

new jersey Architecture



Apr/May/June 1982

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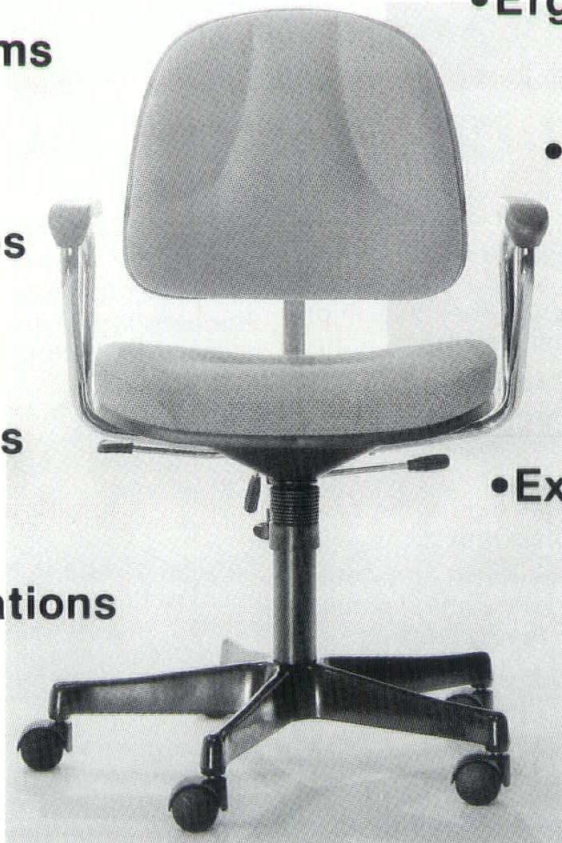
•Lateral files

•CRT furniture

•Computer stations

•Executive furniture

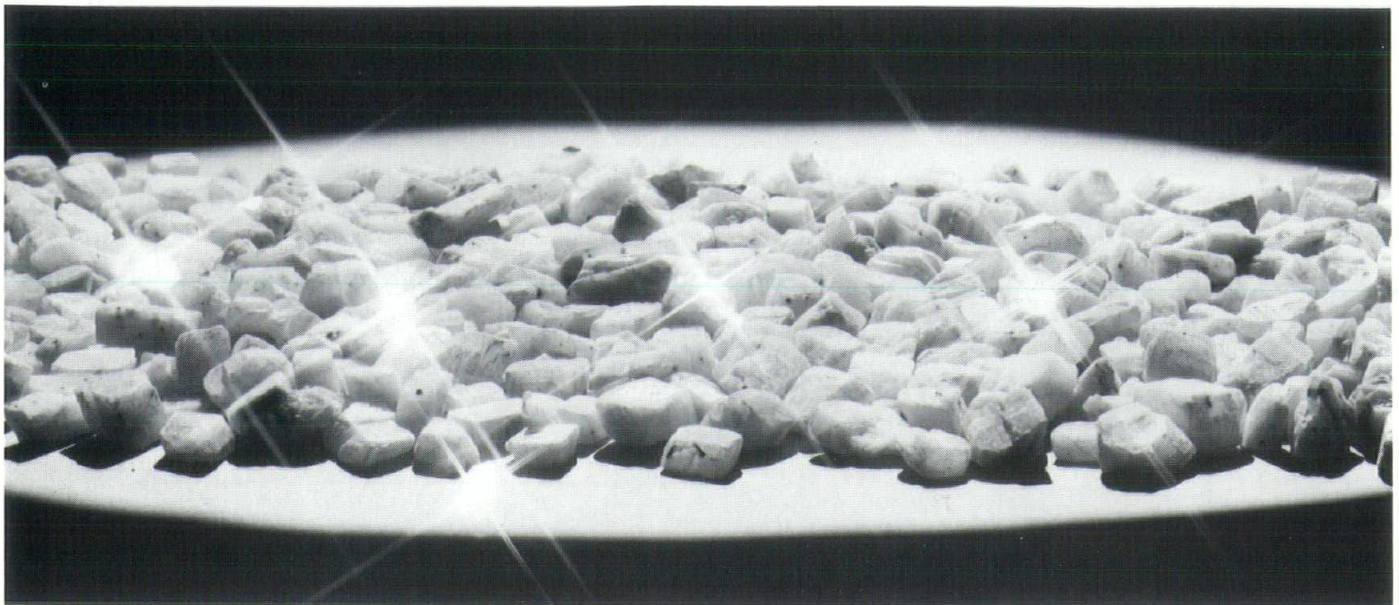
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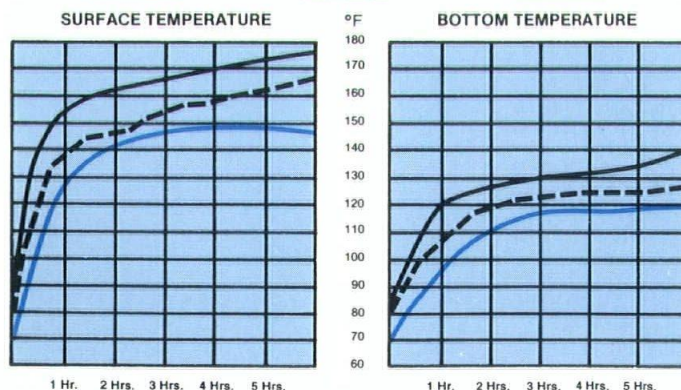
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*Based on tests conducted by the Howard Inspecting and Testing Laboratory, Inc., Montclair, NJ.

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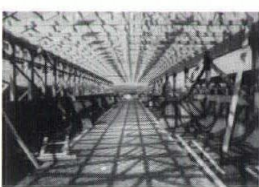
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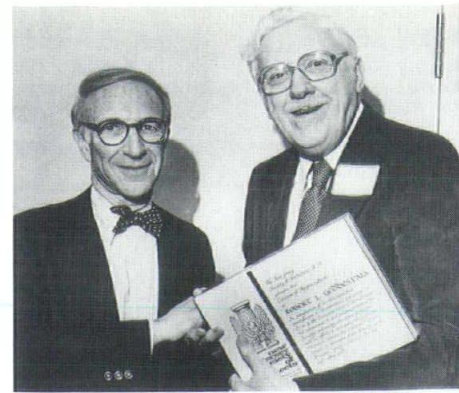
Cover: Sunlight plays on weathered wood staircase in Lucerne, Switzerland.
 Architect: unknown
 Photographer: Eli Goldstein

Kenneth D. Wheeler, FAIA, has relinquished his partnership status and his position on the Management Committee. With the firm since 1950, he has become Consultant for Special Projects while continuing with a limited number of assignments.

Philip Kennedy-Grant, a member of the Editorial Board of *ARCHITECTURE NEW JERSEY* for the past three years, has been named Vice Chairman of that Board.

Robert L. Geddes, FAIA, was the guest of honor at the 8th Spring Conference of the NJ Society of Architects, held at the School of Architecture at Princeton. Dean Geddes received an award for his "distinguished contribution to architectural education, and his commitment to...the Society's Continuing Education Program."

H. Robert Yeager, AIA, has joined Richard Browne Associates as the firm's Director of Architecture. Yeager holds a Bachelor of Architecture degree from Cornell and was a member of the evaluation and thesis juries of NJIT and Cornell University respectively.



Robert L. Geddes, FAIA and Herman H. Bouman, AIA

AIA's Highest Honor

Harold D. Glucksman, FAIA, and *William H. Short, FAIA*, have been elected to the College of Fellows of the American Institute of Architects. Fellowship is a lifetime honor bestowed for outstanding contributions to the profession of architecture.

There are approximately 1,500 members of the College of Fellows, representing only four percent of the total AIA membership.

Mr. Glucksman is a partner in the firm of Glucksman and Guzzo with offices in Irvington. Mr. Short is a partner in the firm of Short and Ford in Princeton.

Highest Professional Recognition

The Schulman House Addition, in Princeton, designed by *Michael Graves, FAIA*, has received an Honor Award from the American Institute of Architects, the nation's highest professional recognition of design excellence. The Honor Award will be conferred on Mr. Graves at the Annual Convention in Hawaii in June.

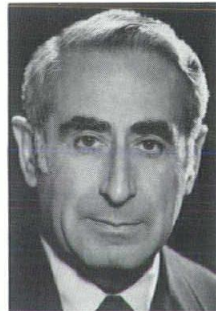
News Briefs

Leo Rutenberg AIA and Associates announced that *Edward David Macieko, AIA*, has joined the firm as an associate. Their offices are in Kearny.

The Aybar Partnership is the new name for the continuing practice of Architecture and Planning of Romeo Aybar, AIA and George A. Held, AIA. Their offices are in Ridgfield.

Stephen F. McGarty, AIA, has been named an associate in the firm of Collins, Uhl, Hoisington, Anderson, and Azmy of Princeton. Mr. McGarty obtained his graduate degree from Pratt Institute. He has been with CUH2A for 12 years and is a resident of Kendall Park.

Harry B. Mahler, FAIA, and *Michael J. Savoia, AIA*, have been named Senior Partners of The Grad Partnership and have become members of the Management Committee of the firm, a prominent Newark firm of architects, planners and interior designers.



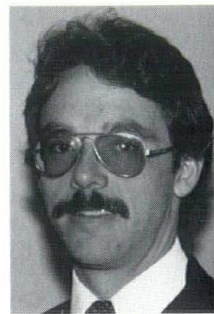
Harold D. Glucksman, FAIA



William H. Short, FAIA



Kenneth D. Wheeler, FAIA



Philip Kennedy-Grant



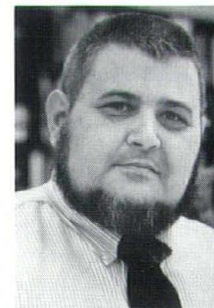
Management Committee, The Grad Partnership (l to r) Senior Partners Harry B. Mahler, FAIA; Bernard Grad, FAIA; Howard Grad and Michael Savoia, AIA.



Schulman House Addition



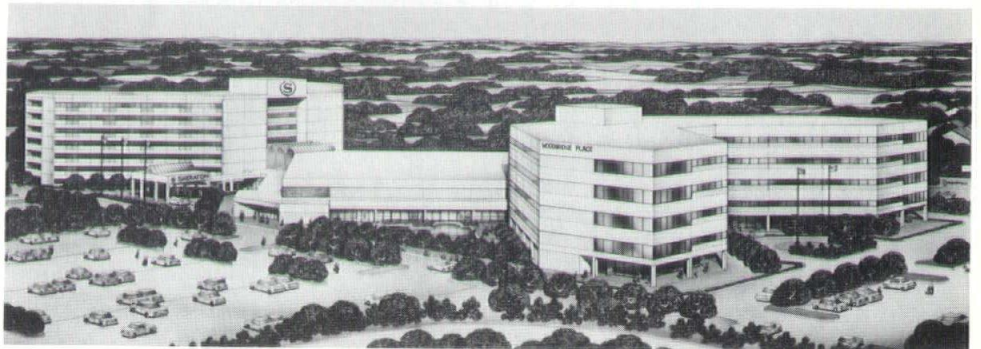
H. Robert Yeager, AIA



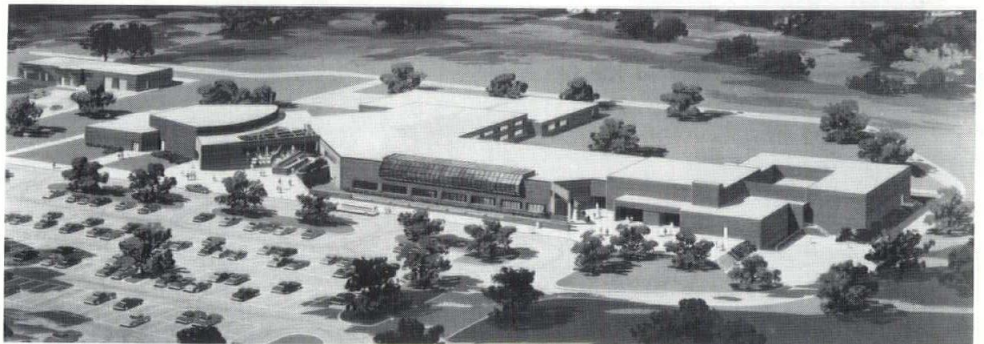
Stephen F. McGarty, AIA



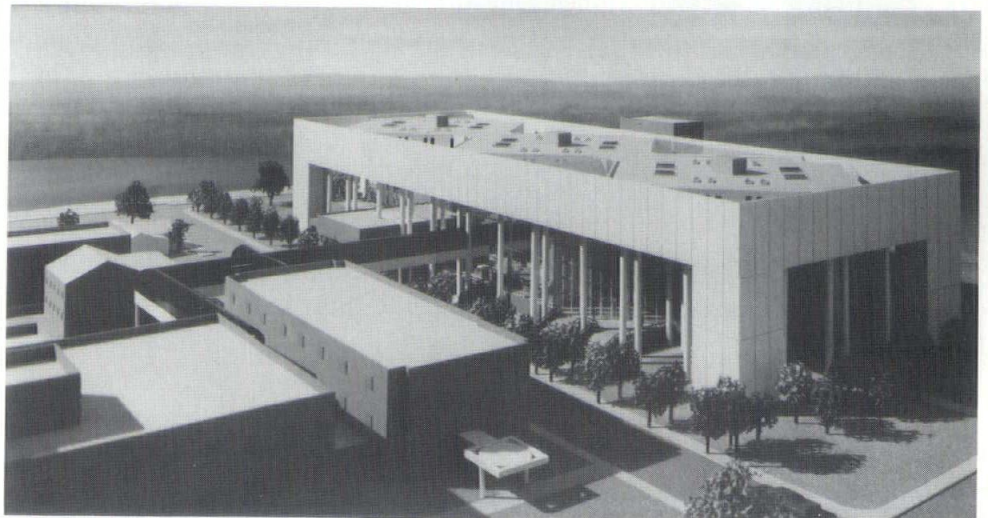
The Shops at Glenpointe, Glenpointe Development Project, Teaneck. Architects: The Office of Barrett Allen Ginsberg, AIA, Bernardsville.



