

ARCHITECTURAL

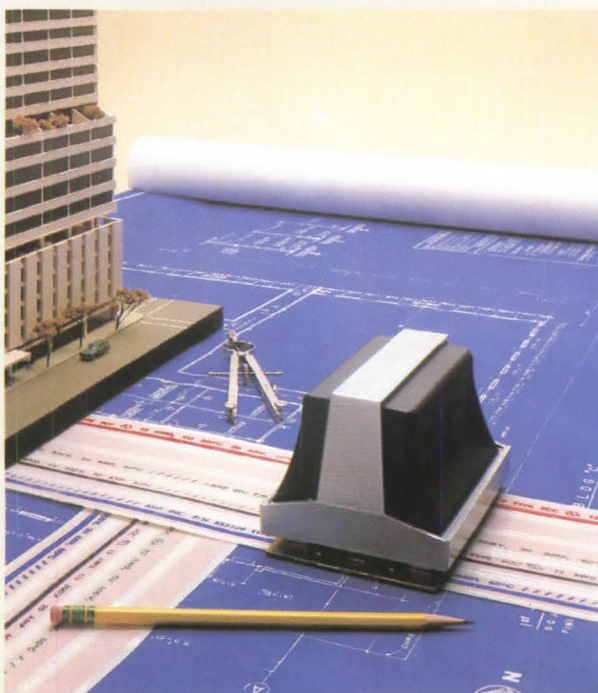
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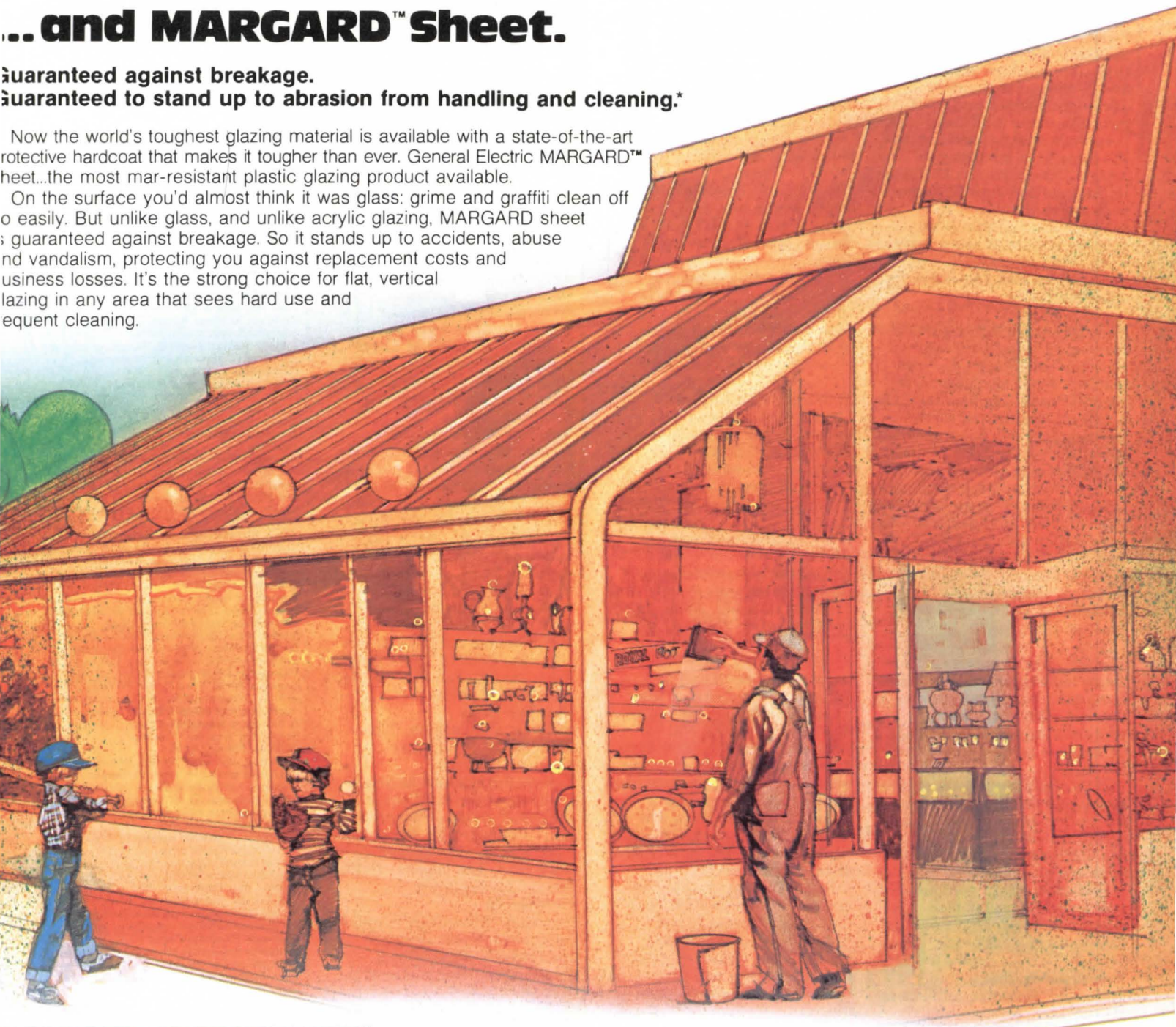
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## Computers: The soft spot is software

*In this third part of a series, Sweet's computer expert outlines the types and sources, and explains why they still need development*

By Harry Mileaf

Software is the term that refers to the program—procedural sets of instruction—that controls the computer system. The program tells the computer what to do, how to do it, and when to do it. Without a program, a computer system is useless.

Because of this, it is the existing software available for a system that often determines which system you should choose—not only for what you need to do at the present, but for what you would like to do in the future.

### Software and systems decisions have to be made hand in hand

The search for a system to buy, rent or lease is complicated by the fact that decisions cannot be made about the equipment by itself, but must include software considerations for the over-all package to be most useful.

Quite often, tradeoffs are required: one system might be better than another, but not enough software is available for it; or the software might not do as thorough a job, or run as quickly as another; or it might not have the proper back-up and support; or the software might cost too much.

Remember, the cost of the total system includes the cost of software, and software can represent a significant cost item. In the long run, considering your growth plans, the cost of all the software could well exceed the cost of the computer system. Thus the more you understand about software, the better your decisions will be.

### How does the software control the computer?

The microprocessor—the computer's central "brain"—is designed so that it responds to a fixed set of relatively simple instructions. A program organizes these simple instructions in some procedural sequence to accomplish tasks and solve problems.

There are different types of microprocessors, with each designed to handle its own set of simple instructions. The differences between them might not be great, but they are different, and cannot be used interchangeably.

A programming language refers to a set of specific codes, either numerical or syntax, which represent specific instructions. The set of codes and/or the set of syntax statements used to manipulate the set of instructions is the language. There are many languages.

### What kinds of software are available?

*Machine language* is the actual set of instructions of the microprocessor, and each instruction is represented by a short numeric code. A sequence of these numeric codes is a *program*. Machine language is difficult and time consuming to prepare. But it operates the quickest, and is most efficient in the use of memory.

*Assembly language* is similar to machine language, except that it permits the use of short mnemonic codes in place of numeric codes, provides for some additional instructions, and allows explanatory notations. Assembly language is a little easier to use than machine language—but not much, and has the same advantages.

*High-level languages* were developed because of the tedium involved in writing machine- and assembly-language programs. These provide broader sets of instructions, which are more problem-solution oriented, and use syntax easier to remember, as well as some other things that make programming less difficult. High-level languages are also referred to as macro languages. There are two categories of higher languages:

1. Compilers. Regardless of the kind of language used, the computer's microprocessor will only respond to machine language. With a compiler-type macro language, the macro program is first compiled down to the necessary machine language instruction codes. Then, the compiled machine language program is run whenever it is needed.

2. Interpreters. With an interpreter-type macro language, the macro program is first run, and each individual instruction is interpreted and reduced to its machine language set and carried out before the next instruction is sequenced. The machine language sets are not saved, and must be interpreted each time the program is used. The principal operating advantage of a compiler language is that it is faster than an interpreter language.

In the evolving struggle to simplify programming, many varieties of high-level languages have been developed, with each more beneficial to use in certain applications. The three most popular types are COBOL, FORTRAN, and BASIC. COBOL was designed for business applications and FORTRAN for engineering and math applications. BASIC was originally designed to teach

programming, and has become very popular for both business and engineering applications, because it is easier to learn. BASIC is by far the most used with microcomputers.

There are standards for these programs, but no one seems to follow them religiously. As a result, programs using these "standard languages" quite often are not transportable from one computer or system to another.

*Operating systems* differ from the programs referred to before, which are also called *applications* programs, because they are run within the computer to solve particular applications problems. The operating system provides an additional language set that coordinates the flow of data into and out of the computer, i.e., between the computer and its input and output drives: keyboards, tape drives, disk drives, printers, plotters, etc. There are also a number of different operating systems. The mix of applications and operating system languages further complicates the standardization problem.

### Where do you get software?

Programs are expensive to prepare. Since the computer company is in the hardware business, it generally produces enough software to sell the equipment, but does not invest in additional software that will enhance the equipment applications to any large degree. And sometimes, the company's software is not quite good enough, because it does not know your business as well as you. This has led to the springing up of other sources of software.

From a survey of over 200 software suppliers made by Sweet's, the profile in Figure 1 (overleaf) shows the categories of suppliers who are serving the construction industry.

*Hardware manufacturers* that produce the computer equipment represent a small number of software suppliers, because, as explained earlier, they are primarily interested in selling hardware. And traditionally, they do not understand your practice as well as they should.

*Systems vendors* supply about 34 per cent of software. They are generally not manufacturers. They are knowledgeable consultants who choose various equipment, coordinate it in a package with appropriate software and make the coordinated system available as a *turnkey system*—a complete system ready to run.

Some of these systems vendors

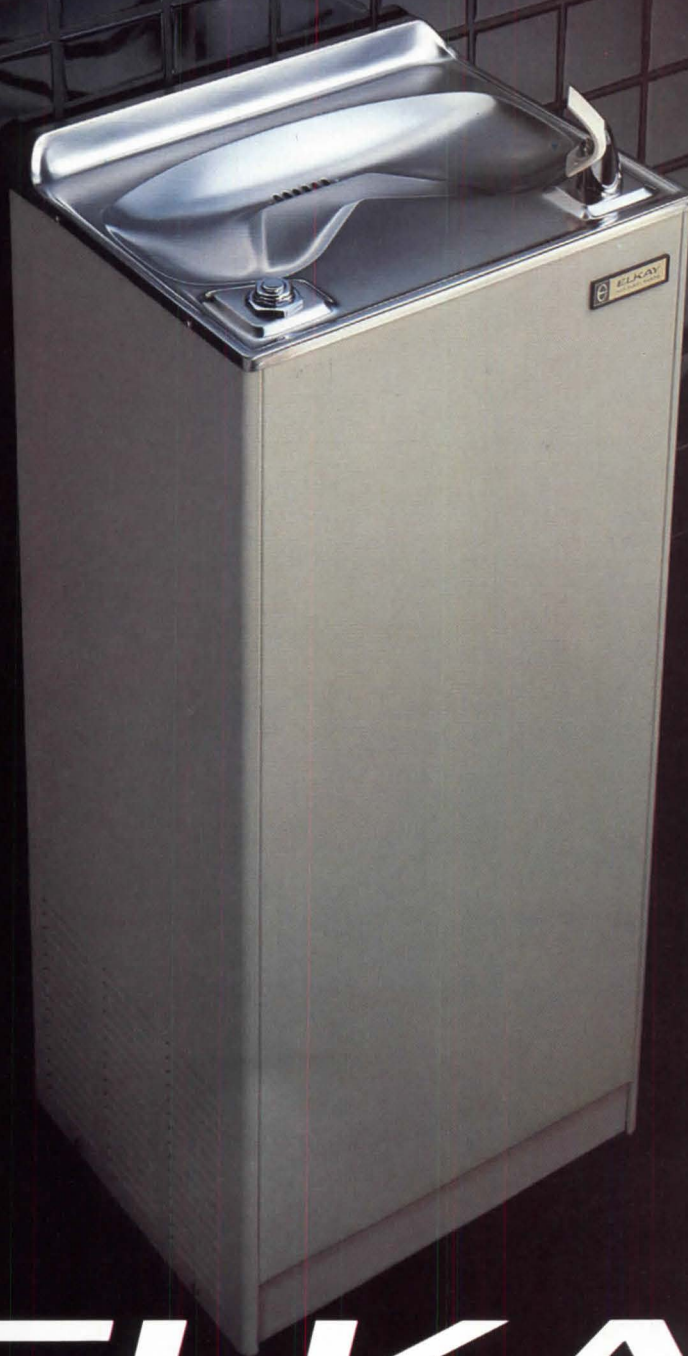
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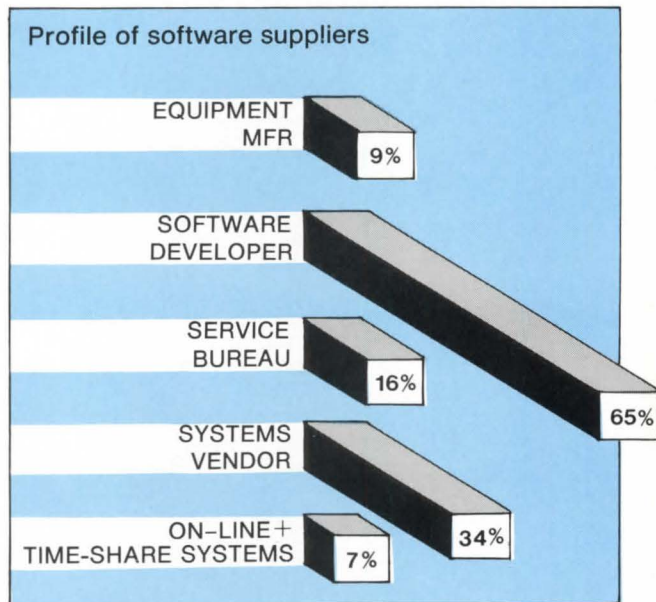
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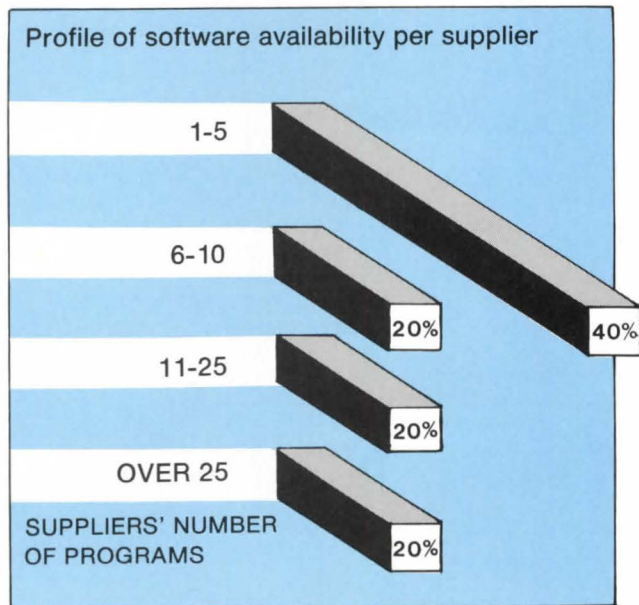
Circle 26 on inquiry card

Figure 1 (top) shows where software comes from and indicates the fledgling nature of the field by the large number of software developers.

Figure 2 (bottom) shows that the average number of programs available from the suppliers is limited to about 20.



(Percentages exceed 100% because of multiple roles of suppliers.)



come from the ranks of the construction design profession, and some are practicing architects. Essentially, these systems vendors save you the time and trouble of trying to find which peripheral equipment (printers, plotters, disk drives, etc.) and software you should get to work with which computer for specific applications. This though, could have its disadvantages. The system might be so configured as to limit your expansion with software from other sources. And some systems vendors are small entrepreneurs. You should do a thorough check on their stability and maintenance and training capabilities. The growing number of systems vendors is the result of the shortcomings of the manufacturers in this area.

Software developers design programs. Although the systems vendors are focusing their efforts on your needs, they still limit their software efforts to their systems, and within their financial capabilities. To fill the gap, independent software developers have proliferated. They are the largest group of software suppliers.

These firms are not usually directly involved with any specific equipment or systems, although many of them will do custom programming for you. Again, a growing number of these software developers are from the ranks of the design profession.

Service bureaus are about 16 per cent of the software suppliers. They principally make the software available to you indirectly by doing the work for you at their premises. However, some service bureaus will sell or lease their software.

On-line or time-share systems are the smallest group of software sources. But here too, you must use their system to use their software.

#### But, all of these sources are not enough

Figure 1 shows that there are about 50 per cent more software developers than hardware manufacturers and systems vendors combined. They are all trying to fill a large gap. But are they succeeding?

The Sweet's software survey indicates that they are not yet filling the gap. This survey shows that about 62 per cent of the software available to the construction market must still be obtained with the equipment or the system. So although there are many developers, they are still providing few programs.

This indicates that the software developers are small firms with a small average number of programs each. It turns out that this is one of the major problems facing those practices making long-range plans.

Figure 2 shows a profile of all software suppliers with the number of programs they have available for you. Some 40 per cent of them have five programs or less. Another 20 per cent have between six and 10 programs. This means that 60 per cent of all the software suppliers have 10 or fewer programs for sale or lease to you. Only 20 per cent have more than 25 programs. The average supplier has 20 programs.

To make any long-range application plans for any one computer system, you will have to spend time evaluating the wares of a number of software suppliers. And chances are any system or source of supply might not give you the ability to plan very far ahead. It might pay to go the route of many of your peers, by mixing the use of service bureaus, on-line systems, and your own systems in your long range plans.

The large number of software suppliers with few programs each indicates that the gap is still there. And considering that new equipment and systems keep coming, each with its own special requirements, we can expect the gap to continue for a while.

This means that unless you can hire an expert consultant to do the work for you, or have the financial ability to assign a full-time staff member to the task, you should plan on spending time learning and dealing with a number of potential suppliers. Or you can go the route of a surprising number of your peers—write your own programs or have them written for you.

You have now seen how the computer industry supplies software. The next article in this series deals with how the construction design professional acquires it.

*Mr. Mileaf is director, Technology and Product Development for Sweet's Division, McGraw-Hill Information Systems Company. His achievements for Sweet's include Mechanical, Electrical and Civil Engineering Catalog files, technological planning over the past 15 years, and 11 research studies over the past 3 years on influences in the construction industry. Mr. Mileaf is the author of 16 books on technical subjects.*

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# The profitable professional: Selecting the right contract

*The second in a series of articles on sound management, by an attorney who specializes in architects' and engineers' problems*

By Barry B. LePatner, Esq.

Wittingly or unwittingly, the law of contracts weaves itself into the fabric of an architect's daily activities. Even before the commencement of any design services, the owner quite likely has executed contracts for the purchase of the property to be developed, the building loan and tenants.

One would, therefore, believe that the architect would have little difficulty in requesting the client to execute a contract for the design services on the same project. Yet, the opposite is precisely the case.

Having secured the commission, perhaps with only a letter of agreement, all too many architects and engineers are ready to launch into their work without securing the benefit and protection that comes from a comprehensive set of documents that spell out the rights and obligations of each party. It should matter not that the owner is an old, valued client, that the project is small or that the final scope of the work is narrowly circumscribed.

## What is the real meaning of a contract?

My well-worn copy of *Webster's New World Dictionary* defines a contract as "an agreement between two or more people to do something; compact; covenant; an agreement, usually written, enforceable by law."

There is a substantial body of law that surrounds the making, breaking and enforcement of a contract. As a statement of general application it might be observed that in the eyes of the law, a contract is given special status. If clear and unambiguous, it is treated with sacred regard.

It should be some source of comfort to know that the realm of the law of contracts is based primarily on common sense. More precisely, the law looks to the intentions of the parties at the time of the making of the agreement. As such, a written agreement contemplating all anticipated contingencies is far more preferable in terms of resolving disputes than a vague, poorly drafted agreement.

## There are three early steps to securing a good contract

The first step requires the architect to become familiar with the scope of the project. This requires knowledge as to details of the owner's needs, the extent to which standard or unique design/construction techniques may be needed, and the budgetary range that will define what may or can be done.

Knowledgeable architects will spare no effort to develop this information.

According to Alan Schwartzman, a partner in Davis, Brody & Associates: "The farther we go in defining the scope of our services, the more precise we can be in getting the right contract." Identification of these elements is a critical step and one often overlooked in the rush to proceed.

(For valuable reference tools, see "Compensation Guidelines for Architectural and Engineering Services" and "A/E Supplement to Compensation Guidelines," 1978, published by the AIA. These publications, surprisingly little known, offer several analysis forms which can be used in the pre-contract stage.)

The second stage requires the designer to gain an intimate knowledge of the client. Researching the owner's background, financial capability, reputation in the business world, and experience with architects and engineers can aid immeasurably in gaining the insight necessary to secure a properly drafted contract.

Just as the owner has reviewed a design firm's résumé and past experience, so should you familiarize yourself with the party retaining your firm's services. Where any doubt exists, a credit check is a wise investment and could help to avoid prospective problems.

Finally, after gaining a good understanding of the project and your client's needs, it is equally important to ask if your firm can capably perform the work that will be required. Is the in-house capability present or will outside consultants be needed? Is there adequate time to devote to an intensive design schedule or will there be conflicts with existing business? Does this project coincide with the firm's future business goals or is it being taken on merely to "keep the staff busy?"

## The selection of the contract will be the single most important business decision during the job

From this decision will flow all related financial issues, governance of the work itself, and the means of resolving disputes which may arise out of the performance of the parties. It is at this point, at the latest, that competent legal advice should be sought. Memorializing an agreement on substantial construction and fee dollars should not be done in a vacuum.

To your client, the decision to go forward with you as the architect on *this* project manifests the client's commitment. To the architect, it is the opportunity to make an initial impression that his or her business acumen will be committed to representing the owner's interests as well.

And let there be no mistaking how that early impression can best be made: by submitting a well-drafted contract for professional services that protects the business interests of both parties.

It is well to remember that owners do little in their business lives without consulting their lawyers; contractors follow the same rule. If you as an architect believe you are more skilled in the business and legal nuances of the construction industry than the owner and his or her advisory team, you are playing dangerously with your future.

## A review of the contract is also important

Increasing numbers of design firms are making contract review part of their standard business procedure. On this point, Schwartzman says: "Not only should you have your attorney review each contract, but at the same time, you are wise to have your professional liability insurer review it to ensure that any claims arising under the contract will be insurable." Seeking both legal and insurance counsel at any early stage in negotiations enables Davis, Brody to have significant input into contract formation. Says Schwartzman: "Some clients take issue with certain revisions we have made to the standard AIA agreement, and ask us 'if it's good enough for the AIA, why isn't it good enough for you?'"

"We are able to explain the reasons for each change that was made. In general, the client is receptive to this approach. If he is not, or if he proposes revisions, we will ask our carrier for guidance on how far we can go and still have an insurable provision."

To highlight the fact that successful firms insist on a contract, Eason Leonard, a partner in I.M. Pei & Partners states: "We may begin work on a project pursuant to a letter agreement. But this will only cover design concept services, and carry with it the understanding that a detailed contract for the balance of the project is to follow."

The use of standard AIA/NSPE forms, though widely

employed, should be carefully scrutinized. It is important to recognize that these forms have been designed to cover the broad base of situations that may arise during most standard projects. Recent decisions in state and Federal courts may substantially affect provisions in the standard agreements, warranting ongoing review of their applicability to a given project.

## Do not become responsible for things you cannot control

Of course, the services of the architect will also be affected by decisions of the client, the coordinated efforts of the construction team and decisions of the construction manager, if one has been retained by the client. Leonard is quick to note: "The architect's cost and profits will be affected substantially by the procedures decided on by the client to complete the project. Do we go out to bid with a complete set of drawings? Will a construction manager be used to get an early start on construction? We can only be responsible for those things in our contract which we control, and our contracts must be very clear for this reason."

Certain provisions of the agreement must be viewed as critical to protecting the rights of the architect. In addition to the scope and payment provisions, these include (1) additional services, (2) scope of reimbursable expense items, (3) ownership and use of documents, (4) termination requisites and, (5) equitable adjustment of compensation in the event of project suspension for more than an agreed-upon period of time.

Recognizing the importance of the contract in defining and protecting the rights of the architect is, as shown above, an important step in the development of a successful practice. Learning how to integrate an agreement into over-all operation of a well-run practice will provide innumerable benefits in both the short and the long run.

*Mr. LePatner has law offices in New York City, where he specializes in the representation of architectural and engineering firms. He is co-author with Sidney M. Johnson of Structural and Foundation Failures: a Casebook for Architects, Engineers and Lawyers, published this year by McGraw-Hill. Portions of this article appeared in the August 1982 issue of the "LePatner Report," a newsletter for the design professionals published by the author. Copyright© 1982 by Barry B. LePatner, Esq. All rights reserved.*

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# Legal Perspectives: It pays to know about arbitration

*Familiarity with the process will enable you to better understand your position as one of the arbitrating parties*

By Arthur Kornblut, Esq.

Any architect who regularly uses standard AIA agreement forms should be familiar with their provisions related to the resolution of disputes. Since the 19th century, the AIA contracts have mandated arbitration for this purpose, and the current editions are no exception.

Arbitration has been long recognized as an effective mechanism for resolving disputes in the construction industry, because it normally enables the parties to bring the issues before a decision maker knowledgeable about construction matters.

For architects concerned about professional reputations and negative publicity, arbitration has the important advantage of being confidential. Whether or not the arbitration process is conducted successfully often depends on a clear understanding of what arbitration is and is not.

## **Arbitration can be described as a creature of contract**

Namely, whatever procedures and rules the parties agree upon are applied as the mechanism for dispute resolution. When two parties to a contract agree to use arbitration, the courts in most states normally will not interfere with that agreement, and will not permit one party to resort to litigation after a dispute arises.

In a few states, the courts will not enforce an arbitration clause in a contract unless the parties still agree to arbitrate after a dispute arises. In all states, an agreement to arbitrate after a dispute arises will be enforced by the courts.

The AIA contracts contain broad arbitration clauses. The parties agree that they will submit "all claims, disputes and other matters in question" to arbitration rather than to litigation in the courts.

Arbitration, however, should not be viewed as an alter ego for litigation. Arbitration in the construction industry usually works best when it is limited to disputes between two parties to a contract that arise out of the parties' contract. A contractor, for example, should not be a party to an arbitration proceeding between an owner and an architect.

The different contract requirements and legal standards applicable to each party can become blurred in multi-party arbitration—a distinct danger, as there is no way to appeal errors of law in arbitration. For this reason, the AIA contract prohibits the involuntary joining of third parties in arbitration proceedings.

## **Who should administer arbitration proceedings?**

Under the AIA contracts, the parties are required to utilize the arbitration procedures established by the Construction Industry Arbitration Rules of the American Arbitration Association. No one is forced to use the AAA procedures, but they do have the major advantage of being administered and staffed by trained professionals. The AAA tribunal administrator acts as an objective buffer between the parties, while the arbitrators are being selected and the parties are preparing their respective cases.

The AAA rules contain a fee schedule for having the case administered by the AAA. Whereas court fees are often a relatively nominal set amount when a lawsuit is filed, the AAA fee schedule is based on the amount of each claim and counterclaim, beginning with a 3 per cent fee for amounts up to \$10,000 and climbing to \$1,850 for a \$200,000 claim (plus an additional 1/4 per cent for amounts in excess of \$200,000).

The parties also are often asked to compensate the arbitrators for each hearing date after the first one. These costs should be kept in mind when thinking about arbitration under the AAA procedures.

## **There is some rule flexibility**

Under the AAA rules, some important areas are not covered explicitly. The AAA rules state that only a single arbitrator must be appointed to hear a case unless the parties' agreement specifies otherwise. The AAA, in its discretion, can appoint a larger panel.

Often, a three-member panel is desirable for larger cases (i.e., those involving claims in excess of \$50,000), because it permits a broader range of judgments to be made about the issues. This spreads the risk of a misunderstanding of facts or of an error of law that can result in a bad decision. Three-member panels, however, often require longer periods of time to be selected and can cause scheduling problems because of the additional people involved.

Another issue on which the AAA rules are open involves the locale of the arbitration hearing. If the parties agree on a locale, the case will be heard at that place. In the absence of an agreement, the party who files the initial arbitration claim may have a distinct advantage because the rules state that a party can request a locale for the

hearing (and this is normally done in the initial filing of the demand for arbitration). If the other party fails to object within seven days, the locale shall be as requested. If the other party objects, the AAA has the power to make a final and binding decision about the locale.

## **Arbitration differs from litigation in preparation for the hearings**

Arbitration, unlike litigation, does not have any formal rules for "discovery"—the legal process by which the parties, through their attorneys, prepare their cases. In court, the parties can be served with interrogatories (written questions that must be answered under oath in writing), be required to respond to requests for production of documents that would be admissible as evidence, and be made to appear at depositions (proceedings at which oral questions must be answered under oath). Discovery proceedings are designed to expedite the courtroom proceedings through proper and adequate preparation.

In arbitration, the only formal procedures involve the arbitrator's subpoena powers where granted by statute. In other words, only the arbitrator can legally require the appearance of witnesses or production of documents.

In a construction industry case, the absence of formal discovery proceedings can create distinct problems because much of the evidence involves written records and the memories of witnesses about circumstances that occurred months or years before. If the parties and their attorneys do not voluntarily agree to exchange documents and permit the taking of depositions from witnesses, an arbitrator has little practical power to compel compliance with discovery requests.

If one party fails to comply with a directive from an arbitrator, the arbitrator does have the power to dismiss claims or rule against the uncooperative party. There is a great deal of reluctance to do so, however, because an arbitrator does not want to appear to be acting capriciously or arbitrarily—these being among the few grounds for challenging an arbitration award in court. Thus there is a general inclination to hear the case fully and to give both parties the opportunity to speak before the arbitrator, even when one party has not met requests from the other party or the arbitrator.

## **A distinct advantage can be judgment by true peers**

Most people would never have an opportunity to sit as a judge in a courtroom case; an architect can, however, serve as an arbitrator in construction cases. Being a member of an arbitration panel can be an informative and rewarding experience. If one has an opportunity to serve as an arbitrator, he will see first-hand how difficult "judging" can be.

Cases in which the parties can not work out their own settlements rarely are clear-cut. Each side usually holds strong beliefs about the correctness of its position, and is able to produce witnesses and documentary evidence to support its case and to discredit the other party. An arbitrator often must sort through conflicting evidence when hearing both sides of the same story in order to reach a decision that is fair, within the context of the parties' contract and the law.

An architect who has the experience of serving as an arbitrator will have a much better understanding about what he will be facing if he finds himself as a party in an arbitration proceeding. To become an arbitrator, contact the nearest regional office of the American Arbitration Association for the appropriate forms.

If qualified, your name and biographical information will be added to the AAA roster for your geographic area. At some point, your name will be submitted to the parties for consideration for selection in a given case. If selected, the AAA tribunal administrator will notify you and provide you with the information needed to perform your duties. By studying the AAA rules carefully and recognizing the tremendous power possessed to determine the outcome of the case, an arbitrator should have little difficulty in conducting the proceedings properly.

*Mr. Kornblut is a registered architect and practicing attorney in Washington, D.C.*

*This article is published with the understanding that the publisher is not rendering legal services. If legal advice is required, the services of a competent professional should be sought.*

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# Marketing: Winning proposals for commercial work— and any other type as well

*A noted design communications specialist  
explores the subject with some of his colleagues*

By Ernest Burden

The need for architectural firms to succeed in client presentations is paramount to their existence.

With such high stakes involved, it is amazing how little time and energy can be spent preparing for the final moment of truth—the client interview. Without a winning presentation, all the gathering of leads, the pre-qualifications, and the proposals are for naught.

The clients, on the other hand, are likely to plan for success every waking moment. In virtually every major corporation, for instance, the marketing, sales and public relations efforts are based on a fundamental strategy geared to the competition. When such clients view an architectural firm presenting its capabilities, they must be truly amazed.

## Marketing covers a broad spectrum, yet only has three main components that have to be in the right proportion

These are contact, presentation, and follow-up. Of these, as much as 70 per cent of the effort can go into the means of contact, developing leads, direct mail campaigns, the production of brochures and the development of social and personal contacts.

If this happens, as little as 20 per cent of the total effort will be left for the preparation of the proposal. The large majority of projects are lost at this stage. Of the 10 per cent effort now left, 8 per cent will go for the interview, and 2 per cent to follow-up.

Fred Stitt, architect and editor of "The Guidelines Letter," amplifies the problem. "There are two things wrong with most design firms' marketing efforts. First, the greatest amount of time, effort and money goes to chasing the least likely and desirable clients. Second, when a prospective client is ready to listen, the least amount of time and effort is spent dealing with the client's needs and interests."

Both failings result from not setting priorities on what counts in marketing.

## The need to focus on the client's needs and expectations is a major stumbling block

The hardest part for design professionals is conveying an interested approach to staff involved in client contact.

Barbara Lord, of Lord & Welanetz Inc. Communications Consultants, adds: "Realizing that every member of the firm is a potential developer of new business, it is necessary to realize the importance of internal communications. In most firms,

there is a lot of internal confusion about what message the firm is trying to send. We see a marked increase in the use of new communications and technology—the use of video and the use of computers."

Design practice is changing. Experiments that were tentative and radical a few years back have become standard professional practice. A large percentage of design services are not purchased by individuals, but by committees with a good knowledge about the design and construction process.

Clients may even develop their own program, and invite the design professional to translate their needs into a building. Few owners view the design process as an opportunity for the architect. They view the design process as one where alternatives are investigated and presented to the owner for comment and decision. A common client complaint is that many design professionals have an inability to listen and hear their desires.

## Success can mean following the clients' lead

Don Prochaska, an architect with Kirkham Michael & Associates, knows firsthand that this is true. "The clients are concerned with absolutely everything about their project that you can imagine. Their own staff can be very large with a lot of internal resources. They may have people that know more, in some instances, about many of the things you are going to be doing than you do. You may be viewed as an important technical extension of the in-house people. So listening is important. Listening can be the most important thing."

Bob Whitson, project manager, Bank of America Data Center, tells it from the client's side. "The client's needs are of paramount importance. Demonstrate how you have the skills and resources available to address each of those concerns, and how your firm's qualifications relate to the client and the client's concerns."

