of equipment and procedures of specific installation. System is designed expressly for hospitals, meeting requirements of cleanliness and low noise levels. Rapistan Incorporated.
Circle 118 on reader service card

Health care equipment systems planning and interior design services in connection with patient rooms, ICUs, CCUs, emergency rooms, surgical suites and patient and materials handling systems are explained in 20-page booklet. Company provides counseling on details involved in planning, evaluating, specifying, ordering, delivering and installing. American Health Facilities, Inc.
Circle 119 on reader service card

Cubicle hardware and intravenous feeding systems are described in illustrated brochure which contains information and specification data on in-ceiling, to-ceiling and dropped-from-ceiling cubicle track mountings. Tracks and fittings are shown in full detail, including typical bills of materials for a variety of two-bed applications. Grant Hardware Company.
Circle 120 on reader service card

Flood proofing. Booklet describes measures to be taken in designing new buildings as well as structural changes which are possible to protect existing facilities against flood damage. It discusses how to determine flood potential of a construction site, new building site selection criteria within a flood plain, site engineering considerations and various structural design features needed to protect a building. Of interest to architects, contractors, city managers. The Hartford.
Circle 121 on reader service card

Office furniture. A 24-page color brochure illustrates the Tempo 8 line of wood office furniture. Coordinated series includes executive and secretarial desks, credenzas, occasional tables, chairs, sofas, settees, casual seating and club chairs. Stow/Davis.
Circle 122 on reader service card

Glasweld gives you the durability of masonry, the beauty of glass, the flame-resistance of stone, and the low cost of Glasweld.

Oregon Institute of Technology, Klamath Falls, Oregon. Skidmore, Owings & Merrill, Architects.

With all that going for it, no wonder the architects chose Glasweld® for this building in Oregon.

And no wonder builders and architects are using Glasweld to achieve interesting effects on low-rise buildings, as well as skyscrapers.

Glasweld is a flat, inorganic fiber-reinforced panel, coated with an all-mineral, colored enamel surface.

It is highly versatile, too. Except for the windows, all major surfaces in this photograph are Glasweld. Window-wall insert panels, fascias and fabricated coffer soffits. Even interior wall linings.

Another feature is permanence. The kind you find in the very best grades of porcelain enamel and ceramic tile.

As if that weren't enough: Glasweld is incombustible, waterproof, impervious to stains, simple to cut and drill, and easily applied. So, installation and maintenance costs are low.

But the real beauty of Glasweld is on the surface. The fine-brushed slate surface, the two textured sand finishes, and the 23 other colors.

Like to know more? Contact your U.S. Plywood Branch Office. We can tell you all about Glasweld *and* the rest of our extensive line of exterior cladding.

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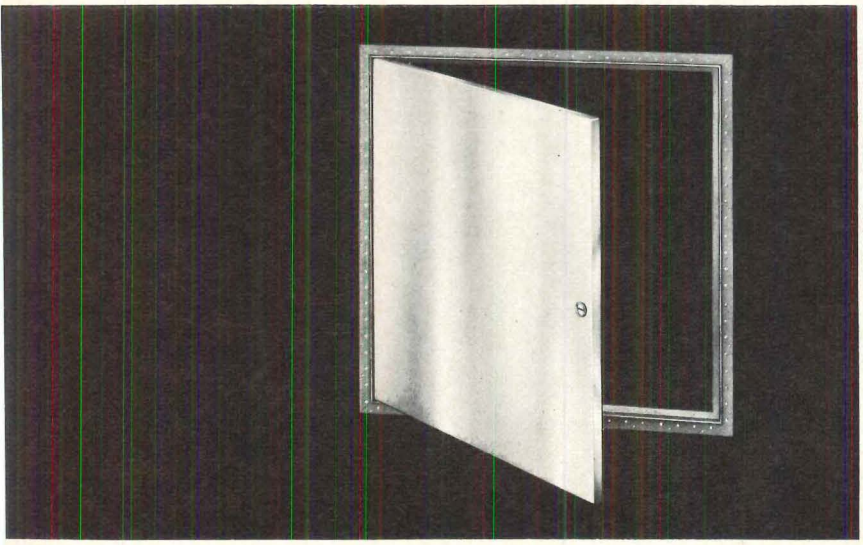
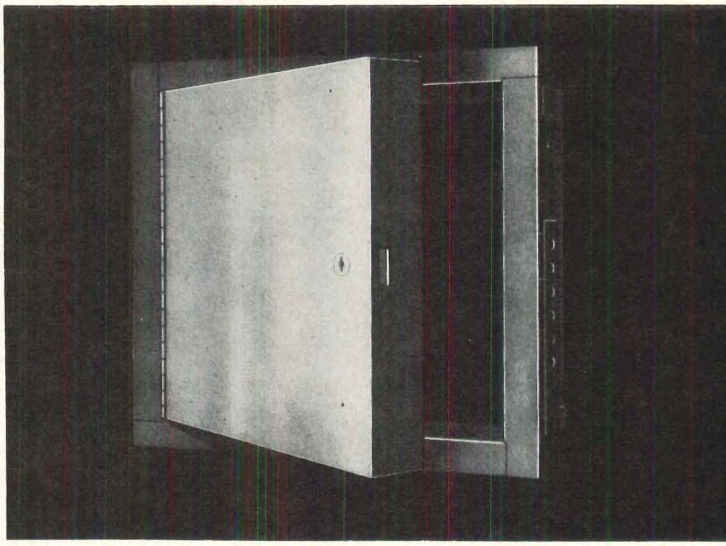
NEW is a yearly STANDARD with Milcor® metal access doors





Last year

we introduced the new DW Door for drywall installations. Drywall cement covers and hides the frame flanges and the panel fits flush with the wall eliminating the visual distraction of projecting surface mounted units.

This year

we have increased the size in which you can specify our Fire Rated Doors . . . and made all sizes available with a mortised opening for a cylinder lock, making it easier to provide master-keyed locks throughout a project.

Over the years, the innovations we've developed, as we've expanded and improved our offering, have made Milcor Metal Access Doors the most widely accepted and specified brand on the market. But frequent change means that you should refer to our latest catalog if you want to be up-to-date on the many different styles we offer for wall and ceiling installations. We're in Sweet's, section 8.12/InL . . . but get your own copy of the 1973 edition of Catalog 33-1. Write to: Milcor Division, Inland-Ryerson Construction Products Company, Dept. G, 4069 W. Burnham Street, Milwaukee, Wisconsin 53201.