The 255-room Sheraton Hotel at Woodbridge Place Hotel and Corporate Center. Architects: Rothe Johnson Associates of Iselin.



Renovation and expansion of Mahwah High School. Architects: The Harsen & Johns Partnership, Tenafly.



Ocean County Justice Complex, Toms River. Architects: The Grad Partnership. Correctional Consultants: Justice Facilities Design Center of HDR.

1857 * 1982 The First 125 Years



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THE AMERICAN INSTITUTE
OF ARCHITECTS

The American Institute of Architects was founded in 1857 by a small group of architects who met in New York City, in a building near Trinity Church on Broadway, to explore ways of improving their profession.

They had much to do. By all accounts, architecture was at a low ebb, and really did not exist as a profession in this country. Until the middle of the 19th century, according to one writer, architecture in the United States was "the trade of carpenters-builders and the games of gentlemen-amateurs."

The architects who met near Trinity Church wanted to improve their public status and do something about the unbridled competition between architects which then prevailed. The result of their meeting was a resolution to form a professional society. Richard Upjohn, architect of Trinity Church, was elected president of the new organization.

Raising the ethics, standards and competence of the architectural profession was no easy task for the founders of The Institute. There were no architectural schools and few books. Adult education for young practitioners was unknown. But, the new organization overcame these problems one by one, and soon the AIA was issuing technical publications. It later added standard documents on such important matters as contracts and owner-architect agreements. In 1912, the first issue of *The AIA Journal* was published.

In 1868, the AIA Board of Trustees enrolled the first four students of architecture at Massachusetts Institute of Technology. One year later, the University of Illinois and Cornell University both offered their first course in architecture.

In 1899, the AIA acquired its permanent home, the historic Octagon House in Washington, D.C. Built starting in 1798 and completed in 1800, The Octagon served as the temporary White House after the British burned the presidential mansion in the War of 1812. The Octagon was the AIA's national office until after World War II when The Institute moved to a new Headquarters building behind the Octagon House. The Octagon was then opened to the public and has since been designated a National Historic Landmark. In 1969, additional restoration was undertaken.

The AIA, now a 38,000-member voluntary professional organization with 294 state and local components through professional and public services, has successfully carried out its aims determined 125 years ago "to unite in fellowship the architects of this continent and to combine their efforts to promote the artistic, esthetic, scientific and practical efficiency of the profession." This 125th anniversary is time not only to honor the past of the Institute but to look to the future of the profession and the built environment.

a case for sabbaticals: one architect's experience

by William M. Thompson, AIA

The term "sabbatical" is usually thought of in terms of the academic profession, but I believe it should apply to all professions, especially creative ones such as architecture. By definition, it is a period of rest as part of an ongoing cycle, ideally, every seventh day or seventh year to relax, reflect and renew.

One should be wary of the person who claims, "I haven't had a vacation in years." With the ever increasing pressures of living in late 20th century America, one becomes painfully aware of the need to stand back to look at what one is doing and see whether it fits into a larger context. The natural tendency is to become so preoccupied with day to day problems and demands that months and years slip by; when time is consumed in the same manner as products, life begins to lose quality and significance.

In contrast to this typical pattern of living inflicted upon us by a highly urbanized industrial society, it is possible and suitable particularly for architects to embrace an individualized approach to their practice. But in order to do so, we must open our minds to the potential available to us. Continuing education programs are the introduction to this new way of looking at our work and lives; yet, these programs are often too specialized or superficial. They sometimes even serve as a rationalization that we are keeping up with or ahead of new ideas or developments. Maintaining professional competence may demand more than just continuing Education Programs.

To go a step further and take a sabbatical requires a willingness to take some risks and not think only in terms of security, for today security is a deceptive concept fast losing its validity in the context we have known. Similarly, we develop a sense of indispensability about our practices. No way could work go on without one's presence, we think, and yet, if we were to be incapacitated for a prolonged period, projects somehow would be carried on.

We use the term perspective in design but often forget to apply it to our lives. From this, we must ask ourselves, what do we truly care about? What is our philosophy of life, not just toward architecture, but all

facets of living? Do quality judgments prevail over quantitative ones? Do we have some scope to our vision, a sense of mission about our work, or have we lost sight of the proverbial forest for the trees? When the time comes to look back on a life's work and experiences, will we feel cheated or dismayed that our expectations were not fulfilled?

These are among the questions I had been asking myself. Also, for the past several years, there had been a deepening sense of frustration, of feeling saturated. New projects didn't hold the excitement they formerly did, and it seemed more difficult to get through the routine demands of day to day activity. Obviously, a time for pause was at hand.

In 1969-70, I had spent a year working as Resident Architect at Colonial Williamsburg, appreciably detached from my practice. Where this was not exactly a sabbatical, it had the same advantages of a change of scene, pace and purpose. That year served me well in a variety of ways, and I look back upon it as a highlight of my life. Thus, two years ago, my wife and I began to consider how we might accomplish another such experience.

The importance of a place and way of life that were in harmony with our values and which would give us the maximum exposure to learning on all levels led to a trip to Scotland. Convinced that here we could best pursue our various goals of reading, writing and expanding our experience, we decided to return with our family for a sabbatical year to Crail, a fishing village on the North Sea. Its size, history, beauty and its proximity to St. Andrews, home of Scotland's oldest University, combined to make Crail an ideal site for our odyssey. The interests and education of our four children had been taken into consideration, and we could even get around without an automobile.

The logistics of leaving one's practice for a year, and dealing with the myriad of details at home were predictably involved. Yet, thanks to my wife's support, persistence and organization, everything was packed away, our house was prepared for

our tenant to move in, and the six of us were ready to depart with our 11 cartons of worldly goods for our year abroad. The office, under the guidance of a responsible associate, has managed to avoid any serious problems, while I called on fellow professionals to assume responsibility for the out-of-town projects.

Our whole perception of needs was scaled down to a basic level, thus permitting concentration on the intangibles we were there to appreciate. The key element for me was further study in Environmental Psychology, an aspect of architectural practice which I feel has been sadly neglected. Consequently, I was able to arrange with the Psychology Department at the University a program of independent research, a carrel was provided in the library, access to the facilities of the department, and the privilege to audit any courses I chose in the rest of the University.

As I write, these opportunities are serving to expand my perceptions with ever increasing rewards. My family is benefiting in many other ways as well, through contact with a different culture, a new view of our own country, and a chance to explore a land of vast beauty and wonder.

Financing from savings and careful planning has permitted us to live at a comfortable, albeit far from luxurious, level, in spite of inflation. We are indeed learning how much is enough — one of our goals, and reasons for selecting the frugal Scottish environment. Most important is the time to contemplate, evaluate, and plan for the future, so that when we return to the U.S. in June, our scope of vision will be broadened, our commitment to long term goals more firmly established, and our lives enriched with a fuller appreciation of the famous Pope quotation: "The proper study of Mankind is Man." We in the design professions, especially in this era, would do well to take the kind of time provided by a sabbatical to pay heed to this universal wisdom.

Editor's Note: Mr. Thompson, of Princeton, is a member of the Central Chapter.

interior design — architecture's growth industry

by J. Robert Hillier, FAIA

Interior design used to be the decoration and furnishing of rooms that had been designed by the architect. Only a few years ago it was described as everything that fell out when you turned a building upside down and shook it. It was viewed as a cottage industry run by little old ladies with blue in their hair who could only talk about "decor" and were not so fondly referred to as interior desecrators.

Today, interior design has come into its own as a full-fledged and integral part of architectural services. It is the creation of interior architectural spaces within a building and is therefore a very comprehensive and complex service. What once created ambience based on indulging personal whim has now become an art/science responding to the bench marks of the 1980's; productivity, employee retention and sales per square foot. The fact that good interior design not only pays for itself but can return its cost manyfold is now appreciated by all types of businesses, be they manufacturing, offices or shopping centers. Interiors is without question the fastest growing segment of the architectural profession today. With more and more interiors being subject to fire code analysis and review, the call for interior design services is falling more and more to the architectural profession since only a licensed architect is qualified to deal with such new code issues as exiting, flame spread and combustibility.

Interior design is a far more time intensive and time responsive business than architecture. First of all, it happens faster. Generally, clients rent space and expect to move in "tomorrow." This means the interior design firm must propose designs and help the client decide on a solution in much less time than it takes to develop a building design. The bureaucratic processing of the interior design is generally effected in a shorter time span. There is no planning board, no environmental impact statement to be dealt with, only the building permit.

The design decisions in interiors are also shorter lived; the brick exterior will be around a lot longer than the dining room carpet. The short life aspect of interior design is also reflected in the Internal Revenue Service rules. Interiors generally have a five year tax write-off and certain areas even derive a first year investment tax credit. Because of the shorter life span of interior designs, they tend to be much more impacted by stylishness than architecture. What is very stylish today will be out of style tomorrow. Where a hemline style changes every year in the garment industry, one can see the interior design industry

transitioning into new styles in about a two to three year sequence. Dark green, gray, wicker and brass have now been pushed aside by a new wave of dusty rose and powder blue. One wonders where the trend will turn next.

The most vital part of the interior industry is currently in the design of offices for corporations. Interiors for companies are very much impacted by the dynamics of a company. Departments grow and shrink; people are hired, fired and promoted. This results in constant physical change for the interior spaces to be responsive to the mission of the company. The dynamic workplace has led to the evolution of "open office landscape" where various work positions are defined by privacy panels that do not go to the ceiling and can be readily rearranged. This enables the interior design to be specifically responsive to the best work flow arrangement. It also saves money. To move a typical 10'x12' office along with all of the related mechanical services changes costs between \$3,000 and \$4,000. It only takes \$200 to relocate and rearrange a 10'x12' open office landscape workstation.

Finally, interior designs have a short life span because of normal wear and tear. Every so many years, one likes to do a major "spring cleaning" of a space. A fresh coat of paint does wonders for the soul and an overworked space. The need to renew leads to constant interior redesign and upgrading. Many companies have their interior designers on a retainer basis to manage the continual upgrading and assure its consistency.

The scope of services related to interior design parallel those in architecture. They are as follows:

Programming: This is probably the most important service for a client since it involves figuring out what the interior design spaces are supposed to do and how much space the client needs. Programming a computer is telling it what to do after one has diagnosed the problem it is supposed to solve. Programming a space is the same; diagnosing and defining the client's needs and objectives and designing the space to accomplish those objectives. The program defines the space the client needs and how it will function. If possible, a program should be developed before a space is rented or purchased and can serve to target the amount of spaces to be sought. The program should also serve as the basis of the budget for the project.