Frank A. Smith, AIA, marketing consultant, says: "Contact all members of a selection committee. Talk to them. However, do not spend your time selling your firm to them, but rather probe for their feelings. Determine, as best you can, what each of them is looking for. Then design your presentation so that it meets all of their expectations."

Stitt claims that the two worst pitfalls are failing to probe client prospects about their needs and

failing to listen when they do talk about them.

## Reverse the usual sales approach

*Business Monthly* reports that most sales people begin presentations with an explanation of what their product or idea is designed to do. In one company, a test group began presentations with questions about customers' problems and needs. The test group's sales went up 50 per cent over those who focused first on the product or idea.

Stuart Rose of Professional Development Resources Inc. is a Ph.D. and architect. He has a unique approach: "Traditionally, design professionals do most of the talking in their first direct contacts. The diagnostic method reverses that self-centered approach. You start off by asking questions, and spend most of the time listening to answers. First you call the client prospect to ask for a meeting to obtain data about his or her needs. You're interviewing the prospect rather than being interviewed. You're asking for data, not giving it. You're finding out what can be done, not selling yourself.

"What about those questions prospects have about your experience and qualifications? Most of them should be briefly answered before the interview, on the telephone or in a letter of inquiry. Remember, you'll be controlling the interviewing. The more you listen, the more you'll be in charge."

## Be clear about your own abilities and expectations

Barbara Lord feels it is important to "find out who the design firm is in the public eye, possibly by image surveys, and how they are perceived in the market place. Then determine who and where the right markets are, and develop messages to those specific audiences."

Jim Sabraw of Marketing Research Consultants, adds: "Seat-of-the-pants decisions in marketing are no longer the rule. Rather than gut feeling, objective data is being gathered more and more, and market research is becoming an accepted management tool."

John Coyne of Coyne Associates (marketing and public relations): "Have a clear-cut, planned idea of what kind of work you want, are good in, and can prove to prospects. To attempt to crack new services or new territories in a tough economy can be a long and expensive gamble. Why? Because

clients tend to play it safe in tough times—to deal with known quantities. "Get back to basics. Look for and offer the best thing you do, and make sure the clients of your past are still clients in the future."

Smith has similar advice: "Don't look for new business in these competitive, recessionary times. Look for old business. Your chances of getting work either from or through former and present clients are much higher than cold calling."

## Then, focus on the presentation

Whitson: "The actual presentation is usually the only tangible quality standard on which the client has to compare your firm to others. The client has many driving forces behind him and the project.

"The successful presentation must focus on those driving forces and relate them to the design firm's qualifications. The content of the presentation should provide continuity, linking your proposal to your presentation through certain clearly stated key ideas that address the particular clients."

David R. Dibner, FAIA, who changed his role from private architect to commissioner for construction management for GSA, suggests that "it might be a good thing for all architects to go on the other side of the table for a while to learn what it's like to be a client. So often I listen to an architect making a presentation, and I want to reach out to him and say, 'Look friend, you're doing something wrong. You are not addressing the point. You are not looking to what the client needs, but rather to your own needs.'"

Edward Hall, architect, of Hall Associates, architectural marketing: "The presentation is a process of forming an appealing message around a project strategy which is logical, competitive, concrete in its proof and relevant. Features are generally solutions to problems. If they are not the client's problems, the client will scarcely value the solutions."

Smith adds: "The presentation theme must be that your firm can offer something no other competitor can. Developing this theme properly entails a tremendous amount of homework regarding the client's concerns as well as a good knowledge of your competitors, but—if you neglect it—your chances are slim."

Stitt feels that clients are clear about their needs. The presentations they see are often

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not. "Irrelevant" is the word heard most often from clients about design firms' presentations.

Hall: "Too often the potential for a superior technical approach to a project is avoided or overlooked. Yet, it can be an even stronger strategy for selection than the principal's personality or the firm's credentials. The project strategy must be based on linking client buying motives and firm selling motives on the critical issues as well as numerous minor factors. It is a concept new to most firms but growing in significance in aggressive offices for one reason—it works!"

#### **The presentation must be built on a good proposal**

Ken Watson of Infoscan is one of the few consultants who has made a serious study of the procurement process. In his manual, "Preparing Proposals," he states: "It is a serious mistake to think about proposals in isolation from the general marketing strategy of the firm. The problem as he sees it is that proposal contents are generally descriptive rather than persuasive. They appear to be disorganized, not visually interesting and poorly written."

Watson says: "Non-responsiveness is the kiss of death." He claims that on the average, about two out of three proposals for government work are classed as non-responsive, and disqualified for further consideration for that reason alone. As a result he maintains that no detail is too trivial to include, if the Request For Proposal mentions it.

He continues: "The second most common aspect of non-responsiveness is using the RFP's own wording in describing the problem or requirement. This does not demonstrate understanding of the problem, and *certainly* does not indicate an adequate response to the client's needs.

"The first step in writing a proposal is to define a theme or focus provided by a 'proposal win strategy.' But a good strategy is to no avail if the proposal is not responsive in every detail."

Whitson adds: "The client's RFP structure usually indicates what the client considers important. Respond in the order as the RFP is written."

#### **Marketing research is important at every step**

Sabraw points out the importance of research: "A designer needed a good deal of

information about a particular RFP: the selection process; the type of people doing the selecting; their attitudes about what firms should emphasize in the interview; the acceptance of audio visuals in the interview process. By learning, the firm got the job."

He believes that marketing research techniques are not readily available to the average architectural firm. "Many of these firms have never had to operate an over-all marketing framework. They have been able to survive in a production-oriented mode."

#### **Show the client that you know how to get the project built**

Hall: "Focus on the process rather than the product."

Carol McConochie: "Stress your ability to specialize with emphasis on the end-use of the project—such as showing how the users think, work, and use this laboratory or that hospital. Show that you are an expert in *their* processes."

Public relations consultant Tom Harack states: "The most critical thing for designers to do is to project both creativity and cost-consciousness in some desirable proportion—a pretty subtle proposition. Since this proportion itself is going to change from prospect to prospect, the idea is to be more selective. This is not exactly a revolutionary concept, but ever more important."

#### **Articulation is not just a design term**

David Wachsmann of Wachsmann Associates, Public Relations, comments on the problems architects face in getting proper publicity for their projects. "To most architects, the word articulation means something physical. Verbal articulation—the kind that commands the attention of huge audiences—is also a demanding discipline. It is no surprise that very few people master both. When they don't, what is needed are translators who can render the architect's work and thinking in the medium of compelling words. The people best qualified may have the training and experience of journalists."

Harack: "Knowledgeable designers will concentrate on allowing independent third-party sources—reporters, editors or people who give talks—to support their contentions of design excellence."

#### **A good brochure is important**

Warren Friedman of Tecton

Media maintains: "Your firm's brochure is effective only if your reader—a decision-maker—reacts to it. By react, I mean the reader is intrigued, impressed, likes what he sees, feels your firm is a little different or better and should be talked to. This means that your brochure needs the right appearance. The elements of paper stock, binding and quality and richness of printing will reflect on your capacity for quality. The test is your firm's marketing story. It is the backbone of your brochure, providing organization and tying the whole package together."

But one must be careful with text. As McConochie points out: "Just about every firm has a non-paragraph about itself—a non-paragraph because it doesn't sound any different from what hundreds of other firms are saying: 'personal attention of the principals on each project . . . our fine service as attested to by our long list of repeat clients . . . design-oriented . . . client oriented . . . responsive.' All these things may be true but they must be said freshly to be effective."

#### **What are the current marketing trends?**

Lord says that firms in the lead are using very targeted programs with mailings as the forerunner to that. The mailings are being used to pre-sell or to narrow their prospect list, not to replace direct selling.

Adds McConochie: "Some direct mail pieces are like magazine ads in design and copy brevity. The breakthrough they represent is a new clarity on the part of design firms in selecting a simple message. Too often, design firms want to say everything all at once to everybody about how competent and how diverse they are. This garbles the message."

Rose believes that two trends are emerging in marketing design services. "First, the training of marketing skills—especially related to lead-finding and building client relations—has spread to the technical staff. Too many sales efforts die when support staff suffer from 'foot in mouth disease.' And better sales skills, which produce greater client responsiveness, also help deliver quality services.

"The second trend is planning. This includes market research to find out where the action will be. And it includes specific strategies for getting there, combining both media and live sales efforts. Firms that have done this have thrived right through this recession. Too many

firms are pursuing work in markets that have faded, in which competition for remaining work is fierce and unprofitable.

"In the future, an increasing percentage of design firms will begin to act like businesses, and their principals like managers. Future marketplaces will be more quality and long-term oriented. Focus on long-term clients will be more essential than jobs with finite durations."

#### **Don't forget the visual part of a presentation**

George Johns of Harsen and Johns architects says that "clients seldom visit the architect's office. We usually go to the client's office. So they just see us through our brochure, slide presentation or pictures we bring along. They normally don't get to see the full experience of the staff, an important element.

"There is little argument that personal contact is at the top of the list of reasons that clients remember design firms. Any marketing tool then becomes a substitute when the personal contact is not possible.

"Logically the more personal this substitute message is the more impact it will have on the client. A printed piece is only a visual experience, whereas an audio-visual 'talking brochure' is a see and hear experience. Since it must be presented in person this approach can achieve the highest retention level of any form of presentation. Most people prefer to talk their way through a presentation, because it seems more natural. Yet the addition of visuals helps to organize the talk, and actually saves valuable time. Clients appreciate that."

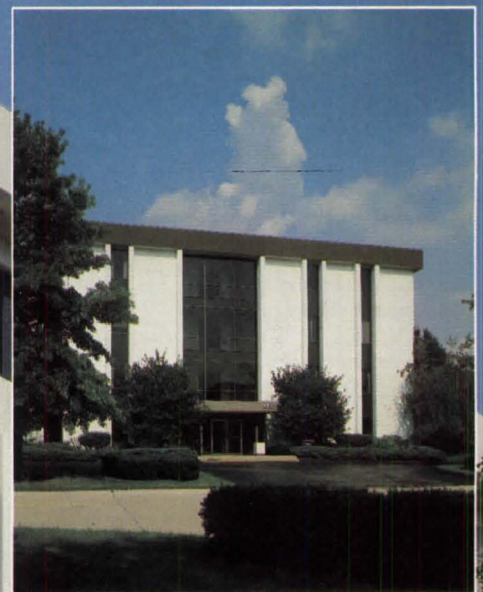
*Mr. Burden is an architect, author and design-communications specialist. He publishes a newsletter on design-communication trends and state-of-the-art presentation techniques called "The Presentation Advisor"; is a member of the Society for Marketing Professional Services and is the author of several books including Architectural Delineation and Design Presentation, both published by McGraw-Hill.*

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## Preparing the architectural professional: a report on a symposium at Aspen '82

The basic scenario of the 32-year-old tent show known as the Aspen International Design Conference varies little from year to year. The purpose of this annual June gathering in a meadow high in the Colorado Rockies is to provide a stage upon which a group of permanent stars—some of the nation's best-known industrial designers, graphic artists, film makers, commercial illustrators and photographers—perform for their corporate clients, in the company of supporting players who change from year to year—artists and intellectuals currently in fashion. The most distinguished of the clients are invited to perform in turn—each offering a major address.

Within and in spite of this unvarying format, all kinds of interesting things happen, which is the reason this particular show keeps getting a good audience—largely young design professionals (including architects) and a good number of older participants who turn up year after year.

Because architects tend to be minority members of the IDCA board of directors (four out of seventeen this year plus architectural planner and writer Jane Thompson), the industrial design and graphics majority too often grants the Mother Art little if any prime time. This year, however, was an important exception. The theme itself, "The Prepared Professional," organized by conference chairman George Nelson, called for participation by a great variety of disciplines: thus the speaker group included inventors, scientists, administrators, designers, novelists and film directors among others. It also included such distinguished figures in the world of architecture and planning as architects Arthur Gensler and Moshe Safdie, sociologist Robert Gutman who studies architectural practice and education, artist James Wines of SITE and planner Edward J. Logue. Gutman, Safdie and Wines played the leading roles in a major symposium moderated by Jane Thompson "On the State of the Practice of Architecture and the Future of the Profession." Thompson, who is vice-president of Benjamin Thompson and Associates, began the symposium by describing what she sees as a "collision course between education and practice that underscores a professional identity crisis."

She referred to the 1979-80 NCARB study which analyzed



Jane Thompson

and defined the services that make up the practice of architecture, and the various areas of knowledge and types of skills required for "basic competency." This study is being followed by evaluation of state and national exams, with the goal of modification of all testing and grading in licensing procedures. "It should be assumed," Jane Thompson pointed out, "that such standards, arising from the most extensive analysis ever made, will predict the future expectations of all professional architects."

Thompson referred as well to several studies made in the last decade which challenge and question current architectural practices, among them a 1973 paper to the schools of architecture on the need to reform architectural education. The authors, the deans of a consortium of Eastern schools of architecture, deplored the quality of professional preparation: "Architectural education is an underdeveloped area of the academic world—its content somewhat unstructured and undisciplined, its methods in need of improvement, its research minimal, its preparation of students for a changing world of practice inadequate, and its leadership of the professional almost non-existent."

**The challenge then is to reform the teaching of design to prepare students for broad responsibilities and to provide intellectual leadership to the profession**

In concluding her presentation of the issues to be examined by the symposium the moderator said: "We also see an emerging conflict between what is taught in the schools and the realities of

what graduates are employed to do. There is almost a rivalry or hostility between the preparing institution and the professions outside. Certainly we have felt this in our office in Cambridge where we see the portfolios and the attitudes and ambitions of students coming out of the schools on the East Coast and elsewhere. In the last five years we have found the students displaying not just the normal unpreparedness which we are used to and expect to tackle. We are facing something else—the need to make our new young employees unlearn and revise their attitudes, habits and design mannerisms which have been engendered by the schools. I think we have to ask if this is the way professional schools should be serving professional offices and indeed society."

**Robert Gutman, a member of the sociology faculty at Rutgers and the architectural department at Princeton, reported on the restructuring of professional practice**

He began by citing the cultural pressures deriving from industrial society and the growth in the knowledge base for professional work. Instead of a community of self-employed scholarly artists expressing personal styles and ideas architectural practice is coming to mean a comprehensive practice by a salaried team within a large firm, whose structure integrates the skills required for designing large-scale environments.

According to Gutman, this shift has an important impact on the relation of schools to the profession. Architects who select careers as academics become alienated from practice and hostile to practitioners; schools exhibit an institutionalized prejudice against curricula adapted to current practice. Gutman observes that an unusual rivalry has developed between academic architects and the profession at large. Academic faculties are re-emphasizing the model of the artist-architect, and some elitist teachers are even arguing that commitment to excellence in design is incompatible with building. The task of integrating ideology and reality becomes the burden of the confused student, and the public visibility of this fragmentation threatens the effectiveness of the architectural profession.

Gutman believes that the real world of architecture, in his words, "has to be seen within the framework of the culture

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industry and the service industry. The service industry model includes the kinds of businesses which are dominant in American society and provide the information, advice, consultation and service that we need to keep our society running. The culture industry means of course mass culture. Anyone involved in the production of art—design, graphic design, industrial design—is very aware of the culture industry. There is a tremendous demand out there for the products of artists. Architecture has been influenced in this. You can complain all you want about the downturn in the building industry and the problems architects now face in surviving, yet the fact is that there is a larger market for architecture today than there ever has been in American history. This expansion in demand goes unrecognized because our society so generously produces architects to fill it.”

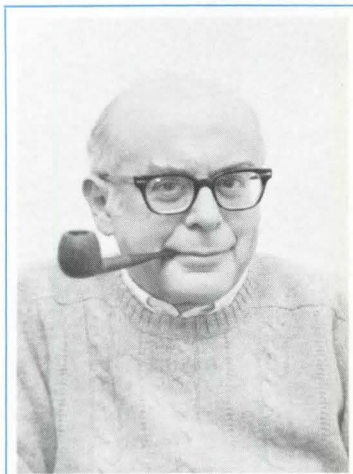
**In the not-so-esthetic life of the big office the management role has become a specialized function**

It includes management of the building process as well as engineering, design, construction and financial management. About 25 per cent of all U.S. architects are salaried workers and the proportion is increasing in relation to the growth in size of firms. Finally, more firms are engaged in real estate development and 14 per cent own construction companies.

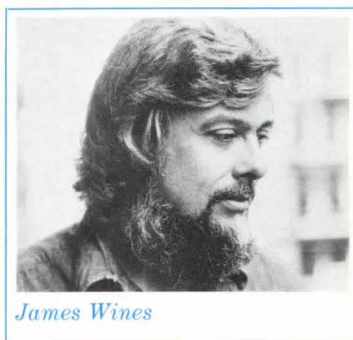
Having said all that, Gutman asserted: “A lot of what is going on in architecture today is an attempt to resist this, particularly on the ideological level. The growth of the antimodernization and the antimodernist movements, the rise of post-modernism, the participation by many architects in cultural production for the culture industry is a way of resisting or fighting back or denouncing this development. As a consequence, today we have a badly split profession with each half operating according to different principles with different objectives and different attitudes toward the building industry and the consumer. Architects are creating an adversary situation within architecture itself.”

**Artist James Wines is surely a member of the culture industry as Gutman describes it**

Beginning as a sculptor and a graphic artist he is president and co-founder of SITE Projects, Inc.



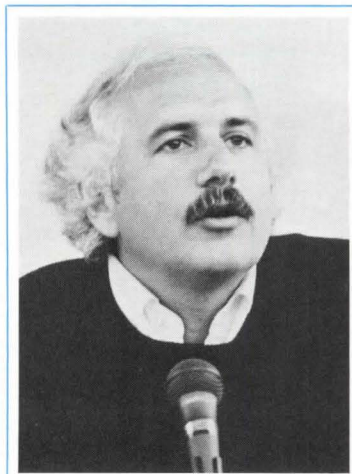
Robert Gutman



James Wines

whose fragmented facades for Best Products Co. have made the firm world renowned. Wines’s contribution to the symposium was to propose that a further dichotomy exists in the architectural profession among those on the esthetic half of the great divide: “Design is not art,” claimed Wines. “Construction and engineering are not art, but merely services which can be included in the art-making process. I believe in architecture as art, versus architecture as design. For me art is an autonomous endeavor, with free and experimental esthetic intentions. Art is answerable only to the subconscious rituals and impulses of a particular social and cultural context. It is not answerable to serviceability. Art is about communication and content. Design is about accommodation and purpose. Design implies a priority of some practical nature to be resolved on esthetic terms—or in other words, a compromise of art in deference to the expedient.

“The question of ‘service to humanity’ is also based on definitions. Twentieth-century architecture,” artist Wines argued, “has been mainly about formalism, functionalism, rationalism, standardization and economy—or in summary, all the things that make life oppressive and tedious. The elements consistent with art—ambiguity, inversion, humor, irony, pathos, sensuality and ritual (or all of the ingredients that make life interesting)—are missing. Modern and contemporary architecture’s obsession with the surgical dissection and reshuffling of volumes in space has been an attempt to convert



Moshe Safdie

engineering into sculpture, but in the end has served only to celebrate the unpleasant message of utility. This is architecture as design. If architecture is not art, it cannot be classified as a ‘service to humanity.’”

Architect Moshe Safdie appeared not to agree with Wines that architectural art and design were mutually exclusive, or indeed that it would be helpful for architects to think of themselves primarily as artists. “If we go to the museums,” he added, “and look at what we think of as art and ask ourselves how many of the people who produced it thought of themselves as artists, especially before the Renaissance, we would have to conclude very few. I am against the practice of architecture as art when the emphasis is upon personal expression as a priority. I am against perpetuating the mystique of design as something which is private and incommunicable. It seems to me that we should put the emphasis on the craft of building, on logic, on responsiveness in terms of the down-to-earth things people feel they need in their daily lives, versus putting the emphasis on a world of visual manipulation in which the spatial order is not related to these human things. It seems to me that the central question today is what is the social and ethical framework of the profession. If we can come to an understanding about that, I think the answers to the question of how to educate architects will fall into place.”

Dr. Gutman agreed with Safdie at this point: “There is no doubt that a kind of academic approach has taken hold which ignores the practical dimensions and the relationship of architecture to social policy. As you may know, a number of the leading architectural schools in this country have thrown out their city planning departments. In most cases this action was initiated by the architectural faculty who felt that they could not talk the language of social policy and felt no possibility for communication with the planners.

“It seems to me that there are

really three components of architectural education, two of which the schools now largely ignore. The first, is the historical, theoretical, intellectual component which inculcates in the student a strong sense of the tradition of how to design and what design principles are. The schools still do this and often exceedingly well. As a result students have become pretty astute critics in the purely formal sense.

“The second is the teaching of what the old-timers used to call practical reason—that is to say finding ways to deal with problems in a common-sense manner, translating lofty conceptions into the realities of practice. This approach has been virtually abandoned as well as the third which Moshe has just pointed to: ethical principles, *l’education morale*. It used to be incumbent upon the professional schools—law, medicine, architecture or even schools of painting in the 19th century, to acquaint the students with certain fundamental philosophical principles which would transcend the particular situations in which they would operate and which would lead responsible practitioners of art or architecture or medicine or law to act in ways which were consonant with the public interest. No more.”

**Gutman argued further that the American university, as an institution, is not responsive to many of the major social and ethical issues in our society**

“To the degree,” he said, “to which the professional schools have adopted the mantle and absorbed the norms of the university, they have tended to sacrifice all other values to the values of theoretical and scientific expertise.”

But as Dr. Gutman reminded the symposium: “Design is what the architect presumably can do that other building professionals cannot; and I mean by design the artifact evaluated from an esthetic perspective. Above all else it has to look good—this is what makes architecture. We hope and expect that it will function reasonably well too. The problem now in architecture, and in architectural education too, is that looking good has taken so much precedence over other dimensions of design that expectations about functions are too often dashed. How to right the balance is now the big challenge to the schools and the architectural culture.”

Mildred F. Schmertz

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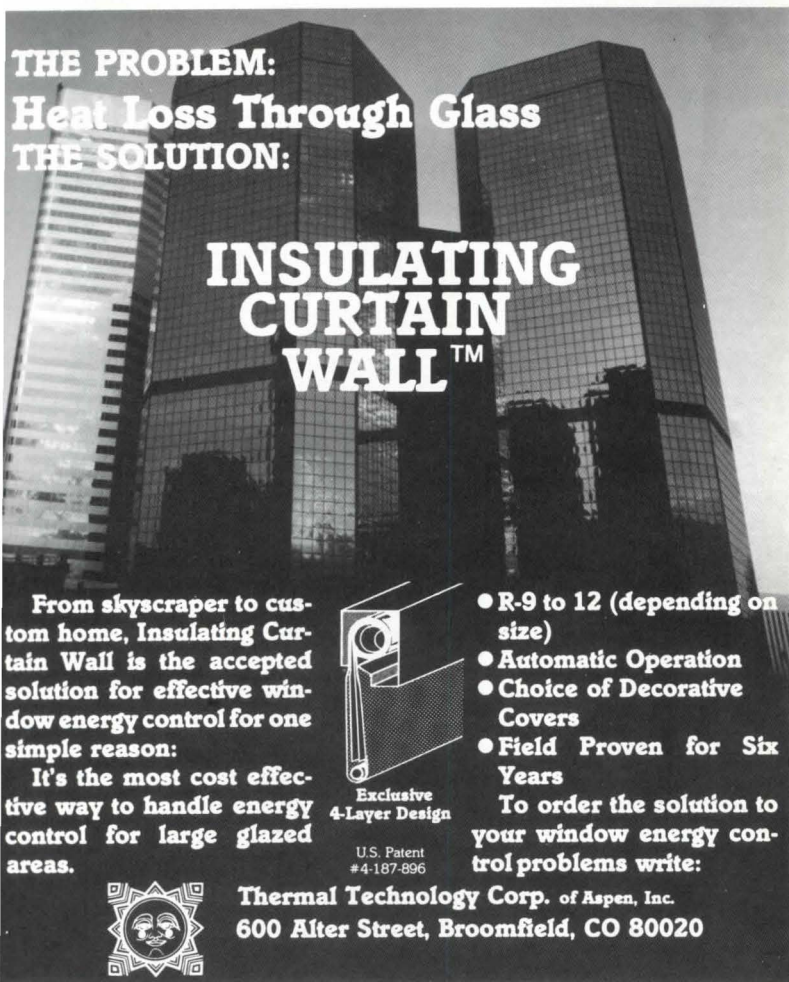


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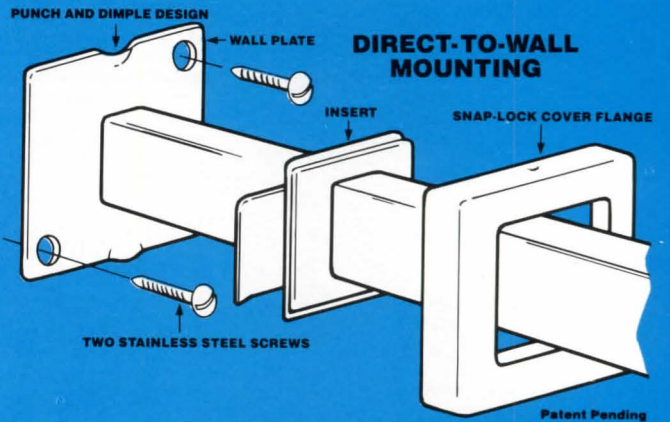
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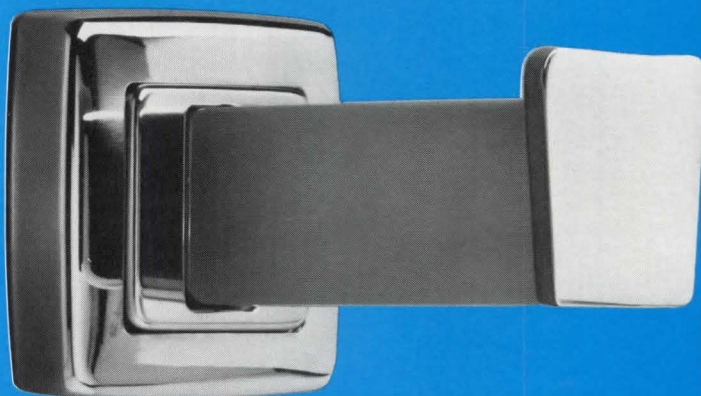
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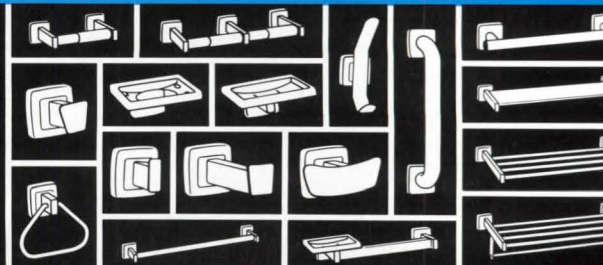
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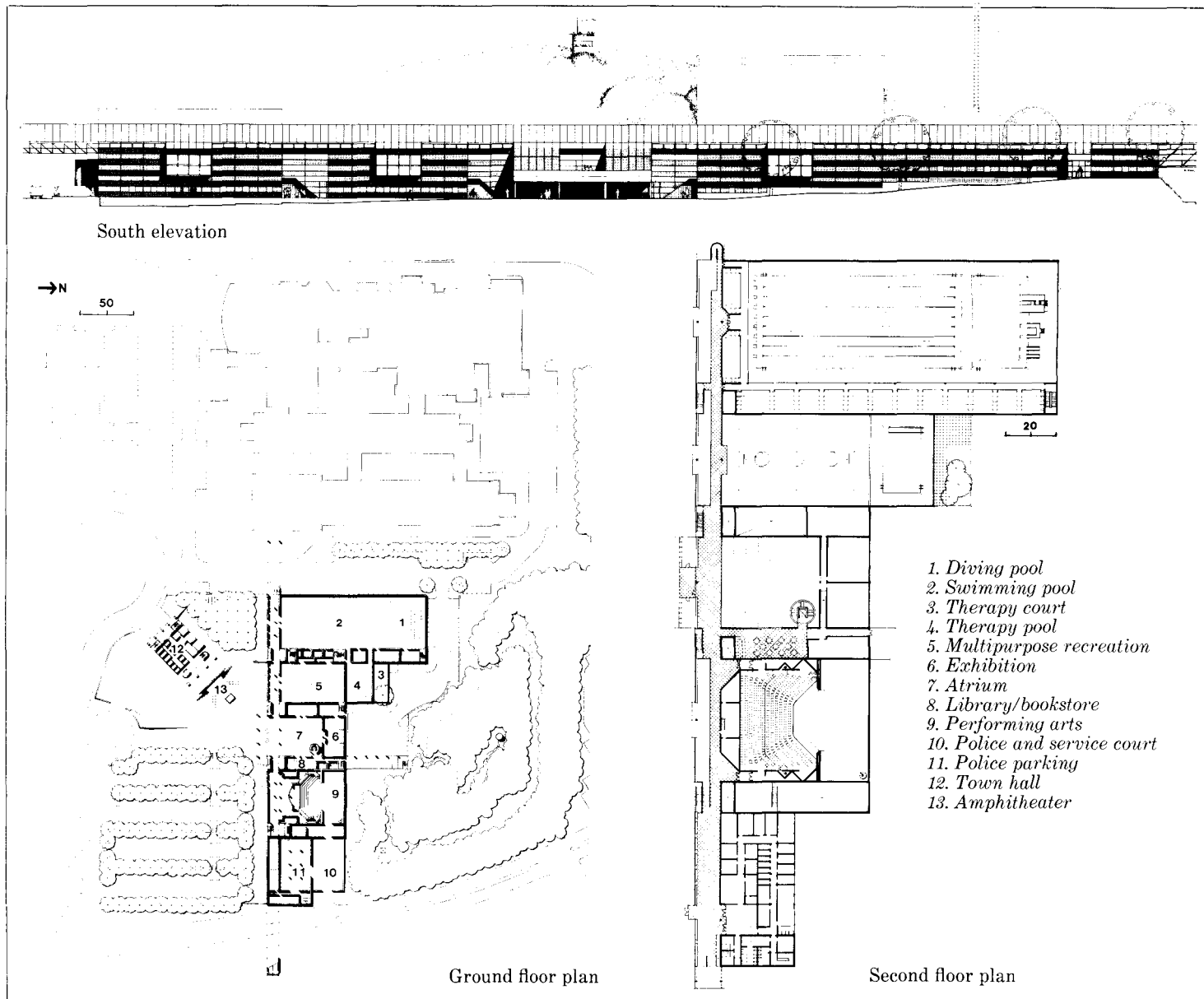
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## Design awards/competitions: The Monroeville Area Civic Center Architectural Competition

Premiated design:  
**Kelbaugh & Lee Architects and  
South Street Design**

The municipality of Monroeville, Pennsylvania, received 71 submissions in a one-stage competition for the city's new civic center, a \$12-14-million complex that includes a town hall, visual and performing arts centers, indoor swimming and diving pools, a gymnasium, and a public plaza. The \$15,000 first prize and the commission to realize the project have been awarded to the joint design team of Kelbaugh & Lee Architects, of Princeton, New Jersey, and South Street Design, of Philadelphia. Their scheme is shown below, followed overleaf by drawings of the \$3,000-second-



Since the end of World War II, Monroeville has grown from a rural settlement into one of Pittsburgh's largest suburbs, with a population of 31,000. As in many recently developed suburban areas, Monroeville's shopping centers and commercial strip are major gathering places for area residents. In the hope of creating a worthier focus for community life, the municipality and the Gateway School District sponsored the competition for a civic center. Submissions were invited from registered architects in Pennsylvania, Ohio, New York, Massachusetts, Connecticut, Rhode Island, New Jersey, Maryland, Virginia, West Virginia, and Washington, D.C. The jury consisted of architects Helmut Jahn, AIA, of Chicago; Charles E. King, FAIA, of Jacksonville, Florida; Barton

Myers, of Toronto; and Louis Sauer, FAIA, of Pittsburgh; as well as Marshall Bond, Monroeville's municipal manager; Michael O'Toole, assistant superintendent of the Gateway School District; and Dennis Norris, project manager of development for the Oxford Development Company in Monroeville and competition committee chairman. Gary R. Naktin, AIA, served as professional advisor.

The site for the proposed civic center is a 12-acre plot of land adjacent to a busy commercial zone, the Gateway School complex, and an area designated for the development of public facilities such as health-care and senior citizens' centers and a library. Before the competition program was drawn up, a committee supervised by the

University of Pittsburgh's Graduate School of Public and International Affairs conducted a "community use preference survey" to evaluate possible functions for the civic center site. Extensive traffic and access studies were also carried out.