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General Offices: Melrose Park, Illinois

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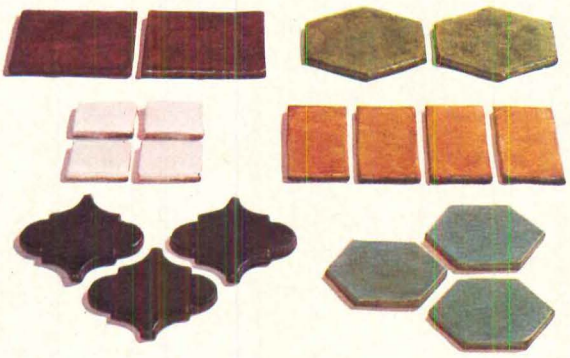
Circle **No. 349**, on Reader Service Card

The road to the *Magic* Kingdom is *paved* with Earthstone.

Not far from the massive gates to Walt Disney World, travelers who arrive at a new Regency Red Carpet Inn are greeted in a spacious lobby that's paved with Florida Tile's Earthstone. This natural, hand-molded, half-inch thick tile has a rich look of quality, combined with a rustic, old-world warmth that offers a genuine "welcome" to tired travelers. Yet, it is durable enough to receive throngs of overnight visitors. And, Earthstone still needs no waxing, no buffing or stripping. Whether or not you have a mouse living down the road from you, Earthstone will enhance any interior floors you may be planning. There are six shapes and six colors immediately available.

Regency Red Carpet Inn, Kissimmee, Florida



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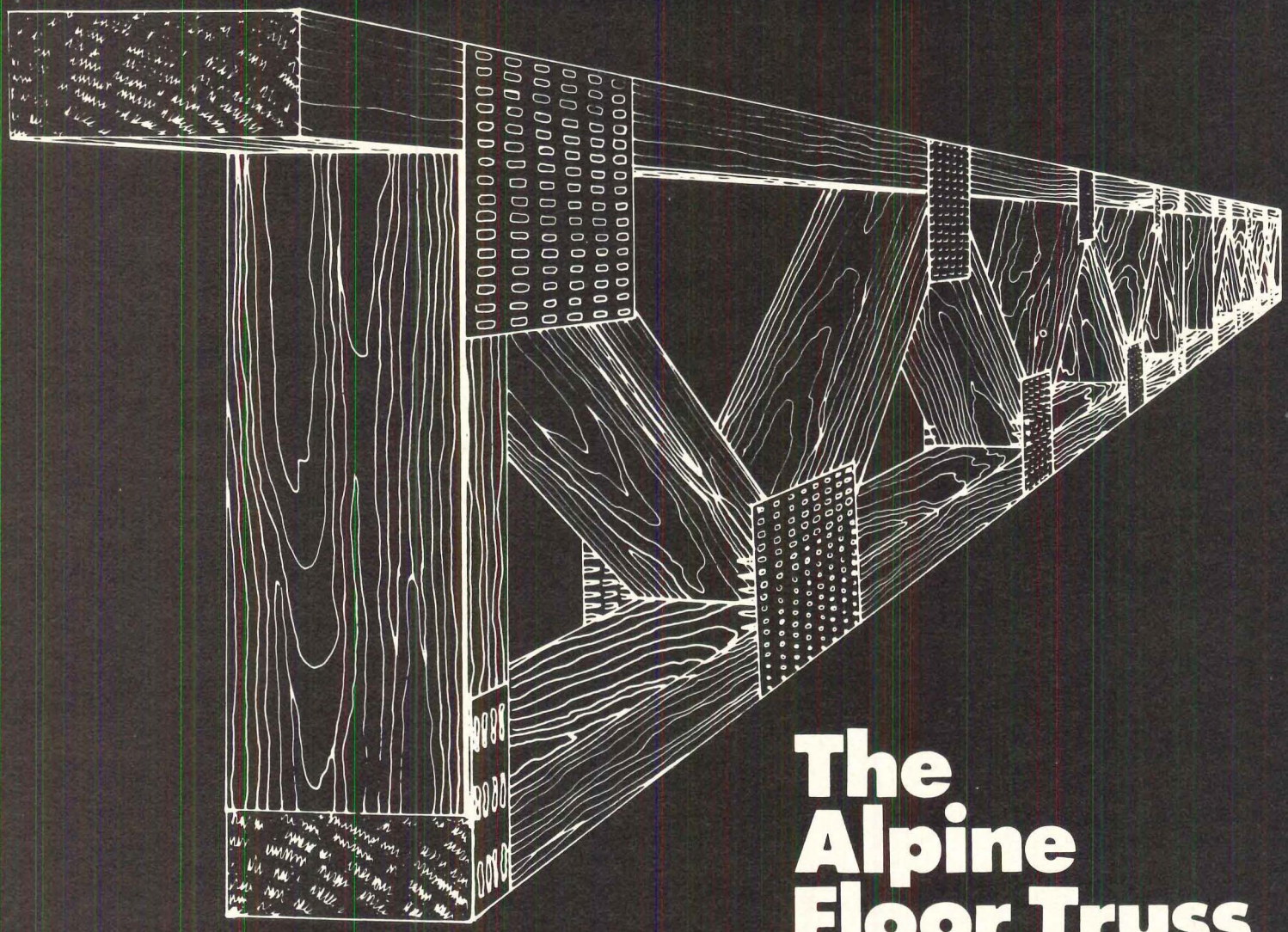

The Alpine Floor Truss System*

Speeds Construction

Less pieces to handle means faster installation. The open web system means no drilling, cutting, or notching for mechanical systems.

Saves Costly Labor

CARPENTERS: Most floor trusses are set at 24" on center instead of the 16" or 12" spacing of conventional framing. There are less pieces to handle, so the job goes faster. Floor trusses are shop fabricated and come to the job ready to be erected. There's no need for costly cutting and trimming. The 3½" nailing surface speeds placement and nailing of the decking material.

ELECTRICIANS: Wiring and conduit are run through the open spaces in the trusses. There is no need for drilling joists to form a wiring chase. Elimination of labor means faster electrical installation and less time on the job.

PLUMBERS: All notching and furring can be eliminated by running the pipes through the open-web trusses.

AIR CONDITIONING AND HEATING: An open space can be left in the center of the truss for large duct work – and small ducts fit easily through the open webbing system. There is no need for costly carpenter call-back to "fur down" a ceiling to cover the duct work.

Versatile

Greater spans are permitted by the use of floor trusses. This means more flexibility in design – with room size and arrangement not limited by the allowable span of a joist.

* Part of the Alpine Total Truss System.