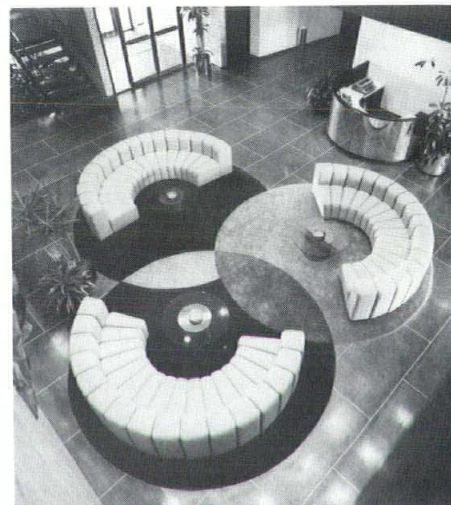
Site Selection: Helping a client find a space to rent in an existing building or an existing building to buy. The interior designer should do a quick feasibility study layout to make sure the spaces will work for the client before the lease or sale is consummated. Sometimes, zoning can be an issue. Can the interior be used as planned under the current zoning code?

Schematic Design: This is the most critical design phase since the specific design direction for a project is established. An effort is made by the interior

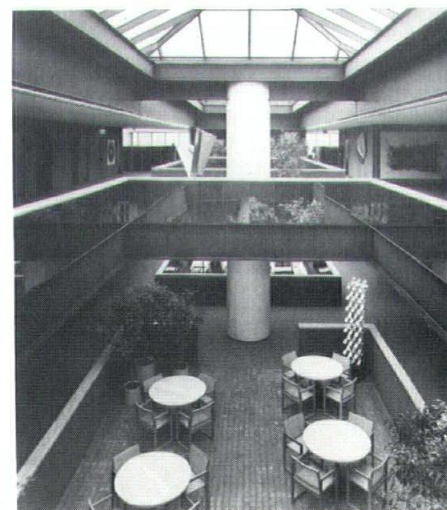
designer to create a layout of spaces in plan and cross-section that is responsive to the client's program of needs.

Construction Documents: Depending on the nature of the space to be occupied, construction documents of permanent installations such as walls, ceilings, doors and the related mechanical services have to be developed. In the business environment more emphasis is being put on the electric and electronic services to a typical workstation. The workstation of the future will require an array of connections to word processors, computers, electronic mail systems and closed circuit TV besides the telephone and electric connections. These connections and the equipment must be coordinated by the interior designer.

Furniture Selection: Selecting everything from the Board Room table to the ash tray in the lobby is in the realm of the interior designer. The furniture is selected for approval by the client. It is then put out with specifications for proposals by dealers who assemble the pieces of furniture from various manufacturers and install them. This installation is checked by the interior designer who notes any omissions or



General Foods Corporation Lobby
Cranbury, NJ



National CSS Interiors Atrium Wilton, CT

defects and makes sure that the dealer corrects them.

Color and Finish Selection: Each surface of each interior space will have a final finish applied to it. These finishes and their colors should work together to create a consistency through the entire design. The finishes should be functionally and aesthetically responsive to the client's needs.

There is more and more known about the effect of color on the performance of an environment. Spaces that are painted blue are cool and impersonal. Red spaces make people feel warm and excited and green spaces help people relax. (A pool table felt is green to make the eye relax and assure greater accuracy in a shot.)

Graphic Systems: Helping people find their way around in a building is becoming more and more important as the buildings become larger and more complex. It is the job of the interior designer to develop signage systems that are attractive, consistent and flexible. This involves color, type, style, size, plus a basic empathy for the layman trying to find his way.

Art Program: The selection of paintings, sculpture, tapestry and other forms of art is an essential "final touch" in any interior design project. There are specialists in the area of art programs who can lead the interior designer and the client to the appropriate galleries to find art that is supportive of the overall interior design theme. More and more corporations are viewing their art as an important investment. The nature of that investment can range from a collection of "blue chip" old masters to the riskier "growth stocks" of the emerging artists. The interior designer should ascertain that the art program is consistent with the interior design.

There are other areas of interior design which are sub-categories of those outlined above. They run the gamut from dining room place settings to the design of match books, to the design of uniforms of some of the workers.

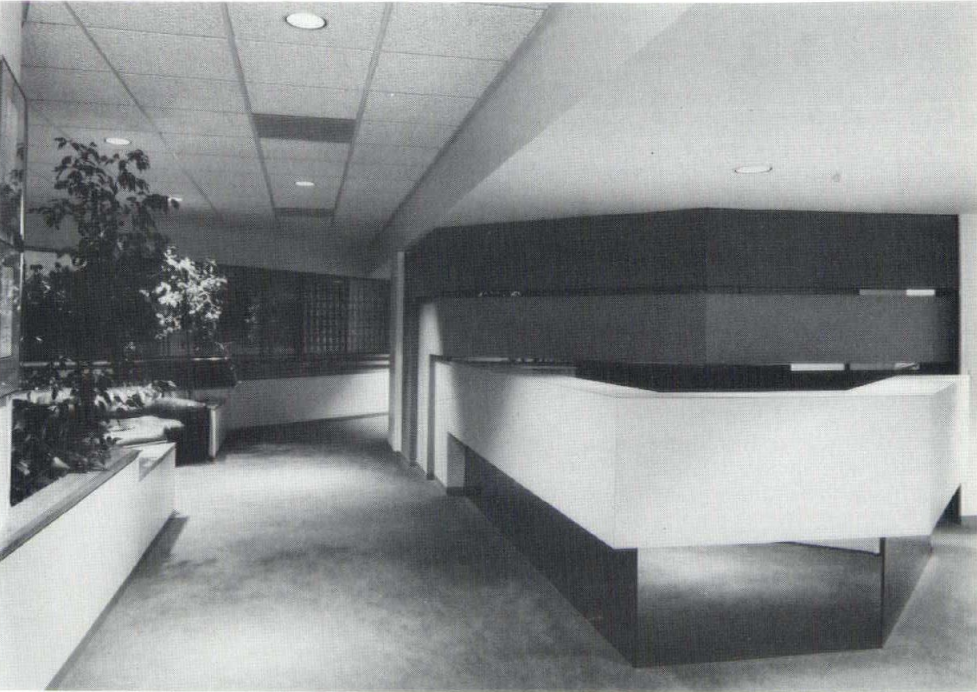
The important word throughout is **consistency**. That is the key element in all good design; the maintenance of a consistency from top to bottom. The architectural interior designer should be the focus of that call for consistency. The more the client will put into the interior designer's area of responsibility the greater will be his assurance of consistency in the overall design of the end product and the more successful will be the interior space created.

Winston Churchill's universal adage "we shape our houses and our houses shape us" applies to the field of interior design. The interior design is the shaper of the space that will impact on our everyday life. This increased appreciation of that potential impact has turned interior design into architecture's new growth industry.

Editor's Note: Mr. Hillier is President of The Hillier Group, Architects/Planners/Interior Designers with offices in Princeton.



*Richard J. Hughes Justice Complex Interiors
Trenton, NJ*



*Hillier Group Lobby
Princeton, NJ*



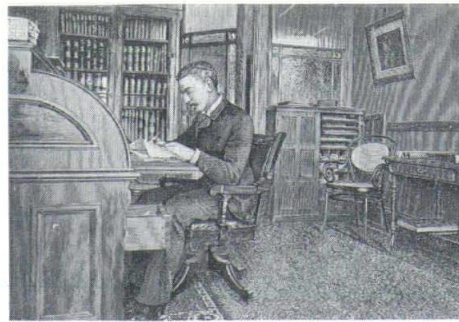
*Beneficial Management Interiors
Morristown, NJ*



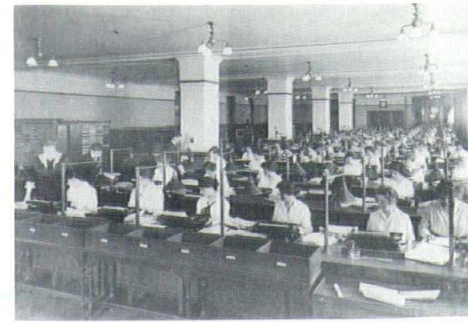
*Englehard Industries Employees Cafeteria
Edison, NJ*

the office: 100 years of change

by James W. McCormack, AIA



1



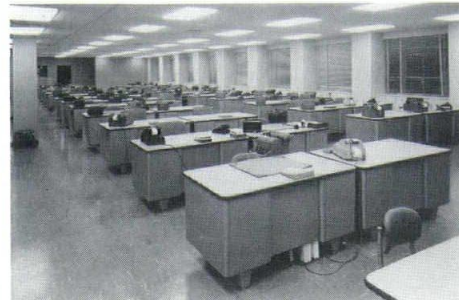
2

The Office has undergone dramatic shifts in style over the last 100 years. In the 1880's ponderous furniture and dark wood interiors expressed the formality of the Victorian Era. The office designs shown in photos 1 and 2 reflect the rigidly structured social attitudes of that time. Private offices were truly private while general office areas were wide open spaces with no acoustical or visual privacy. Lighting levels were minimal, air conditioning non-existent, and ventilation was poor. Workers were crowded into tightly spaced work stations. The photos also provide a record of the relative positions of the sexes in the business world.

Office planning changed slowly as the 20th Century unfolded. Photo 3 shows the office at mid-century. The style is obviously different from the earlier photos. The lighter, industrialized furniture and architectural environment reflect the state of technological development in the 1950's. Fluorescent lighting provides a high level of general illumination, acoustical ceilings help to reduce distracting noise levels, and an air-conditioning system provides a comfortable environment at all times.

Present thinking and future needs in office design are shown in photos 4 and 5. Office landscape is the current approach to office planning. This system is based on the functionalist philosophy of analyzing every step in the procedure of office work and providing an environment for the most efficient execution of the work tasks. This approach to office design includes the benefits of general fluorescent lighting and sophisticated air conditioning systems for climate control. It provides acoustical privacy through sound absorbing partitions, acoustical ceilings, and carpeted floors. The low partitions provide visual privacy while separating the work tasks on an individual level. The furniture and environment reflect the latest knowledge of materials and methods of industrial production.

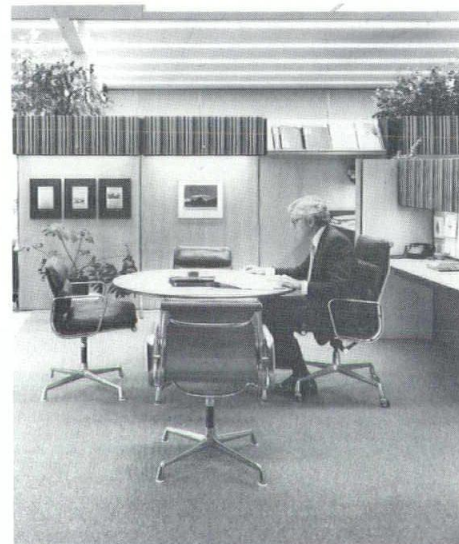
Photo 6 is a design for an executive office which has been praised for its design excellence. In this design the contemporary executive is seen as an action oriented individual. His/Her office is a casual, yet elegant, arrangement of chrome and glass in which every conceivable task has been analyzed and efficiently provided for.



3



4



5

- 1 *Actuary's Office — 1887
Prudential Insurance Co. of America*
- 2 *Typewriting Department — 1890's
Prudential Insurance Co. of America*
- 3 *General Office Area — 1950's
The Itkins of New Jersey*
- 4 *Office Landscape — 1980's
Herman Miller, Inc.*
- 5 *Executive Work Station — 1980's
Herman Miller, Inc.*
- 6 *Executive Office — 1980's
Herman Miller, Inc.*

Editor's Note: Mr. McCormack is a member of the Editorial Board of ANJ. He is employed by Jacobs Engineering Co.



6



effective office planning: partition wall vs. open plan systems

by Philip Kennedy-Grant

In describing the benefits of a particular product, a current television advertisement compares the typical office environment of today with that of a century ago, when utensils such as the ballpoint pen, typewriter, and telephone were introduced. Although the discussion focuses on standard office equipment, the setting depicted as today's office norm is also remarkably unchanged from 100 years ago.

It was then that steel frame structures and elevators combined to make tall buildings, and within them, myriad offices. Typically those offices were laid out along double-loaded corridors, with air shafts where now we create atria. Above the ground floor, where formal public entry was celebrated, the offices are small and numerous. It is this tradition of office layout

that is most often followed today, even in the newest of office buildings.

It is not meant to be implied that all offices currently organized within a pattern of interior partition walls, bearing or not, is less than efficient. What must be noted is that with the vast changes in our society, technological, cultural, and economic, in the last 100 years, a single office system cannot be expected to satisfy all uses equally well. Out of this realization sprang the open plan office system.

Touting flexibility, ease of maintenance, and efficiency, among other virtues, the manufacturers of these systems initially held hopes that the open plan office would render full height, permanent partition walls obsolete. As is everywhere evident, this did not, and likely will not, happen. Whatever the benefits of each type of office layout, it must be made clear that each has its advantages and its drawbacks. It becomes necessary, then, that whenever an office interior is to be planned, the needs of the client be evaluated. This analysis must consider the types of service provided, the amount and kinds of equipment to be accommodated, the organizational structure, the need for future expansion, cost, how lighting and ventilation are best accomplished, and the image the client wishes to express. The accompanying floor

plans reveal how a typical floor plan can be made to accommodate an increased staff through the judicious use of open plan techniques.