The final program outlined three primary functional areas: a 35,000-square-foot town hall ("in its design and over-all use of space, it shall make a statement as to its commitment to the needs of the people of the community"), a 46,500-square-foot sports center (including a 12,300-square-foot pool and 10,000-square-foot multipurpose space), and an arts center (to comprise a 500-seat theater, an outdoor band pavilion, visual and graphic arts studios and classrooms, and an exhibition gallery). In addition to satisfying

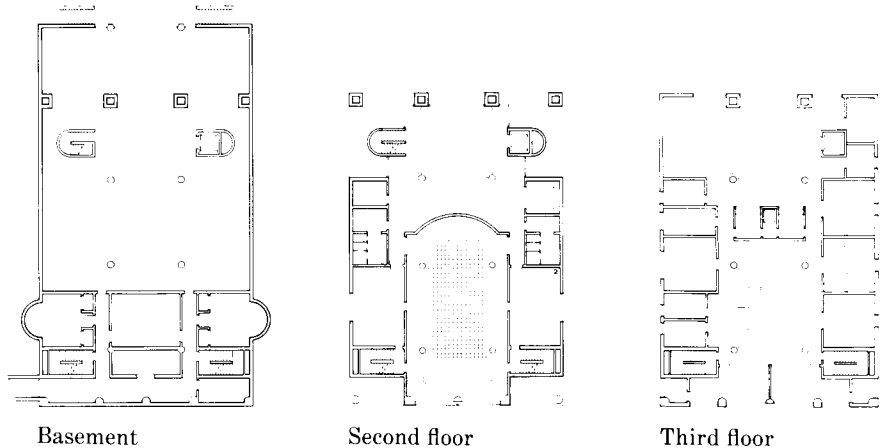
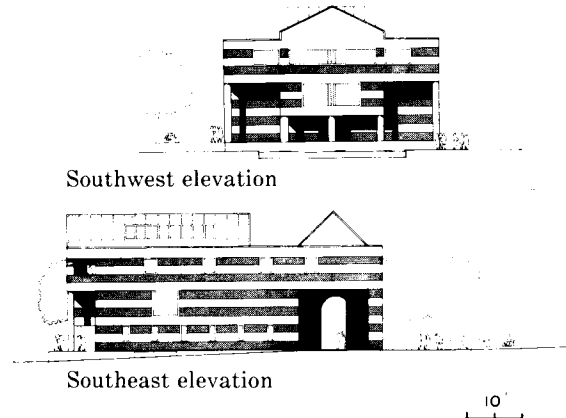
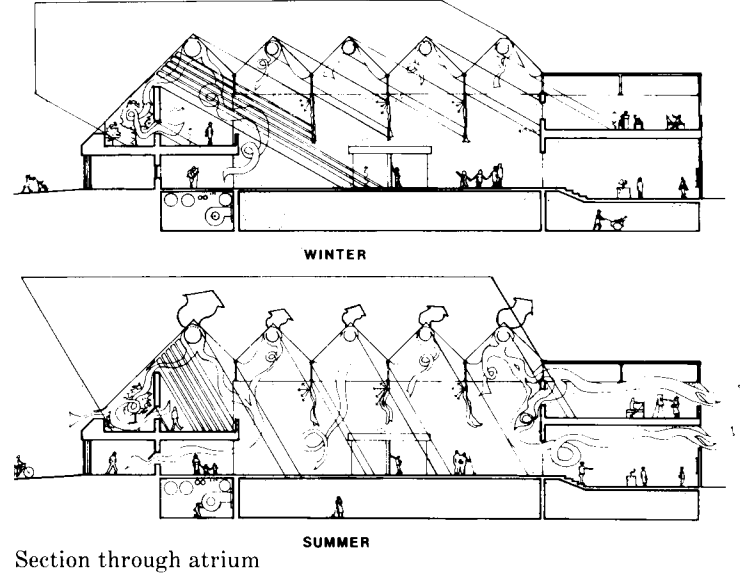
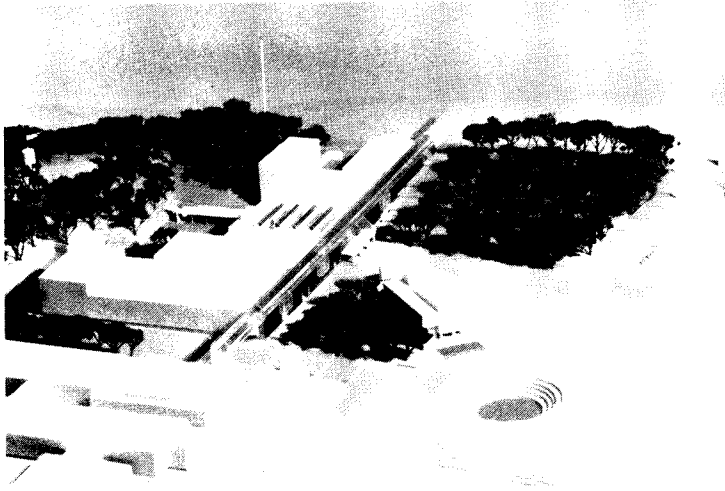
the need for an architectural emblem of civic activity, executed within the \$12-14-million budget, competitors were asked to address their efforts to solar orientation, energy efficiency, and phased construction. The shaping of open public space and circulation routes among new and existing buildings was also to be considered, along with the potential for retaining two large knolls and the trees that lend character to the site amid the surrounding suburban sprawl. Entrants were advised that all schemes would be examined for simple clarity of structure and appropriateness of scale.



prize design by Lawrence A. Chan & Alex Krieger, Architects, of Columbia, Maryland, and the \$1,000-third-prize entry by Troy West, Architect, of Newark, New Jersey. Not illustrated are projects by the three runners-up, Bower Lewis Thrower, Architects, of Philadelphia, Frink and Beuchat, Architects, also of Philadelphia, and Secundino Fernandez, Architect, P.C., of New York City.

**Architects:**  
*Kelbaugh & Lee Architects and South Street Design, joint designers—Doug Kelbaugh, AIA; Sang Lee, AIA; Don Prowler, AIA; Fred Travisano, AIA; Alan Goodheart, ASLA; Bob Nalls*  
**Consulting engineer (mechanical):**  
*Sital Daryanani of Syska and Hennessy*

**Drawing preparation assistants:**  
*Ron Ellis, Ellen Arminio, Alison Baxter*  
**Model makers:**  
*Igor Grosdoff, Dan Harazim*



TOWN HALL

**Premiated design, by Kelbaugh & Lee Architects and South Street Design.** A skylighted "interior street" creates a spine for the sports and arts center, a low, horizontal structure which aligns with the grid of existing buildings to incorporate them into a unified composition. The freestanding town hall is rotated 45 degrees off this grid to stress its unique importance. An open plaza, tilted for visibility, is the focus for the entire scheme. Indoors, a glass-roofed atrium provides a complementary gathering place. The architects propose shifting fill from the south knoll to form the plaza terrace and enhance the relative prominence of the north knoll as a landmark behind the new buildings.

The structure is composed of open-web steel joists and double rows of block walls connected by cross-walls for lateral stability. Clerestories admit side lighting and natural ventilation in the 75- and 100-foot long-span spaces. The parti of repetitive bays deployed along the linear spine allows for flexible phased construction.

The indoor street is also a key element in a thorough energy-use program. In the winter, a solar preheater in the south-facing roof heats the domestic water supply and swimming pools. An attached greenhouse siphons heat and radiates it into the adjoining atrium, which serves as a passive solar-heated buffer zone. Recovery ducts send hot air to thermal storage compartments below the interior street, to the pool and gym, and to cooler areas of the building. There is also a 16-inch unvented Trombe wall at

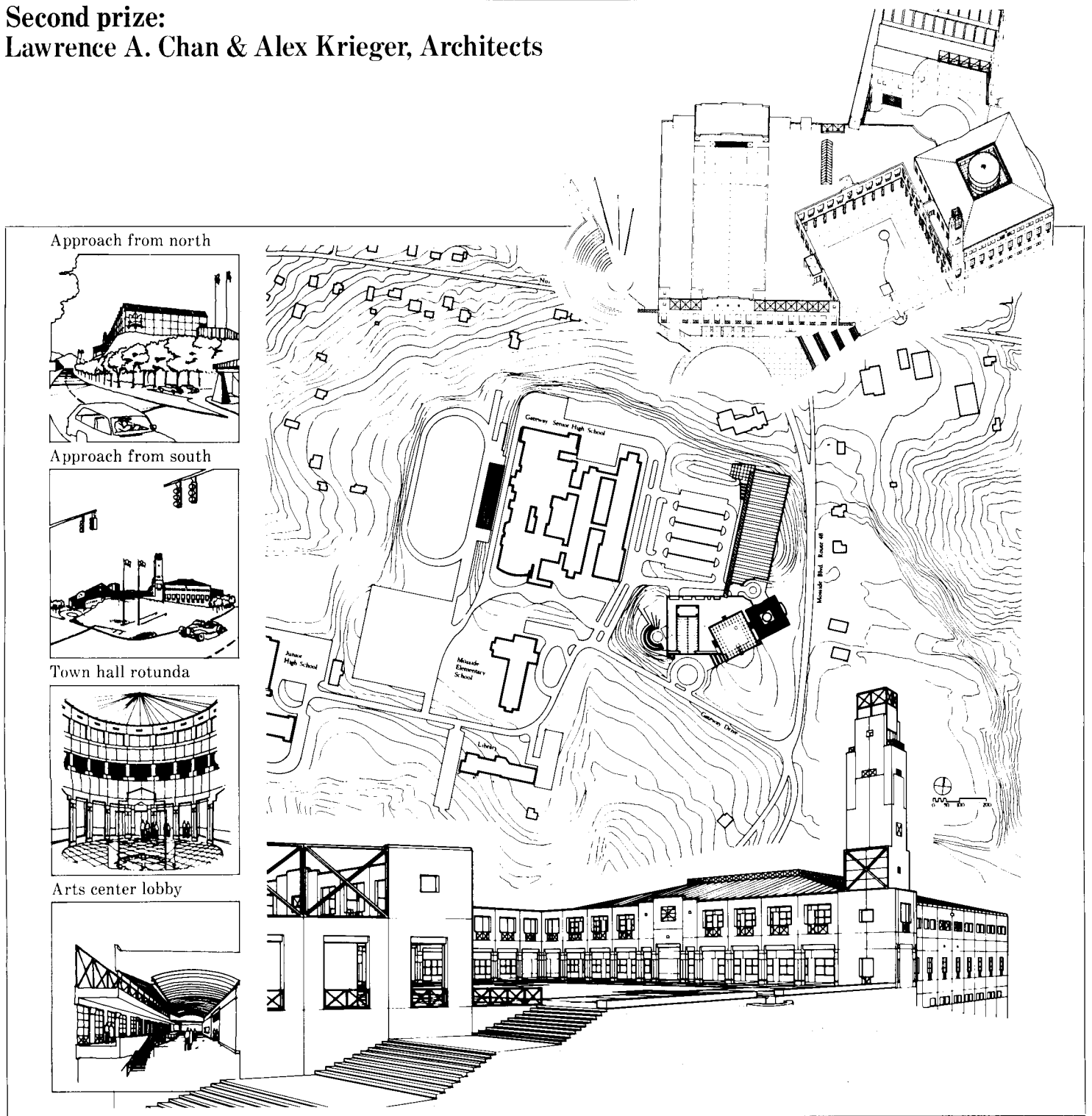
the south front of the spine, with concrete floors and block walls behind to absorb solar warmth and radiate it during the night.

In summer, natural and mechanical ventilation cools the wall masses. The solar preheater helps to shade the interior street, and awnings shade the Trombe wall. Ducts under the roof ridge exhaust hot air during the day and draw cool air into basement thermal storage at night. Curtains, banners, and flags filter sunlight entering the atrium, which is also cooled by combined natural and mechanical ventilation.

Several jurors noted that the Kelbaugh & Lee/South Street Design proposal for phased construction was indeed feasible within the client's budget. Helmut Jahn observed that, even though this scheme is "more

realistic and adaptable [than the second-prize entry] and would serve the community better . . . I feel the community needs some spirit, some romance in its environment." The premiated design impressed him as similar in character to a shopping center. Louis Sauer found the winning scheme "more modern and up-to-date [than Lawrence Chan & Alex Krieger's], which suggests the 'holiness' of government centers—a European notion."

**Second prize:**  
Lawrence A. Chan & Alex Krieger, Architects

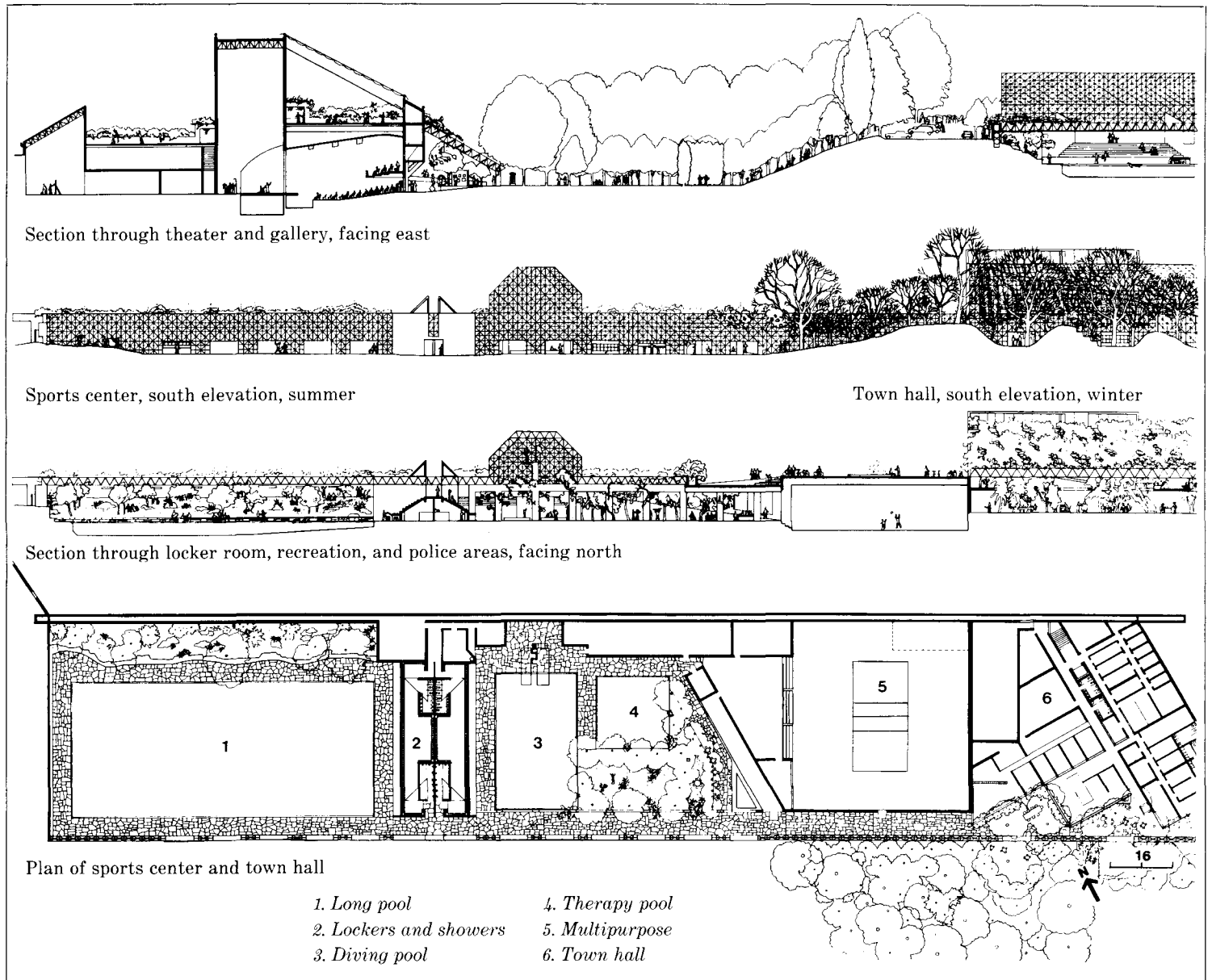


**Second-prize design, by Lawrence A. Chan & Alex Krieger, Architects.** According to its designers, this scheme responds to the basic program for municipal buildings raised above the town by establishing "an image of an acropolis or a capitoline hill with its civic center elevated yet accessible. . . . The intent is to strike a contrast against the character of commercial strips which currently dominates the surrounding context." The theater, arts facility, and town hall bound three sides of a plaza overlooking the entry to the site. Connected to this forum-like space by an arcade, a larger piazza-cum-parking lot (framed by the arts center, the existing high school, and the re-graded north knoll) constitutes a more informal recreation center. The

bi-level arcade acts as a unifying circulation system for the entire complex. It culminates outside the town hall in a campanile-observation tower, a traditional emblem of civic dignity. Marshall Bond remarked that this project "has a feel of Europe when you go into the site and see the turnaround in a square-like setting." Helmut Jahn similarly described the courtyard as "a nostalgic, European classic idea." Discussion also focused on the architects' \$18.5-million cost estimate (15 per cent over budget), their failure to address energy issues, and the lack of a clearly defined entry. Nevertheless, said Barton Myers, "This model has a civic feeling, different from a shopping center. . . . I can visualize summer concerts on the hill."

**Architects:** Lawrence A. Chan & Alex Krieger, Architects—Lawrence A. Chan, Alex Krieger, principals-in-charge; JoAnne Gaines, Bradley R. Milton, Anne Tate, Peter C. Doo, project team

**Third prize:  
Troy West, Architect**



**Third-prize design, by Troy West, Architect.** The park-like setting defined by this project won special praise from the jury. Troy West suggests that the civic center project be initiated in the autumn, not with ground-breaking for construction but with the festive planting of 31,000 trees (one for each resident of Monroeville) by citizen volunteers. Twenty-five-foot-wide avenues of trees would demarcate a system of esplanades, connecting every zone of the site to the civic center. In the main forum, further plantings would complete the "consecration" of the land. Thus, says the architect, "the civic center exists before the construction begins." The town hall, sports and arts centers are all earth-sheltered structures built into the existing terrain.

Glazed space frames bring daylight indoors, moderated by louvers, the foliage of deciduous trees, and vines. Ground heat pumps supplement this passive solar system.

West proposes that slate floors, rock garden seating, outdoor barbecues, stone stairs, and parking terraces could be constructed by volunteer labor. Maintenance of the semi-wild landscape would be a continual education for school and community groups.

Jurors Myers and Jahn opined that the project failed to "integrate" the various programmatic elements, comparing unfavorably in plan with the more geometrical solutions of other competitors.

**Architects:**

*Troy West, Architect—Troy West, principal-in-charge; Brian Bontelier, project assistant; Brian Dowd, Jacqueline Leavitt, Mike Jaeger, Vesna Juresko, Anker West, Troy Eric West, project team*

**Engineering consultant (structural):**

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I was disappointed to see you have changed all that. The new format looks like a warmed-over *Progressive Architecture*. You have broken a fundamental rule in any business: "If it ain't broke, don't fix it."

I know you will probably never return to the old format. Too bad!

*Marvin Threadbare  
Houston*

How inviting, how exhilarating, and how breathtaking is the Dan Flaven installation in Los Angeles [RECORD, July 1982, pages 120-123]. And how marvelous it is to see art works so well integrated into a space as to actually be the space rather than objects in a space. Thank you for this spectacularly lush visual treat of a presentation of a Vignelli-designed Hauserman showroom.

It is unfortunate, however, that such a superb, uplifting, stimulating "modern" work could be mentioned in any way with Graves's funereal, depressing, decadent, neo-whatever Sunar showroom.

*Martin Price, AIA  
Fort Worth*



While revisiting Xi'an in China's northwest, I saw the "old man with glasses" again in his sunken courtyard dwellings. He was very happy to see a copy of ARCHITECTURAL RECORD with his picture in it [May 1982, page 94]. I took a picture of him and the magazine for you.

*Paul P. Sun, AIA  
Watertown, Massachusetts*

I suppose the reason I am writing is my frustration with not having read a reasonable criticism of the post-modern movement and its proponents. Most of what I have read seems to me criticism oriented to adherence to particular styles. Although I have not been left totally dismayed upon viewing the published works of Messrs. Graves, Moore, Venturi, et al., I

have been more than a bit disturbed by the meager arguments of those who would see their demise.

Ironically, the most appropriate criticism could be derived from Philip Johnson's dictum, "You cannot not know history." It would seem to me the purpose of knowing history is not merely to repeat it in form and ornament, but to utilize that knowledge as a foundation for further refinement. Specifically, to take portions of historically significant structures from distant cultures and to combine them and introduce the aggregate form into a society thousands of miles and years removed hardly seems progressive.

Knowing history, too, is understanding that it maintains a somewhat cyclical pattern.

How unfortunate that most people in our profession don't realize this fact. It is fact, though, that throughout history even our profession has suffered periods of regression just prior to periods of progress in innovative thought. Witness, for example, the relatively recent regression exemplified by the Arts and Crafts movement, which preceded more progressive movements (Cubism, de Stijl, etc.). It is indeed unfortunate that critics of post-modernism cannot see, then, the movement for what it most probably is: the lull before the storm.

A quote I found several years ago (pre-post-modern), attributed to Auguste Perret, states a similar viewpoint more eloquently than I could hope to: "He who, without betraying the modern conditions of a

program, or the use of modern materials, produces a work which seems to have always existed, which, in a word, is banal, can rest satisfied. Astonishment and excitement are shocks which do not endure; they are but contingent and anecdotic sentiments. The true aim of art is to lead us dialectically from satisfaction to satisfaction, until it surpasses mere admiration to reach delight in its purest form." *Daniel LaBozetta, Architect Columbus, Ohio*

**Correction**

In error, RECORD credited the wrong photographer for the picture of the Currier Gallery of Art on its August 1982 cover. Photographic credit properly goes to Cervin Robinson.

# Granite.

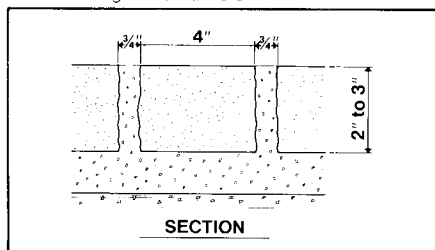
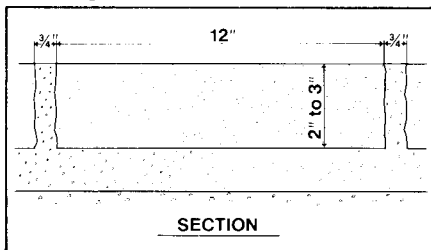
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Sturr Young, Associate Architect, Oak Park, IL



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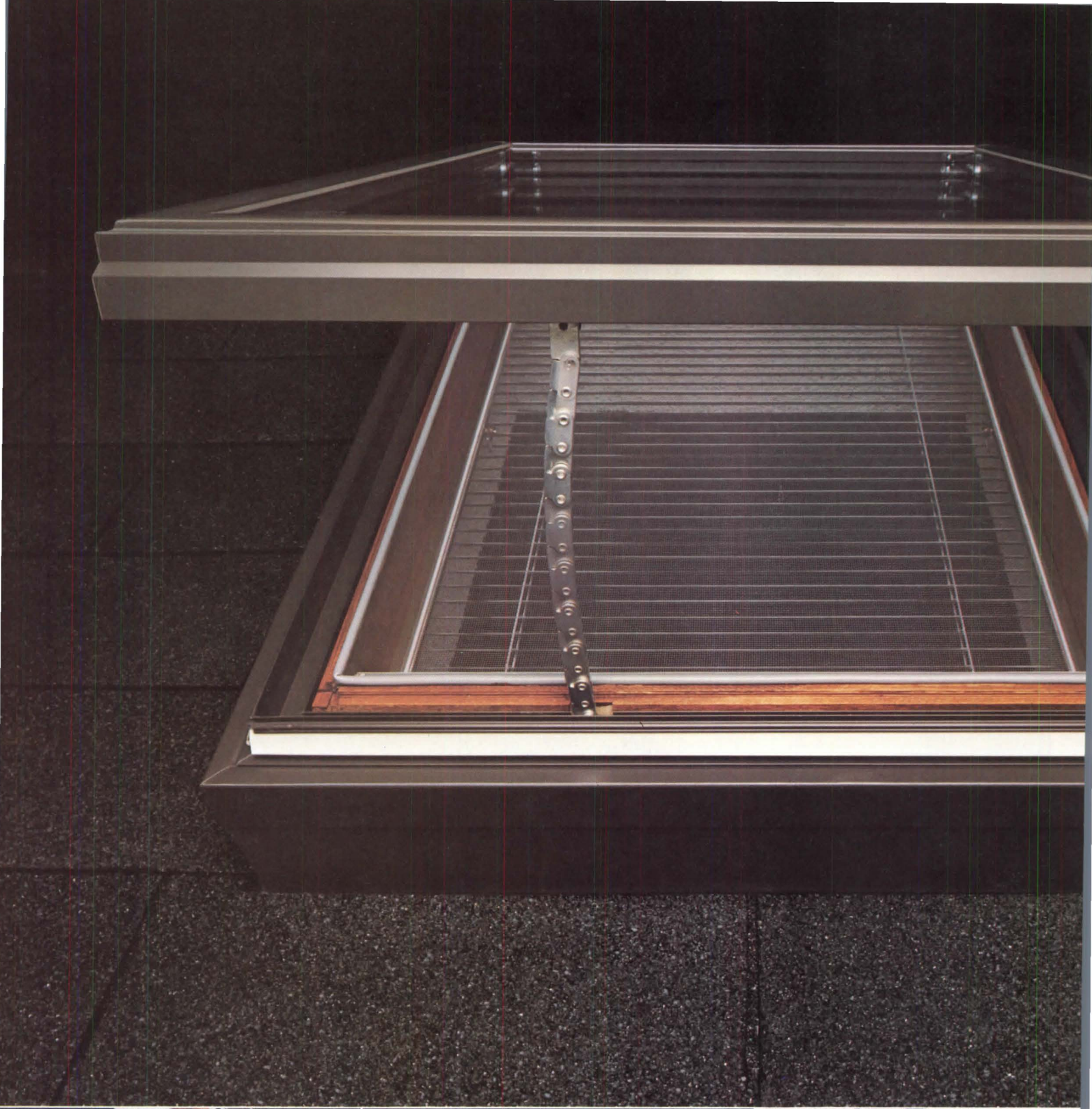
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# Housing students

Just twenty years ago, writing in *The American College* (ed. Nevitt Sanford, John Wiley & Sons, 1962), a trenchant analysis of the problems and processes of higher education, Christopher Jencks and David Reisman took exception to the “pinched quality” of the typical student residence, which, they observed, “joins two students, two beds, two bureaus, two desks, two straight chairs, and 200 square feet of floor in an effort to produce enlightenment.”

Even as they wrote, however, this all-too-familiar image of the dormitory was being challenged—as were many other aspects of the campus environment of the 1960s and early '70s, though few to greater effect. Today, barracks-style housing is by no means extinct: but neither is it any longer a model.

Almost from their beginnings in Colonial times, American colleges have displayed a certain ambivalence in their attitudes toward the housing of students, some seeing residential facilities as central to their academic mission, others as wholly peripheral, and still others—the pragmatic majority—as an adjunct made necessary by the imperative of attracting students from beyond commuting radius.

At present, though, the swing of the pendulum is clearly toward residential patterns at once physically more supportive and socially less condescending than the nocturnal student storage afforded by the traditional dormitory. The new patterns are rooted in the recognition that apart from the exigencies of his occupation, which requires that he work at home and at odd hours, the student's demands of a residential community are no more eccentric than yours or mine: a sense of privacy and autonomy mediated by ready (but readily avoidable) occasions to join company with his fellows.

The architectural expressions of this recognition are many and varied. But common themes can be traced, most notably the conscious construction of a hierarchy of proximities, from the students' own room (with or without a roommate) to the dormitory as a whole, with intermediate social groupings whose physical nexus is the hall, the entry, the suite—even, increasingly, the apartment. A related theme is that of diversity in types of student accommodation and in their arrangement relative to one another. And these departures from the cookie-cutter plan are reflected in a similarly enlightened approach to other aspects of design, emerging in a new generation of dormitories that respect their occupants and grace their surroundings. *Margaret F. Gaskie*

Architectural Record October 1982 91

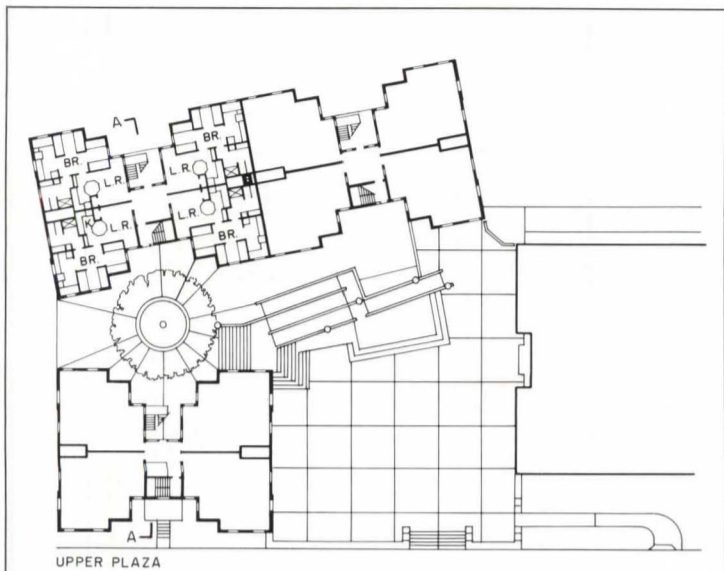


The downward slope of the site toward north and east not only dictated a two-level plaza but also encouraged a variation in roofline between the two dormitories to the south, adding a further touch of the impromptu to belie the carefully studied definition of the plaza's open space. Apart from the stage and ramp walls the most prominent

built element outlining the plaza is the end wall of the dormitory adjoining it on the west (photo left)—a looming shape both sturdy and evocative, shaped in rusty oversized brick and capped by a chunky “chimney” lacking only a child-scribbled curl of black-crayon smoke. At night the sparkle of lights arched over the recreation room entrance plays against the rosy glow of globs flanking the stage



## “Meet you at the Plaza”



On its opening last year, the paved two-level forecourt defined by this three-dormitory complex was spontaneously dubbed “The Plaza” and eagerly embraced as the pre-eminent meeting and mingling place within a campus notably lacking in such focal points. All as planned—though even more successful than hoped, says architect Jefferson Riley, partner-in-charge for Moore Grover Harper, who envisioned the complex as “an enticing destination” at the end of the campus residential street.

Enticing it is, and not only because the street otherwise offers the eye only aggressively nondescript motel-modern. Although the exteriors of the new buildings are of brick—a brisk nod to other campus structures—the inner walls enclosing the plaza are white stucco washed with panels of off-white—ecru, beige, gray—that emphasize (and sometimes invent) planar shifts and create a sense of both movement and variety. Facades organized around arched and balconied stairwells add to the illusion of a vaguely Mediterranean fantasy village transported suddenly to the midst of a bucolic Connecticut campus. It says much for the beguiling quality of the space that one only momentarily finds the materialization disconcerting.



The design of the dormitories, according to Riley, was predicated on the establishment of a set of domains, from the lively shared space of the plaza to the quiet privacy of the resident's own bed-study, with graduated levels of community interaction along the way. This aim was abetted by the college's decision to provide in the new halls apartment suites complete with kitchens, dining areas, and living rooms—in part because these had proved popular in an earlier residence hall and in part to obviate the need for expanding food service facilities to accommodate the new residents. From the plaza the progression moves to the stair halls where a sunfilled common foyer at each landing links the four apartments on the floor and serves as a casual meeting point for the 24 students sharing it. Off the foyer, behind solid oak doors are the apartment living rooms—the semi-public realm of the six residents of each suite. Beyond, a common hall gives access to three two-student bed-study alcoves which are the private turf of each student. The tiny (7-foot by 11-foot) alcoves with the common bedroom between are also the device by which the architects were able to provide livable apartment space within a budget allowing no more gross floor area than a hotel-type dormitory—a stingy 166 square feet per student. The solution essentially was to layer the alcoves, using the “air rights” over desks and closets for the beds, and to wrest from the arrangement every possible inch of storage space. But the success of the ploy hinges on the common hall which, when the broad sliding doors to the alcoves are opened, effectively expands their apparent space from cozy to roomy.

In addition to front entries signalled by exaggerated fanlights, each dormitory has for fire code reasons a recessed open backstair sheltered by a portico that holds the line of the facade. Stairs and balustrades are painted lemon-yellow as a year-round reminder of the ensign maple's autumn foliage



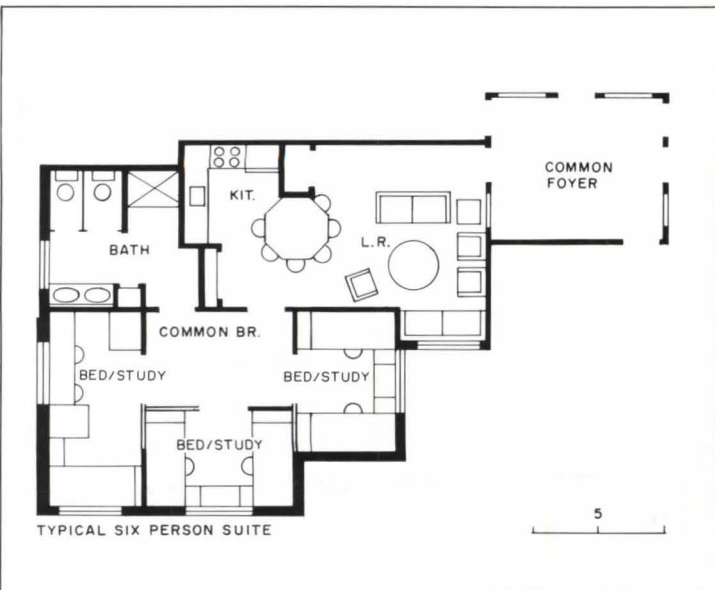
*Student housing  
Quinnipiac College  
Hamden, Connecticut*

**Owner:**  
*Quinnipiac College*

**Architects:**  
*Moore Grover Harper—Jefferson  
B. Riley, partner-in-charge; Glenn  
W. Arbonies, partner, Leonard J.  
Wyeth, project managers*

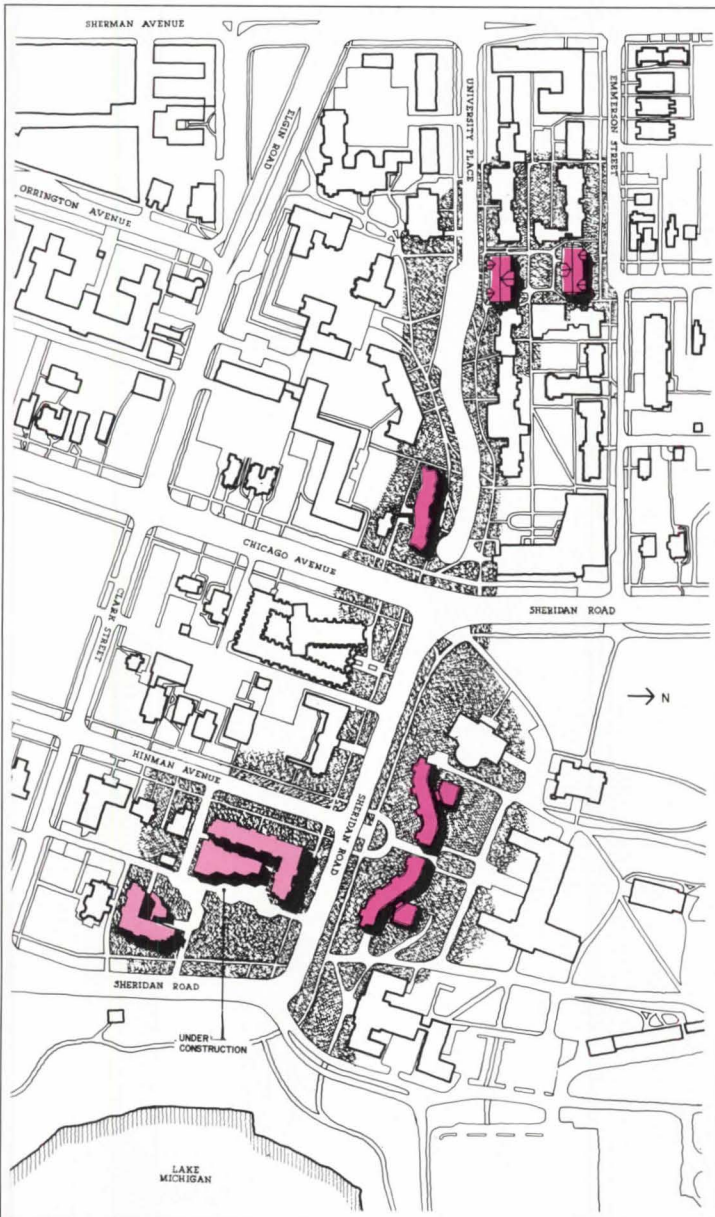
**Engineers:**  
*Besier Gibble & Quirin, Inc.  
(structural); Helenski Zimmerer  
Associates (mechanical/electrical);  
Cahn Engineers, Inc. (civil)*

**General contractor:**  
*Kapetan, Inc.*



*The meticulous detailing and effective use of borrowed space that characterize the private areas of the suites are also evident in the more public living areas. With the concurrence of the students, who find it difficult to furnish large spaces, the living rooms are small, but seem generous in combination with the open kitchen-dining area and the spill-over space of the common foyer just outside.*

## Putting dormitories in context



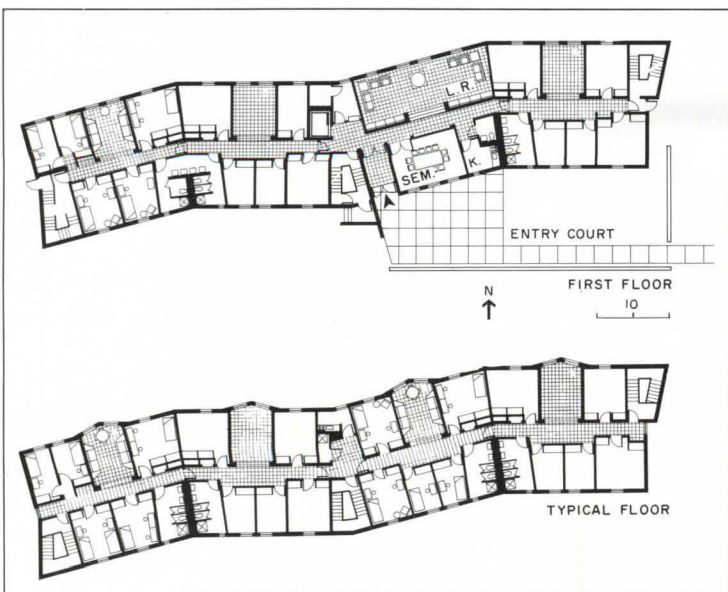
*Though dispersed in location and divergent in character, the three projects draw by their very modesty and deference to the streetscape a unifying thread through the emerging residential sector. Particular care was given to the massing of the buildings that mark the main vehicular entrance to the campus. The twinned curves of the complex shown at lower right in the site plan (see also pages 100-101)*

*consume much of what was previously a landscaped open expanse but preserve an axial approach to the building behind. And the lost open space will be, in effect, traded back by pulling the second-phase dormitory complex opposite away from the intersection, creating an inviting forecourt for the buildings and a proper gateway to the campus.*

The approach to Northwestern University from the south is a pleasant progress along the shore of Lake Michigan through a settled community of substantial homes set in tree-studded lawns. At the university proper, the transition from town to gown is a gentle one, free of the ticky-tacky college-town development that so often signals arrival at the gates of an institution of higher learning.