ALPINE TRUSS

Alpine Engineered Products, Inc.
P.O. Box 2225, Pompano Beach, Florida 33061

Circle No. 322, on Reader Service Card

Efficient building idea: Recent report tells how to solve the acoustical problems of open offices.

Good news for architects who like the design freedom of open offices—but don't like the acoustics.

Tests by an independent acoustical testing agency show you can get excellent open office acoustics by using these three things (with the help of an acoustical consultant):

1) An acoustically non-reflective ceiling—so the sound won't bounce off to other areas.

2) Sound-controlling screens—to stop the sound from going directly from one work area to another. (Either directly or by reflection.)

3) A masking sound system—technically designed to fill the sound voids without increasing the overall ambient noise level. This makes it possible to hold personal conversations in a normal voice—without being overheard.

Of all the ceilings tested for Owens-Corning Fiberglas—including expensive coffered and baffled systems—the best was Owens-Corning's Nubby II Fiberglas* Ceiling Board in a standard grid suspension system.

If you'd like the whole story, send for our free design guide, "Achieving Acoustical Privacy in the Open Office."

Write to Mr. P. I. Meeks, Owens-Corning Fiberglas Corporation, Fiberglas Tower, Toledo, Ohio 43659.

*T.M. Reg. O.-C.F.

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Design Awareness

Design Awareness *by Robert Sommer. San Francisco; Rinehart Press, 1972, 160 pp., 23 illus., $5.95.*

Reviewed by William C. Miller, assistant professor of architecture at the University of Arizona, Tucson.

Today there is a growing interest in using building evaluation research as an aid to understanding the effects of built form upon its inhabitants, in using behavioral data as input into the design process, and in having users participate in design decision-making. This concern for introducing behavioral and user input into the design process has created a group of individuals, both in design and nondesign disciplines, deeply involved in the study of man-environment relationships. In *Personal Space,* Robert Sommer was among the first to attempt to make designers aware of the necessity for a behavioral basis and approach in design. Now, in *Design Awareness,* he deals with the more specific problem of "the relationship between the people who design and manage spaces and those who use them."

This increasing interest in behavioral research has brought a flood of new literature into the stream of architectural consciousness. Much of it, however well intended, is of marginal use to the designer actively engaged in the design task. The general objectives and intentions of the researcher are different from those of the designer; the type and scope of much current research suffers from concerns and findings that are too specific to be of general use to the designer. This situation has created a gulf between researcher and designer, which is further accentuated by the researcher's insistance that the designer take on the responsibility for assimilating and then applying research findings to specific design tasks, and by the inability and refusal of the researcher to predict behavioral responses in proposed projects.

Too few designers and researchers are actively engaged in developing usable mechanisms that would insure the implementation of behavioral input into the design process. Sommer, as a result of his consulting activities on architectural projects, realizes this situation and attempts to overcome some of the existing problems. He consciously avoids the designer versus researcher polemic by focusing on the more important problem, the user. He states, "People want a voice in the design and use of their buildings, streets, parks and cities. They want to be more than spectators and consumers in a world designed and managed by remote design professionals."

The first part of *Design Awareness,* "Social Design," is concerned with environmental consumers and their role as decision-makers in the design and management of their environments. The need for an individual to participate in the creation of his environment, to exert influence over it, and to manifest "self" within it, is essential and necessary at all scales of the environment. Sommer feels that occurrences such as the People's Park movement in Berkeley, various forms of people's art, environmental responses made by people living in large housing projects, personalization of the single-family dwelling in suburbia, and other such manifestations represent an *ad hoc* form of user response to his environment. Some paradigms, however, for user participation and decision-making in the design process are starting to appear. The advocate architect and planner working in Community Design Centers on projects for minority or low-income groups, the formation of environmental workshops to attack a specific d sign task or environmental problem, an the upsurge of environmental awarene programs all represent instances where users participate in the design process These are small but essential steps in d veloping the necessary institutions and processes for insuring user participatio the design process.

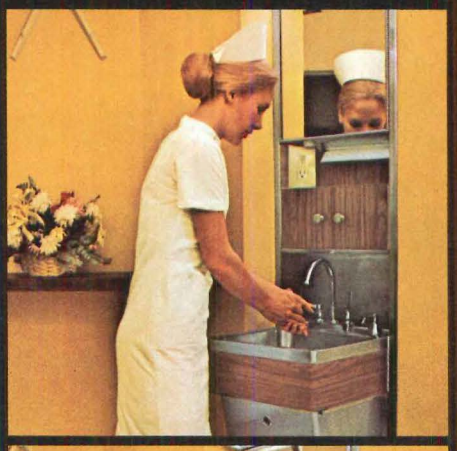
Sommer realizes, however, that mere making the decision-making process a cessible to the user is not sufficient: "Y is not enough to give people options. T must know how to use them and also th consequences of exercising them. The no point in making people aware of the environment if they have no way of influ encing it. Participation without awaren produces ignorance and ugliness; awa ness without participation lends to frus tion and alienation."

The second part of *Design Awarenes* "Evaluation," deals with methods for e uating buildings and ways of using this information to design and build better environments. The purpose of building evaluation is to produce a better built p uct—functionally, technically and aesth ically. As Sommer states, "An occasion mismatch between building and occup is tolerable; the present situation of suc cessive replications of bad situations c tainly is not." A comprehensive buildin evaluation would include evaluations o the social and behavioral consequence the built form, building construction sy tems and material selections, economi considerations, space allocations and aesthetic qualities.

Sommer cites the example of the "V wagen Model" as both a reason for an approach to building evaluation; it rep sents, he notes, a product that was dev oped through an evolutionary process consisting of an evaluation, feedback a redesign cycle. Each new VW is a refin ment on and further development of th previous model; or as the VW ad states "We don't have to start from scratch e year." Re-inventing the wheel on each building project will further neither the state-of-the-art nor the overall quality o the built environment. This is especiall portant when considering today's larg number of institutionally generated bu ing types: housing projects, schools, o fices, mental and physical health care ities, correctional facilities and so on. becomes increasingly important that e new project develops from the knowle

[continued on page 136]

the new hospital room:



How do you provide greater convenience for patients, doctors and nurses?

Put a Bobrick Console in the patient's room, as shown here in the recently completed Verdugo Hills Hospital near Los Angeles.

This one functional unit combines a lavatory; mirror; dispensers for towels, soap and paper cups; light fixture; convenience outlet and a storage compartment for bedpan and washbasin. There is also a compartment for patient's toiletries.

This lifetime stainless steel unit is a cost saver. . . and space saver, too. It fits into a wall opening 16″ wide by 4″ deep.