The following list shows some advantages and disadvantages that are associated with each type of office layout.

Permanent Partitions

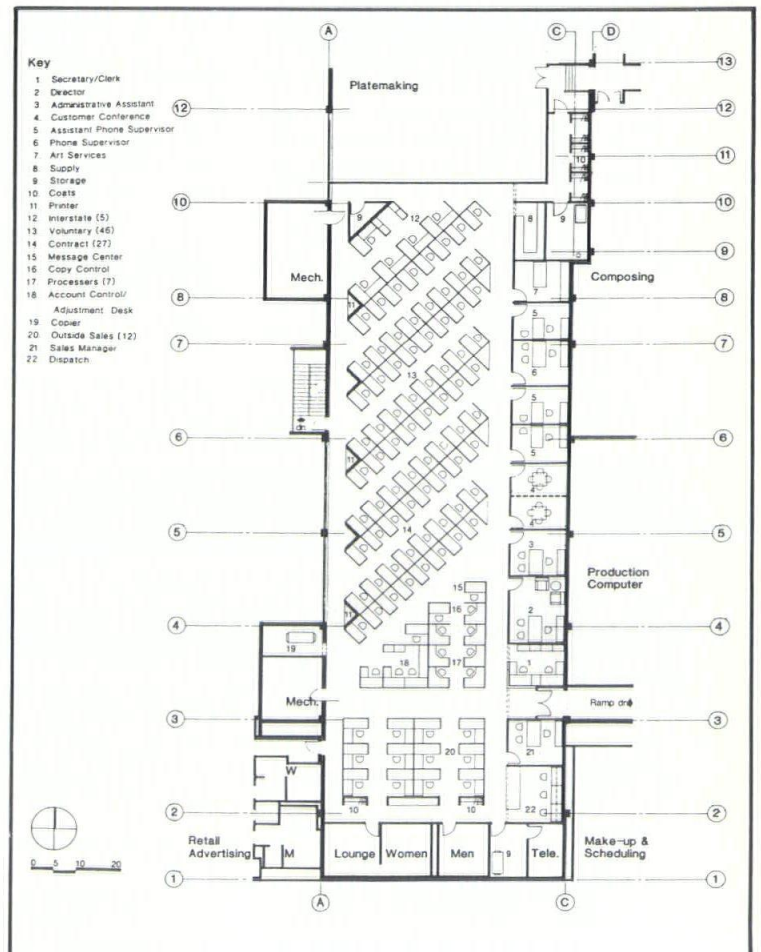
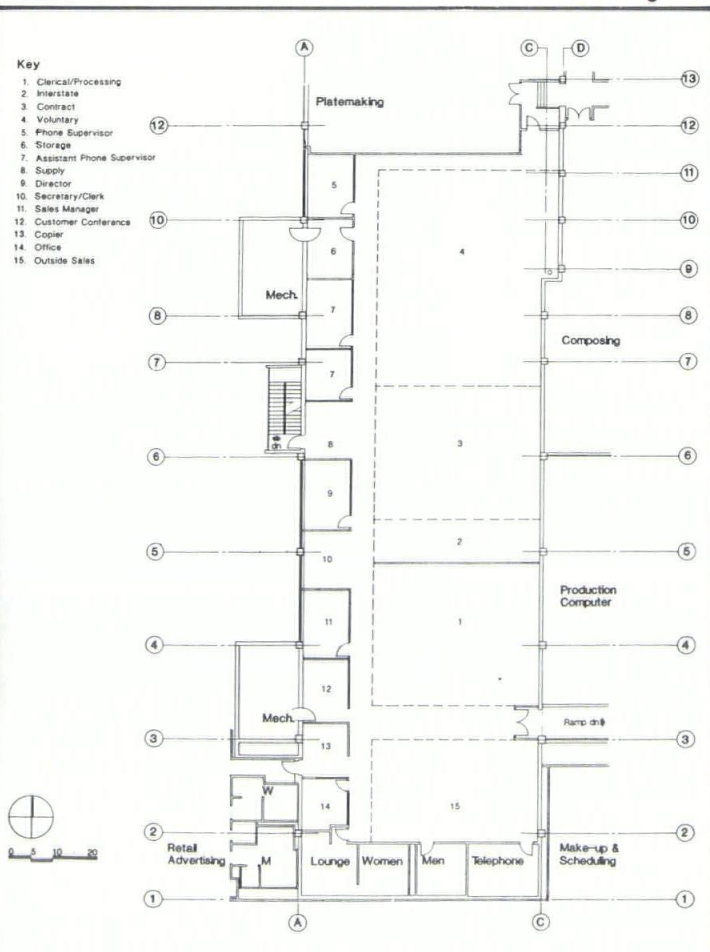
- Acoustic privacy generally good
- Initial expense low to moderate
- Impression of stability & identity strong
- Personal privacy enhanced
- Lighting options greater
- Maintenance costs higher
- HVAC costs higher
- Difficult to alter configuration or expand

Open Plan Systems

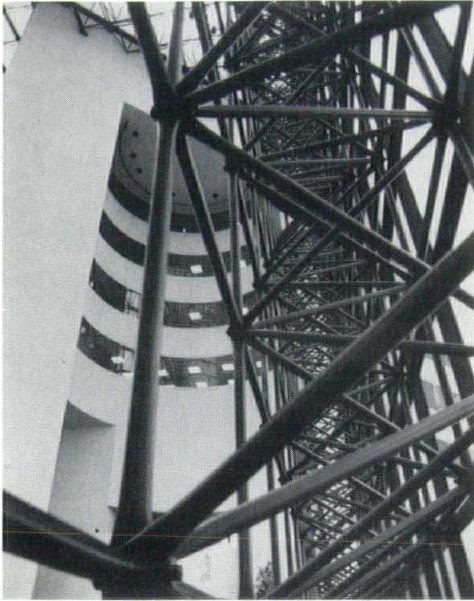
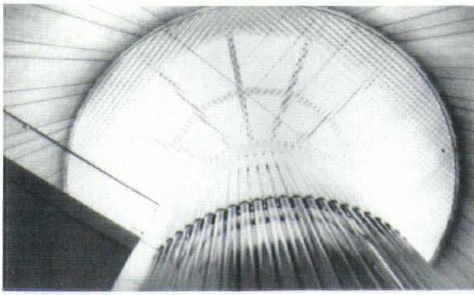
- Flexible in arrangement
- Accommodates expansion well
- HVAC usually simpler
- Exterior views may be made available for greater number of people
- Investment tax credit may be available
- Initial expense great
- Sound isolation fair to poor
- Long lead time typical
- Special tools/techniques for erection may be required
- Personal space small, not private

Existing Plan

Furniture Plan



Editor's Note: Mr. Kennedy-Grant is Vice Chairman of the Editorial Board of ANJ. He is employed in the office of Barrett Allen Ginsberg, AIA, in Bernardville.

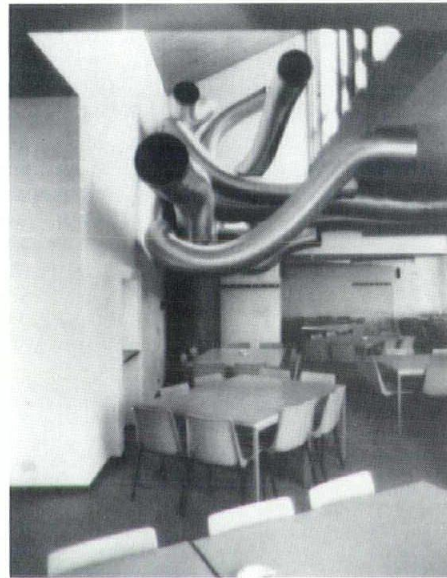


A
B

Why is it that the visible characteristics of architectural objects in nature seem different indoors than out, even if daylit in both instances? How can those differences be exploited?

Unless located in very dense urban settings, outdoor spaces typically have wide exposure to the sky. Interior spaces, however, have much more limited access to light. Because the aperture through which natural light enters is generally relatively narrow and is restricted to only one or two quadrants, the light that does get in is traveling in a narrower range of directions than would be the case outside. It is this directionality which alters our perceptions of colors and textures. It is this directionality which provides opportunities for unique architectural expression. It is the placement of these apertures which so strongly determines the perception of a space and its defining surfaces. Among the most important types of directional illumination are (1) omnidirectional light, (2) top light, (3) perpendicular light, (4) grazing light, (5) specularly reflected light, and (6) variable light.

OMNIDIRECTIONAL LIGHT can make it feel as if we are outdoors. The



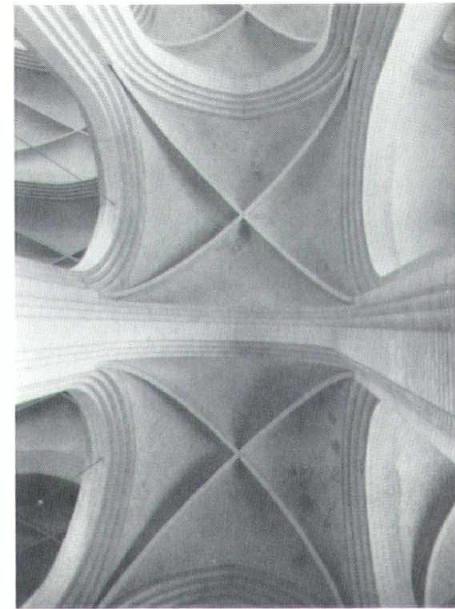
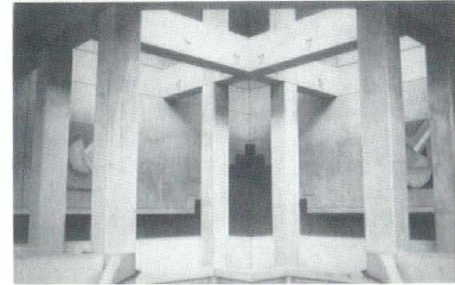
C
D

transparency of the enclosure reduces its apparent presence. The density of the structure alone gives scale to the enclosure (B, G, J).

TOP LIGHT traditionally evokes spiritual imagery. Perhaps this explains why places of inspiration (museums) and worship (churches) often incorporate this idea (A, E, I).

Light which falls PERPENDICULAR to a surface (or which is diffuse) tends to minimize shadows. Thus, the graphic (two-dimensional) qualities of materials are emphasized. Patterns of assembly, such as the coursing variations in brickwork, become easier to read (L).

Direct light which is GRAZING the surface casts shadows which are strong and long, emphasizing relief.