So when Northwestern faced a perceived shortfall of some 900 places in student housing and proposed to locate the needed residences at the south end of the campus, where sorority houses and a scattering of dormitories formed a nucleus for an expanded student housing precinct, the decision came easily to contain the growth insofar as practical within the existing campus. Locating suitable sites came less easily. But poring over the campus map, architects Nagle Hartray & Associates in consultation with the university's administration and housing committees were able to carve out three "found" sites in appropriate relation to one another and to existing student housing—a parking lot, a street that could be closed without calamitous effect on campus circulation routes, and a rose garden and lawn overmantling an underground storage building. (In a second phase of expansion a dormitory with dining hall and a residential college replace a huddle of old houses at the campus entrance.)

The interweaving of three housing complexes of varying size and program into an existing building fabric was a clear problem in contexture—but one complicated by the absence of a consistent context. Although the Collegiate Gothic of the earliest buildings is still the dominant campus motif, later additions in other styles (and none) add up to a fine Collegiate Eclectic stew. Thus while a concern for setting informs each of the three new dormitories, its working out led to individuality rather than uniformity. Such resemblances as reveal themselves are matters less of form than of substance—most notably the skill with which the structures are coaxed to contribute, despite their singularity, to the consonance of their surround. A related common note is the differentiated expression of the buildings' street facades and the private faces they turn inward to their respective sites, each suggesting if not in fact defining the shelter of a courtyard. And the play of public and private is carried through to interiors with spatial hierarchies planned to respect the residents' personal as well as social needs.

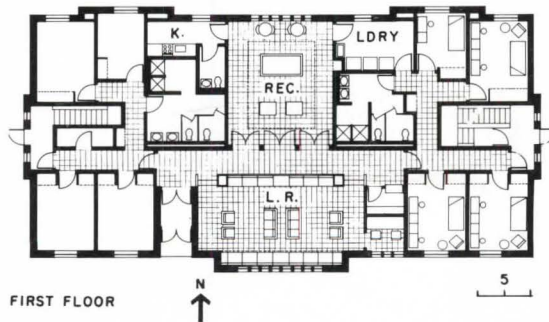


*The North Allison dormitory, the middle unit of the newly built group, replaces a parking lot with housing for 129 students in eight-student "community suites" of single and double rooms clustered around a living room. Because the building stands free yet serves as a visual transition between the cozy Cottage Gothic of nearby sorority houses and small residences and the bland bulk of newer, larger*

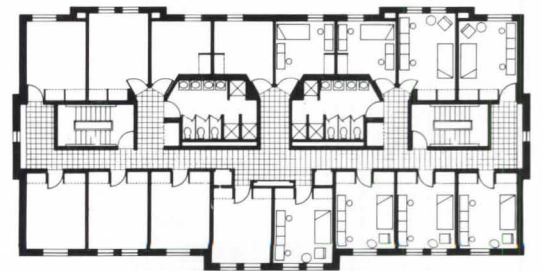
*dormitories, scale was the critical issue. The building's height accordingly was contained within four stories and its apparent length tempered by an undulating facade further articulated by modified bays marking the suite living rooms. Placement of the entry court at the rear anticipates formation of a quadrangle by expansion of the existing dormitory on the south.*



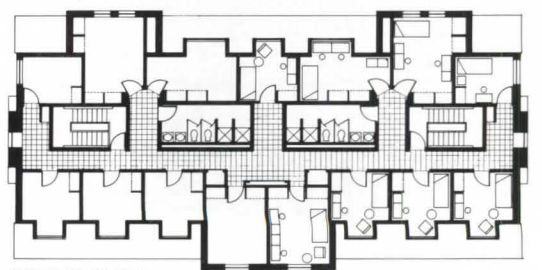
*The deepest bow to campus context is made by the new Mid-Quad dormitories, which are set on a vacated street in the midst of a double row of 1924 residences cast by Gamble and Rogers in a delightfully free rendition of Cotswoldian. To maintain the integrity of the block, the infill buildings echo their traditional neighbors in style as well as scale and materials.*



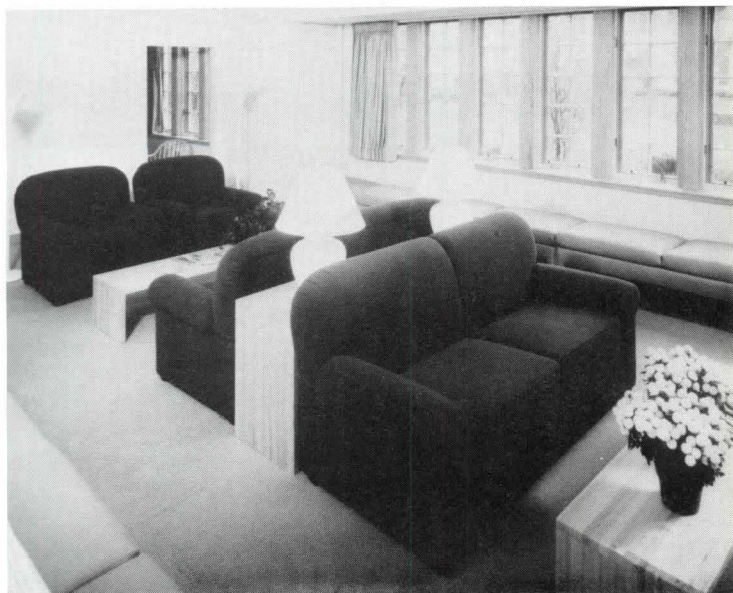
FIRST FLOOR



SECOND AND THIRD FLOORS



FOURTH FLOOR



*Although the new buildings are symmetrical rather than random in elevation and subtly different in detailing and fenestration—and of course in plan—their repetition of the earlier residences' creamy lannon stone facades and cool slate roofs contributes to a near-seamless blend of old with new. Because each dormitory in the pair houses only 90 students, a livable balance*

*could be achieved with a conventional corridor plan, albeit one enlivened by rich variety in individual room configurations—including coveted dormered eyries on the top floors. The two buildings turn their backs to the street to face one another across a private courtyard overlooked by common house living rooms (left) complete with plump sofas and inviting window seats.*



*Of the recently added housing facilities, the Kresge dormitories are the largest in size, the most complex in program, and the most prominent in location, coming immediately to view as the approach swings into the campus. The complex supplants a formal expanse of lawn and walkways—a nonbuilt gateway—that previously marked the entry to the university. Thus to retain a suggestion of the*

*former openness and sense of arrival, the complex is arched back from the street in a symmetrical serpentine curve and pulled apart at the center to reveal an axial vista across the remaining lawn. Built over an underground storage building that lurked beneath the greensward, and so limited to three stories in height, the buildings combine formal massing with residential scale and character.*



*Northwestern University Housing  
Evanston, Illinois*

**Owner:**  
*Northwestern University*

**Architects:**  
*Nagle, Hartray & Associates Ltd.—  
William Sitton, Dirk Danker,  
William Doerge, project staff*

**Engineers:**  
*Gritschke & Cloke Inc.  
(mechanical/electrical); Beer,  
Gorsky & Graff Ltd. (structural)*

**Consultants:**  
*Jeanne Hartnett & Associates Inc.  
(interiors); Joe Karr & Associates  
(landscape)*

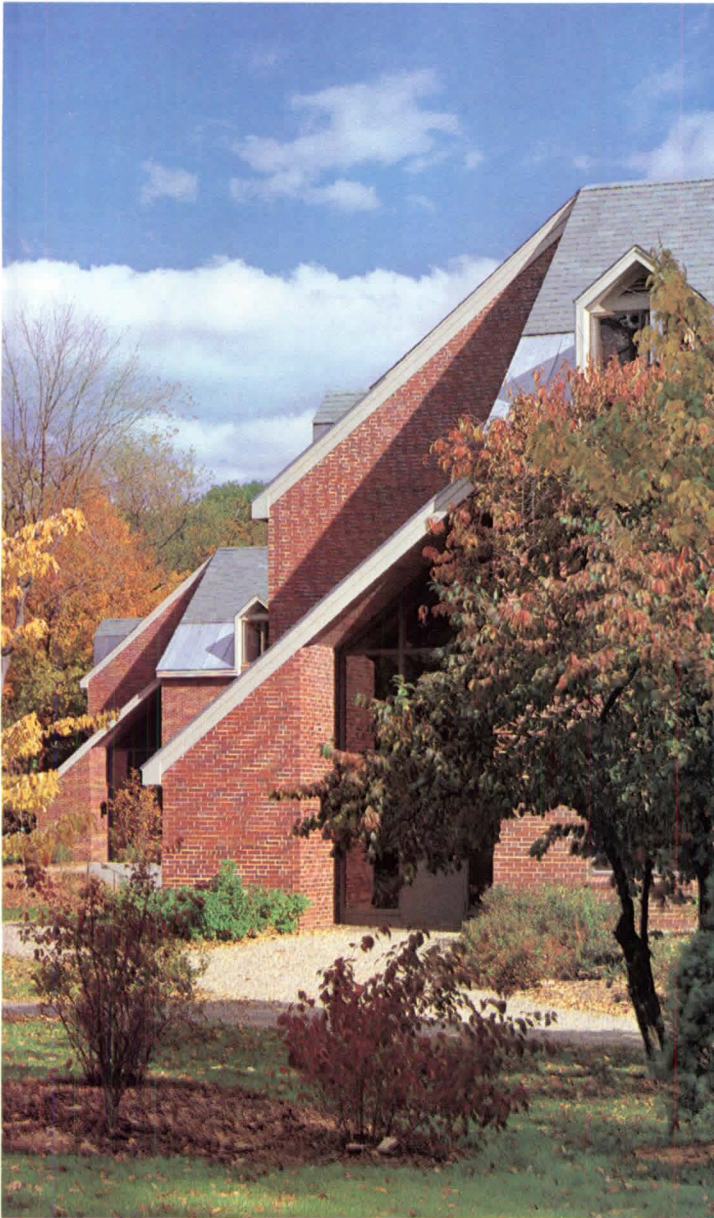
**General contractor:**  
*W.E. O'Neill Construction Co.*



*The paired dormitories, which mirror one another in plan, are organized as modified residential colleges housing 240 students whose major interest lies in foreign studies or communications. The basic living units are eight-person suites with bed-study rooms grouped around shared living rooms that are emphasized by bay windows on the street side of the building. These are augmented by*

*the usual complement of common living, recreation, and service spaces. In addition, however, the program called for academically oriented common facilities—language labs, seminar rooms, faculty offices, audio and video equipment, computer stations—which are concentrated in low structures linked to the dormitories by their off-street entrances.*

## An old tradition renewed



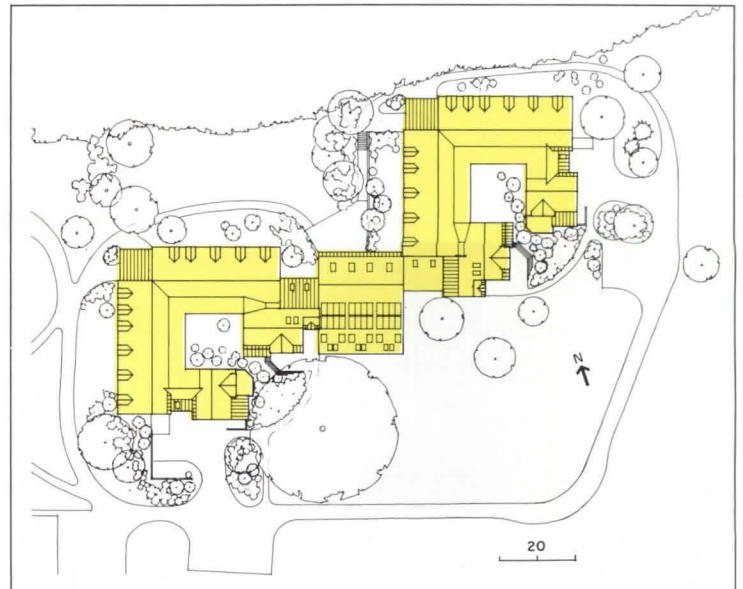
*Principal entrances to both dormitories are tucked into the northwest corners and sheltered by a dropped pitched roof that replaces the expected hip at the right-angle intersection of the gables. Within, a triangular stairwell gives access to student room floors.*

For independent boarding schools the tradition of the corridor master—part policeman, part counselor—quartered at the end of the hall remains basic to the concept of dormitory life that they see as the bedrock of their being. But Mr. Chips retired long ago, and his contemporary counterparts are less likely to be donnish bachelors than family men with wives and children. “Digs” will no longer do. And neither, for that matter, will the spartan corridor cells in which Mr. Chips’ boys were housed.

Both considerations weighed heavily in the planning of new dormitories for Deerfield Academy, a venerable prep school in an even more venerable western Massachusetts town. Among the earliest pioneer communities, settled at a time when the West lay just beyond the seaboard, Deerfield is both proud and protective of a colonial heritage evidenced in fine old houses and churches, in stately trees—and in the academy that has been a part of its life since 1797.

So a decent concern for the sensibilities of the town overlay the immediate planning problems of providing suitable housing for faculty families as well as their student charges and of maintaining a proper balance between privacy and accessibility for both. The responding parti, both deft and deceptively simple, offsets two L-shaped dormitories in a pinwheel around a commons and turns their red-bricked facades into the core of the campus. On the side oriented to the town are the faculty residences, duly gabled and clapboarded in deference to old frame houses nearby. The corridor masters’ quarters occupy their traditional place at the end of dormitory corridors, but there is nothing traditional about the Chinese puzzle of interlocking levels by which the four two-story houses and two flats find their linkages with the six corridors of student rooms.

In arduous planning consultations initiated by architect Timothy Smith, students, faculty, and administration hammered out the guidelines that governed the character of the living spaces in both dormitory and residence and the quality of interaction between them. For the student the most important outcomes were a limit of eight to twelve on the number of boys housed in each corridor and the provision of a variety of room types—singles, doubles, and double suites—with access to a common living room. For the master, the key result is embodied by his study, which forms a “magical connection” between his charges’ living room and his home—a neutral ground that respects the privacy of the school families on both sides.







*Viewed from the west, the Johnson (foreground in photo) and Doubleday dormitories with the commons between turn to the campus restrained facades in a brick similar to that used for existing campus buildings. Fenestration is simple though arrhythmic to follow the window placement of rooms inside, and ranks of windows peak in dormers that lend welcome relief to the*

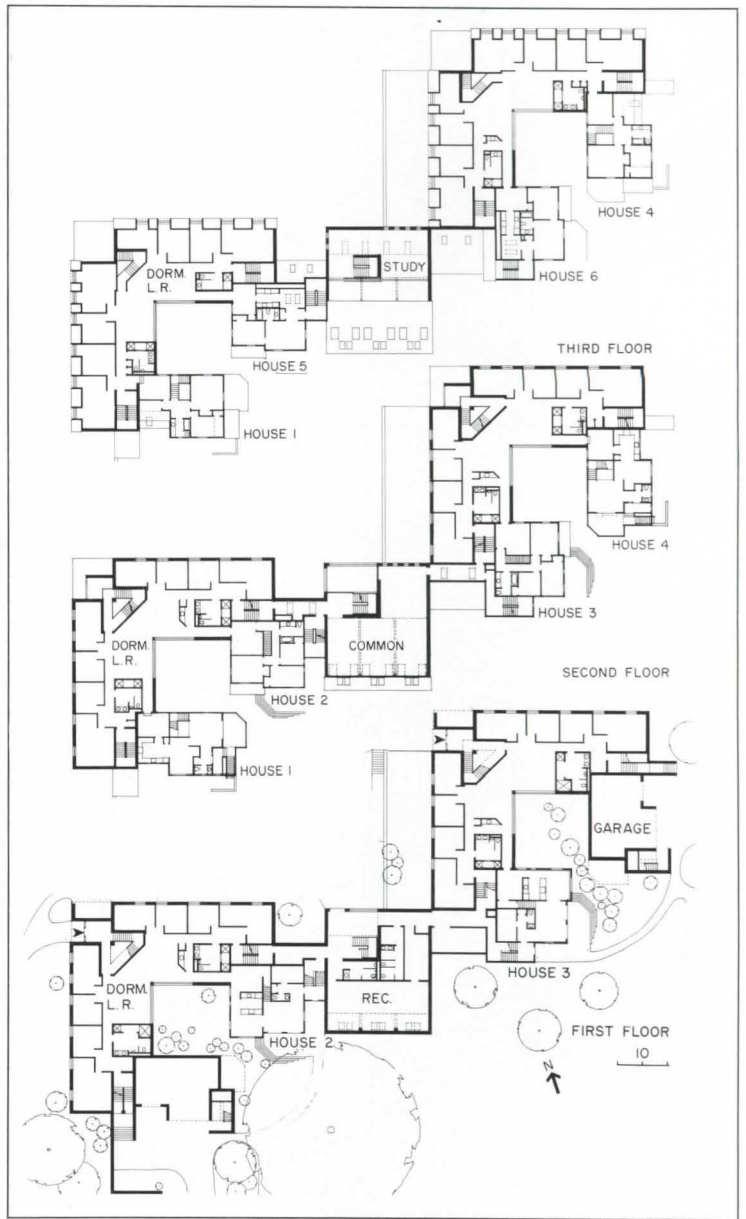
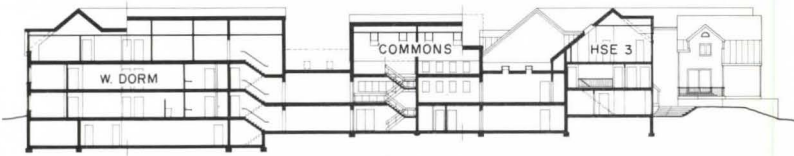
*buildings' strong horizontals. The inner angles of the L-shaped buildings form south-facing sun pockets, while the outer angle of the complex sketches generous, casually landscaped grounds and informal playing fields.*



*The restraint that characterizes the dormitory side of the complex gives way on the southeast to an exuberant jumble of faculty houses flanking the deeply pitched roof of the commons building, which is pierced with skylights and mounted with solar collectors that supply 70 per cent of the domestic hot water. The houses themselves are large and rambling like many of their colonial neighbors in the adjacent*

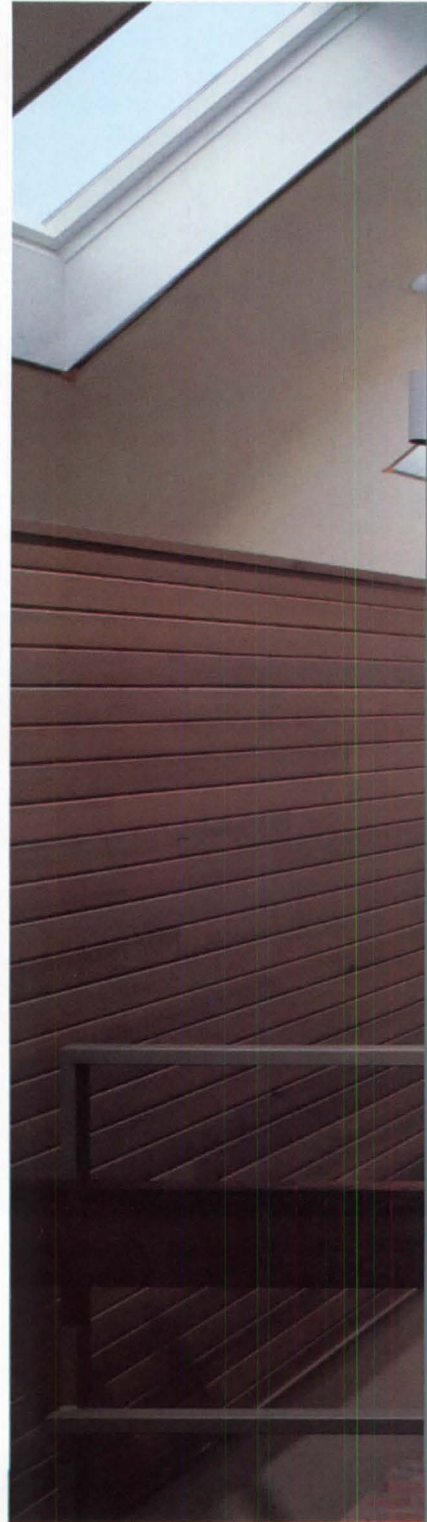
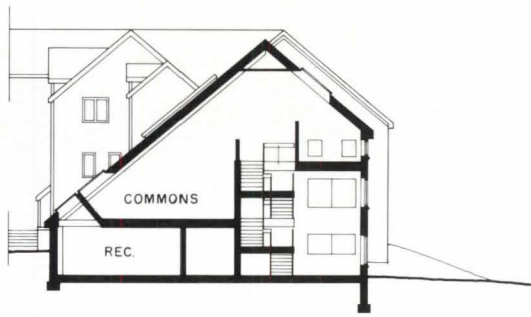
*town and further establish their kinship by a similarity of massing, scale, and detail. Because there are no exits from the student quarters to this side of the complex, its grounds become a private front yard for the masters and their families.*





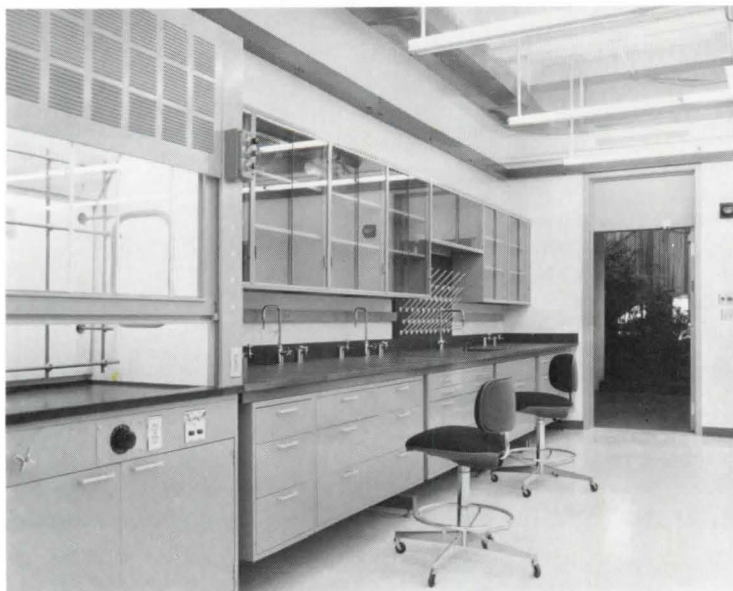
*Labyrinthine at first glance, the plan resolves to two L-shaped buildings flanking a central commons. Student rooms trace the outer perimeter of the ells, giving onto a floor living room whose inner corner opens broad expanses of glass to the sun-pocket court. Masters' houses are appended to either end of the angled corridors—the traditional placement—and intricately interlayered to connect*

*with student quarters: For example, in the west dorm the first-floor corridor master lives in house 2, the second-floor master in house 1, and the third-floor master in the flat designated house 5. In each case the umbilical between student and master is the masters' study—and beyond that his kitchen.*



*By offsetting the commons from the dormitories on either side by half a level, its noisiest space, the recreation room, could be buried below grade, though adequately lit by skylights. The commons proper (above and facing) is a warm and receptive space that soars upward to embrace a study mezzanine. A similar hospitality characterizes the dormitory living rooms (right).*





Two suites of laboratory rooms are provided on separate floors, one above the other. Centrally located on each floor is a supply room for equipment storage, solvents, glassware etc. Offices and artifact rooms are located along the exterior wall of each lab. The larger labs provide space for four people and the scheme provides two offices and one artifact room per lab. The parallel interior walls contain the main risers for the mechanical and electrical services. Two 4-foot-wide fume hoods are provided in each large lab. Every chemical lab contains two 8-foot-wide fume hoods and adjacent storage cabinets (also mechanically exhausted) back to back. This arrangement assures maximum protection in the event of an accident. There are exits at opposite ends of each lab. All services are exposed at the

underside of the ceiling slab including a perimeter electric busduct tray. Removable floor panels at the center of the large laboratories provide access to all services and will accommodate central branches or special equipment as required. In addition, electrostatic air cleaning has been provided throughout the building. Prior to construction, tests were made to determine the extent of potential vibration transferred from the adjacent streets to the building site, and an analysis was made of the proposed structural and mechanical systems to determine the optimal locations for electron microscopes. Care was taken to locate the hydrogenation laboratory at an exterior corner of the top floor and to reinforce the interior walls of this lab in order to minimize damage should an explosion occur.

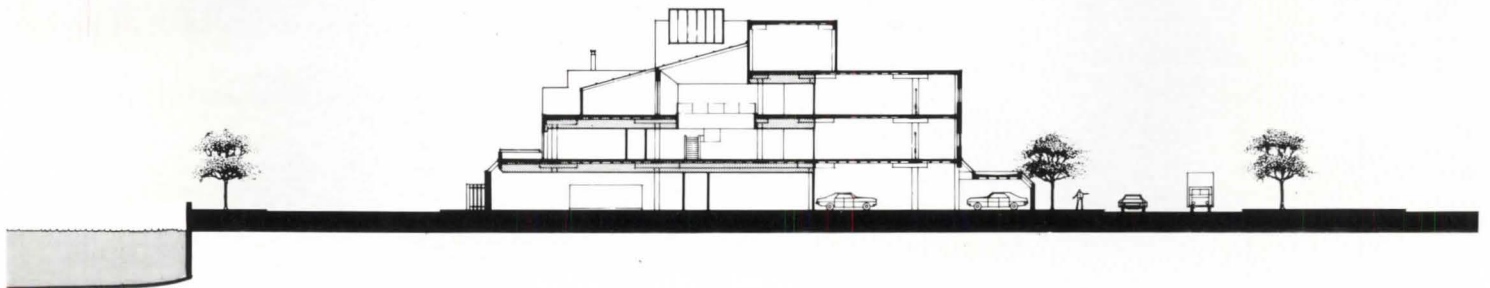


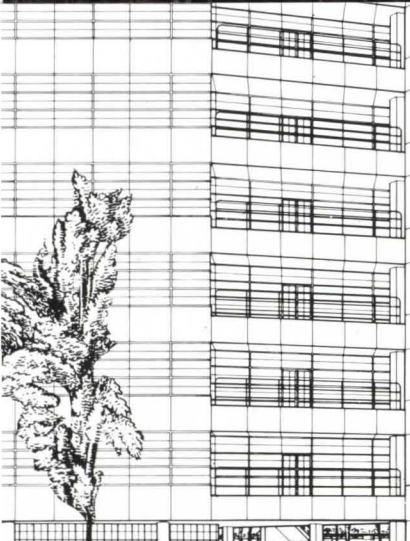
*The Rowland Institute for Science  
Cambridge, Massachusetts*  
**Owner:**  
*The Rowland Institute for  
Science, Inc.*  
**Architects:**  
*Hugh Stubbins and Associates,  
Inc.—Hugh Stubbins, designer;  
Merle T. Westlake, project  
architect; William E. Ralston, job  
captain/construction administrator;  
Philip T. Seibert and Mary  
Killough-Kennedy, interior design;  
Michael Gilligan, landscape  
architect*  
**Engineers:**  
*LeMessurier Associates/SCI  
(structural); van Zelm, Heywood &  
Shadford (mechanical/electrical)*  
**Consultants:**  
*Bolt, Beranek & Newman  
(acoustics); John J. Pepper Corp.  
(corrosion); McPhail Associates,  
Inc. (soils)*  
**General contractor:**  
*Vappi & Company, Inc.*

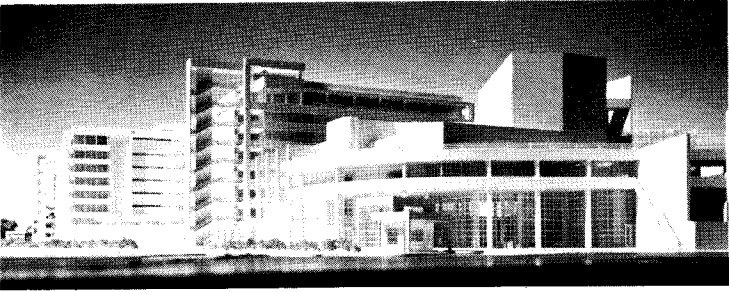


*Included at the reception level (top photo) is a library (not shown) which overlooks an enclosed garden. This floor also includes workrooms, darkrooms and a 4-car garage. The large circular stairway interconnects the first floor reception level with another reception area on the second floor. The focal point of this second level, and the third, is an internal two-story skylit atrium (opposite page).*

*The laboratory suites and additional office areas open upon this atrium space at both levels. A dining room, kitchen and conference room are also on the second level. The atrium has a handsome circular bench (not shown) and an additional elegant stair connecting the two levels of laboratories and offices.*