Bobrick Consoles are part of a "Total Design Concept" of coordinated washroom accessories for today's hospitals.

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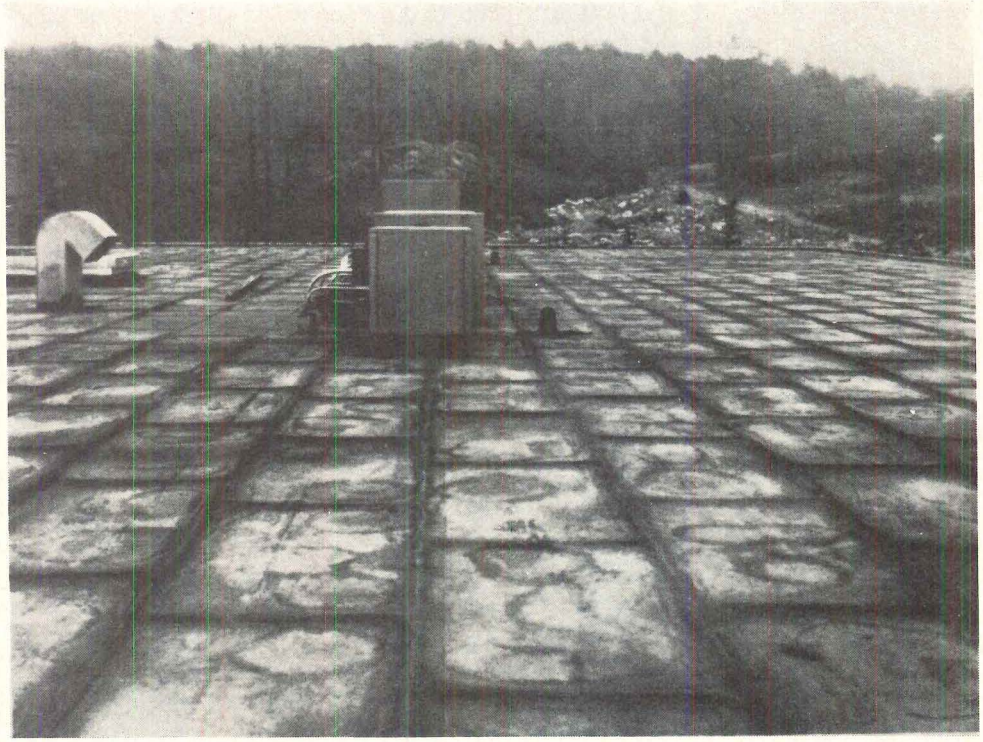
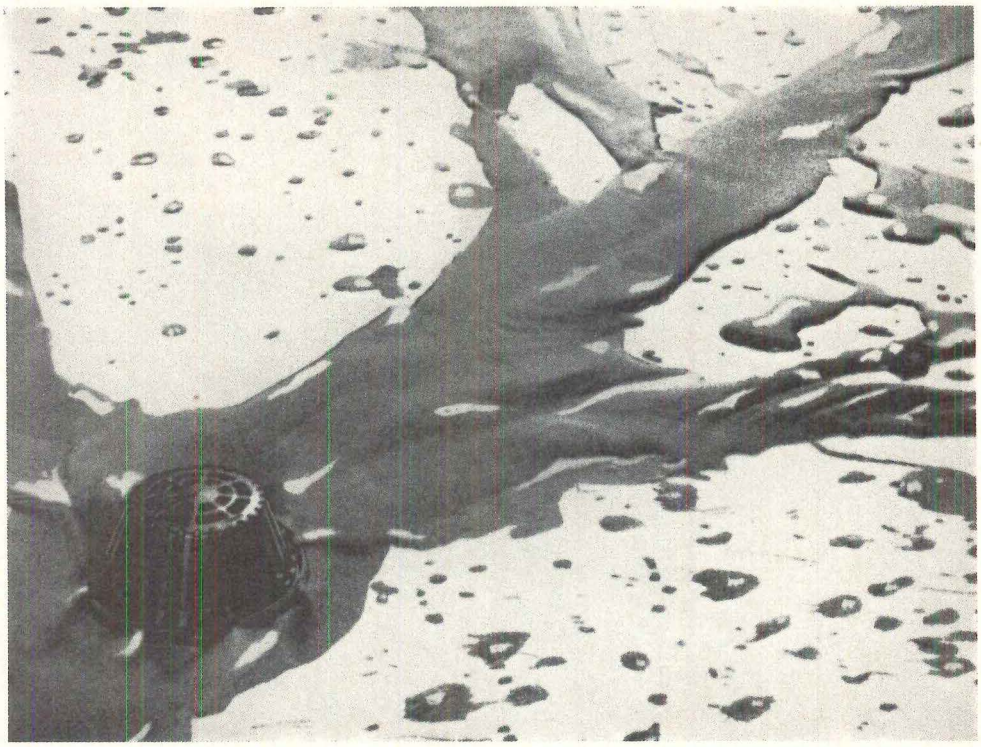
Problem: Joints in Roof Insulation.



Insulation joints are built-in failure points in roof systems.

Not only do they leak heat but they can also cause premature roofing failure. You can compensate for the joints being there by such methods as taping, but . . .