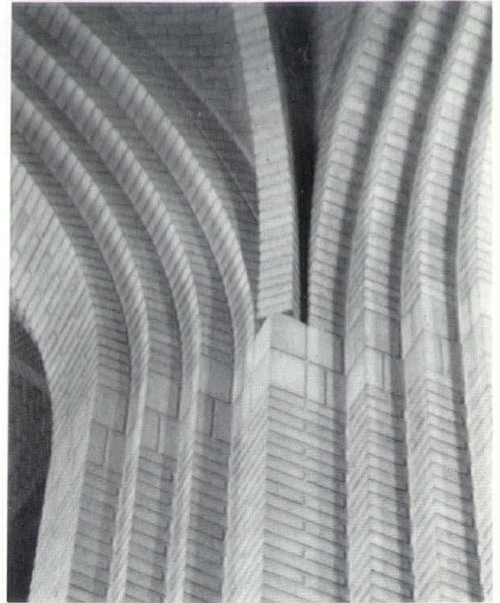
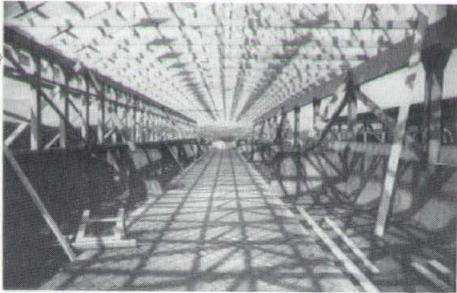
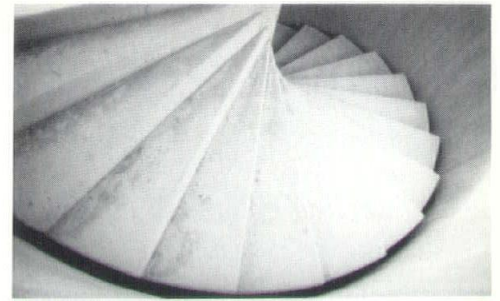
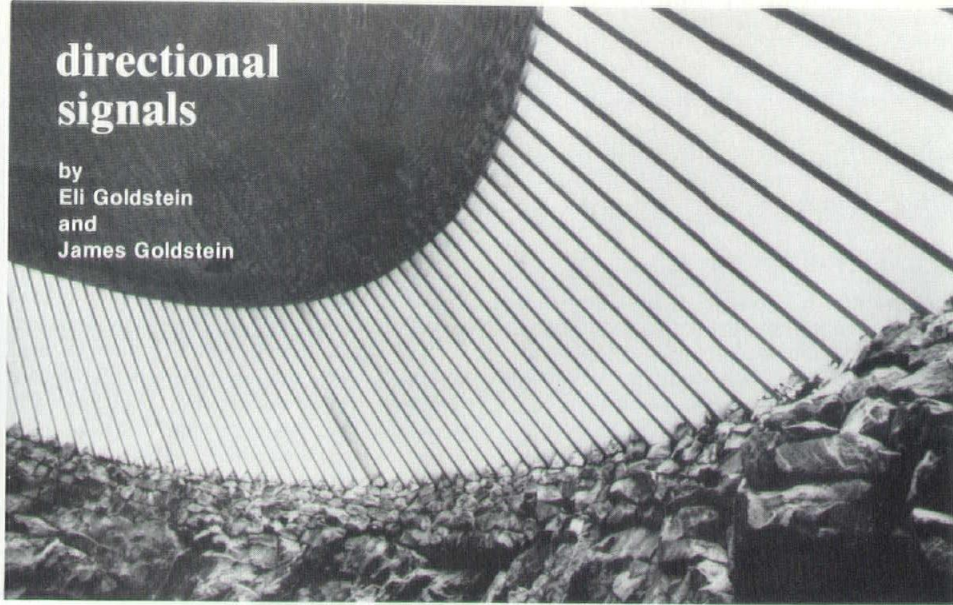


E
F

Even the slightest imperfections are revealed, a desirable attribute if the goal is to reinforce the hand-built quality of a stone wall, but a problem if the irregularities are distributed

directional signals

by
Eli Goldstein
and
James Goldstein



G
H

in a manner which is neither reasonably random nor clearly controlled (H).

VARIATIONS in the intensity of light, whether intentional or accidental, can

intensify architectural space. Widely spaced apertures of small size can aid in understanding spatial dimensions, and in clarifying changes in architectural form. If the intensity diminishes gradually, the sense of mystery and depth is heightened. Materials become less distinguishable from one another as their distance from the viewer increases (C, F, K).

SPECULARLY-REFLECTIVE SURFACES take on several unique roles. Objects seen in reflection seem farther away than they are, thus increasing the apparent size of a space. A reflective surface loses its own identity and takes on that of the objects it reflects. And finally, such surfaces alter the directions of light which strikes them (D).

I
J

K
L

The orientation of a room determines not only the amount of direct sunlight it has potential to receive, but the color of that light, and the variations in its intensity and duration from season to season. But discussion of these issues must await another time.

Editor's Note: *Eli Goldstein (photographer and author), a recent graduate of MIT, specializes in the architecture of cold climates. His work has taken him to the Alpine regions both here and abroad where the majority of the above images were recorded, and has involved him in the design of several mountain-side developments, including the winning scheme in the Eagle Ridge National Design Competition, (Steamboat Springs, Colorado, 1981).*

His father, James Goldstein, AIA (who edited the article), a graduate and trustee of the same institution, is the principal at the firm of James Goldstein and Partners, in Millburn, and a member of the AIA National Design Committee.

architects in furniture design

by Wayne Lerman, AIA

Architecture is an art form which bridges and touches many other creative arts. It is not surprising, therefore, that architects have always branched out into such fields as painting, graphics, sculpture, and interior design. Specifically relating to interiors, architects over the years have designed furniture, and today, architects are continuing to design furniture for both residential and commercial uses.

Architects have always felt a relationship between inside and exterior environment. Consequently, the components of interior space are seen as a logical extension of the exterior architectural expression and must receive equal attention if the building interior is to enhance the inhabitant's experience.

Furniture design by architects has usually been a spinoff from architectural influence of a particular style such as neoclassicism. Certain architects have extended their own feelings about exterior design to their design of furniture. In some cases, the actual design of furniture has been a built-in concept which is directly integrated with the building form.

Internationally respected architects of the past, such as Frank Lloyd Wright, Le Corbusier, Alvar Aalto, and Ludwig Mies van der Rohe created pieces which today have become classics, and are copied by many. Today, architects such as Charles Gwathmey, Michael Graves, and even I, Wayne Lerman, have designed furniture.

In my opinion, there are two reasons for this practice to have continued through history. First, no modern architect believes that interior design can be separated from exterior design. Second, most modern architects have found chairs and tables to be items with which they can experiment simply and directly with aesthetic and technical concepts. A piece of furniture has the same concerns of function, proportion, and manufacture to be resolved as does the development of exterior architecture.

It is also clear that manufacturers look to architects for a different perspective regarding furniture. This is due to the in-depth technical knowledge an architect has over the abilities of an interior designer. An architect's training in structures allows the projection of these theories directly to furniture design.

Furniture manufacturers have frequently asked architects who have achieved success and recognition to design furniture. Not only does this improve the manufacturer's credibility with architects due to the architect's recognition, but it has served as a major marketing tool for the product the

manufacturer introduces. A specific example of this is the Sunar Furniture Company. They have successfully, through the talent of Michael Graves, revitalized and revamped their image through showroom design and furniture products designed by him.

Another contemporary example which comes to mind, is Knoll Furniture Company. For five years they have been a forerunner in offering furniture by architects. Even today, they are offering a desk and credenza line by Charles Gwathmey and Robert Siegel.

As previously mentioned, this writer has frequently incorporated furniture from built-ins to custom designed pieces in many projects. It is a nice feeling to create a custom conference table for a client which is unique and has a special relationship in overall continuity to the total design. In addition, the idea of a built-in seating unit integrated into a lobby space as part of the building architecture takes a giant step away from the placement of a sofa on the floor. I have created credenzas, custom bedrooms, wall storage units, and tables, all of which generate a special feeling. It is pleasing to dwell on the intricacy of detail and personalization furniture design gives; as well as on the major changes in scale from exterior architecture.

Architects have a special feel for materials which they relate to in a more inventive way than do non-architects. Granite, marble, glass, plastics, and woods are materials which architects have carved, cut, twisted and massaged to create furniture. Cantilevered seats, cantilevered table tops, or chair seats in tension have all been innovative ways architects have used their knowledge of material and structure.

Proportion and detail, familiar words to architects, extended to furniture design. Radius corners used by Aalto in the 1930's were known then as his "bent knee" design. They were constructed of laminated birch veneers which he introduced in stool, table, and chair designs. Le Corbusier and Breuer, in their classical designs, used bent chromium steel tubing. Mies van der Rohe, in his famous Barcelona Chair, uses a double cantilever (seat and back) created by flat plate polished steel.

Marcel Breuer was said to have revolutionized 20th century furniture. His designs always created controversy and defied the conventional. His first major contribution was inspired by the bars of his Adler bicycle, from which, in 1925, the "Wassily" chair was born. The design has now survived 57 years of plagiarism. This, in fact, was the first chair made of tubular steel.

Frank Lloyd Wright is another architect who has had great influence on architectural philosophy. He was the true "master builder." Wright is most often recognized for his exterior architecture, but he made sure that he designed the furniture in a great many of his projects. On occasion, his designs extended right to the utensils on the table. Wright felt very strongly about the relationship of furniture to his architecture. It was said that he would pay surprise visits to his clients to make sure they did not change his furniture or move it from its intended place.

What does all this mean? It means there is and has been an interest by architects to design furniture. Whether it has been an extension of a building being designed by them, or as a separate isolated project, architects have reached out in this direction. Historically, it seems that architects have used this form of design as an extension of a building form or as a testing ground for future concepts in form and detail. Additionally, today, it seems that architects are being asked to design product lines by manufacturers because of their different perspective of furniture and their in-depth technical knowledge of material limitations. Ergo, there is an increasing role for architects in the design of furniture and their recognition as furniture designers is enhanced.

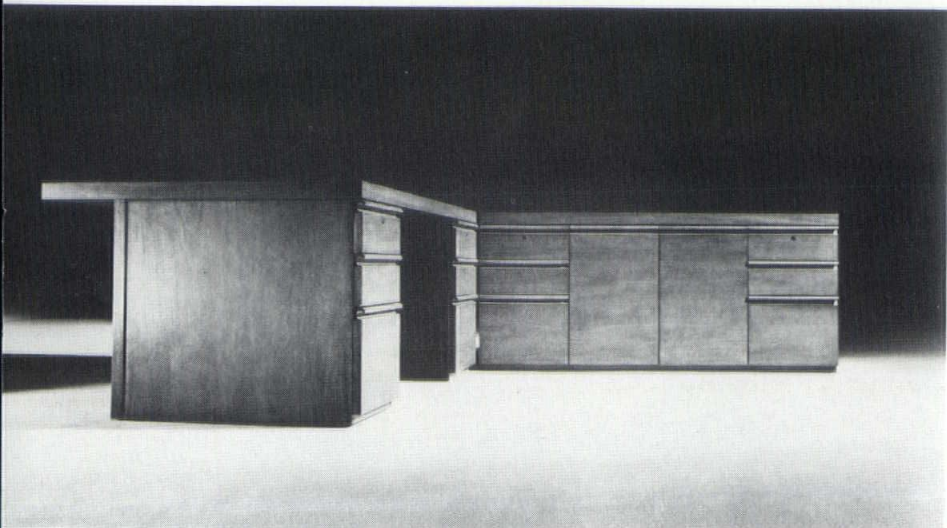
Editor's Note: Mr. Lerman heads the Wayne Lerman Design Group with offices in Woodbridge. He is also a member of the Editorial Board of *ANJ*.



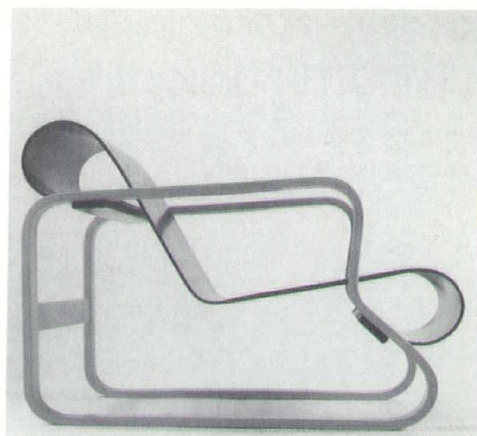
Le Corbusier — Atelier International, Ltd.



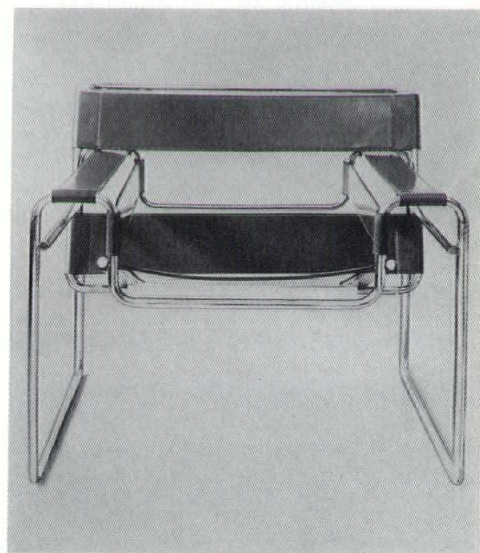
Michael Graves, FAIA — Sunar Furniture Showroom



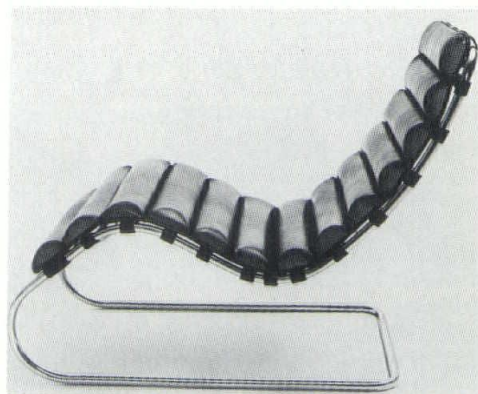
Mathew & Siegel — Knoll International



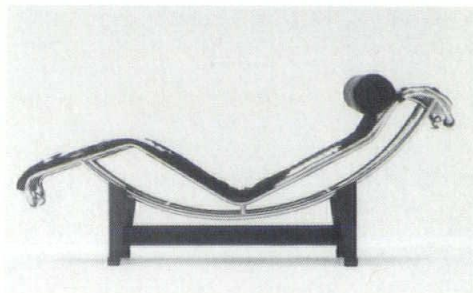
Alvar Aalto — International Contract Furnishings, Inc.