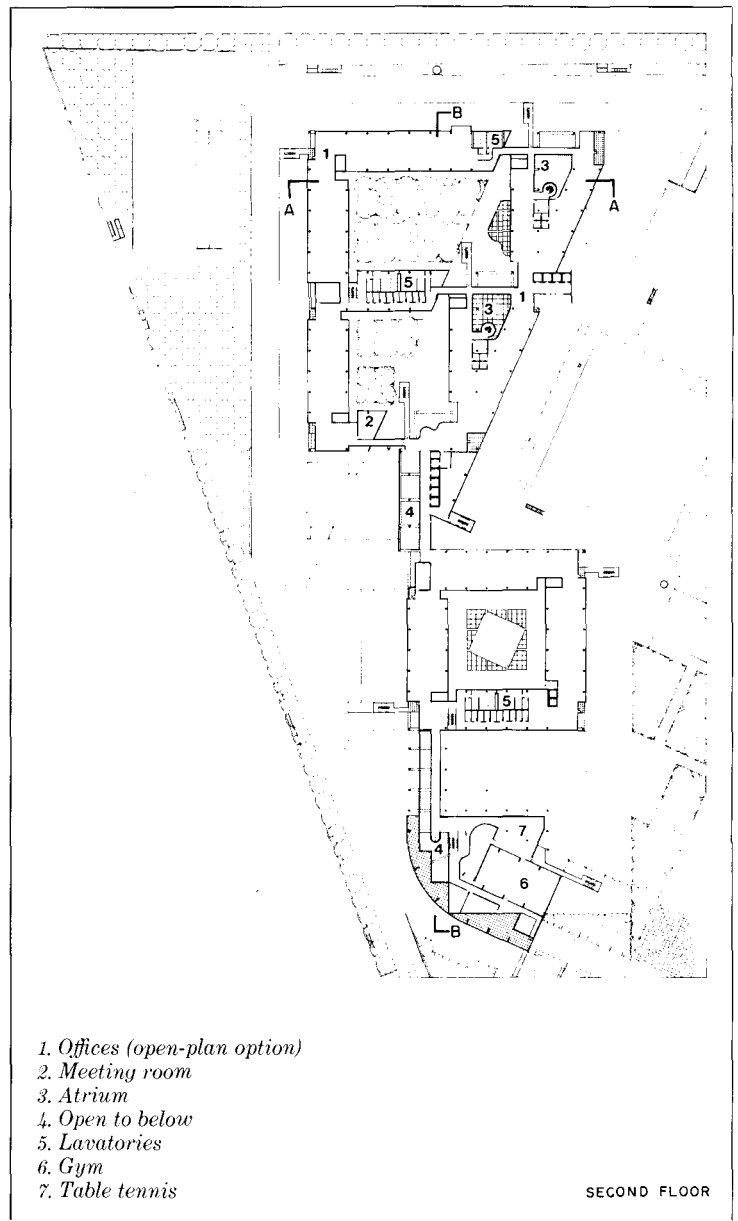
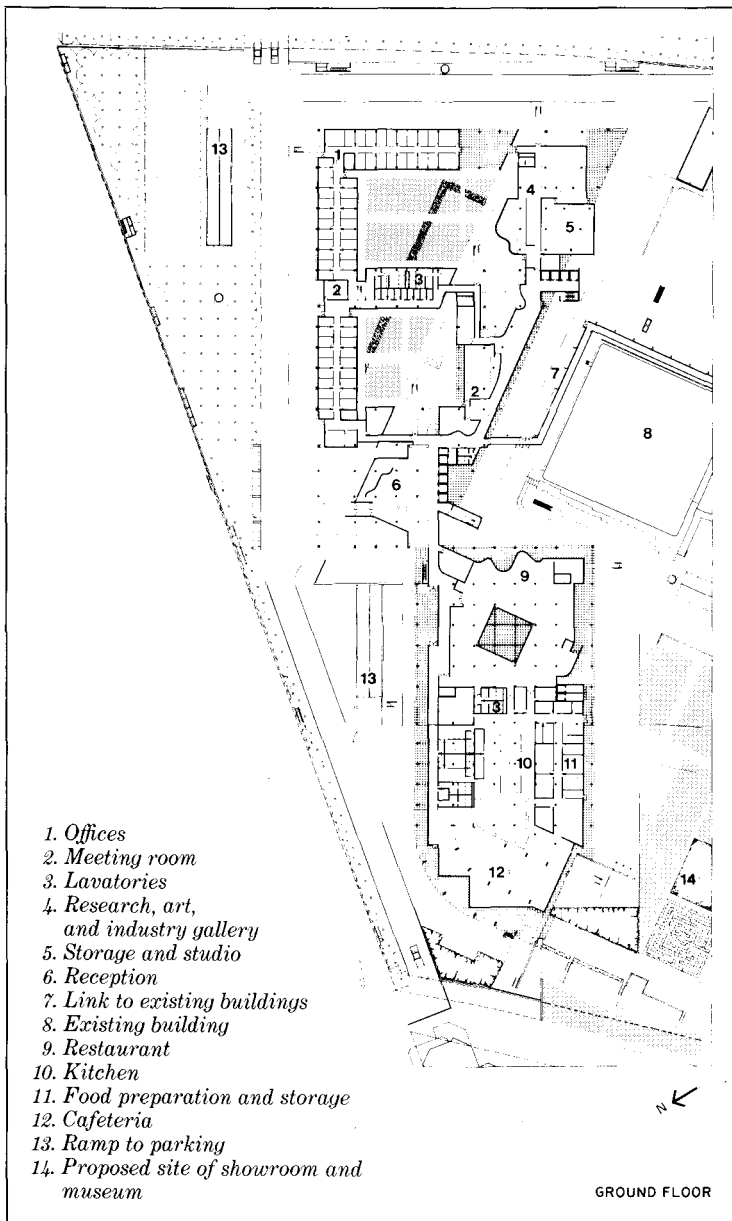




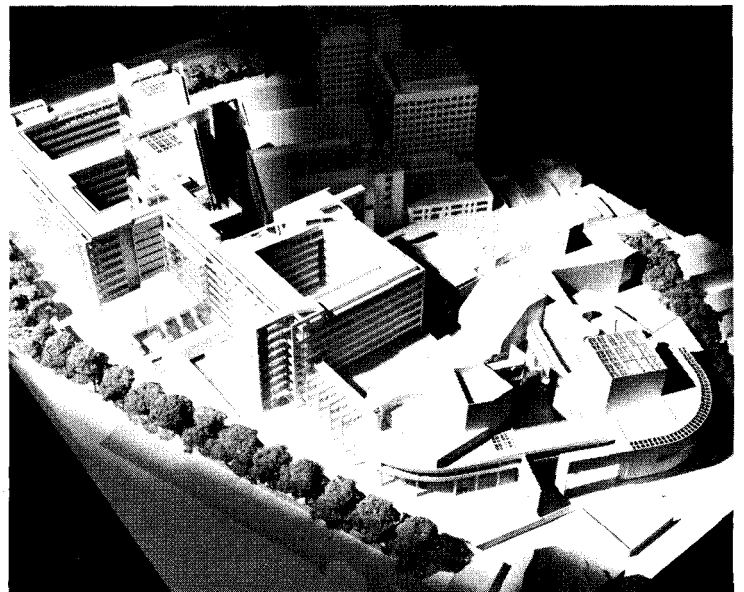
The complex intersecting volumes of Richard Meier's design reflect the functional diversity of Renault's programmatic requirements, as well as the architect's attempt to establish coherent urban order among an amorphous series of spaces. At present, the site of the new headquarters is occupied by parking lots and warehouses. The three 1960s office blocks which stand to the south of the proposed building (left of center in axonometric above) are overcrowded and, by Renault's standards, give desk workers insufficient daylight. Beyond their failings as a working environment, these boxy structures lack the symbolic presence Renault desires for the administrative center of its international operations. At the

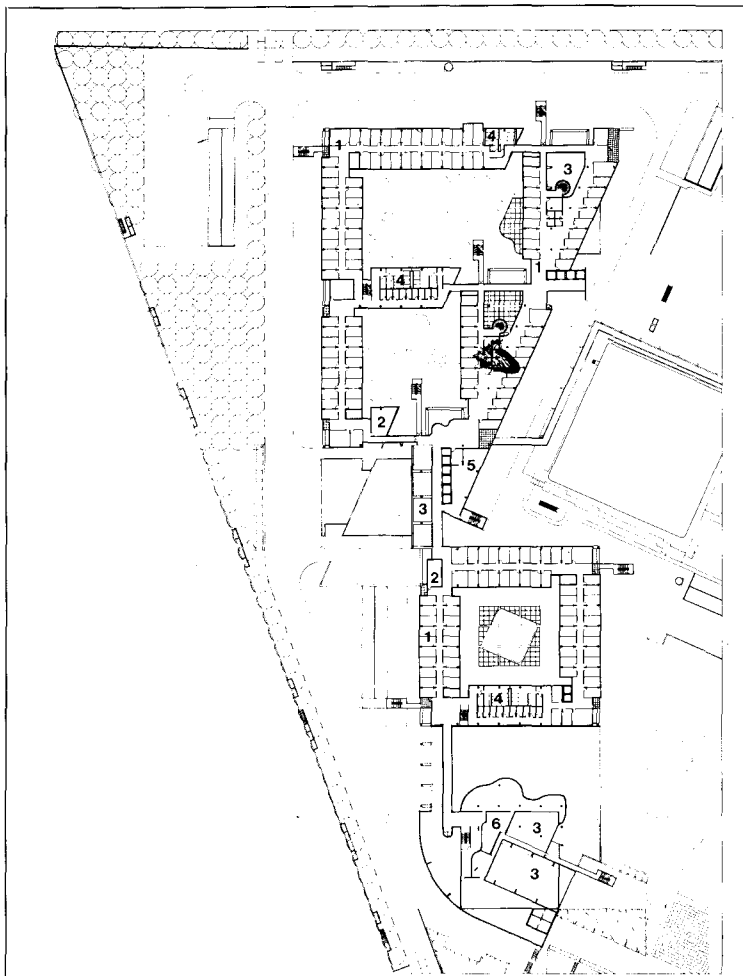
outset of design, Meier rejected the familiar model of the corporate monolith standing in pretentious isolation. The superimposed grids that determined his basic parti are directly related to the layout of existing Renault offices and factories (figures 1 and 3, left) and the orientation of the Quai du Point du Jour and nearby Paris streets (figures 2 and 4). Facades keyed into these interlocking geometric patterns acknowledge the multifaceted nature of Renault's corporate image.





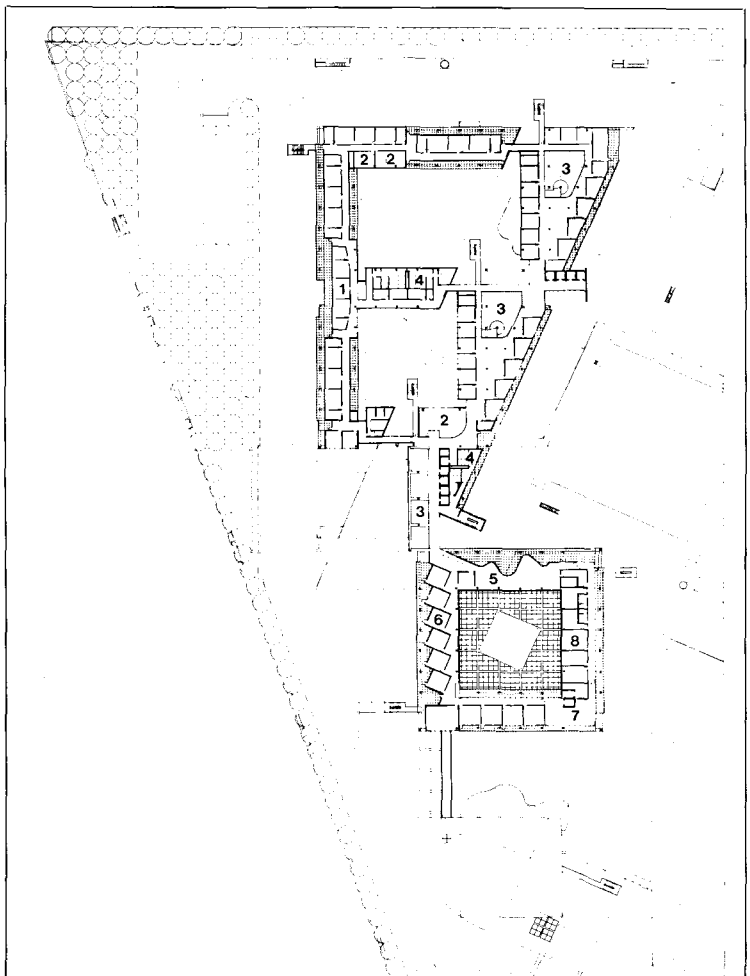
*The entire complex represented in Meier's model measures 1.2 million square feet, including 500,000 square feet of bi-level underground parking and 110,000 square feet devoted to a technology museum and showroom. The four plans above comprise the segment of the headquarters to be built during the first phase of construction (now delayed by a Renault decision to give first priority to industrial investments, research, and development). At some later stage, Renault would add the museum and showroom wing beyond the cafeteria (extreme right in photo this page, and photo opposite below). Formal gardens or a park would cover the museum-showroom site until second-phase construction begins.*





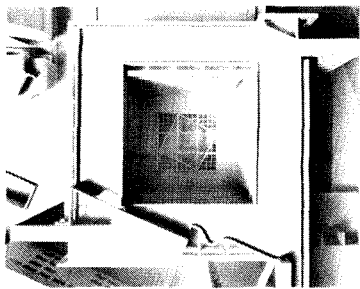
1. Offices
2. Meeting
3. Open to below
4. Lavatories
5. Food vending
6. Lockers and showers

FOURTH FLOOR

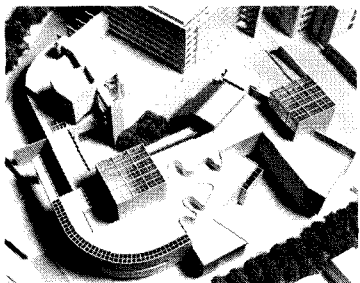


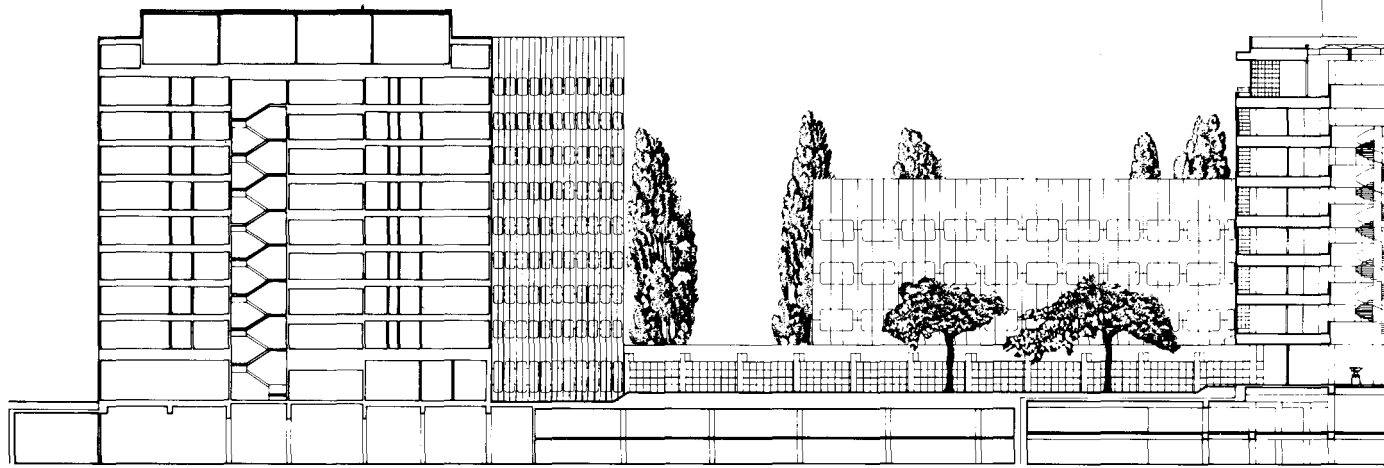
1. Directors' office suites
2. Meeting room
3. Open to below
4. Lavatories
5. Executive club
6. Directors' dining rooms
7. Kitchen
8. Service

EIGHTH FLOOR

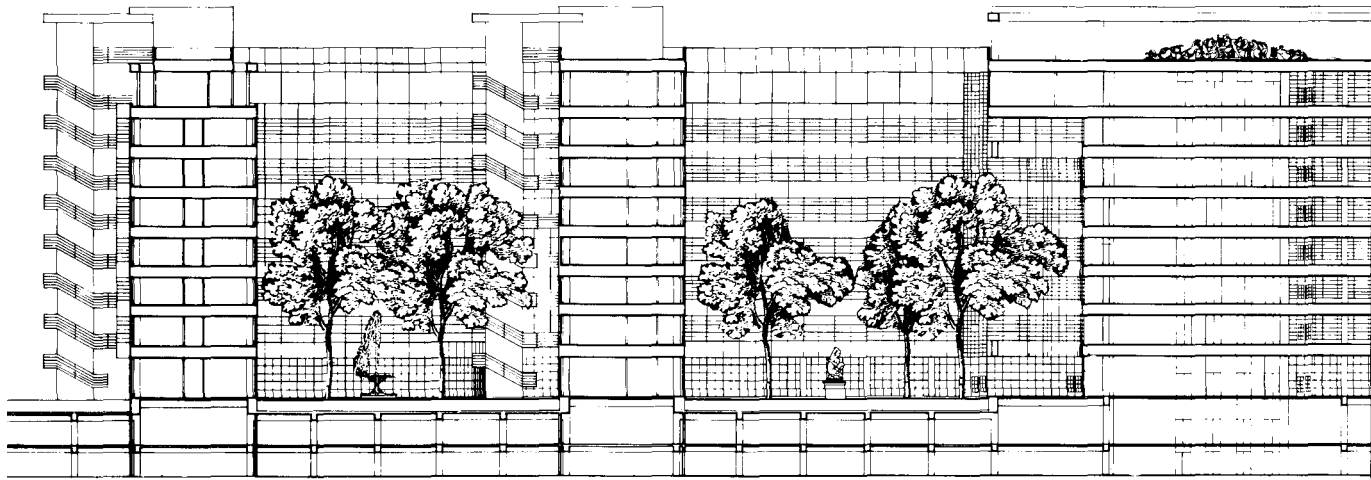


Skylights and interior courtyards permit exposure to natural illumination and views throughout the working day, and reassert the regulating order of the grid—most notably in the skylight over the ground-floor restaurant (above left). Overhead glazing lends visual drama to a number of key spaces, such as the lobby inside the main entry, the atria that vertically connect office “life units,” and the Research, Art, and Industry Gallery. The latter is loosely conceived as a place where Renault personnel and the interested public can display the results of their own artistic and intellectual creativity.





SECTION A-A



SECTION B-B

*Elevations were composed to create a suitably dignified effect when seen from Paris (photo opposite) without overwhelming the older office buildings at the Point du Jour site (at left in photo this page)—uniform roof lines conform with Paris building codes. Enclosed loggias skirting the edge of a garden courtyard would connect the new and existing structures. In line with established French tradition, formal plantings, fountains, and sculpture simultaneously pose a picturesque foil to the geometry of the buildings and extend the architect's axial scheme into the landscape.*



Renault Administrative  
Headquarters  
Boulogne-Billancourt, France

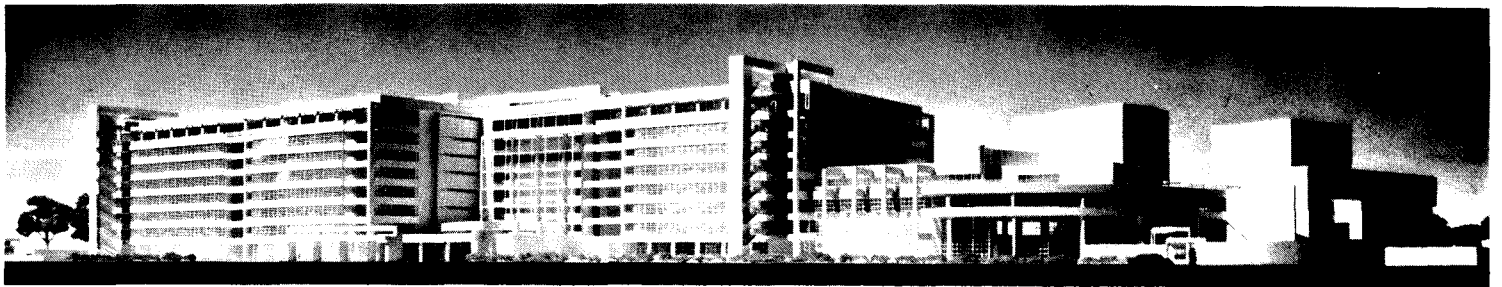
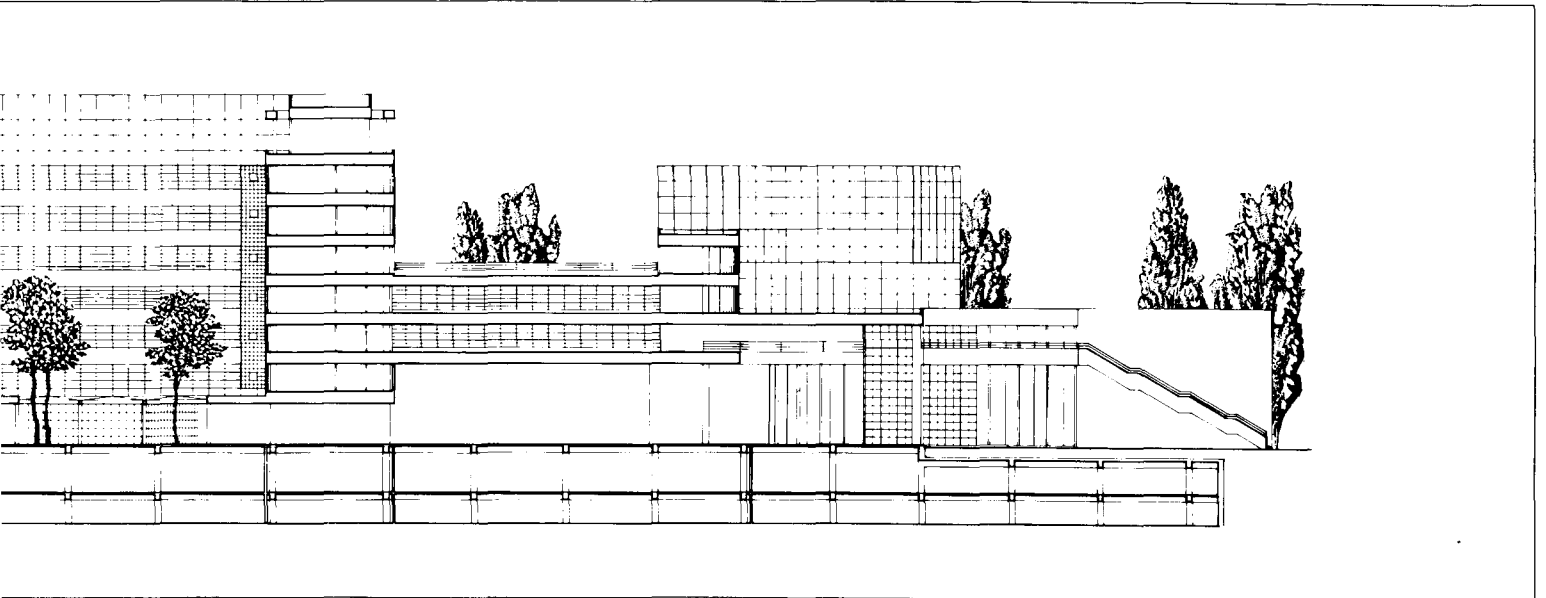
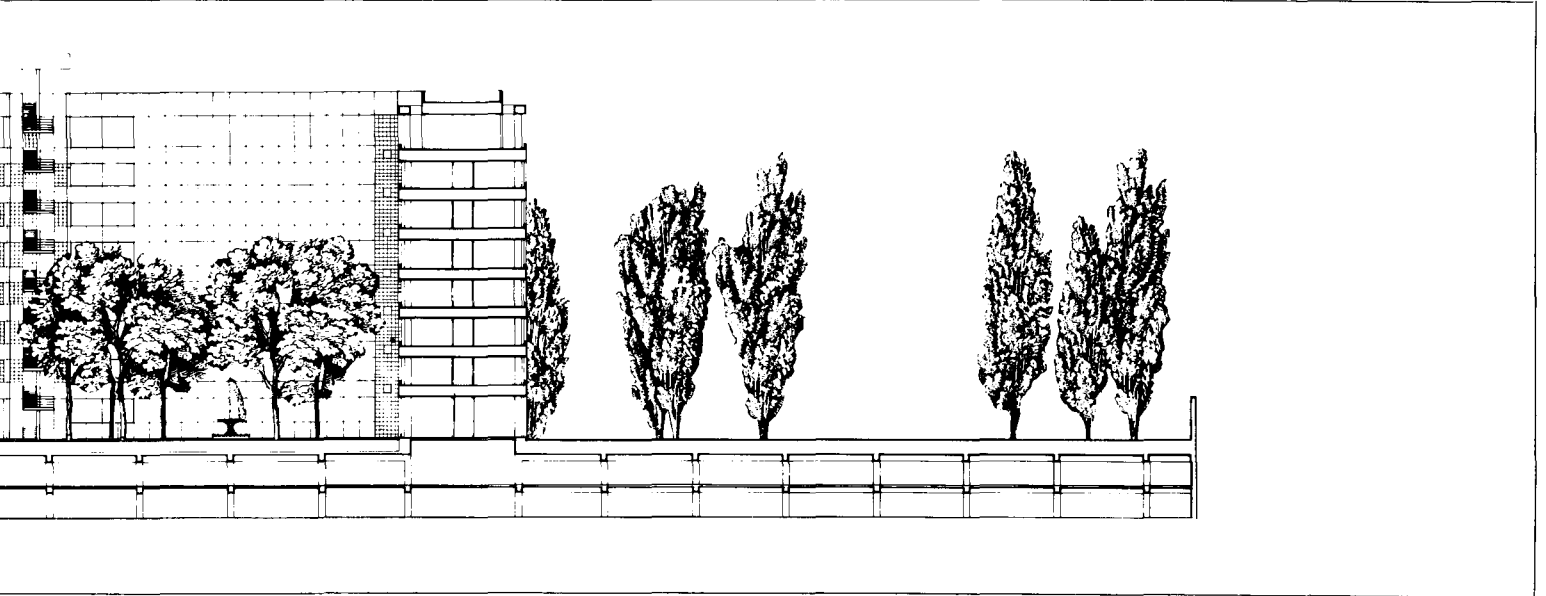
**Owner:**  
La Régie Nationale des Usines  
Renault

**Architects:**  
Richard Meier & Partners,  
Architects—Richard Meier, FAIA,  
principal-in-charge; Susan Berman,  
associate; Margaret Bemiss, David  
Diamond, Steven Forman, Hans

Christoph Goedeck, George  
Kewin, Jean-Michel Meunier,  
Richard Morris, Joan Ockman,  
Vincent Polsinelli, Patricia  
Sapinsley, Jean-Christophe  
Tougeron, Boris Vallejos, Greta  
Weil, Nicholas Woolfenden,  
project team  
**Engineers:**  
Séri Renault Ingénierie  
(mechanical, electrical, structural)

**Consultants:**  
Gérard Journé, Architecte, C.A.R.,  
Architectes et Ingénieurs; Bernard  
Merlin (cost); Jean-Marc Casso (fire  
protection); Severud-Perrone-  
Szegezdy-Sturm, Consulting  
Engineers (structural); Jaros,  
Baum & Bolles, Consulting  
Engineers (heating, electrical,  
sanitary)

**Model makers:**  
Albert Maloof, Larry Callender and  
Curtis Vasquez



# Same designer, same client, three different interiors

U. S. Trust Company of New York  
New York City  
Haines Lundberg Waehler, Architects

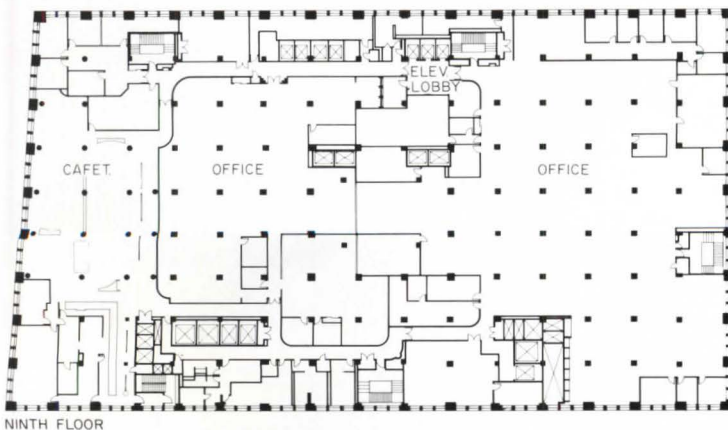
For 128 years, the U. S. Trust Company of New York has conducted business at the corner of Wall and William streets in Manhattan's financial district, its business being personal banking—trust and estate management and investment counseling for moneyed individuals. The bank takes the “personal” in this job description seriously, and its customers often deal with the same banking officer for many years, even after he has risen to major executive responsibility. Until only 12 years ago, tellers sat at rolltop desks to oblige customers in bygone ease and privacy.

But though the trust company still prides itself on catering to the individual, banking has changed a good deal since the Civil War. To accommodate modern needs, the bank recently embarked on three projects: the renovation of its downtown office, the relocation of its operations facility, and the opening in midtown of its second office. All three architectural assignments were undertaken by Haines Lundberg Waehler, a New York firm that has had long association with the company.

The projects had little in common beyond their locations in previously existing buildings. The operations facility, shown on these two pages, occupies three and a half floors in the old Wanamaker department store. The space provides for about 700 people (a number that ebbs and flows in response to action on the Street) and for the vast amount of computer equipment needed for up-to-date banking. At this location, the architects' chief problems were to fit clerical offices and mechanical equipment into space designed for a far different purpose, and to provide good light and a humane working environment in the large areas.

At the company's main office on Wall Street, the task was simpler: to provide a customers' lounge with teller counter and platform (pages 126-127). Even for such a straightforward function, however, the client wanted the degree of comfort and grandeur traditional to its facilities.

The third assignment was the most remarkable: the restoration-cum-adaptation of a pair of McKim, Mead & White houses on one of mid-Manhattan's most appealing residential side streets. Because U. S. Trust recognized, with some enthusiasm, that it had an art treasure in its possession, the architects could restore the house with museumlike care and skill (pages 128-129). And the client got incomparable spaces for the reception of clients and for its own offices. G.A.



NINTH FLOOR



The large high-ceilinged spaces at 770 Broadway in the old Wanamaker department store provided adequate area for office space at U. S. Trust's operations facility and the necessary floor-to-ceiling dimension for a computer center, now supported by 20-inch raised flooring at the center of one level. Moreover, the tall windows took in light near the ceilings, where its transmission to the interior is most effective. Indeed, HLW recaptured some of this daylight by removing 8-foot dropped ceilings at the perimeter, allowing windows to extend up to the 9½-ft ceilings; in the center, ceilings are 11 feet high. To make the most of daylight in interior spaces, butt glazing surmounts partitions around the periphery (see executive reception area at top). To humanize the scale of the corridors, which are very long

around the perimeter, HLW designed what it calls “soft architecture,” curving walls and handrails around “hard” necessities like mechanical equipment, elevators and vaults (directly above). The four floors in the facility are separately color-keyed—peach, blue, mauve, dusty rose—and similarly colored murals are presently being painted by Ken Stern. In the employee cafeteria (opposite), dropped lighting “beams” and a low-voltage lighting system designed by HLW lower the apparent ceiling height and visually define bays.

*U. S. Trust Company of New York,  
Operations Center, 770 Broadway  
New York City*

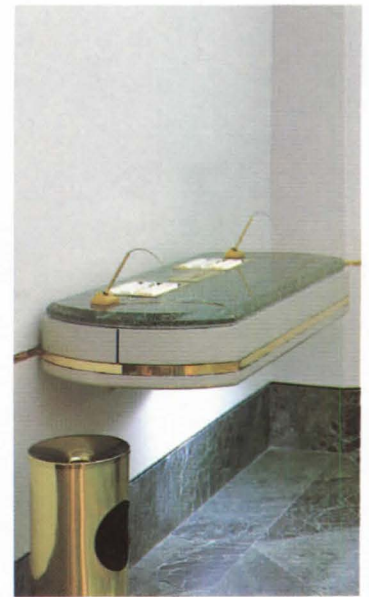
**Architect/engineer:**  
*Haines Lundberg Waehler—  
Michael Maas, partner-in-charge;  
William E. Baltz, partner, general  
project manager; Stuart Pertz,  
director of design; Carl W.  
Ordemann, project manager;  
Roberte Mithopoulos, project  
architect; Richard Smith, project*

*designer; Vincent Pucillo, interior  
designer*

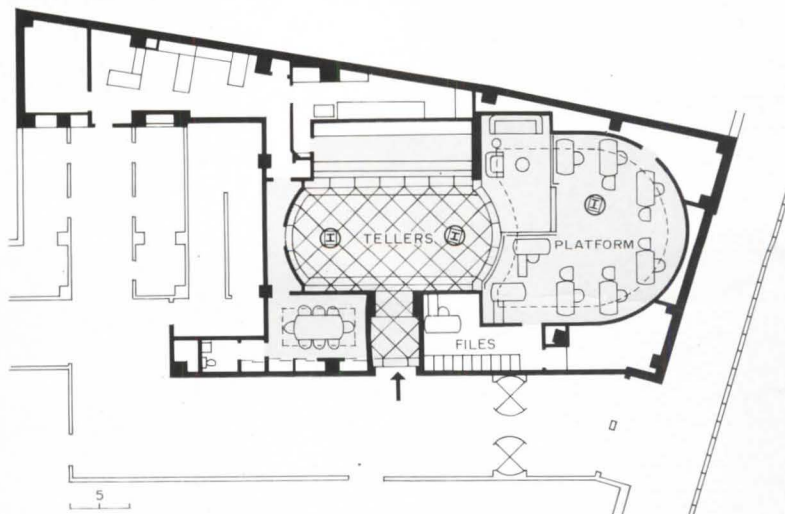
**Consultants:**  
*Frank Giampetro and Associates  
(kitchen); Ostergaard Assoc.  
(acoustics)*

**General contractor:**  
*Joseph P. Blitz, Inc.*





*In its main office at 45 Wall Street, U. S. Trust moved its teller area to street level from a downstairs location, tucking it into an irregularly shaped corner of a tall downtown office building (designed in 1954 by HLW). To create a monumental axiality in the central space, HLW slightly skewed the entrance so that two large existing columns align within the oval volume; fat white jacking emphasizes their substantial size in the small space. A third existing column on the raised platform at one end (see plan below) is off the axis and hides self-effacingly behind central columns (see, so to speak, opposite). Materials are calculatedly luxurious: gray velours upholstery for the customers' lounge (left), green marble and brass for the check-writing desk (above), green marble and fabric lining elsewhere (opposite).*



*U.S. Trust Company of New York  
Banking Floor, 45 Wall Street  
New York City*

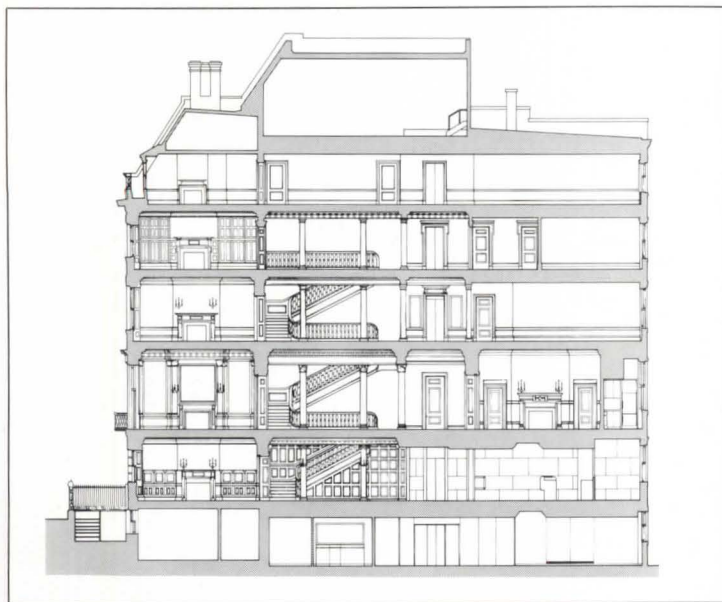
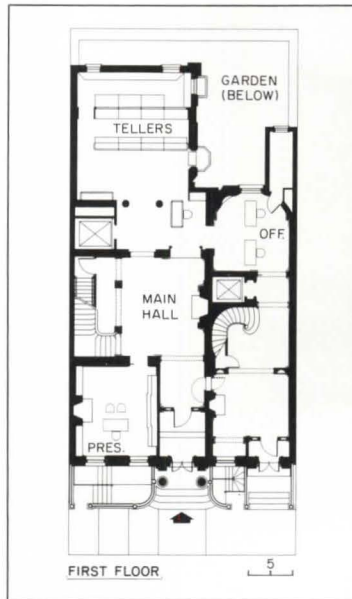
**Architect/engineer:**  
*Haines Lundberg Waehler—  
Michael Maas, partner-in-charge;  
William E. Baltz, partner, general  
project manager; Stuart Pertz,  
director of design; Carl W.  
Ordemann, project manager;*

*Seymour Gellar, project architect;  
Jorge Ambrosini, project designer;  
Judith Kotick, interior designer*  
**General contractor:**  
*Joseph P. Blitz Company, Inc.*





When ready to open its first mid-Manhattan office, U. S. Trust acquired a pair of townhouses designed in 1896 by McKim, Mead & White for James Goodwin. From 1945 until the late '70s, a school occupied the property, inflicting some alterations, but the bank, recognizing a treasure when it saw one and a grand milieu for the reception of its clientele, wanted the buildings restored. HLW's extensive historical research was greatly helped by the original drawings, the recollections of Henry Sage Goodwin and a published family history. Among the rooms restored, the Green Room, formerly the living room (top center), has damask walls that match the original and sconces cast from McKim, Mead & White originals found in Buffalo; the Spanish cedar woodwork was intact. In the Ladies' Parlor, now an



administration area (bottom center), gilding was based on traces found on ivory-colored plaster and wood. Mr. Goodwin remembered the red flocked wallpaper on the main stairway (opposite), which, like the rest of the building, has been sprinklered. The only modern design is a teller's area (right), finished with limestone to suggest the outdoors through windows in the main hall.