Solution: ZONOLITE Roof Decks



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nting: Pablo Picasso, *La Cruche Fleurie*. San Francisco
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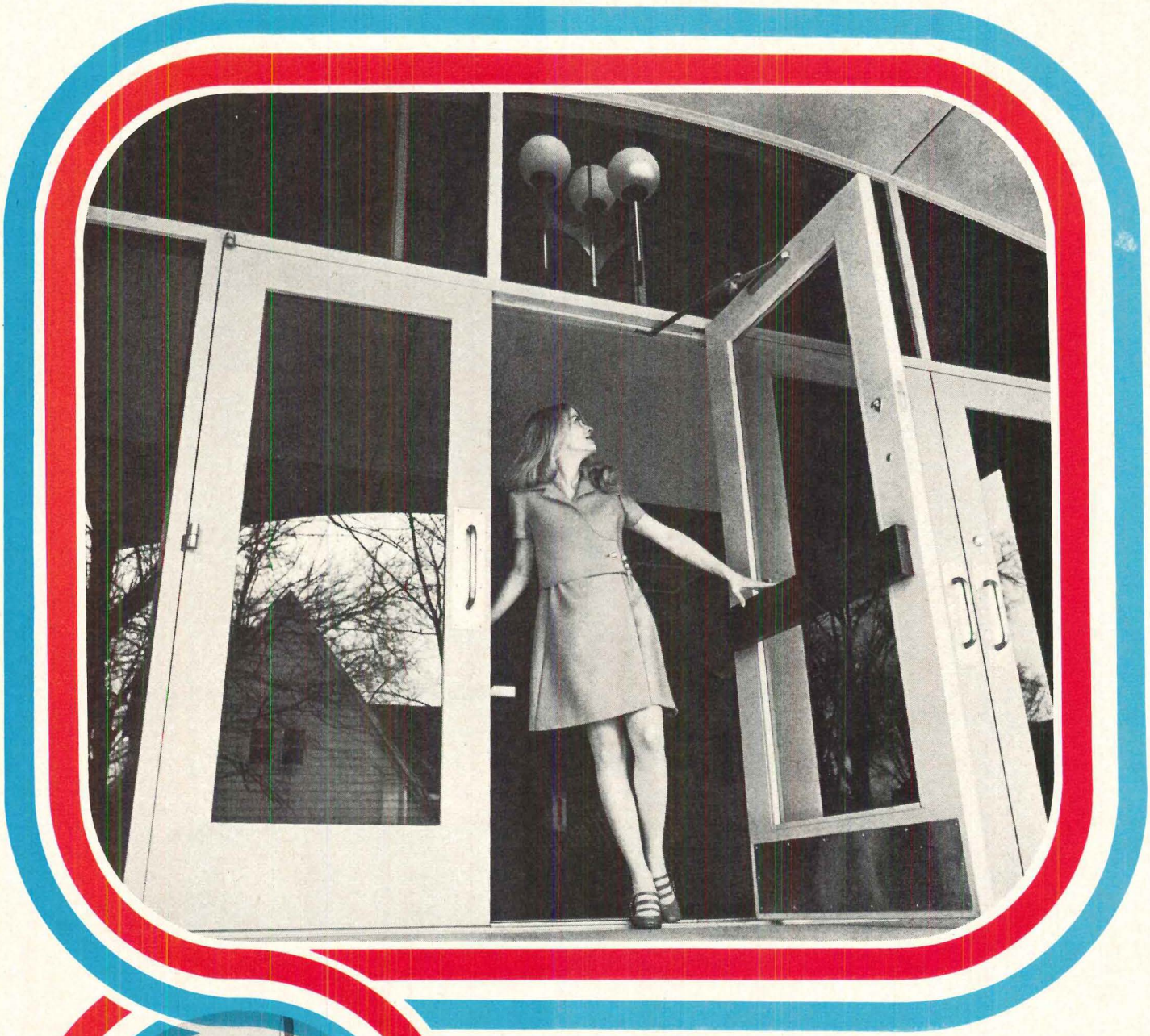

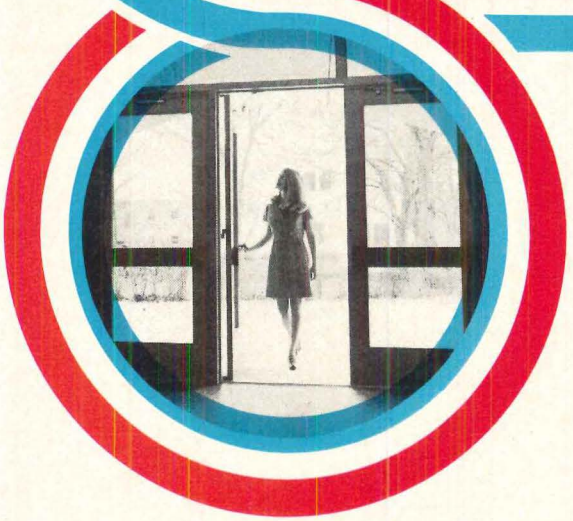

top to bottom

Ultimate door control; the brawny Rixson No. 27 concealed heavy-duty floor closer, with M19 intermediate pivot, and the durable Checkmate No. 8 door holder and stop. There is no equivalent for the total control and protection of heavy-traffic doors.

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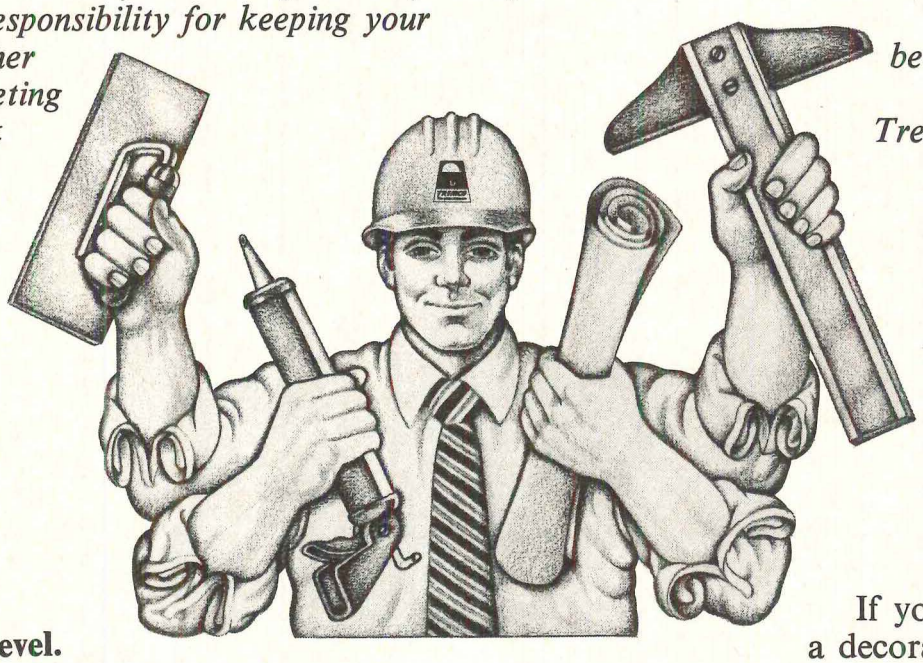