Wassily lounge chair — Stendig



Mies van der Rohe — Knoll International



Le Corbusier — Atelier International, Ltd.

enter — the dynamic building

by Jacques A. Duvoisin, AIA

The architect has never been more essential to the building design process — both interior as well as exterior; his job is becoming, however, more complex and challenging. The need for his knowledge of energy efficient design reaches well into the realm of interior design. The architect must now be more familiar than ever before with the ramifications of mechanical and lighting systems, and the effect of hitherto purely cosmetic treatments, on interiors. He needs to know for example how certain draperies can enhance passive effective solar design or how quarry tiles near south facing windows for example, can likewise improve energy efficiency, and, hence, life cycle costing.

A new "palette" of design options, essentially passive solar in nature, has developed: window treatments to take advantage of natural lighting; photo-sensitive control of artificial lighting; window films; and movable insulation. Micro-processors are seeing increasing use in control of HVAC and lighting systems. Even the appearance

of buildings, through manipulation of elements of the building envelope can be changed by these small computers enabling a dynamic response to a changing environment.

In his pre oil-embargo book, *The Architecture of the Well-Tempered Environment*, Reynar Banham pointed to future buildings that would see an increasing marriage of structural and HVAC systems to a point where structure would become truly ancillary. This is not a "brute force" approach of using energy to provide life-support for people, but rather a concept which integrates technology and form. In the post oil-embargo era, the architect, aware of the wide spectrum of design and technical options, is an essential actor in the process to speed implementation of proven energy-efficient systems and materials in buildings — both new and existing. Design with energy efficiency as an objective is becoming more and more a problem of reconciling first costs with visual consequences. The design process begins with site design considerations and ends with incorporation of the latest in energy-efficient technology.

As manufacturers respond to escalating energy costs, an explosion of energy conservation options such as computer controls, mechanical and lighting systems has created at the same time a problem to the building owner as well as an opportunity to save money. In certain respects this "information overload" has produced a certain inertia on the part of building owners confused as to which options to implement. (Next month might bring a newer, more ef-

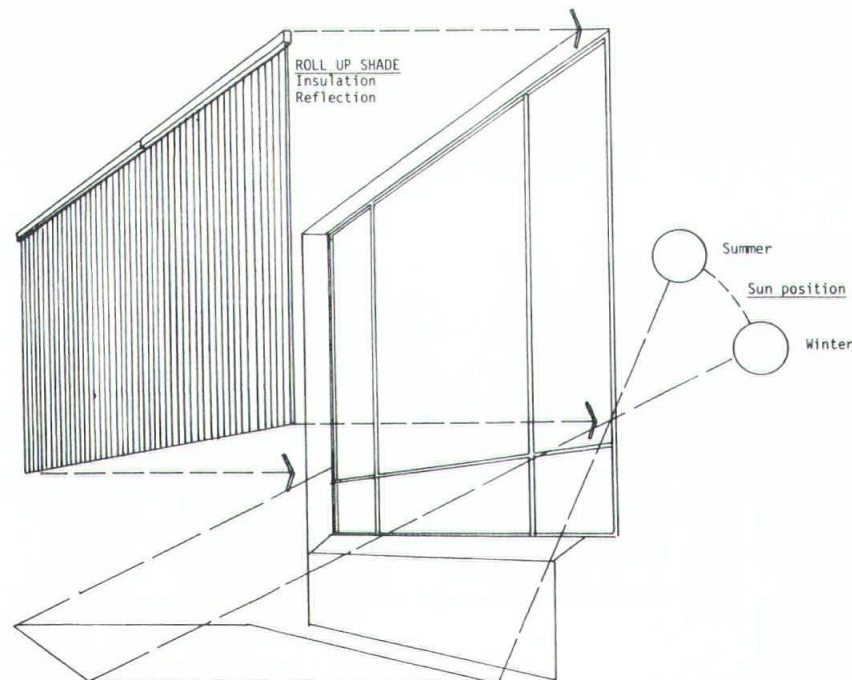
fective, lower cost product.) With respect to interior design, the window area in particular is a key area of interest. Properly designed, a window area can, through "perfect operation," save in heating, cooling and lighting costs.

One of a new generation of window treatments is a movable insulation/reflector "sandwich." Manually operated or on timers, this shade system can reflect sun in summer, provide glare control and roll down to insulate during evening hours. When combined with photocell-operated lighting with dimming controls, this application makes effective use of daylighting to offset electricity costs.

Completing this look at state-of-the-art developments are "smart" thermostats and microprocessor-based controllers that can be pre-programmed to work with the passive solar window lighting. These devices provide the essential link between environmental control and building envelope systems.

The ripple effect of the oil embargo of 1973-74 has widened to include every facet of building design and construction. Many architects have responded by applying their expertise to the challenge of producing energy-efficient buildings. A "new breed" of architecture has evolved, one which makes energy efficiency a priority and change the norm rather than the exception...the dynamic building.

Editor's Note: Mr. Duvoisin is a Partner of the Weaver Partnership, Morristown, and a member of the Editorial Board of ANJ.



SOLAR SHADE

Interior architecture: selecting the finishes

by Charles A. Spitz, AIA

Every day, people experience the interior architecture of buildings; homes, offices, stores, restaurants, schools, banks, theaters, hotels and hospitals. As part of this experience, they see the materials that comprise the interior finishes: wood paneling, carpeting, acoustical ceilings, wood trim, ceramic tile, gypsum board, vinyl wall coverings, rubber flooring, and draperies. The choice of the materials to be used as the interior finishes may be one of aesthetics, personal preference, economy, corporate image, functionality or maintainability. No matter what rationale is used, the interior finishes must conform to the New Jersey State Uniform Construction Code.

The Construction Code contains specific requirements about interior finishes, and permits wall finishes based upon the flame spread of the finished surface. In order to understand why there are limits on finish materials, an understanding of the term flame spread is necessary, as is an understanding of the classes of flame spread. The term flame spread is the surface burning characteristics (propagation of flame over a surface) of a material which has been tested using the Steiner Tunnel Test, also known as ASTM E84, NFPA 255 and UL 273.¹ Two materials are used to calibrate the test method and are assigned ratings, 1/4 inch thick asbestos-cement board has a flame spread of 0, and 23/32 inch thick select red oak flooring is rated at 100; and serve as the basis for determining flame spreads of other materials. Flame spread ratings are divided into three classes: Class I 0-25, Class II 26-75, and Class III 75-200.² As the flame spread of materials increases, so does the potential for a rapidly developing fire, thus the rationale for establishing maximum flame spreads for building types and the various elements of the building.

Floor finishes are also tested and placed into classes. The test used to establish the ratings for flooring materials is called The Critical Radiant Flux Test. In addition, the "Pill Test," Department of Commerce FF-1, establishes the minimum threshold for flooring materials or a minimum critical radiant flux of 0.04 watts per cubic centimeter. The other classes and their thresholds are Class I and Class II minimum critical flux of 0.45 and 0.22 watts per cubic centimeter, respectively.

Now, you ask, "What do all of these numbers mean and how are they used in selecting the materials used on the interiors of buildings?" The numbers or class minimums provide the design professional with an understanding of the flame spread potential of the materials used for interior finishes. By using two examples, the focus will be placed on selection criteria for the interior finishes.

The first example is an eight story office building (Use Group B and Construction classification 2A) with four stair towers and on each floor, an elevator lobby, which is part of the exit access corridor. The height of the building requires a fire suppression system.³ The maximum flame spreads for the interior finishes for this example can be established by using Table 1421.5 of the *BOCA Basic Building Code/1981*. In the exit stairs, materials with flame spreads not exceeding 75 are permitted; and in exit access corridors and in rooms or enclosed spaces, materials with flame spreads not exceeding 200 are permitted. After reading Table 1421.5, and before jumping to the conclusion that the author erred, be sure to read Note "a" following the Table. As you can see, the installation of a fire suppression system expands the list of materials which can be used for interior finishes. A review of Table 1421.7 and Section 1421.7.1 reveals that the choice for floor finishes also changes to a less restrictive class with the installation of a fire suppression system.

Suppose your client would like to have plain sliced red oak paneling installed on the walls in each elevator lobby. Since red oak has a flame spread of 100 (Class III) and the building has a fire suppression system, the choice of finish is permitted.⁴ Let us make a slight modification in the building to see what if any, affect there would be in the choice of the finish material. Reduce the height of the building to five stories and do not install the fire suppression system. The same red oak paneling would not be permitted in elevator lobbies if they are part of the exit access corridor.⁵ The exception is contained in Note "d" of Table 1421.5, which permits 1,000 square feet of applied surface area of finish materials with a flame spread less than 200 in the grade floor lobby.

The second example is a 20 story hotel (Use Group R-1 and Construction Classification 1A) with six stair towers and on each floor, two elevator lobbies which are included as part of the exit access corridor. A fire suppression system is not included. The interior finishes used in the stair towers must have a flame spread less than 25 and the floor material must be a minimum of Class II. The individual rooms must have wall and ceiling materials with flame spreads less than 200 and flooring materials must conform to the "Pill Test" as a minimum.⁶

Again, your client is insisting that red oak paneling be installed in the elevator lobby areas on all floors. A review of Table 1421.5 reveals that the maximum permitted flame

spread is 75 and the paneling has a flame spread of 100. The paneling cannot be installed in the locations requested, or can it?

There may be two alternatives which will satisfy the request of your client. The first alternative is to finish the paneling with a fire retardant, intumescent, if you will, coating which reduces the flame spread to 25 or less. The second alternative is one of interpretation of the Code. The following citation is applicable: "The use of a surface finish of paper or of a material of not greater fire hazard than paper shall not be prohibited provided such finish does not exceed 1/28 inch (1mm) in thickness and is applied directly to a noncombustible base..."⁷ Suppose the red oak was sliced to the thickness indicated and laminated to gypsum wallboard, does the red oak then meet the intent of the code? The answer depends upon whether or not the red oak is a greater fire hazard than paper.

The discussion thus far has been limited to the three major areas of interior finishes, walls, floors and ceilings. There are other interior finish items which are influenced by criteria contained in the building subcode. A few of those items are included in the following paragraphs.

Interior trim is not limited as to flame spread requirements in any use group as long as the material has a flame spread not exceeding 200 and the trim materials do not exceed ten percent of the aggregate wall and ceiling areas of the room.⁸

Doors, frames, finish hardware and associated glazing used on the interior of a building may also be required to conform to the construction code. Specifically, if a door is required to have a fire resistance rating, the door frame must be hollow metal, an automatic closer is required and any glazing in the door must be wired glass. While these requirements may not appear to be too harsh, if you wanted door frames constructed of a hardwood or tempered glass surrounded by a wood trim in the door, they would not be permitted as part of a fire door assembly.⁹

The next time you experience the interior of a building, remind yourself of the selection process which was necessary to meet the program requirements and also conform to the New Jersey State Uniform Construction Code.

Editor's Note: Mr. Spitz is Chairman of NJSA's Building Codes Committee.

FOOTNOTES

¹ National Fire Protection Association, *Fire Protection Handbook*, Fifteenth Edition, Pages 5-49 to 5-52.

² Building Officials and Code Administrators International, *BOCA Basic Building Code/1981*, Section 1421.53 Page 313.

³ Building Officials and Code Administrators International, *OP. C.T.*, Section 508.1, Page 83.

⁴ Building Officials and Code Administrators International, *OP. C.T.*, Table 1421.5 and note a, Page 312.

⁵ *IBID*, Table 1421.5, Page 312.

⁶ *IBID*, Tables 1421.5 and 1421.7, Pages 312 and 313.

⁷ *IBID*, Section 1421.1, Page 311.

⁸ *IBID*, Section 1421.6, Page 313.

⁹ National Fire Protection Association, *NFPA 80-79 Fire Doors and Windows*, Section 2-5.1, Pages 80-26; Section 1-7.1, Page 80-21.

furniture and equipment innovations

by Michael C. McAneny, AIA

The design of office furniture and equipment is constantly being modified, revised and altered so that maximum support (figuratively and literally) is provided to changing business operational systems. Of current interest is the impact of office computers upon work station components; specifically, the increasingly widespread use of CRT terminals at clerical through executive levels.