*U. S. Trust Company of New York,  
Midtown Office  
9-11 West 54th Street  
New York City*

**Architect/engineer:**

*Haines Lundberg Waehler—  
Michael Maas, partner-in-charge;  
William E. Baltz, partner, general  
project manager; Stuart Pertz,  
director of design; Allan B. Smith,  
project architect; John McLean,  
project architect; Ralph Walter,*

*preservation specialist; Judith  
Kotick, interior designer*

**Consultants:**

*Dr. David G. DeLong, Columbia  
University Graduate School of  
Architecture and Planning,  
Division of Historic Preservation;  
Marilynn Johnson Bordes,  
Metropolitan Museum of Art,  
Department of Decorative Arts*

**General contractor:**

*E. W. Howell Company*



Dental office for Paul Gingras, D.M.D.  
West Palm Beach, Florida  
Aragon Associated Architects

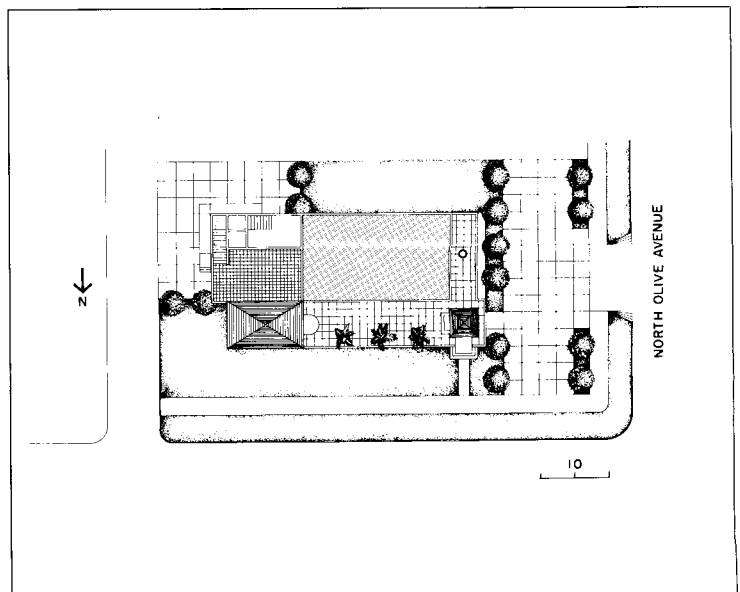
## A small restudy of regionalism



The sights and sounds of modern dentistry are generally regarded as . . . well, not pretty. And though the West Palm Beach office of Paul Gingras, D.M.D., necessarily contains the offending drills, cuspidors, and de-salivators, his patients need not rely on Muzak alone for esthetic distraction. In this case, architecture assists—or more particularly, Aragon Associated Architects, a two-year-old Miami firm that has brought to this, its first commission, a commitment to the enduring appropriateness of regional vernacular. While South Florida's ubiquitous Spanish-style architecture of the early 20th century might be considered a rather grand and romantic model for a modest 2,100-square-foot dental office, the resulting structure proved to be eminently compatible with its once-residential surroundings, with contemporary construction methods, and with the specific and implied requirements of the program. To avoid the potential cuteness of historical pastiche, Aragon exercised restraint and discipline.

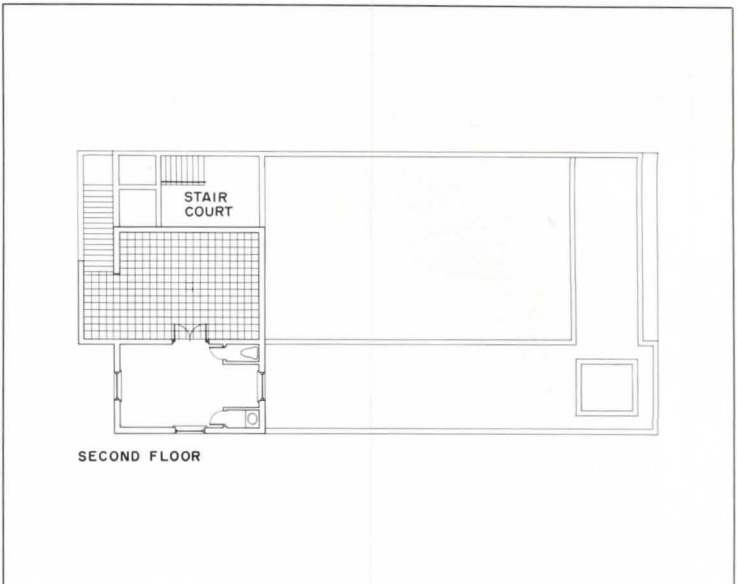
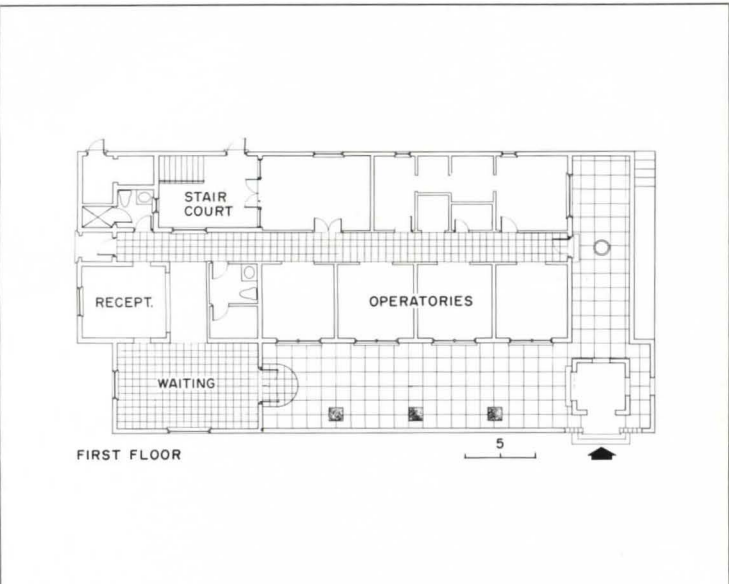
Dr. Gingras' programmatic requirements were easily and economically satisfied by a flat-roofed rectangular box into which the four requisite operatories and support services (X-ray, laboratory, business office, staff lounge, etc.) were neatly fitted along a central double-loaded circulation spine (plan below right). To counter the banality of the box, and because there were no views, 10-foot-high walls were erected along the building's public north and west flanks. Passers-by on North Olive Avenue are treated to an engaging view of planes of smooth stucco (over concrete block) layering back in creamy hues of apricot, terra cotta, and olive; those inside the box are treated to a no less engaging view of open-air courtyards (photos overleaf). Two tile-capped towers anchor the building to its site; they also provide a vertical scale element that recognizes the transitional neighborhood's shift from residential to professional. After entering through the smaller tower (photo left) one walks through a courtyard planted with three Royal Palms into a second tower, where a light-filled waiting room occupies the ground floor. Upstairs, Dr. Gingras looks out on Lake Worth from a "Rapunzel-like" (according to Aragon) retreat and adjacent roof deck (plan below right).

Credit for Dr. Gingras' office must be extended to the University of Miami School of Architecture: three of Aragon's four members graduated in the Class of '79—the fourth, John Steffian, heads the department.

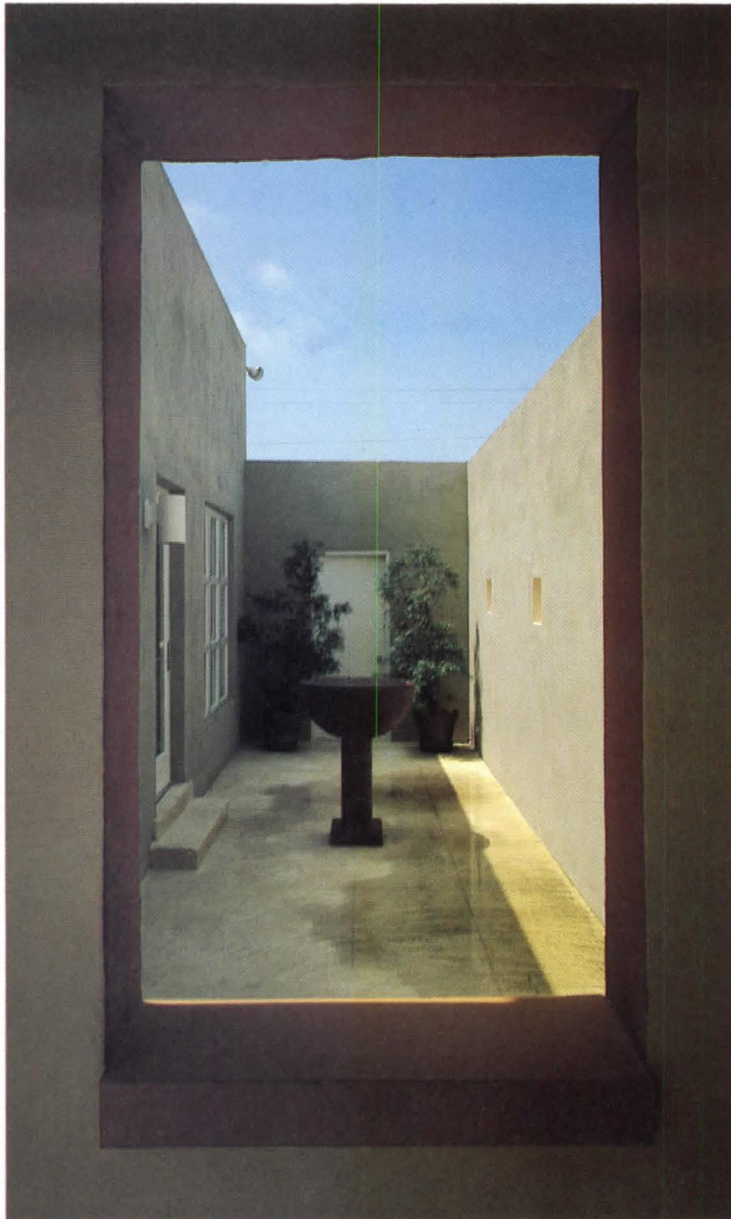




© John Mesma photos







*An eye to Luis Barragán's 1928 Aguilar House in Guadalajara, Mexico, inspired the splashing purple fountain that greets arriving patients through a stucco-framed "window" in the entry tower. A second, wood-framed view of the fountain terminates the interior circulation spine.*

*Dental office for Paul Gingras, D.M.D. West Palm Beach, Florida*

**Owner:**

*Paul and Sally Gingras*

**Architects:**

*Aragon Associated Architects—John Ames Steffian, Armando M. Montero, Jorge Luis Hernandez, principals; Sally Gingras, project coordinator; Luis Trelles, graphics*

**Consultant:**

*Warren Gilpin, Professional Dental Associates*

**General contractor:**

*A. David Carmo, Carmo Construction*

# Modern wiring systems: an innovative and maturing technology



*A simple, reliable plug is the sine qua non of increasingly popular cable-set branch wiring systems. Dual-Lite's ceiling distribution box connector is the interface between the "flexible" wiring systems and conventional hard wiring.*

For many years wiring systems remained basically the same because offices remained the same. But manufacturers now offer new arrays of systems designed to provide more flexibility in delivering power and communications to work areas; greater flexibility in running wires to, and in switching, lighting fixtures; and greater capacities and security for communications wiring. The impetus for these changes stems from: 1) the growth of the open plan, in which the owner would like to locate work stations almost anywhere, and be able to change these locations easily and inexpensively; 2) the arrival of the "electronic office" which requires easy access to wiring for video display terminals, and security for sensitive information; 3) emphasis on energy conservation—especially the capability of turning off lights, locally or remotely; 4) and labor savings in running wiring and connecting it to lights and outlets.

Providing power and communication services anywhere requires a wire conductor within a conduit (sheath, raceway, a plane under carpet squares, raised floor, etc.) connected to a terminal within the room and/or above the ceiling. The degree of flexibility varies among systems—and initial costs vary commensurately. Undercarpet cable can go anywhere. Wiring below access floors can go anywhere there is an "electrified" panel. With cellular flooring and underfloor ducts, flexibility is governed by spacing of electrical cells, but the flexibility can be enhanced by augmenting these systems with undercarpet cable.

The primary use of plug-in cable has been to provide flexibility in wiring lighting fixtures and speeding their installation. But their use is not restricted to this application. They also are used for connecting above-ceiling raceways to power poles. And, for enclosed offices, plug-in cables are nested in floor-to-ceiling partitions.

The cost picture for flexible wiring, though not simple, is determinable and depends upon initial costs, costs of relocation, and applicability of tax credits and tax depreciation rates. Contractors may not pass all their labor savings on to the owner, but the greater predictability of labor costs may be reflected in more accurate bids for flexible wiring systems and, hence, lower costs. Each owner has to establish his own cost parameters, and these will reflect how flexible he wants the system, whether or not he is to occupy the building, how frequently changes are likely to occur, and how much disturbance the tenant will allow.

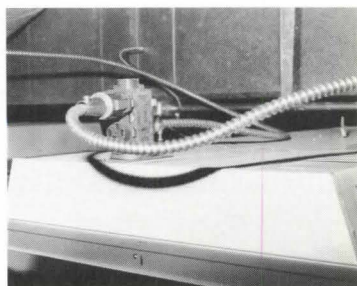
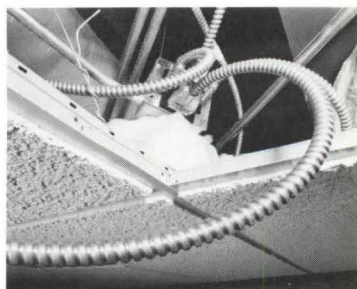
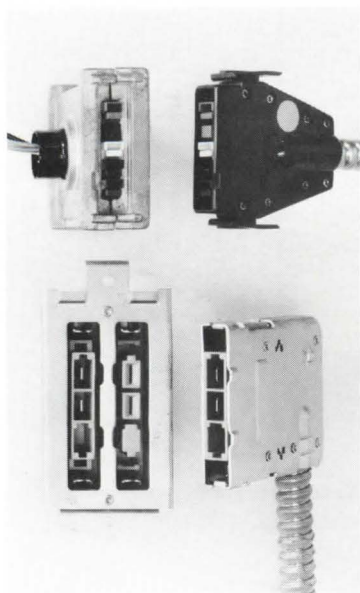
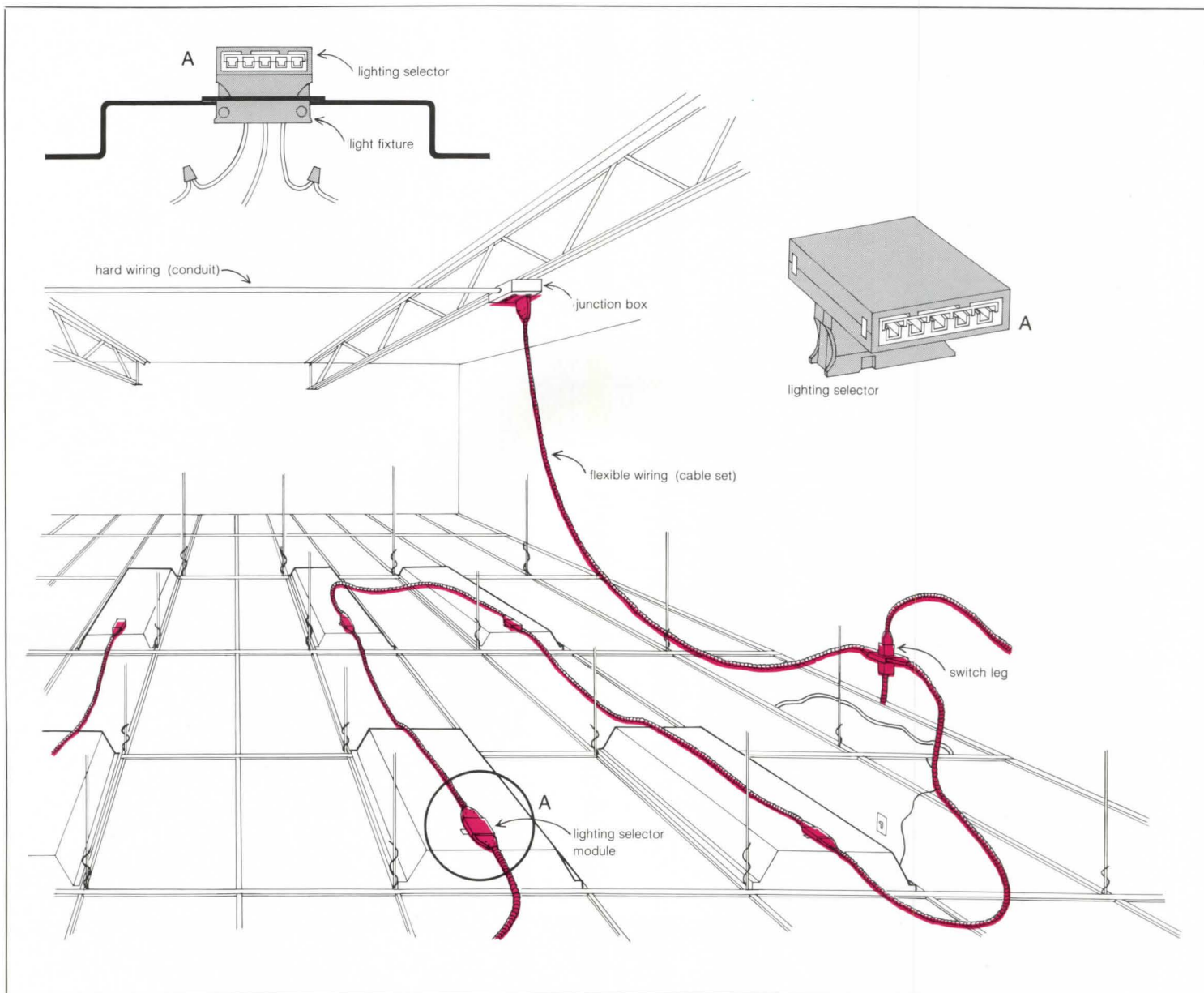
The revolution/evolution process with wiring systems began with the promotion and acceptance of the open plan. The first cable-set system was developed for the SEF open-plan systems schools program in Toronto in 1969. It was flexible, comprehensive, ingenious—but probably more sophisticated than the schools really needed. The system subsequently was adapted for use in a smaller-scale project in Boston. Since that time, plugs and receptacles have been refined to essentials, but also given even greater functional attributes.

Cellular and underfloor duct systems have been refined to give easier access to cells with fittings and have been further compartmented to isolate computer signals.

Poke-through fittings, developed to allow penetration of structural floors for power access while maintaining the floor's fire-safety integrity, handle power and communications, and have been adapted for connection to cable sets.

Undercarpet cable, the most recent system, can be used by itself, or combined in hybrid systems—with cellular and underfloor systems, and with others still untried.

This first article in a series is an introduction to these important new technologies. Later we will deal in more detail with applications. *Robert E. Fischer and James B. Gardner*

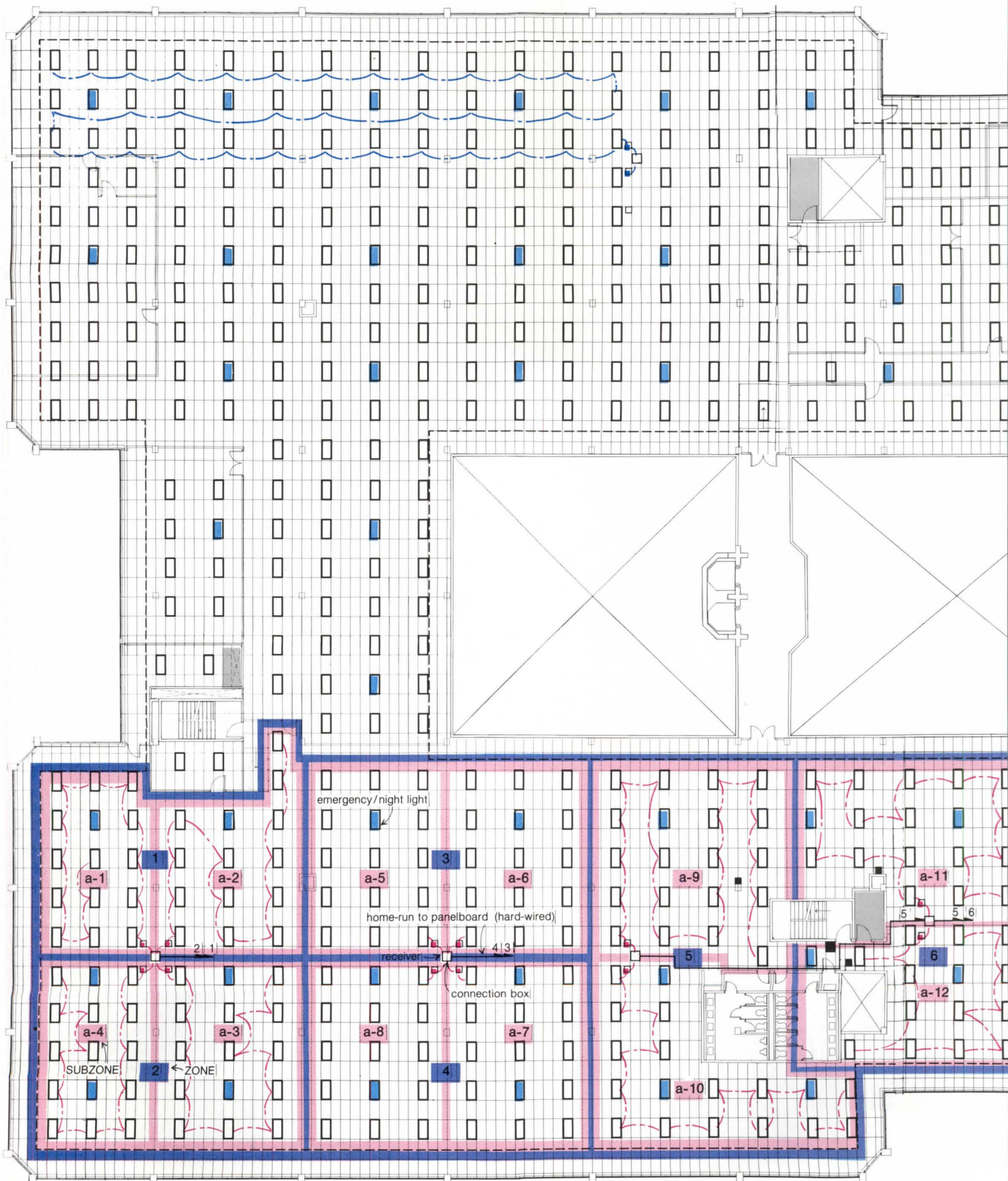


If a plug represents the essential element of one of the newer forms of flexible wiring, then the plug attached to a modular length of cable represents a basic system. This drawing illustrates both the components and the advantages of cable-set wiring systems for lighting—in this case Reloc's. Components are modular. Flexible armored cable loops around obstructions. Switch legs can be relocated or reconfigured within the system when panels or fixtures are moved. A lighting selector module facilitates dual-level switching of fixtures (either one or two lamps on). Since all components are demountable and reusable, they qualify for accelerated depreciation and an investment tax credit. Though the systems differ in the details of their hardware, one way or another they perform basically the same functions. At far left:

Walker Parkersburg cable plug of Lexan and a companion wiring adapter for lighting fixtures. Also a metal-cased Hubbell plug and fixture receptacle which are color-coded and physically keyed to prevent mismatching of different voltages. Hubbell components can make or break with power on. Top right: A Reloc connection box for tapping power. Bottom right: Dual-Lite's five-face connector—an assembly of five internally-bussed receptacles—permits panel or local switching, unswitched power, dual switching control and alternate switching of fixtures.

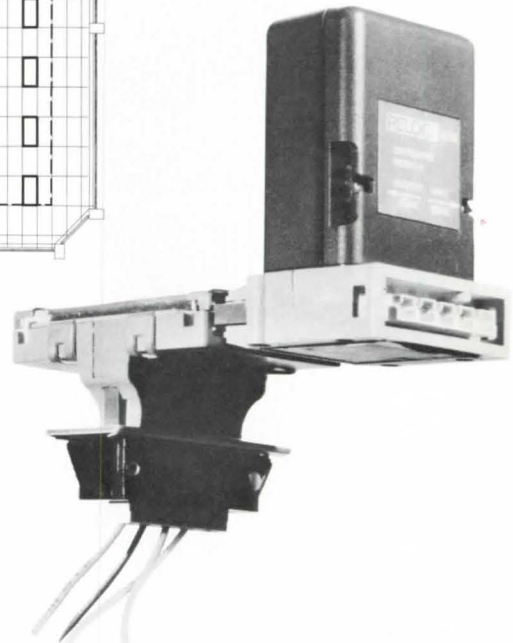
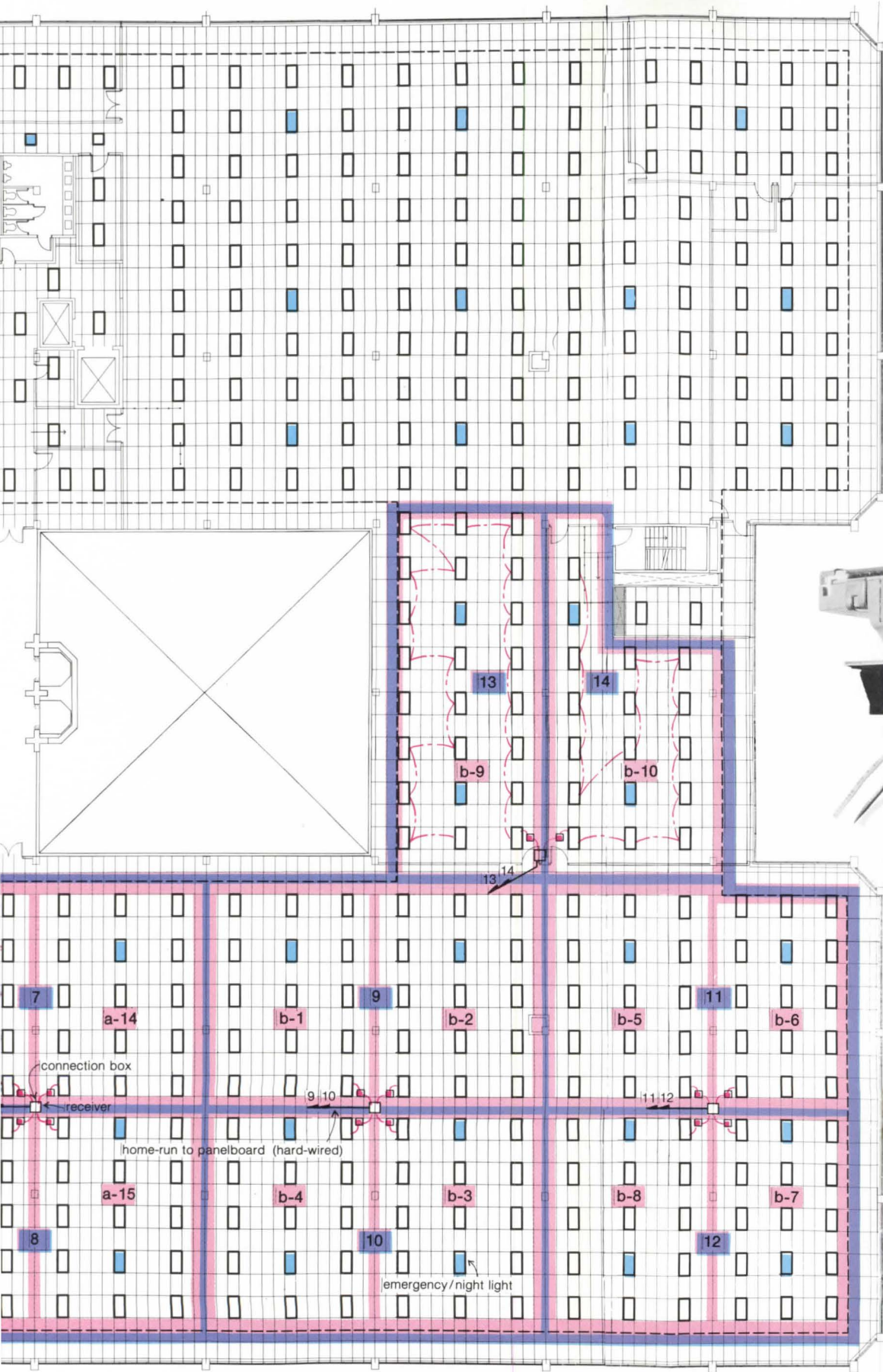


Lighting can be switched from anywhere,  
and lighting zones easily reconfigured,  
in a novel application of cable sets



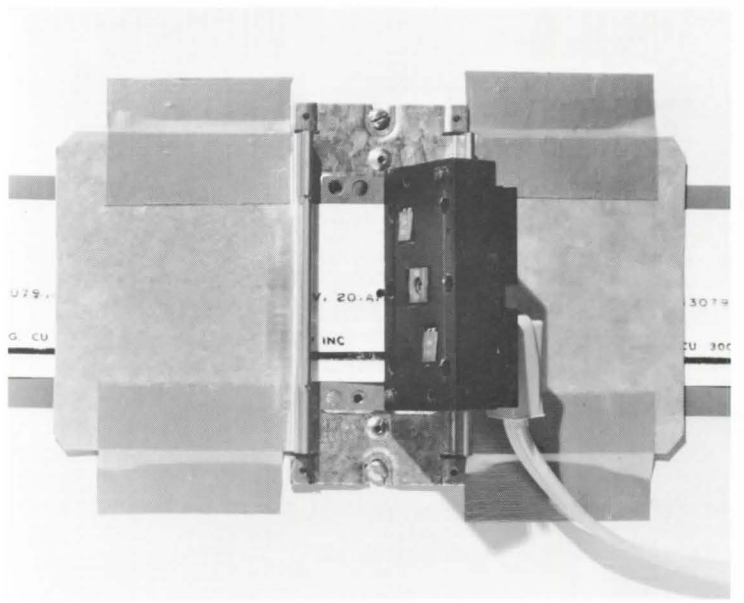
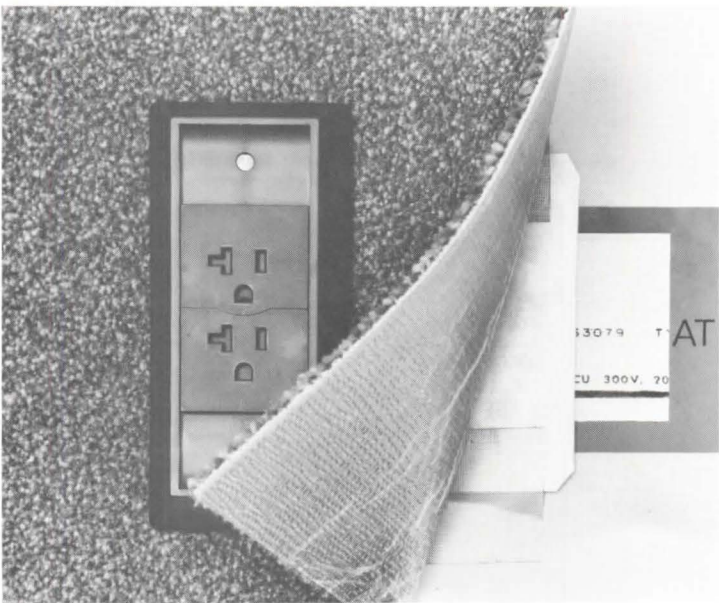
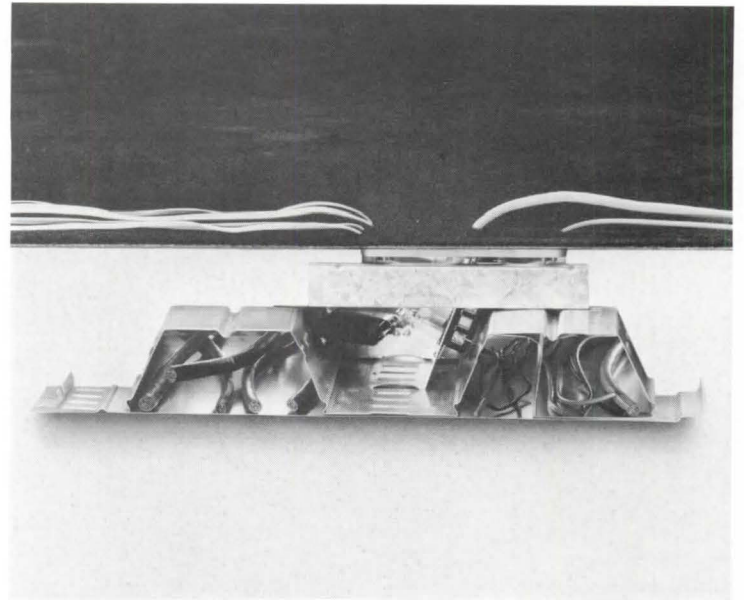
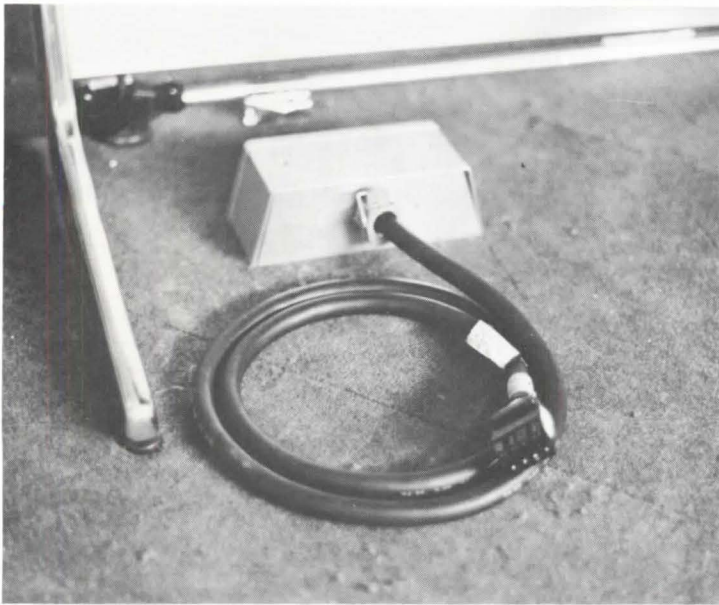


The reflected ceiling plan of Triad 2 office building for Chase Manhattan Bank on Long Island demonstrates lighting designer James Kaloudis' resourceful anticipation of the flexibility potential of the cable-set-system approach; and his further enhancement of the system with state-of-the-art semiconductor switching devices. Kaloudis, of Meyer, Strong & Jones, designed the circuits so they are not fully loaded, which gives more leeway in reconfiguring lighting circuits later. (Circuits now have 26 or 28 fixtures but capacity is there for 40.)