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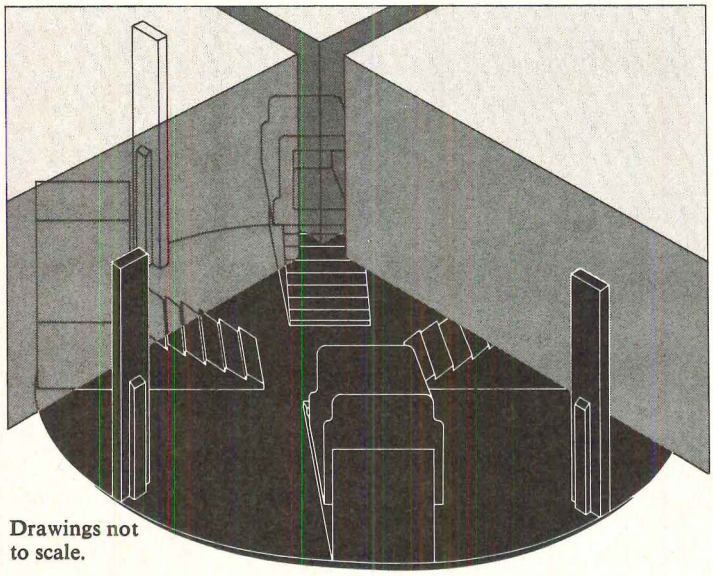
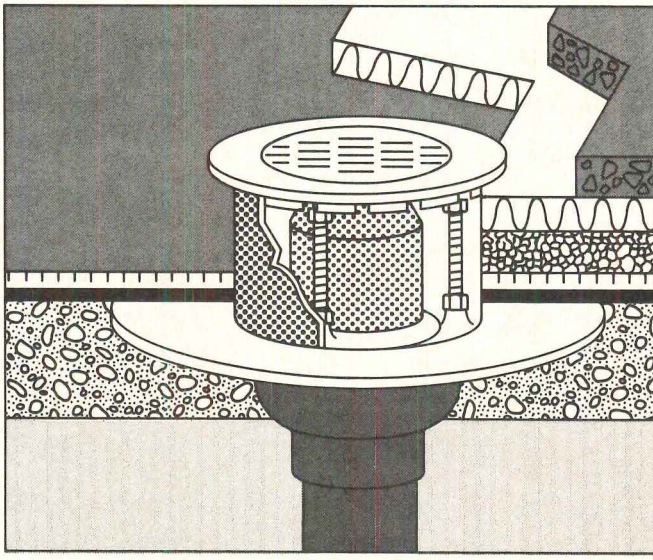


Drawings not to scale.



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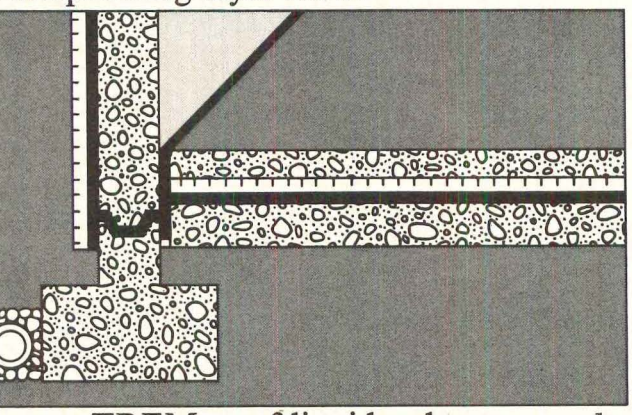
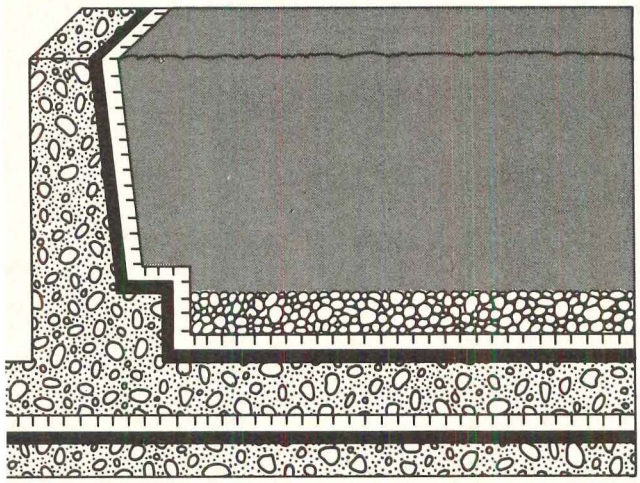


ourse TREMproof liquid polymers can be for the waterproofing of foundations, ters, reflecting pools, etc. They're self-ering and become an integral part of the



ture. Their superior adhesive quality pre-s any lateral movement of water between ubstrate and waterproofing blanket.

ems to waterproof traffic-bearing surfaces.
Mproof Systems also come in a decora-moisture-curing liquid polymer for the c-bearing surface of plazas, balconies, ces, interior floors, etc. It cures to a flexible, less blanket and becomes an integral part e structure. It's easy to use and has excellent resistance to abrasion, chemical spillage and ponded water.

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For those difficult interior waterproofing jobs such as washrooms, and mechanical equipment rooms, TREMproof Systems make for easy, labor saving application in single- or twin-slab construction.

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To complete the waterproofing job, Tremco can provide you with a wide variety of preservatives to keep water out of masonry walls. You can select from heavy-bodied decorative preservatives available in architectural colors. Or, choose from our clear, transparent preservatives that retain the natural beauty of the masonry.

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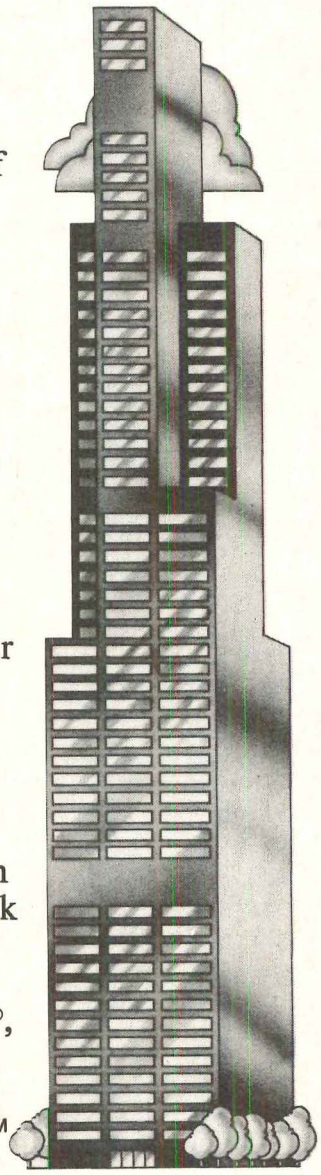

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TREMCO®
The water stoppers

Books continued from page 128

and lessons gained from preceding projects. As Sommer so aptly states, "The feedback process from existing structures must be developed and institutionalized; no design should exist without evaluation, no evaluation without redesign."