Clerical, secretarial and middle management work station systems are now becoming available with options which include deeper than usual horizontal work surfaces, recessed keyboard work surfaces, corner work surfaces which optimize space within the station and filing and other record storage equipment dimensioned to accommodate EDP print-outs and computer tapes and discs. The wire management technology of systems has also been modified to allow for an increased number of separate cables and outlets. Sizes and shapes of standard free-standing desks are also changing to relate efficiency to computer related equipment. Additionally, seating is undergoing similar modification: chairs are being dimensionally scaled down and fitted with lower and smaller arms to relate to keyboard and terminal operations; being made lighter in weight to facilitate seated movement within a work station and being made multi-adjustable and ergonomically correct to account for longer periods of activity from a seated position.

Executive level furniture and equipment is undergoing similar modification. Even some of the more traditionally designed lines now include CRT options. Some furniture is available as a series of add-on components, featuring individual communications elements handling telephones, CRT screens, keyboards, tape recorders and reference trays. In a manner following that of lower level work stations, chairs for executives are experiencing a dimensional scaling down.



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Editor's Note: Mr. McAneny is Chairman of the Editorial Board of *ANJ*, and principal in the office of Cahill, Prato and McAneny, with offices in Far Hills and New York City.



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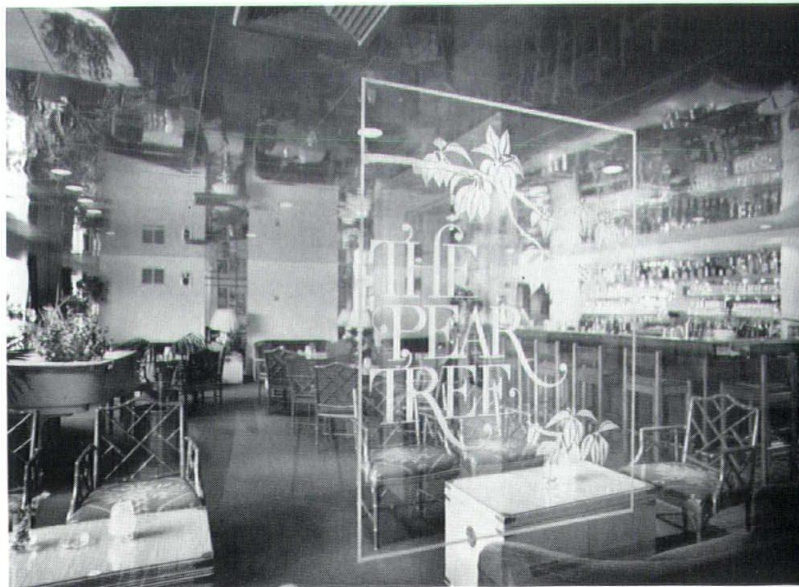
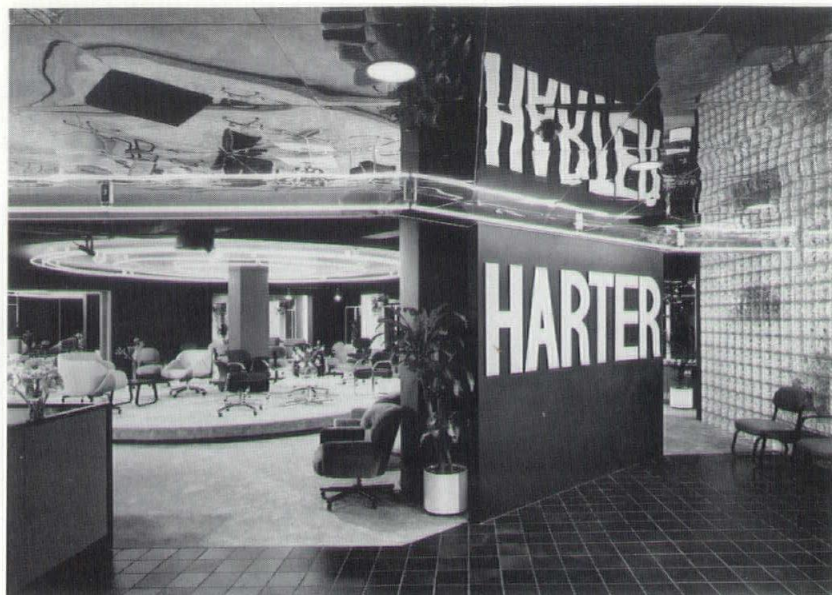


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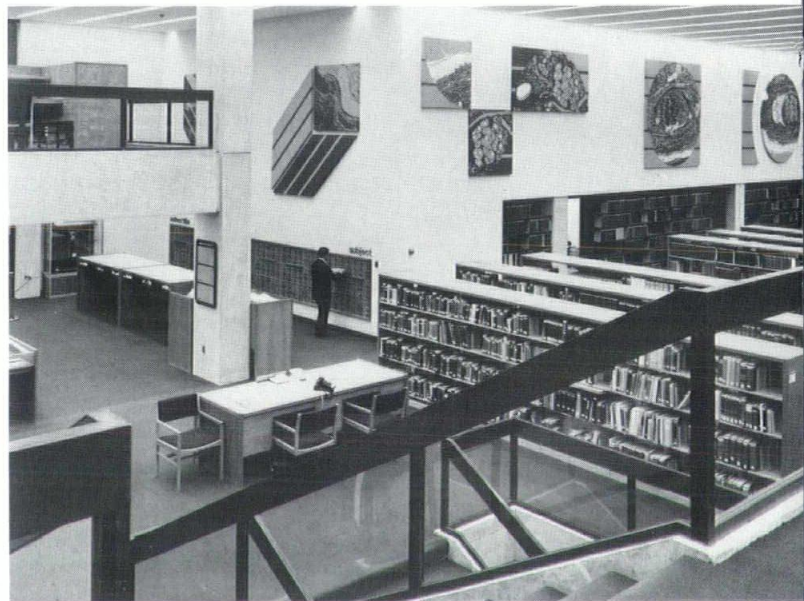


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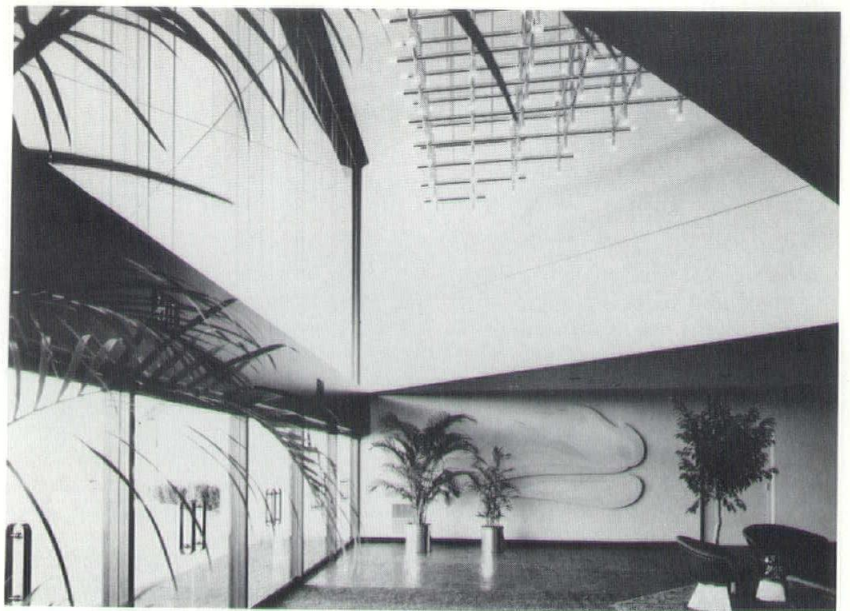
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what is architecture?

by Michael Graves, FAIA

When asked "What is architecture?", I find that kind of question so broad that I would prefer, not so much to limit the discussion to something less, but rather to discuss some particular aspects of our architectural language in perhaps more tangible terms. In other words, I think it quite possible for the architect to express the aspirations of our culture and society with architectural elements which represent larger ideas once he has a knowledge of how his compositions might be read or understood by the society at large. I would prefer, in this short piece, to limit what I have to say to issues concerning our language rather than either larger philosophical ideas or technical and pragmatic issues, both of which are, of course, germane to what we do.

Further, when asked why I use classical elements in my work, I would prefer to speak of elements rather than classical elements, as I find that a somewhat loaded proposition. One might consider elements themselves as archetypal rather than as established only in classicism. I think it would be more appropriate to address the question to some modern architects and ask how it is in their work that the elements, which would have to be regarded as the language, our ability to speak, are not only disguised, but in some cases, nonexistent. There are certain phrases which have become common today, phrases such as "window wall," which, in language of architecture, would have to be regarded as visual slang.

If one sees the language of architecture as represented by those elements which are germane primarily — shall we say only — to architecture, then one has difficulty imagining an architectural composition without them. Those elements are simple things, but in combination with each other they establish both the pragmatic and symbolic language of an architectural culture. If I were to say that those elements that are so well known to us — such as wall, door, window, column, floor, ceiling — give us as architects an ability to express the culture physically and symbolically, most laymen would agree. However, somewhere in the recent past, the architectural question was dramatically altered. Instead of having a language built upon expressive elements relating to and having their roots in both man and nature, some would have us believe that it is better to wipe the slate clean.

Architecture has inverted the question somewhat in that many regard the idea of space or void as primary without much interest in or understanding of the enclosures

and elements which give character or symbolic substance to space. A good example would be any of the many endless space-framed structures which, I believe, not only are disorienting but also limit our ability to make symbolic distinctions and hierarchies, or to give metaphorical substance to the room itself. If one were to contrast such a spaceless milieu with a typical eighteenth-century drawing room, which makes both pragmatic and symbolic distinctions between the elements and surfaces, one begins to understand our current inability to speak a language when that language has been minimized to the point of saying only one thing.

House in Aspen, Colorado. This large house is to be used by one family with frequent guests. Because the house will not be occupied year-round, it is also necessary to provide quarters for full-time staff.

The site is located at the confluence of two small rivers and therefore the primacy of this intersection becomes exceedingly important in the location and orientation of the complex. The main house is oriented toward the south light and faces one of the two rivers, while the guest house is oriented east and faces the other river. These two arms provide the basis for the complex to be organized around a central court. The third side of the court is composed of staff quarters and storage buildings and the fourth side gives access to the pool and orchard.

The exterior wall surfaces of the building employ local wood log-cabin construction but reinterpret that vernacular within a more classical organization. The strong wooden base provides a visual link to the ground, while the remaining face of the building is seen as more ephemeral and frankly analogous to the surrounding landscape. The center section of the building is capped by a roof that not only give importance to the central mass but also provides a sense of enclosure within the great hall below.

Red River Valley Heritage Interpretive Center. One of the most important aspects of the Red River Valley Heritage Interpretive Center is its particular urban setting in that the building is located in a pastoral garden at the edge of the Red River. Within the boundaries of both Fargo and Moorhead, it suggests the complementary themes inherent in urban and rural life, both of which are part of this institution.

The building itself is organized in a way which supports the thematic continuity and linearity of the story to be told. Upon entering, the visitor is given an option of beginning the exhibition sequence or attending an

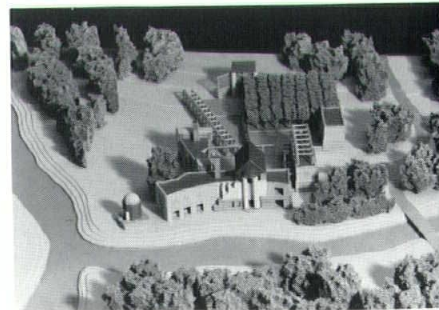
orientation presentation in the small lecture hall. The exhibitions galleries are arranged in a loop that surrounds the center of the building which allows the visitor to relate his present location to the entire sequence, for there is exterior orientation and light available as he passes through the various exhibits. The relationship of the building to the outdoors is also crucial to this sequence, especially for an institution which helps describe and educate us relative to our beginnings on the land. The various outlooks from building to landscape help to reinforce the relationship of man to landscape.

Beyond the primary exhibition area which offer a variety of spaces and light quality, temporary or changing exhibition space for traveling shows is located on the ground floor. Also, the administrative offices, library and oral history collection, and conference rooms are located around the central lecture hall core.