The top portion of the drawing shows how the owner can recircuit the fixtures to obtain a new lighting zone corresponding to a different room layout. The power-line-carrier switching devices (photo above) allow lighting circuits to be turned on or off from any location without "hard" wiring to fixtures. The system comprises transmitters at a control location and a receiver at the beginning of each circuit. The transmitter modulates a coded signal on the a-c power line which causes a mechanical switch to actuate in the receiver. Each receiver is at the plug end of a cable set connected to the first of a daisy chain of fixtures. Lighting will be controlled from a remote console(s) similar to the one in the photo, top. It is important in the beginning, says Kaloudis, to lay out the fixtures in equal zones of symmetrical configuration which optimizes reconfiguration possibilities, and makes the system easier for contractors to understand, bid and construct. The cable-set system is Reloc, and semiconductor switching devices are by Leviton.

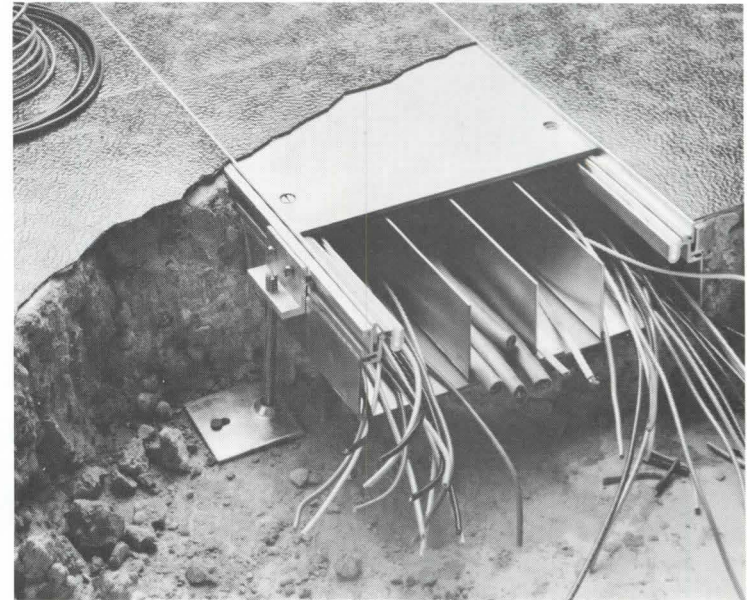
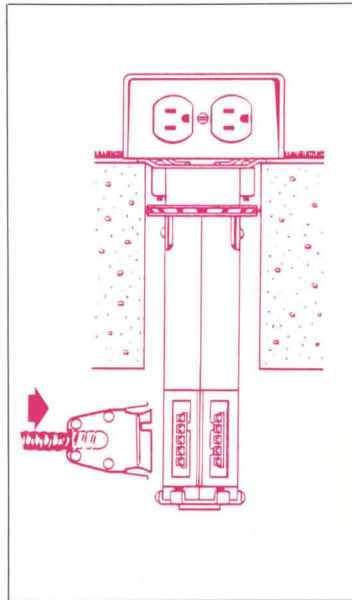
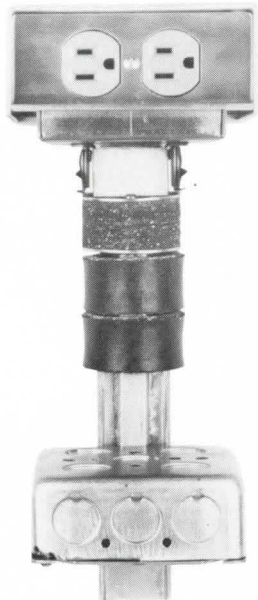
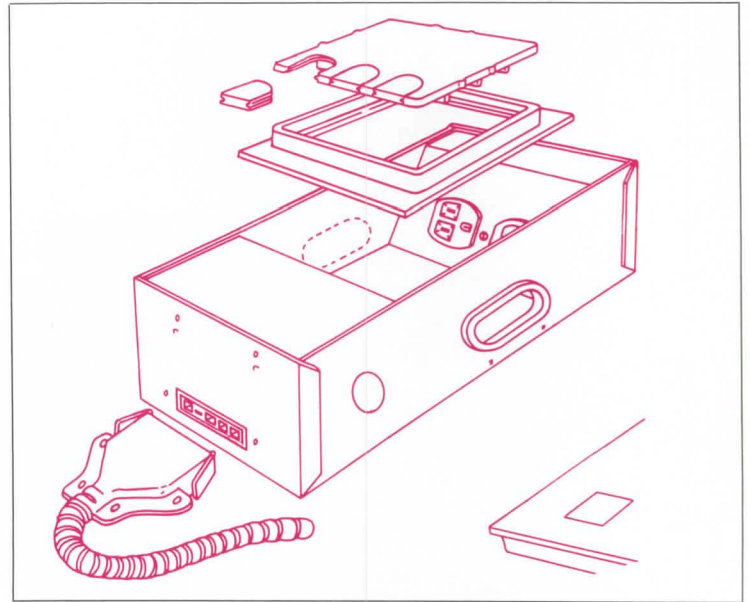
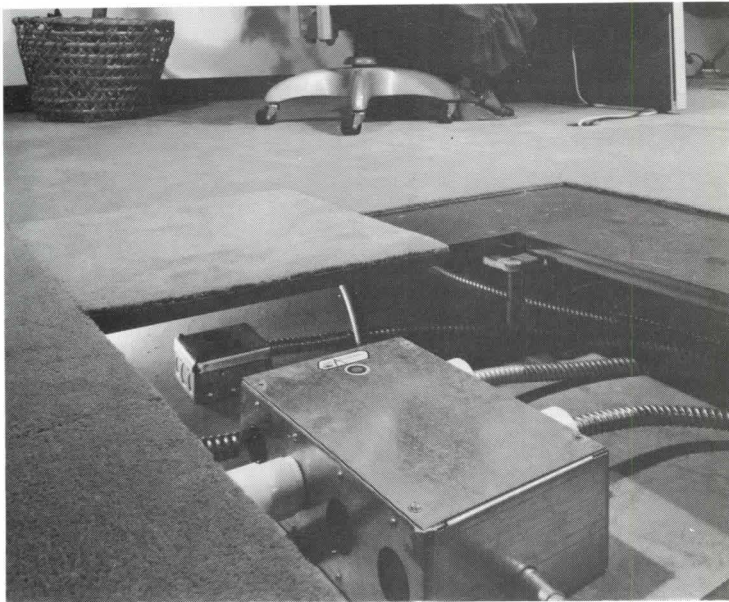
**New and refined systems deliver power and communications to suit technical, economic and esthetic requirements**



*Flat conductor cable (FCC), otherwise known as undercarpet cable or flat wiring, can literally go where no other branch wiring system has gone before—its conduit being the space between slab and carpet square. Outlets for power, telephone and data cables mount atop the carpet. In some cases (for example with full-height partitions or systems furniture) designers may wish to mix components from*

*various wiring systems. A flexible whip (top) from Thomas & Betts' undercarpet pedestal can be plugged into an "electrified" partition. Other special connector assemblies facilitate tapping into in-floor cellular or duct-type systems for additional in-space power and communications services. As communications requirements have burgeoned and become subject to greater security needs, manufacturers have adapted their cellular floor systems accordingly.*

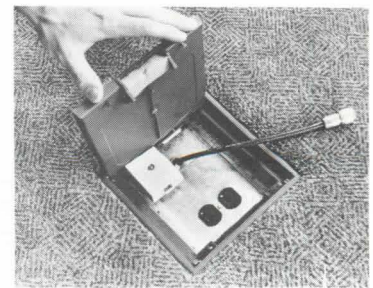
*In a new twist, H. H. Robertson's Taproute III system (top) comprises a subdivided cell that can isolate data cables from telephone and power cables. Data cables, shown at far right, can be accessed, selectively, via a flush-mount preset fitting. To facilitate quicker installations with undercarpet cable, AMP has developed a low-profile direct-connecting receptacle for power which either terminates, or taps into, a flat cable run. The unit is shown assembled, lower left; unassembled, above. A companion coaxial cable, far left, interconnects components of a data processing system.*



Access floors are not merely conduit for wiring but are floorwide channels offering virtually unlimited capacity and flexibility. While their initial costs are high in the spectrum of systems, their eligibility for accelerated depreciation and investment tax credits makes them cost-competitive with other high-quality systems. Donn's system (top photo and diagram) comprises 2- by 2-ft die-formed steel panels supported on four corners by pedestals secured to the slab. Each panel corner is fastened to the pedestal. Panels of the various access-floor systems are electrified by connection directly to armored cable or as shown here, for greater flexibility, to a plug-in-type system. An owner will generally purchase the number of electrified panels recommended by his consultants, plus extras for the future.

When low first cost is more important than a large measure of flexibility (or when tenants are unknown), architects and engineers often turn to fire-rated poke-through fittings. And, because it is difficult for designers to predict exactly where work stations may be located in open plans, these fittings can be used later to provide electrical services exactly where needed. Recent refinements include: 1) added capacity for telephone and data cables; 2) smaller poke-through tubes to reduce slab-coring costs; 3) fittings with receptacles for interfacing with cable-set wiring systems; 4) after-set poke-through devices for cellular flooring that eliminate or minimize the need for adding fireproofing to the metal

deck. The photo shows Raceway Components' 2-in. fitting; the diagram, Reloc's plug-in unit. In a new version of underfloor duct—the original in-slab flexible electrical distribution system—Midland-Ross addresses the imperative of electronic isolation between data and telephone cables while permitting the delivery of services through a single, flush-mounted access fitting.

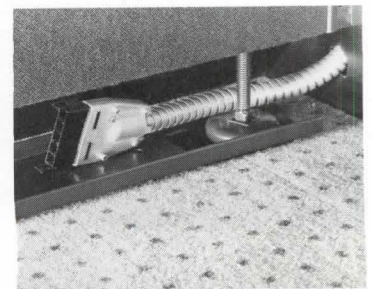
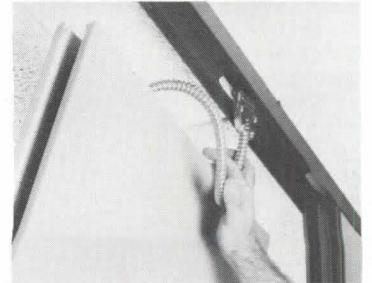
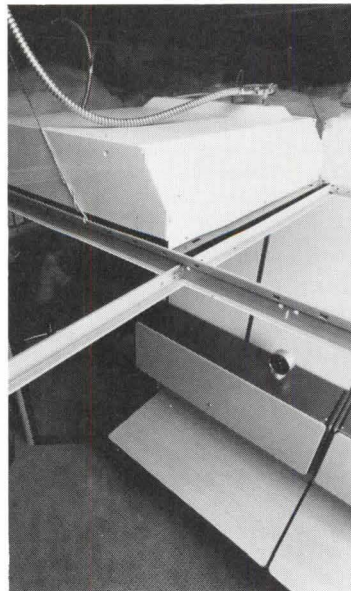


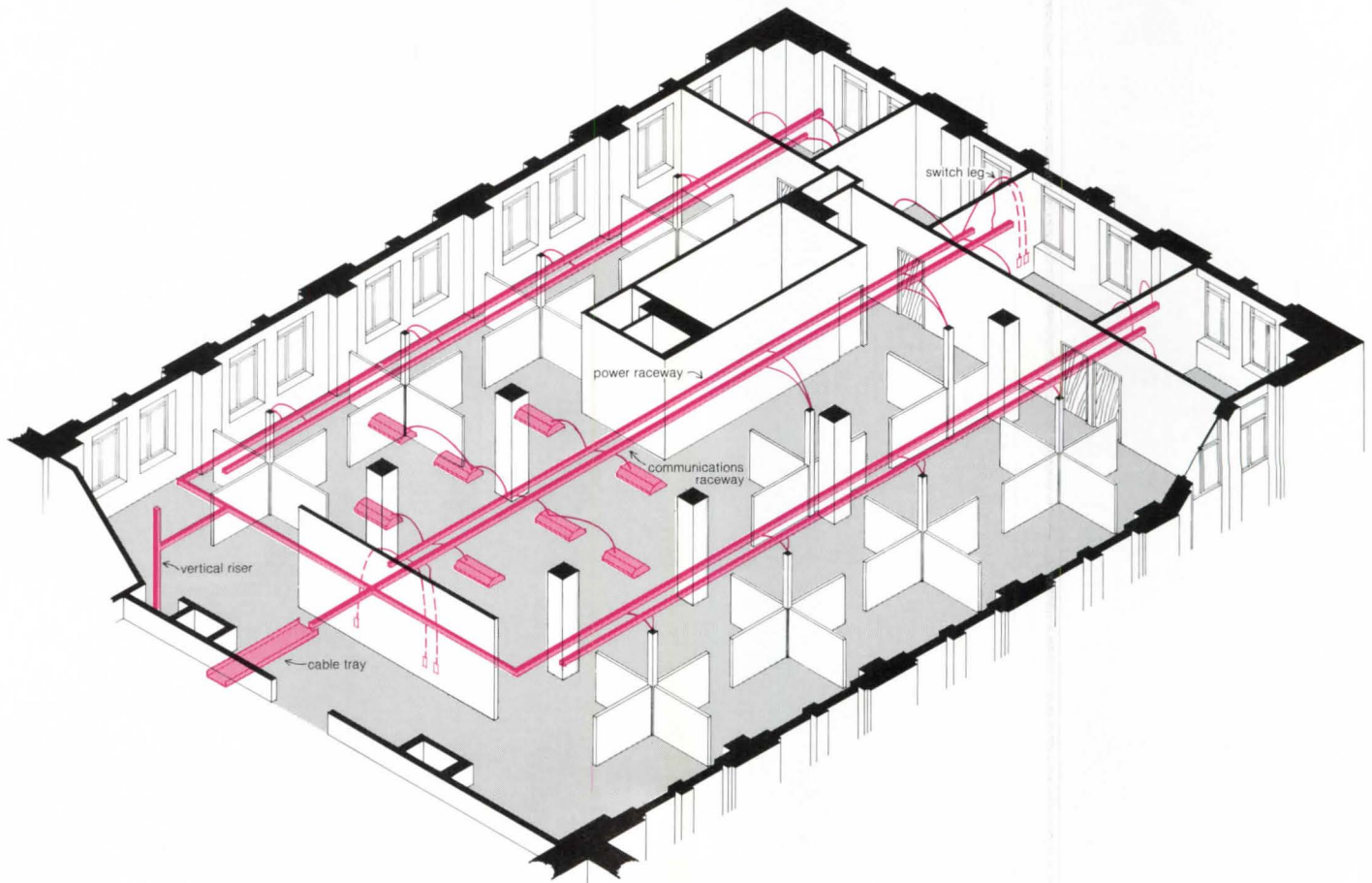
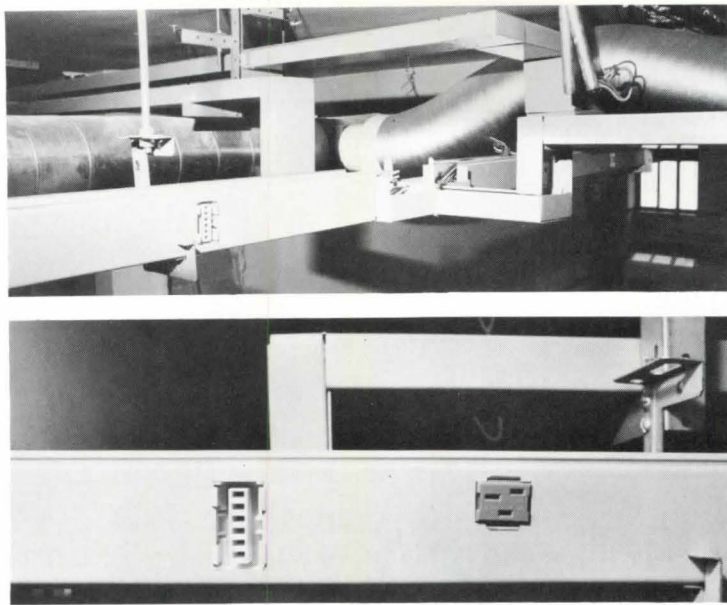
Two installations illustrate how integrated systems for light, power and communications work in spaces designed for change



*Vaughan Walls relocatable partitions—in a new, electrified design—can be plugged in, and, when offices change, unplugged, moved, and power plugged in again for light switches and convenience outlets. This installation is the company's own new offices in an office/light-industry area of Dallas, in which their full-height, site-assembled gypsum-board partition panels are fitted with Reloc's cable-*

*set wiring system. Also, the wiring in the Vaughan Walls can be tied into the same kind of wiring in the open-plan Action Office system of Herman Miller (right, below) which now owns Vaughan Walls. The 2- by 2-ft fluorescent fixtures are electrified by Reloc's cable sets that couple to factory-installed fixture receptacles via a lighting selector module. The cable sets for convenience power and switch legs in the Vaughan Walls panels (above right) are installed in the hollow spaces between faces of the panels as they are assembled on site.*





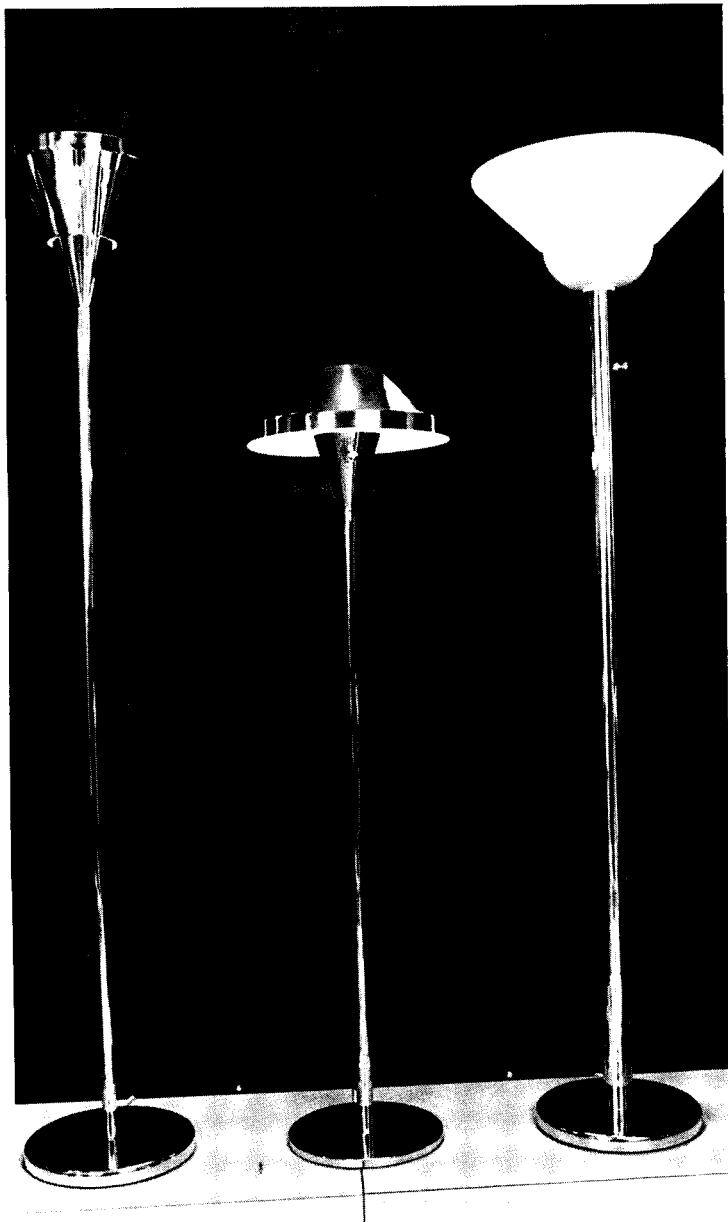
In renovating 260,000 sq ft of office space in an 11-story, 50-year-old state office building in Wisconsin, project architect Dale Volkening, of HSR Associates, sought a power and communications delivery system to replace the existing combination of duct, poke-through and wall receptacles which had been gutted or abandoned. After considering alternatives, Volkening selected Wiremold's ODS5 overhead raceway system for tapping off to light fixtures and for supplying power and communications to open-plan work stations via short-

length telephone/power poles and to private offices via full-height partitions. One communications raceway and one power raceway serve each structural bay. Local switching of fixtures is provided for both private offices and open-plan spaces. Horizontal cable trays bridge corridors for communications cables, and vertical risers at telephone and data closets interconnect floors throughout the structure for communications. To reduce the number of telephone/power poles and to minimize their visual impact, Volkening and interior designer Del Westburg clustered the work stations. Further, the poles were painted a custom color to blend with the interior decor.

Raceway with inset receptacle (top) is an ODS5 lateral fed by a power header. The power header supplies successive laterals, which ultimately power light fixtures and convenience outlets via cable-sets. Only stock components were required to route the raceways around previously installed hvac ductwork. Lower photo shows three- and six-wire receptacles for attaching cable whips.

#### Contributors:

Stan White, Arnold & O'Sheridan; Robert W. Meyer, CRS; James Baker, Jack Esmond and Mike James, 3D/International; Larry Brookshire, Fishback & Moore; Sheldon Steiner, Flack + Kurtz; Ira Archer and Wally Peterson, Gerald D. Hines; Dale T. Volkening, HSR Associates, Inc.; James D. Kaloudis, Meyer, Strong & Jones; Al Skyles and Tony Johnson, I.A. Naman & Associates; Lou Piccirillo, Piccirillo & Brown; Nils Jonsson, Reloc Div. of Lithonia Lighting; James Gallagher, Smith Hinchman & Grylls; Michael Brandon and Gene Schabely, Syska & Hennessy; Jack Tannis, Vaughan Walls. AMP Special Industries; Burndy; Donn Corp.; Dual-Lite Inc.; Electro/Connect Div., Emerson Electric Co.; Wiring Device Div., Harvey Hubbell, Inc.; Midland-Ross Electrical Products Div.; Miller Co.; H.H. Robertson; Thomas & Betts Corp.; Walker Parkersburg; The Wiremold Co.



1  
Mare Heinlein—a designer trained as an architectural historian and sculptor in the U.S., but who now resides in Italy—has designed the various number of products shown here. As a consultant to both American and European firms, his work includes lighting fixtures in brass and marble for Nessen Lamps Inc., a folding table and chairs for Metalmobil, and marble accessories for Karl Mann Associates.

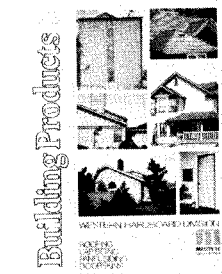
**1. Collection of floor lamps:** Model NF663 (lamp at left in photo) is a brass *torchière* that has a two-piece top reflector, slightly separated to provide an unusual ring of light when in use. Total height is 64½ in., with a 9¼-in. reflector diameter. Model NF667 (lamp in center of photo) is an all-brass floor lamp, topped by a reflector which directs light downward for more task-oriented use. A perforated metal disc prevents glare from overhead. It uses 30-70-100W or 50-100-150W bulbs. Model NF662 (lamp in right of photo) features a 17-in. diameter, white pearl-glass reflector bowl, hand-blown in Italy. The base and column are of solid brass, in a variety of finishes (polished brass, polished chrome or mirror finish). Nessen Lamps, Inc., Bronx, New York.  
*Circle 300 on reader service card*



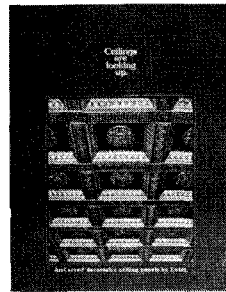
2  
**2. Table lamp:** Model NT666 counterweight lamp has a reflector that pivots up-and-down but stays in place by means of a counterweight and set screw. The base and counterweight are painted "expresso brown crinkle," while tubing and reflector come in either polished brass or polished chrome. Nessen Lamps Inc., Bronx, New York.  
*Circle 301 on reader service card*

3  
**3. Folding table/chairs:** This system was developed to offer a utilitarian, durable solution for institutions and residential applications. A specially-designed set of fittings, called the "Catch System," is said to permit an extremely stable and rigid frame when unfolded. Metalmobil, Camerano, Italy.  
*Circle 303 on reader service card*

4  
**4. Table accessories:** Made of Marne Rouge marble, which comes from the quarries of Caracaya in Italy, these sculpted pieces (ashtray and vases) are produced in limited editions. Karl Mann Associates, New York City.  
*Circle 304 on reader service card*  
*More products on page 157*

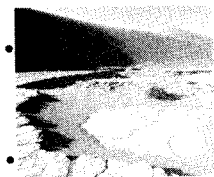


**Western building products**  
A 32-page, color brochure illustrates wood fiber building products for residential and light commercial needs in the West. Photos of roofing, siding and doors are included. Masonite Corporation, Western Hardboard Division, Ukiah, Calif.  
*Circle 400 on reader service card*

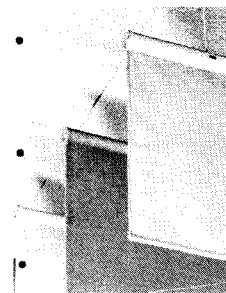


**Ceiling Panels**  
This 4-page brochure illustrates 25 ceiling panel designs. Panels fit standard 2- by 2-ft or 2- by 4-ft grids, or can be custom ordered. Drawings illustrate the patterns which are available in walnut, mirrored or white finishes. Entol Industries, Inc., Miami, Fla.  
*Circle 406 on reader service card*

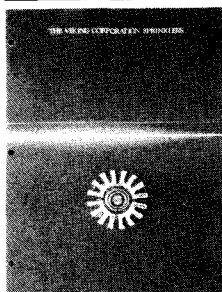
**Air Filtration & Noise Control Systems for Hot, Arid Climates**



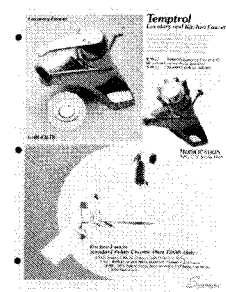
**Air filtration**  
A 12-page, four-color booklet entitled "Air Filtration and Noise Control Systems for Hot, Arid Climates" explains this manufacturer's product capabilities for desert areas of North Africa and west-central Asia. American Air Filter Co., Louisville, Ky.  
*Circle 401 on reader service card*



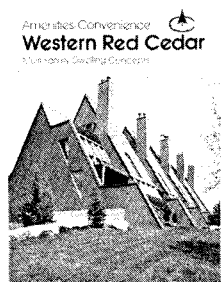
**Banners**  
A packet of information and photos illustrates uses and specifications for cotton duck banners which are available in 30 colors. Each is supported by an upper hanging tube attached to steel clips, and a chart lists 24 standard sizes. Integrated Ceilings, Inc., Los Angeles.  
*Circle 407 on reader service card*



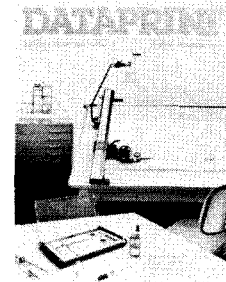
**Sprinklers**  
An 8-page brochure illustrates *Micromatic* and *Decor* fire protection sprinklers. Charts list product specifications for the industrial and commercial fixtures. Special applications are also featured. The Viking Corporation, Hastings, Mich.  
*Circle 402 on reader service card*



**Faucets**  
A color, 8-page brochure describes pressure-balancing shower valves, kitchen and lavatory faucets. Also included are modifications for tub and shower systems, including an outline of steps for conversions. Symmons Industries, Inc., Braintree, Mass.  
*Circle 408 on reader service card*



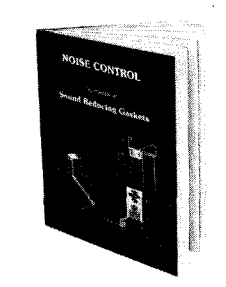
**Cedar**  
A 4-page, four-color booklet illustrates the use of Western Red Cedar paneling on architect-designed multi-family structures. Finishes are shown. Western Red Cedar Lumber Association, Portland, Ore.  
*Circle 403 on reader service card*



**Drafting supplies**  
A drafting supply catalog features thousands of brand name drafting and print supplies in stock at discount prices. All are ready for same day shipment and are guaranteed. Dataprint Corporation, South San Francisco, Calif.  
*Circle 409 on reader service card*



**Brick panels**  
A 4-page bulletin explains the R-Brick "Panel System," which consists of 1/2-in.-thick bricks adhered to polystyrene foam board. Step-by-step installation photos are included. R-Brick Panel System, Inc., Detroit.  
*Circle 404 on reader service card*



**Noise control**  
A brochure called "Noise Control" describes a series of gaskets for sound reduction. Information is also available on the "1-R" system, STC ratings, frequency and frequencies. Zero Weather Stripping Co., Bronx, N.Y.  
*Circle 410 on reader service card*



**Glass products**  
A 28-page brochure describes the energy-related performance of glass products and glazing systems. Data such as daylight transmittance and reflectance, glass dimensions, weight statistics and design guidelines are included. PPG Industries, Pittsburgh.  
*Circle 405 on reader service card*



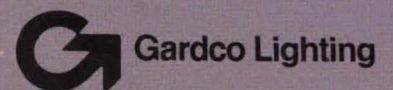
**Roof waterproofing**  
An 8-page color brochure explains a flat roof waterproofing product called "Elastaseal," which is a liquid that can be sprayed, rolled or brushed onto flat roofs and dries into a thin membrane in 2 to 6 hours. London Chemical Co., Columbus, Ohio.  
*Circle 411 on reader service card*





## Leading Lights

Low-level lighting that speaks of new approaches. A permanent enhancement by day, a wide and even light source by night, glare-free in the strictest, Gardco, sense. Vandal-defeating, weather-excluding, maintenance-easing and deft in installation. Rugged in their refinement, Gardco bollards are as well-conceived as the environments they enrich. Gardco Lighting, 2661 Alvarado Street, San Leandro, California 94577. 800/227-0758 (In California 415/357-6900).





**Computerized systems**

An 8-page color brochure describes a computerized plant management system for large- and medium-size businesses and its applications in energy, security and facilities management, maintenance dispatch and production monitoring. SRL Controls, Dayton, Ohio.

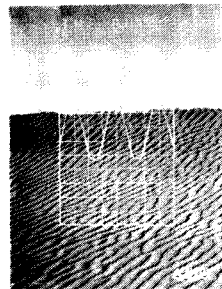
Circle 412 on reader service card



**Wallcovering**

Fabric-backed wallcovering for commercial use is featured in a four-color brochure. Photos illustrate details of wood-grained covering while patterns and sizes for various mirrored and metal coverings are listed in a chart. National Products, Inc., Potter Industries Group, Louisville, Ky.

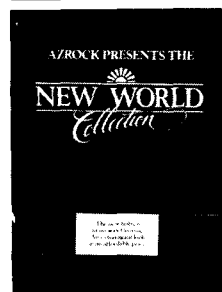
Circle 413 on reader service card



**Furnace**

A color, 8-page brochure describes the gas fired PULSE furnace system. A two-page diagram outlines each feature of the furnace, while another diagram details its operation. Lennox Industries, Dallas, Texas.

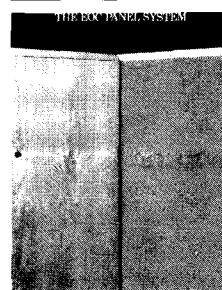
Circle 414 on reader service card



**Floor tile**

A 6-page brochure illustrates the "New World Collection" of no-wax floor tile. Four styles of the residential or light commercial urethane flooring are shown, each with its own color selection. Azrock Floor Products, San Antonio, Texas.

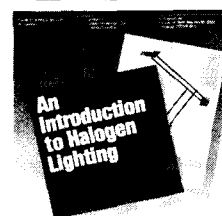
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**Panel system**

An 8-page color brochure illustrates A.P.S. System panels for commercial use. Photographs and drawings illustrate the panel configurations while text describes the 2 1/2-in.-thick panels. Executive Office Concepts, Compton, Calif.

Circle 416 on reader service card

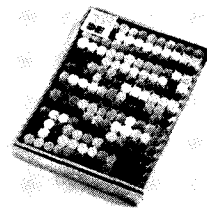


**Halogen lighting**

An 8-page guide entitled "An Introduction To Halogen Lighting" features a pictorial survey of Artemide's halogen floor, table, wall and suspension lighting, augmented with information on halogen's function, uses and advantages. Artemide, New York City.