The chapter entitled "The New Evaluator Cookbook" is one of the most important in the book; it tells how to go about a building evaluation. As Sommer states, "This is a cookbook rather than a theory of food preference—designers are often advised to go back and evaluate their work, but no one tells them how it is done." Sommer is one of the first to provide a selection of mechanisms and methods for building evaluations. He includes sample question types to ask, evaluation forms that can be used and helpful hints and warnings concerning pitfalls that can occur during evaluation. All in all, it is a rather honest, matter-of-fact and pragmatic approach to the evaluation process. He has eliminated the mystique.

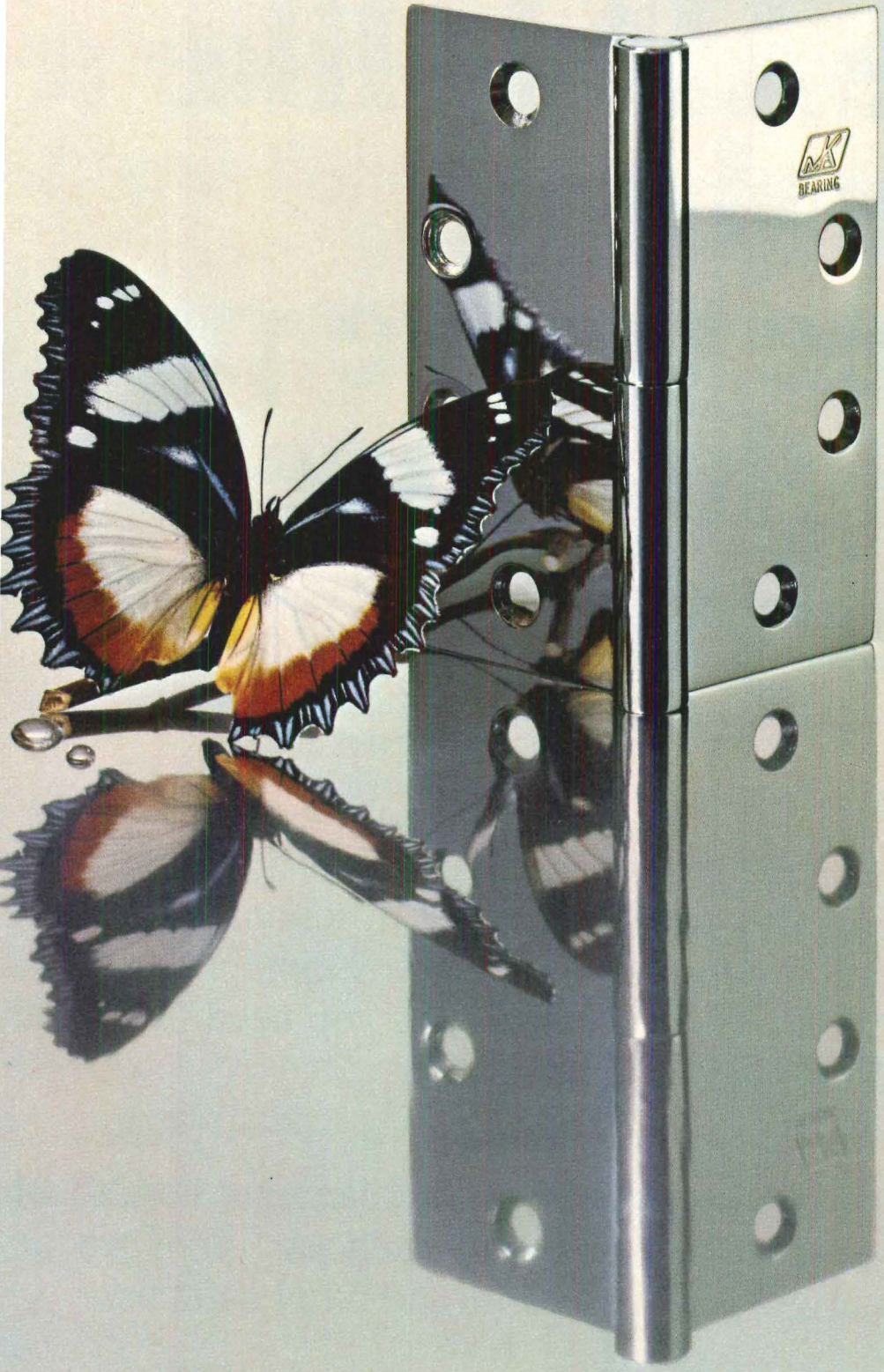
Sommer has made important contributions in *Design Awareness.* He accurately sensed the immediate need for a volume of this type and provided it: a cookbook outlining ways and means instead of another compendium of research findings. Provided with the necessary mechanisms for conducting building evaluations and encouraging user participation in the design process, more people can now be actively engaged in these areas. One hopes this will create transformations within the design and environmental research fields: transformations leading to the ultimate goal of providing better habitations for people.

Documents

[*The documents listed below are available from the associations and agencies cited. Requests for such documents should be directed accordingly.*]

Four Papers on Fire Protection for Buildings in Chicago *presented at the 1972 Chicago Conference on Fire Protection. Gage-Babcock and Associates, Box 270, Westchester, Ill., $2 the set.*

The four papers included are: "Some Comments on the Fire Problem in Buildings" by R.A. Hechtman, "The Fire Experience in High-Rise Buildings" by R.H. Jensen, "The Effect of Structural Materials on Fire Insurance Rates" by W.L. Sands, and "The Hazard and Control of Materials for Building Interiors" by C.H. Yuill.



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Project manager . . . A New York based architectural and interior design firm [continued on page 142]