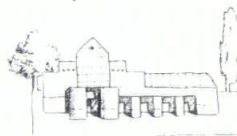
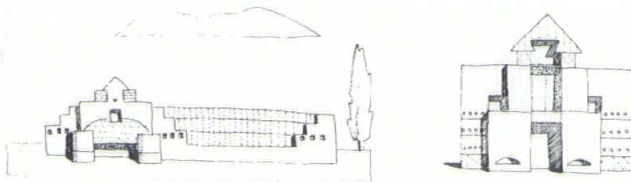
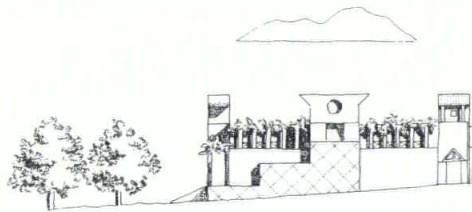
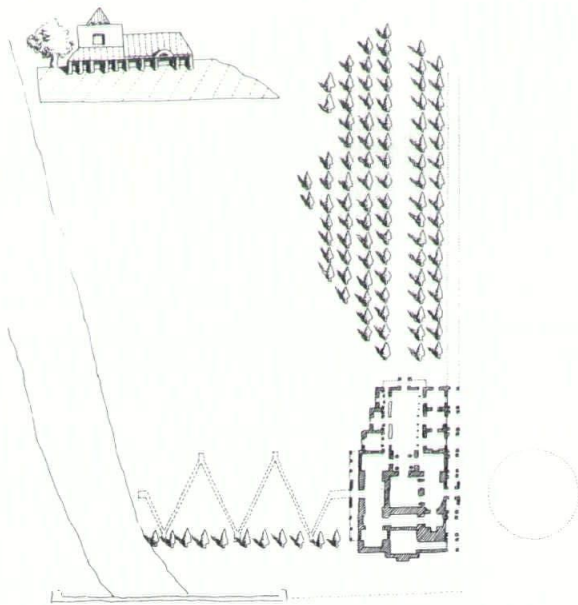
The building's character is known through our understanding of what we might regard as both an urban institution and rural vernacular. It is in this purposeful double reading that the culture of man and his roots, both urban and rural, are further enhanced.



Preliminary Study, House in Aspen, Colorado



House in Aspen, Colorado

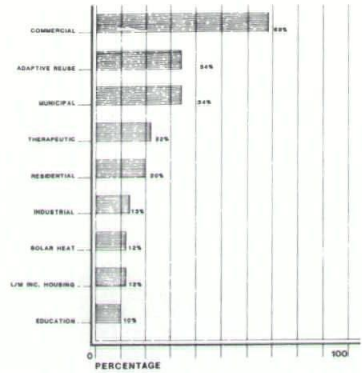


Red River Valley Interpretive Center, Moorhead, Minnesota

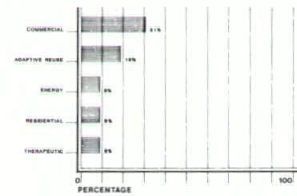
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survey results

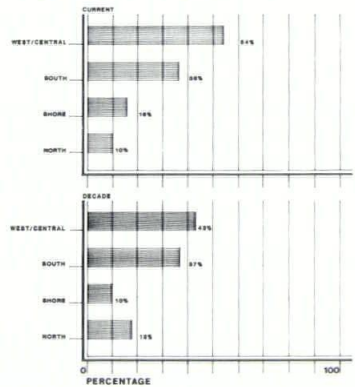
What is the major focus of a particular firm's architectural work?



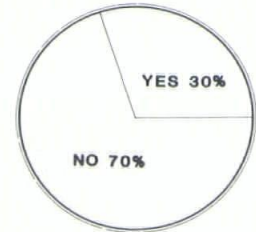
What areas of growth do you feel your firm will focus on this year, and for the rest of the decade?



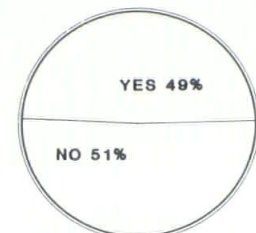
What geographic areas of the state are experiencing the most growth currently, and where will growth be concentrated for the rest of the decade?



Is the firm involved in construction management?

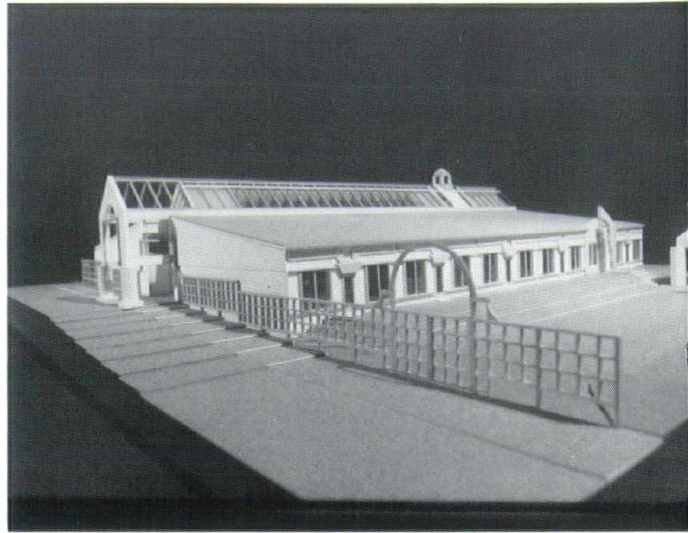
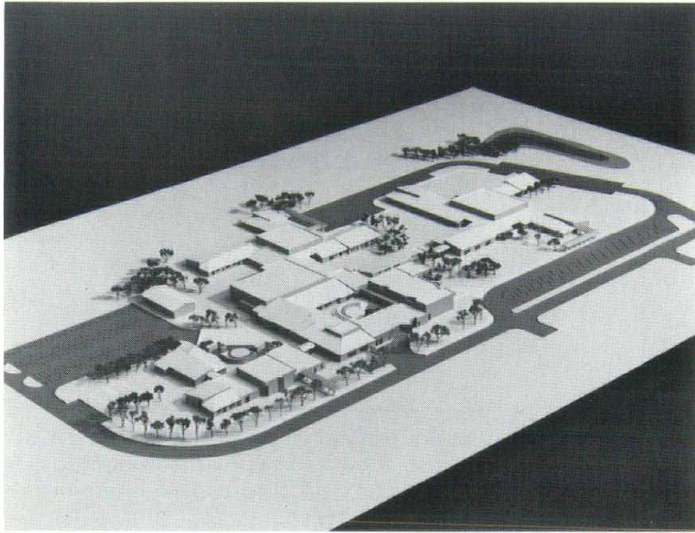


Is the firm involved in equity arrangements?



correction

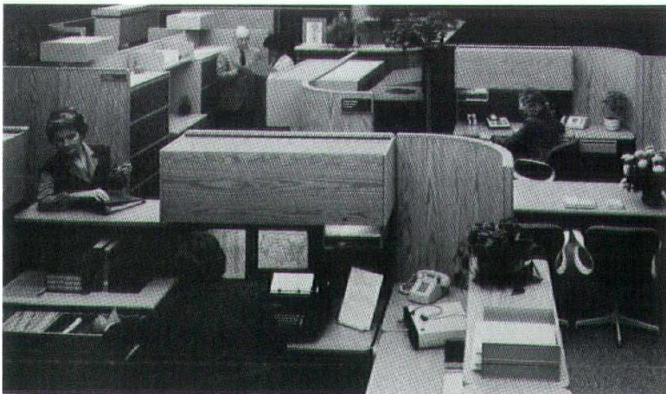
In the last issue of ANJ (Jan/Feb/Mar 1982) two photos were inadvertently transposed. The Burlington County Special Services School, Westampton Township designed by Bouman Blanche Faridy of Trenton, is shown here (left). Princeton Professional Park, Princeton designed in a joint venture by Harrison Fraker, AIA/Short and Ford, AIA of Princeton, is shown here (right).



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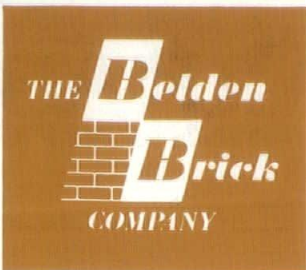
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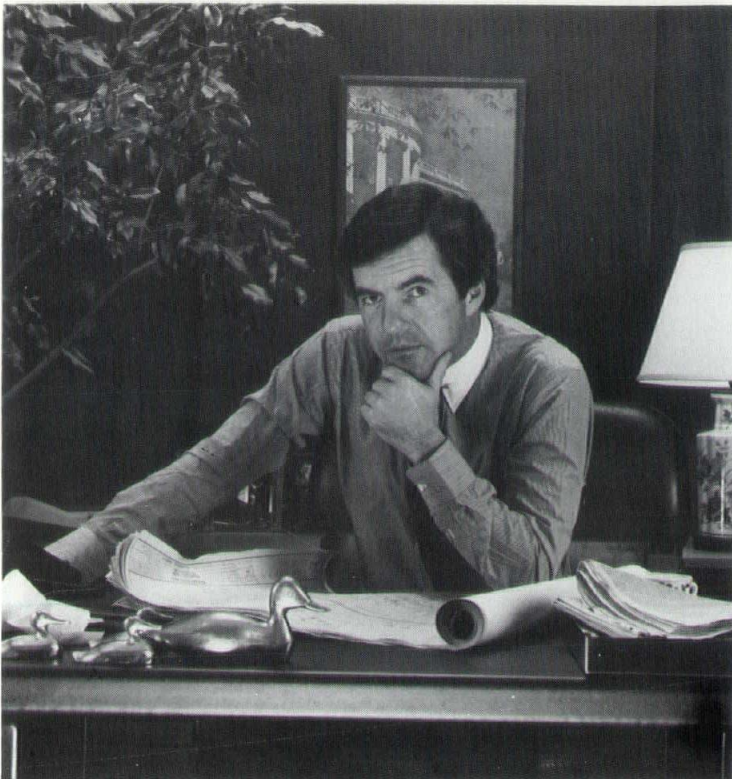
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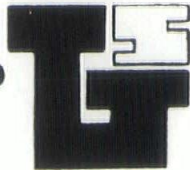
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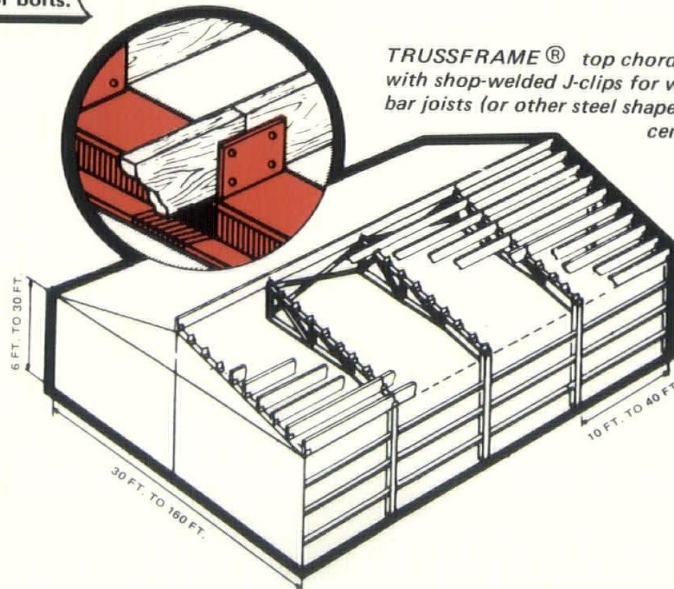
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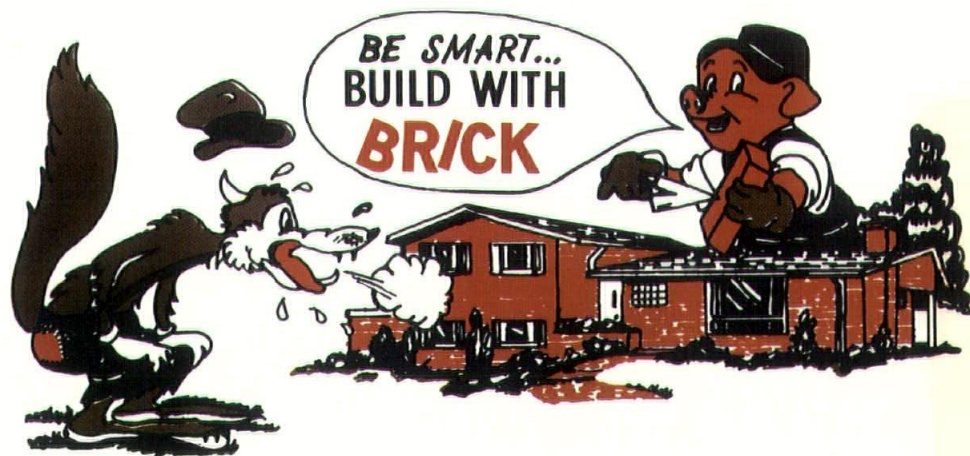
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