Circle 417 on reader service card

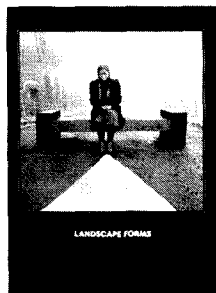
**Artemide**



**Carpet**

A collection of 180 colored nylon fiber carpet tufts in a display box is designed for use with this manufacturer's catalog, which contains more than 200 print patterns and coordinating solids. Custom coloring and custom prints are also available. Durkan Enterprises, Inc., Dalton, Ga.

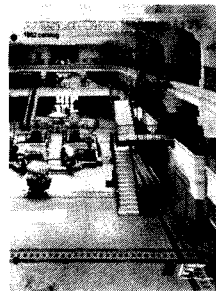
Circle 418 on reader service card



**Benches**

A 16-page, four-color brochure describes lines of wood and fiberglass benches for interior and exterior use. Most of the wood models, available in red oak, redwood or purpleheart, are reinforced with steel. Landscape Forms, Inc., Kalamazoo, Mich.

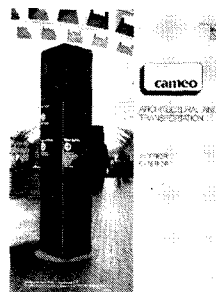
Circle 419 on reader service card



**Tile**

A 40-page color brochure illustrates the entire glazed, quarry and ceramic mosaic product lines, plus ceramic mosaic stock patterns, pregrouted tile systems, trim shapes. American Olean Tile Co., Lansdale, Pa.

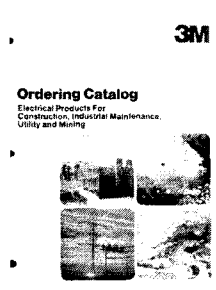
Circle 420 on reader service card



**Transportation graphics**

An 8-page color brochure illustrates porcelain enameled and vitreous enameled aluminum signage and murals. Photographs show panels in place in airports, office buildings and highways. Cameo, Los Angeles, Calif.

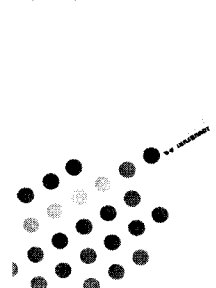
Circle 421 on reader service card



**Electrical products**

A 44-page catalog lists and describes electrical products for construction, industrial maintenance, utility and mining. Categories include tapes, resin, aerosols and coatings, splicing kits and terminals. 3M, St. Paul, Minn.

Circle 422 on reader service card



**Laminates**

A 4-page color brochure called "Color Quest," shows the firm's solid color line of laminates, with text describing available grades and sizes. All laminates are standard in a softly textured moderately reflective finish. Wilsonart, Temple, Texas.

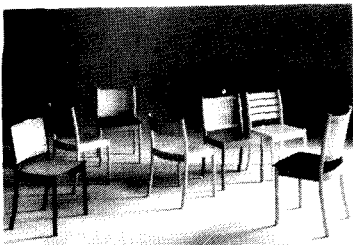
Circle 423 on reader service card

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***This  
fireproofing  
passes  
UL fire tests.  
Is that  
enough?***



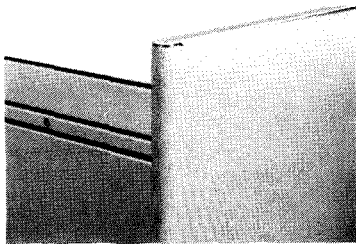
*Sprayed-Fiber Fireproofing*



**Tested chair**

The domestically-made beechwood *Unichair* is constructed for extra durability: the entire assembly is held together by brackets that fit through each leg and connect to the seat. One basic model with four component parts makes possible all seven configurations shown here. Finish options include natural wood, lacquer colors and aniline stains. Atelier International, Ltd., New York City.

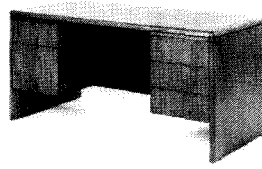
Circle 310 on reader service card



**Postformed laminates**

An alternative to wood veneer in the *Zapf System* office, laminate surfaces have postformed, rounded edges, with no crevices to trap dirt. Offered in beige, light gray, medium gray and slate, laminates can be ordered on all horizontal surfaces. Knoll International Inc., New York City.

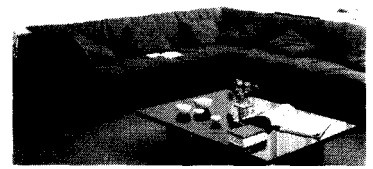
Circle 313 on reader service card



**Soft-edge desk**

Double pedestal desks are designed with soft rolled edges and black reveal lines, and are offered in both a dark brown oak and a light oak finish. Secretarial and word processing versions of the "Series 1600" desks come in a range of sizes. Alma Desk Co., High Point, N.C.

Circle 314 on reader service card



**Seating system**

The *Bonte* seating system is constructed with polyurethane foam padding over a rigid molded foam structure. The seat is suspended on elastic bands. Cushions are filled with polyester fiber. Covers are removable for dry cleaning. Beylerian Ltd., New York City.

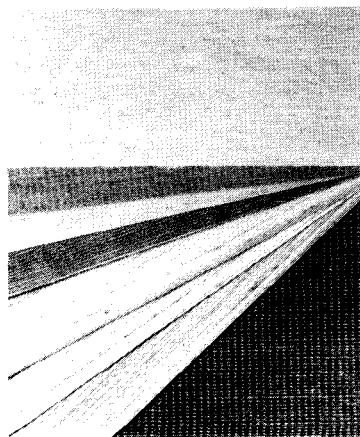
Circle 315 on reader service card  
Continued on page 159



**Operator chairs**

The "9600" series *WorkSeat* is said to be both cost effective and comfortable, providing short arms for elbow support and close-to-work operation. Molded cushions allow unrestricted movement while providing proper body support. The *WorkSeat* is available in chrome, or one of 12 enamel colors. Cramer, Kansas City, Kansas.

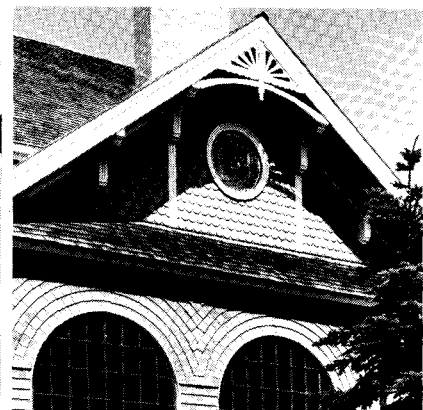
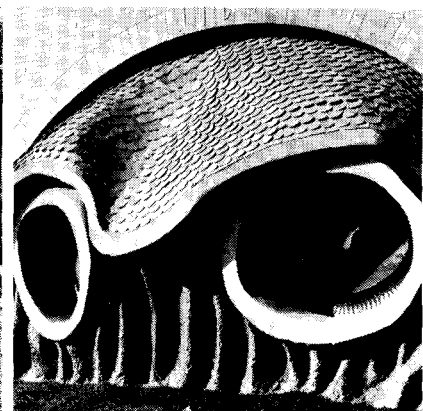
Circle 311 on reader service card



**Fabrics**

In an expanded showroom which now exhibits 3,000 upholstery, wallcovering and drapery fabrics, six major new fabric collections will be highlighted. The six collections are: wool coordinates of 100 per cent wool; Wool Heather in a blend of 70 per cent wool and 30 per cent nylon; Finn wools of 80 per cent wool and 20 per cent nylon; the safety series of modacrylic and nylon; the nylon series of 100 per cent nylon; and the Milan collection. Maharam Fabric Corp., Hauppauge, N.Y.

Circle 312 on reader service card



**FANCY IDEAS.**  
With Shakertown Fancy Cuts Cedar Shingles.

Create your own unique patterns and textural effects for walls, ceilings and roofs. Interior or exterior.

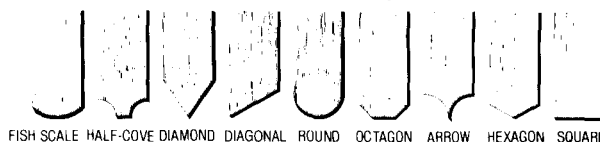
Ideal for accents and combining with other materials for special surface treatments.

If you would like more information

on Fancy Cuts and how they are being used, call Joe Hendrickson 1-800-426-8970 or attach your business card to this ad and mail to Shakertown Corp., Dept. AR, Winlock, WA 98596.

We will send you a sample, design guide and many more fancy ideas.

Available in 9 styles.

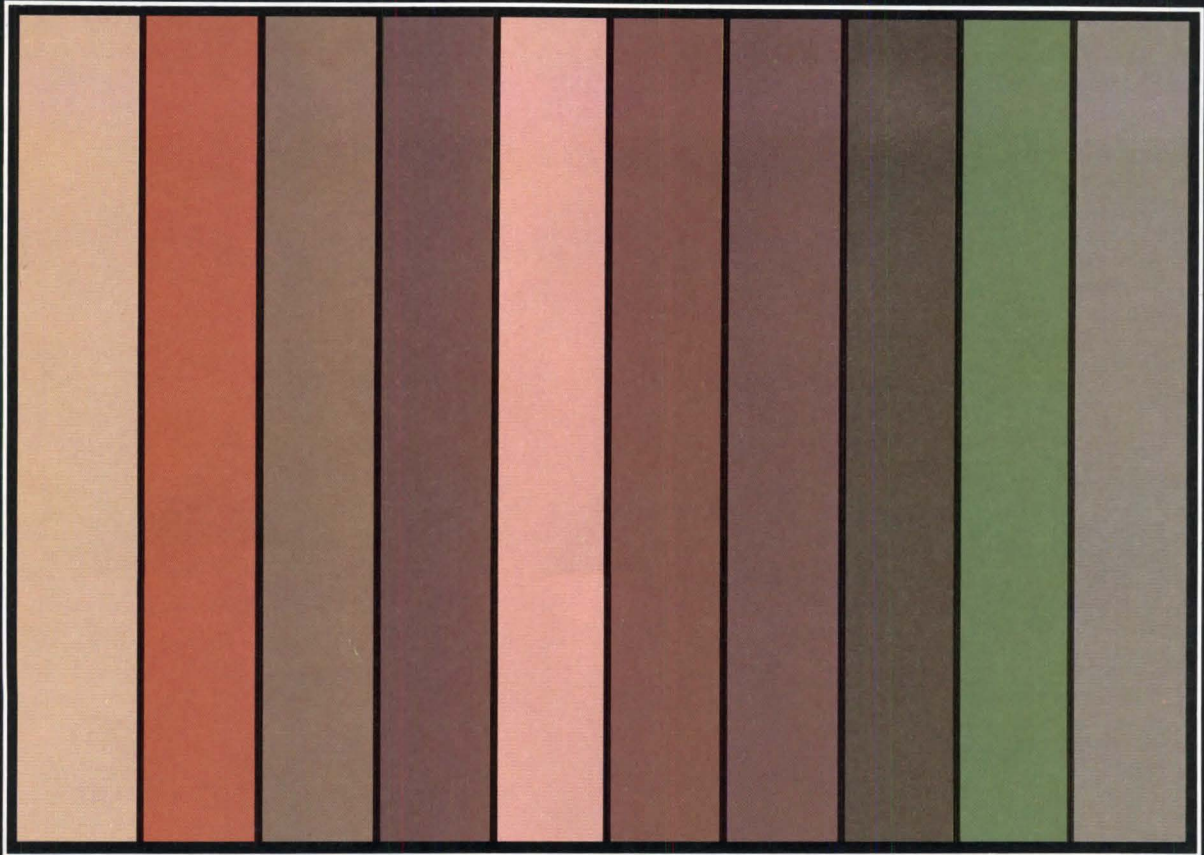


FISH SCALE HALF-COVE DIAMOND DIAGONAL ROUND OCTAGON ARROW HEXAGON SQUARE

Circle 71 on inquiry card

*This is Nevamar*

*New*



*Vogue Collection.  
Ten more contemporary colors in a  
continuing collection. Twenty in all, selected  
with designer input to anticipate emerging  
design trends... with more to come as new  
directions develop. Now stocked in  
Glossies as well as in the standard  
textured finish. For samples,  
call 1-800-638-4380*

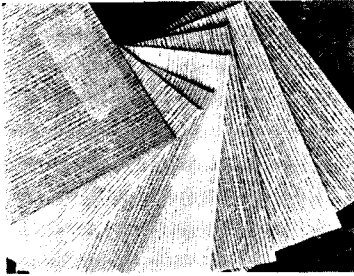
**NEVAMAR**  
DECORATIVE LAMINATES  
NEVAMAR CORPORATION ODEONTON, MARYLAND 21113

Circle 72 on inquiry card



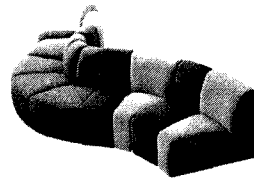
**Vinyl wallcovering**

The "Desert Sand" *Koroseal* wallcovering collection is designed to coordinate with many current upholstery and carpet colors. Containing 100 shades, it features an expanded range of grays in both warm and cool values; yellows tending to orange tones; and browns tending toward mauve. Vinyls are UL Class A rated, and meet Type II requirements for FS CCC-W-408A. BFGoodrich, Fabricated Polymers Div., Akron, Ohio. Circle 316 on reader service card



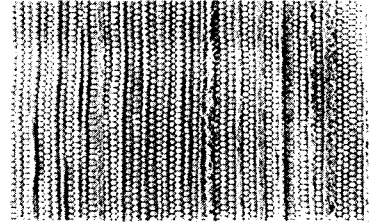
**Fabric verticals**

More than 50 new colors have been added to the *Flexalum* vertical vanes and *Decor* blind lines. Pictured here are eight pastel shades offered in a tightly woven acrylic fabric for "Vertical Blinds." Hunter Douglas Window Products Div., Totowa, N.J. Circle 319 on reader service card



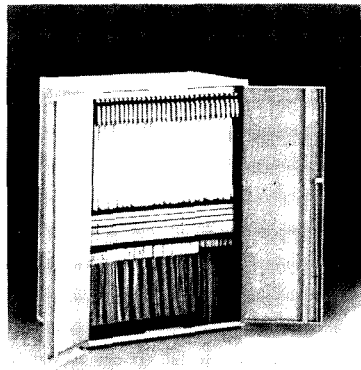
**Modular**

Individual elements of *Artifort's* "Mississippi" lounge group are linked together with a U-shaped device, which also serves as a foot. Units are constructed using metal frames with rubber webbing; seats and backs are upholstered over molded, flame-retardant polyurethane. Castelli Furniture, Inc., Bohemia, N.Y. Circle 320 on reader service card



**Cowhide by the yard**

Suitable for upholstery and wallcovering, flameproofed "Wholly Cow" is a woven top grade cowhide material, backed with acrylic latex. This close-up photograph shows the irregular pattern of the weave, available in chamois, pecan, tabac, mushroom, claret and azure. Jack Lenor Larsen, Inc., New York City. Circle 321 on reader service card Continued on page 161



**Graphics storage**

Offering both vertical and horizontal filing methods, the compact "SuperFile" lets the user choose the interior components that best fit his graphics storage needs. Two types of cabinets (five sizes) are available, with the largest size designed for a maximum 42- by 60-in. sheet. Each file can use any combination of Plan Hold friction binders for vertical filing. Plan Hold Corp., Irvine, Calif. Circle 317 on reader service card



**Furniture**

A contemporary collection of executive office furniture is rendered in sculptured oak veneers and solids with hand-rubbed oak finishing. The desk and service unit feature tops and bases of leather with access fittings of solid brass. Myrtle Desk Co., High Point, N.C. Circle 318 on reader service card

# Designing Quality Communications Systems!

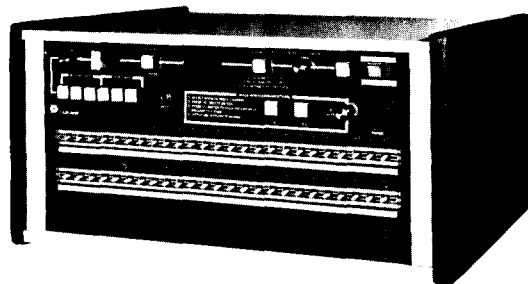
**You're the expert in your field.** You're the one who put all the time, talent and energy into the project. You specify quality materials to match the quality of your work.

**We're the experts in our field** — the field of communications. We're Dukane; we manufacture communications systems for schools, hospitals, prisons, institutions and industry. Our systems are designed to meet your requirements for internal communication, public address, paging, monitoring, tone signaling and background music. Dukane offers a full range of quality products from the simple two-way Compact Communications System to the highly sophisticated microprocessor controlled System 1200.

Our commitment to your project doesn't end with the sale of the product. We have a team of highly trained systems engineers who will assist you with the design of a system to meet your specific needs. A nationwide network of Dukane distributors provide on-site communications planning, local installation and maintenance.

We've helped experts in your field with communications systems for the Harris County Jail in Texas, the Miami School District in Miami, Florida and the Market Square Arena in Indianapolis, Indiana. We'd like to show you what we can do for you . . . expert to expert.

**Attach your business card to this ad and send for free information.**



DUKANE CORPORATION/COMMUNICATIONS SYSTEMS DIVISION  
ST. CHARLES, ILLINOIS 60174 312/584-2300



Circle 73 on inquiry card

# BART TRAINS WON'T SWITCH



After 10 years experience with wool, BART is staying on the track with pure wool carpet. BART, San Francisco's modern automated Bay Area Rapid Transit System, began service in 1972. In each car 100% pure wool sandstone/gold/orange Moresque carpet was installed.

Every work day 190,000 riders—over 5 million a year—trudge on the carpet surface depositing mud and dirt; leaving coffee spills, grease and smoldering cigarette ends.

Wool's long wear, resilience and lasting appearance are equal to the challenge. Soil and stains are removed with monthly shampooing. Burns are easily brushed away, discouraged by wool's natural flame resistance.

BART is completely sold on pure wool's durability and easy maintenance. They are now planning to order 60-150 new cars, and for the carpet they insist on the same 100% pure wool specifications they have used for a decade.

This is the kind of satisfaction your clients can expect from pure wool, especially when you consider that wool carpet's lasting beauty and long life make it the most cost-effective choice.

**Again 100% pure wool sets the standard of carpet excellence.**



PURE WOOL PILE

The Standard of Carpet Excellence.

The Wool Bureau, Inc., U.S. Branch  
of International Wool Secretariat  
360 Lexington Ave., NY, NY 10017  
212/986-6222

The Woolmark is a registered certification mark owned by The Wool Bureau, Inc.

# “Elevette”<sup>®</sup> your condos’ most practical status symbol



The “Elevette” home elevator is so distinctive, it puts your condo in a class by itself. But that’s the least of its advantages. It’s also:

**Convenient** . . . Instead of trudging up and down stairs, you go from floor to floor with the push of a button (and save all that extra energy for tennis!).

**Handy** . . . Have something bulky to take up-stairs? “Elevette” does the job quickly, quietly, effortlessly.

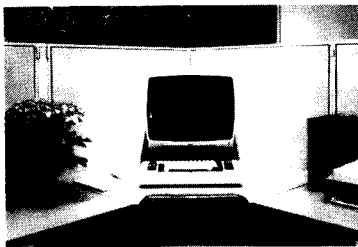
**Helpful** . . . It saves time and effort. And best of all, it increases your condo’s value. Sure, the “Elevette” is a status symbol. But no other status symbol has ever been this practical.

When planning your next project, don’t just allow space for “Elevettes” to be installed in the future. Have them installed as original equipment. Make the “Elevette” a selling feature.

Designed specifically for single family use.

**Write for Full Information and Free Literature.**

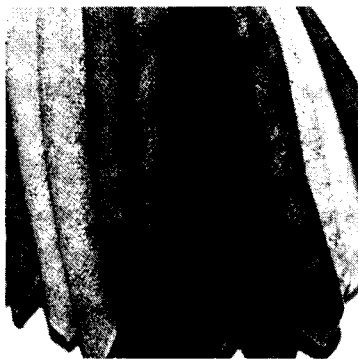
**INCLINATOR COMPANY OF AMERICA**  
DEPT. 52  
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Circle 75 on inquiry card



### Work surfaces

The CRT corner work surface is panel-mounted and is available in either 36- by 36-in., or 42- by 42-in. widths. The front edge is mitered and permits a 24-in.-deep work surface to be aligned at either side. The split-top work surface consists of a primary and a secondary top connected by an L-bracket. Another top features a heavy-duty lazy-Susan swivel. All surfaces are available in laminates in either solid colors or wood grains. All-Steel, Inc., Aurora, Illinois.

Circle 322 on reader service card



### Icelandic wool

An Icelandic wool collection, fleece-dyed and woven in 36 colors, is available in plain weave stripes and solids, in addition to coordinated panel fabrics and upholstery twills. All fabrics have the soil-resistant and flame-retardant qualities inherent in Icelandic wool. Rudd Textiles, a division of Rudd International Corp., Washington, D.C.

Circle 323 on reader service card



### Silk wallcoverings

The 17th “Vescom” collection consists of 25 all-silk paper-back wallcoverings, all with a Class A flame spread rating for contract applications. The color range of the imported materials is mostly muted, but there are some deeper shades such as Cabernet Sauvignon. Gilford, Inc., New York City.

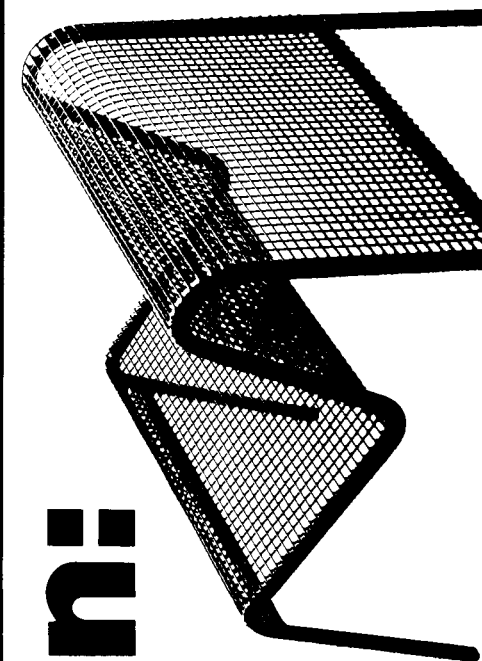
Circle 324 on reader service card  
Continued on page 167

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Kroin Architectural Complements

# Kroin



Anchors and ganging clamps insure configuration integrity and deter vandalism when moveable seating is grouped in sequence.

Mobil is part of a series of Park and Garden Furniture, manufactured in synthetic coated tubular steel and wire mesh, available exclusively from Kroin.

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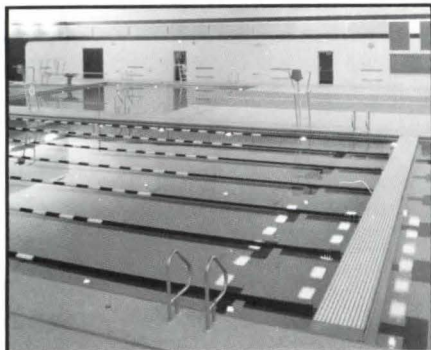


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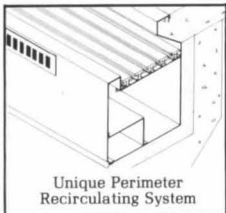
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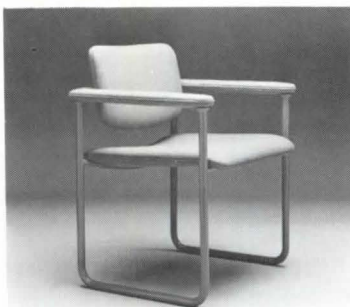
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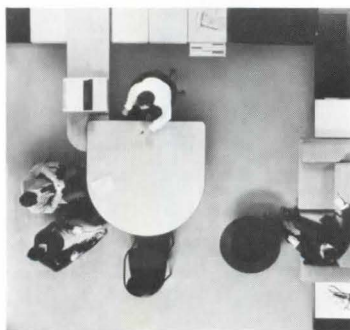
### Armchair

The Stanyan armchair, designed by Brian Kane, has a 1-in. tubular steel frame available in polished chrome or in 18 different painted finishes. The arms are available upholstered or in solid oak or walnut. The seat and back come in any fabric or leather. Metropolitan Furniture Corp., South San Francisco, Calif. Circle 325 on reader service card



### Electric terminal table

This is a terminal-sharing device which allows each user to adapt the terminal position to his individual needs. Two electric motors independently raise and lower the keyboard and the screen platform. Additional adjustment of the keyboard platform from front to back is also possible. The table may be ordered with or without pedestals. Finishes include oak, walnut or mahogany veneers as well as Formica high-pressure laminates. JG Furniture Systems, Quakertown, Pa. Circle 326 on reader service card



### Furniture

The S4 Series, a group of integrated furnishings and component parts, consists of primary and secondary work surfaces, cube storage units, a high storage/wardrobe unit, and several seating solutions. Seating solutions include an upholstered management chair, a pull-up chair and upholstered modular seating units. Dunbar, Berne, Ind. Circle 327 on reader service card

Continued on page 169

# Kawneer.

It means framing systems engineered for versatility, economy and performance.



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the designer's element

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Herb Burnham, Daniel International

# “Bell designs systems where form follows function.”

No project ever goes as planned. Nowhere is timing more critical than in your industry—where every job is customized and each contingency can keep it from coming in on budget and on time.

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Daniel International, in Greenville, South Carolina, put Bell knowledge to work to meet their total telecommunications needs. With their Dimension PBX, Daniel realized net savings of more than \$200,000 the first year, and they anticipate greater savings with each succeeding year.

Daniel wanted a reliable communications system that could grow and change as fast as contingencies develop in each job. According to Herb Burnham, Director of Management Services, “A lot of our jobs are accomplished through task forces. With Dimension PBX, we can move phone numbers when work groups change—fine tune our operations ourselves. That’s a big help and a big savings.”

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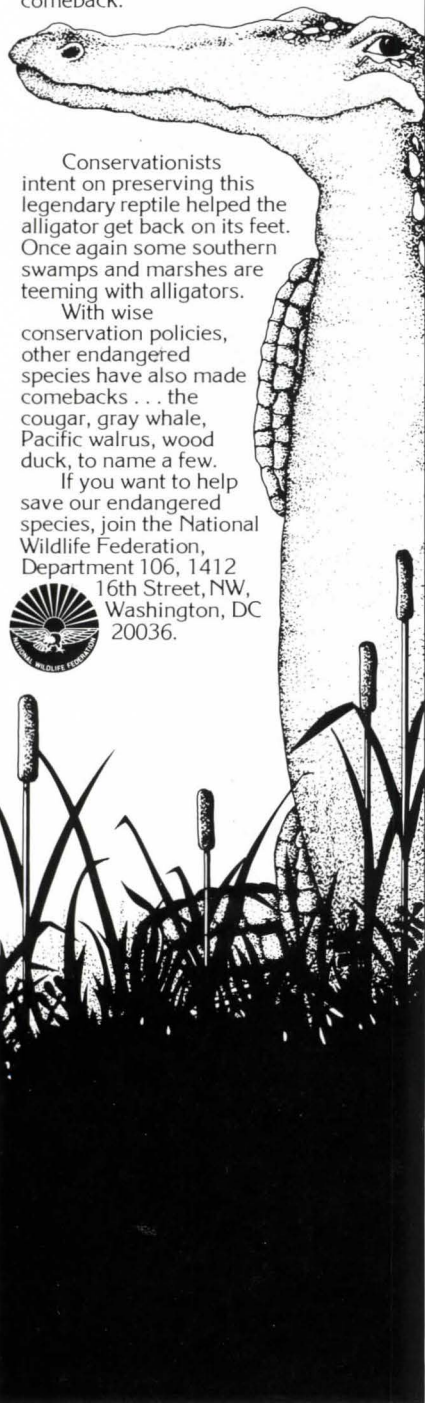
## The knowledge business



## Back, by popular demand.

Just a few years ago, illegal hunting and encroaching civilization had all but destroyed the alligator population in the south. They were added to the official list of endangered species in the United States.

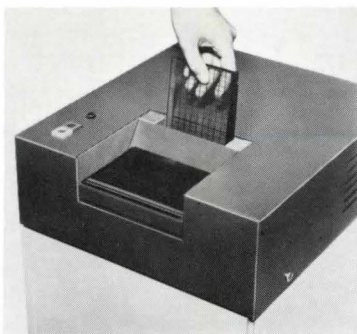
Now alligators have made a comeback.



Conservationists intent on preserving this legendary reptile helped the alligator get back on its feet. Once again some southern swamps and marshes are teeming with alligators.

With wise conservation policies, other endangered species have also made comebacks . . . the cougar, gray whale, Pacific walrus, wood duck, to name a few.

If you want to help save our endangered species, join the National Wildlife Federation, Department 106, 1412 16th Street, NW, Washington, DC 20036.



### Microfilm shredder

The *Microfine 1001* from Destroyit is designed to safely and economically destroy polyester, diazo and even vesicular film into microfine particles which are absolutely unreadable. Its internal cutting unit of alloy steel and a forced air cooling system prevent "gum-up," and allow extended operating periods and long service life. The unit operates on a 3-hp motor; it stands less than 34 in. high. Electric Wastebasket Corp., New York City.

Circle 328 on reader service card



### Electronics furniture

A series of electronic equipment furniture includes terminal stands, which are available in both keyboard or terminal heights and come with a wide range of top depths and widths. All of the 72 models feature a wire management arrangement built to accept any wiring system. The series comes in a modular design which allows for two-, three-, or four-station clusters by using one of four auxiliary top connectors. Cole Business Furniture, York, Pa.

Circle 329 on reader service card



### Modular seating

*Aptus 2*, a modular seating group designed by Jay Heumann, has a standard seat width of 2½-in. Polyester resin arms, cubes, triangular wedged tables and planters form right-angled corners and curves. All upholstered seat and back covers have *Velcro* fasteners and all resin support elements and polyurethane-coated rails may be refinished on-site. Metropolitan Furniture Corp., South San Francisco, Calif.

Circle 330 on reader service card

Continued on page 171

# Kawneer.

## It means windows and curtainwall systems that save energy and labor.



Kawneer aluminum windows and curtainwall systems can help meet a wide range of design requirements for your new building or remodeling program. Our windows offer a variety of functions from thermal, light and sound control, as well as concealed ventilation and even retrofit insulation. And Kawneer curtainwalls are the standard of the industry for performing curtainwall systems.

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# LUDOWICI-CELADON

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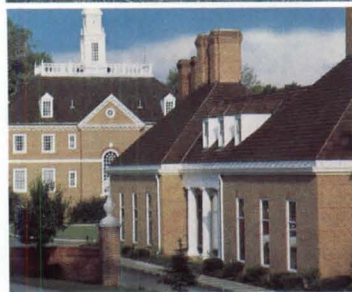


Photo: Chuck Kottal

Ludowici-Celadon offers an unprecedented warranty on the world's standard in clay roof tile.

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The result is a durable yet beautiful tile that graces many fine homes and buildings throughout the country. Ludowici roof tile can be found on The White House, in historic Williamsburg, and on classic buildings at Yale University and The College of William and Mary, as well as corporate buildings for AT&T, and new construction of finer homes nationwide.

Ludowici tiles have a practical elegance that protects against the ravages of sun, snow, wind and rain. In fact, the tiles mellow so beautifully that their aesthetic value actually increases with the years.

What's more, Ludowici tiles offer significant energy savings. Substantial air spaces between tile and roof combine

with the vitrified clay's excellent heat returning properties to allow thermal conservation in both winter and summer.

Ludowici offers standard hard-fired clay tiles in more shapes, sizes, textures and colors than any other company in the world. And because all tile is crafted to your order, your Ludowici representative can help you develop virtually any custom combination of color, texture, or shape you may require.

To learn more about how you may create a tile roofing system which is luxurious, cost-efficient, and comes with a 50-year unconditional guarantee, write or call: LUDOWICI-CELADON, Division of CSC Incorporated, P.O. Box 69, New Lexington, Ohio 43764 (614) 342-1995.



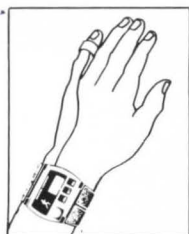
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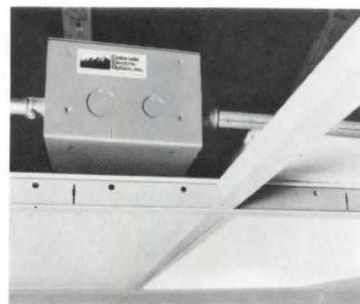
Circle 83 on inquiry card



## Bookcase

*Double Face* is a two-faced rotating bookcase, built in two versions: open-front or with vertical sliding glass doors. Either is available in red or black lacquer or in walnut veneer with edges in solid wood of the same type. Every bookcase turns on a support, which is connected to the others by an element that forms a single base. The shelves are of different depths on the two parts and at two opposite levels. The open front version has two drawers on one side. The glass door version is made so that a light can be installed in the upper part. Beylerian Ltd., New York City.

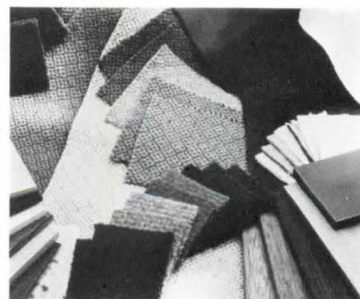
Circle 331 on reader service card



## Infrared light control

This automatic light control is said to be particularly useful in large warehouse areas, infrequently occupied corridors, school classrooms—any place where lights are inadvertently left on when no one is present. The switch contains a passive infrared sensor which immediately detects the presence of anyone who enters its field of view, and automatically turns on the lights. After a selectable time delay, the switch turns the lights off again. Colorado Electro-Optics, Inc., Boulder, Colo.

Circle 332 on reader service card



## Fabric/flooring

A wool and rayon blend called Gaston and a fabric of 100 per cent wool called Grospoint are additions to this manufacturer's fabric groups. Another addition is a hardwood flooring collection of woods from countries throughout Asia, Africa and South America. C.I. Designs, Medford, Mass.

Circle 333 on reader service card

# Kawneer.

## It means safety and security for entrances.



Paneline™

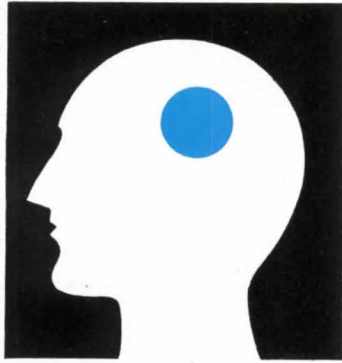
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