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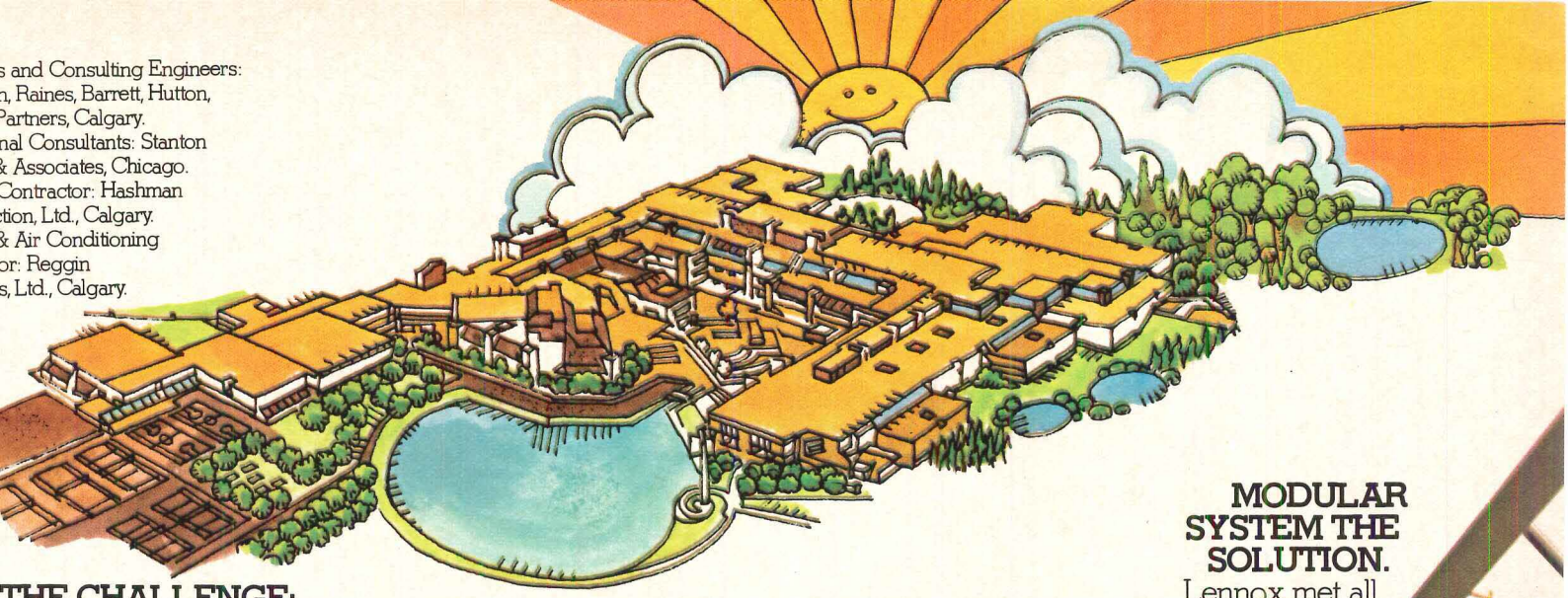

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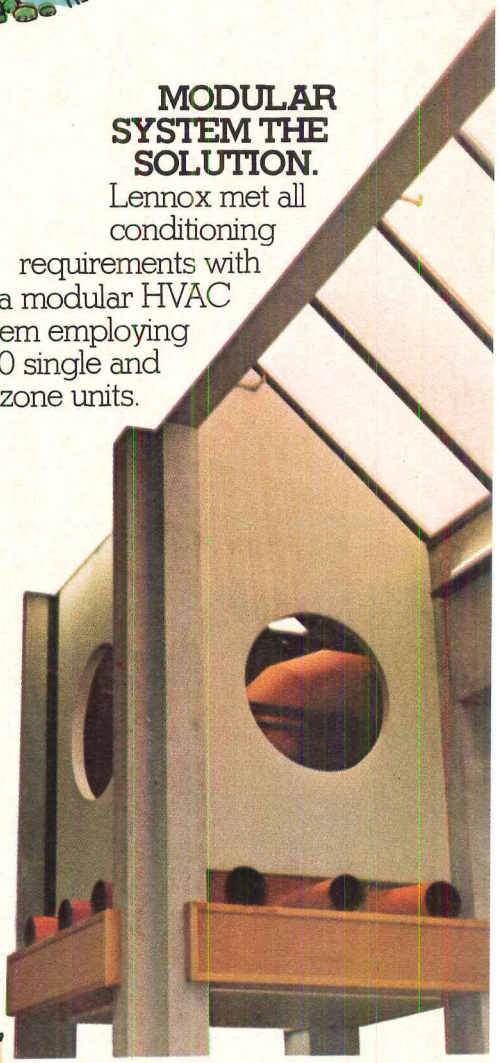

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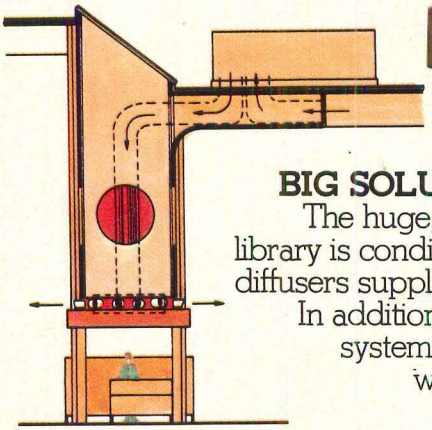

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Job mart continued from page 140

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[continued on page 144]

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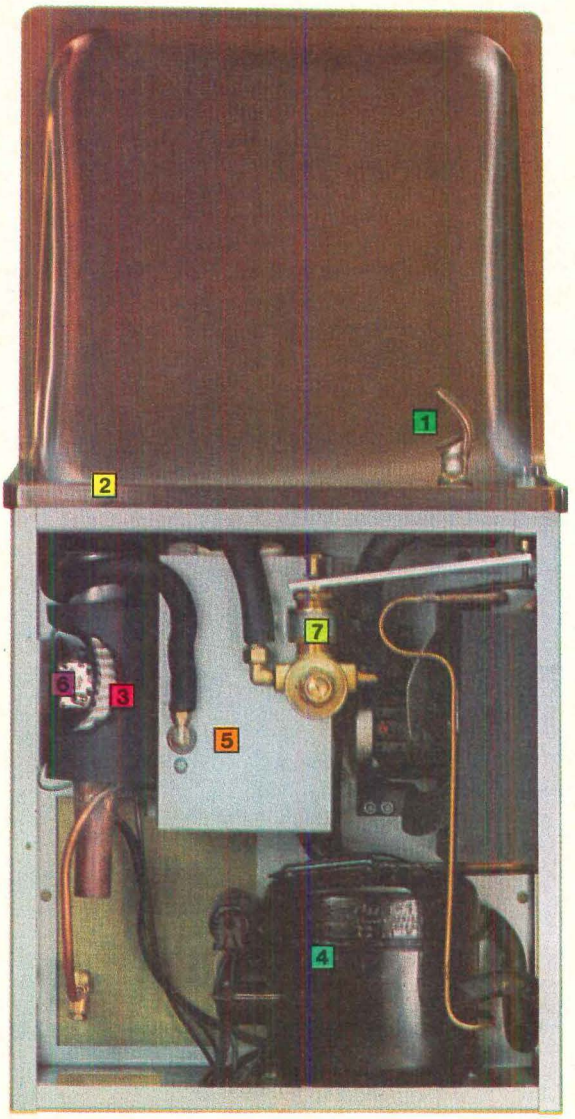

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