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September 1956

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It's the Law *by Bernard Tomson*

P/A Office Practice *Article beginning a discussion of the revision and up-dating of the Standard AIA Contract Forms.*

The necessity for revision of the AIA client-architect agreement forms has long been discussed. This column has repeatedly emphasized the importance of a properly drawn contract between Architect and Owner (*February 1948 P/A, February 1949 P/A, March 1949 P/A, April 1949 P/A, May 1949 P/A, June 1949 P/A, June 1950 P/A, October 1950 P/A, February 1951 P/A, March 1951 P/A*). In order to avoid misunderstanding, I wish to emphasize that it is my position that any "form" is too static to cope with the combinations and permutations that result from the individual differences found in the relationships of the Architect, the Client, the project, the Contractor, the municipality, the dynamic society we live in, and so on, *ad infinitum.* But if there must be "forms," let them be better, rather than worse ones.

The Office Practice Committee of the AIA has recognized the need for the revision of the forms and has prepared a draft revision of the form for use where a percentage of the cost of the work is used as a basis of determining the fees to be paid to the Architect. Many of the recommended changes are highly desirable and long overdue. Some of the changes appear to put additional burdens upon the architect, or do not go far enough in protecting the Architect's interests. It is important that the members of the profession analyze the suggested changes, to determine whether additional improvement in the forms is required.

The Office Practice Committee, in commenting on its recommended changes, pointed out that the only practical way to improve the Architect's status in relation to the Client, is to include in the form contracts those items which will establish a favorable position for the Architect whether common practice or not. The Committee stated:

"Since it is almost impossible to add an item favorable to the Architect in a printed agreement the Committee felt that generally all items possible should be included. Any stipulation can be omitted as a concession to the Client simply by striking it out. Upgrading the Architect's treatment by Clients must come by making it possible to include items in the agreement not now entirely common practice."

The approach of the Committee in this respect is sound and the revised forms should be analyzed with this goal in mind.

Perhaps the most important part of the agreement between Client and Architect (at least from the Architect's viewpoint) relates to those provisions which deal with the Architect's compensation. The first article in which I discussed this subject ("You and Your Client," *February 1948 P/A*) emphasized the desirability of (1) a retainer fee payable at the time the agreement is signed and constituting a minimum fee; (2) periodic payments during all stages of the work; and (3) a provision in percentage of cost contracts that the architect's estimates are to be binding for the purpose of determining the amount of the respective payments until actual costs are finally determined. Does the revised form adequately protect the Architect in respect to his compensation?

The unrevised AIA form did not provide for a retainer, nor for periodic payments during all stages, nor for the Architect's estimates to be binding for the purposes of determining the amount of periodic payments. In the absence of such provisions, the Architect can often be placed in the dangerous position of financing the Client.

The proposed revision to the present form contract is a substantial improvement. It provides for a retainer of 10% of the total fee to be paid in advance. However, some of the value of this provision is lost as the retainer is to be applied against the first phase of the Architect's services ("Schematic Phase") rather than the final payment of the Architect's fee. Further, it is not provided that the retainer shall be the minimum compensation under the contract. This would be of particular importance if the Owner should abandon the project and terminate the Architect's services in a very early stage after utilizing a substantial amount of the architect's time. A suggested clause would be as follows:

"A retainer fee of ———— shall be due and payable upon the signing of this agreement and shall constitute the minimum fee payable hereunder. The said sum shall be retained by the architect and shall be applied on account of the final payment for the architect's fees."

The proposed revision provides for monthly payments in all stages of the Architect's services in proportion to the value of the services rendered. This, again, is an improvement over the present form. However, the value of monthly payments, at least during the preliminary stages, must be based on an estimate of cost. The revision is silent on how this estimate is to be made. The Architect would be best protected if his estimate of cost was binding until actual costs were ascertained, at which time his fee would be adjusted. A suggested clause is as follows:

"Where the Architect's fee is determined by a percentage of cost, his estimate of such cost is made for that purpose only and such estimate shall be conclusive in determining payments to the Architect until costs are finally ascertained upon completion of the Project, at which time an adjustment will be made based upon actual cost."

In a contract where the Architect's fee is measured by the cost of the work, the definition of "cost" is extremely important. The Committee has changed that definition in its suggested revision by adding the following language:

"It shall be the lowest bona fide bid if bids have been taken or shall be based on estimate of cost for the work as submitted by the Architect."

This language may in some instances have the effect of reducing the Architect's fee, as the actual cost of the work may exceed the lowest bona fide bid. In this respect, the desirability of this change is questionable. However, that part of the additional language which provides for the cost of the work to be based on estimate of the Architect in the event bids have not been taken is a definite improvment in the original clause. It would be even more effective if it provided that such estimate is conclusive.

Provisions relating to the compensation of the Architect for the performance of extra services have also been revised by the AIA Committee.

These changes, together with other changes made in the Client-Architect form agreement, will be discussed in next month's column.

Mechanical Engineering Critique by William J. McGuinness

P/A Office Practice *column on mechanical and electrical design in architecture is devoted this month to the subject, Improvement in the Heat Pump for use in Northern Climates.*

A new application of the compound-compression principle to the problem of heating with the air-to-air heat pump in northern climates has proved successful. This may be the last step in making this combination heating-cooling device fully acceptable in the north. An installation of the improved design is now being made in the new building for the Ballinger Company, Philadelphia, Architects-Engineers, after successful results in the Heironimus Store, Roanoke, Va. The principle as applied to the heat pump has been developed by Robert G. Werden of the York Corporation. Application has been made for patents. Suitable now for use in larger buildings it may be adapted within a year for residences.

Heat pumps use electricity for compressors, fans, and pumps, and take the rest of the energy required for heating or cooling from the air, ground water, or the ground itself. With proper efficiency this can be a most economical way of tapping nature's resources. A refrigeration cycle for air conditioning disposes of its heat to the outdoor air or to one of the other two media. In winter, either water, air, or the ground is refrigerated in order to collect heat. Thermally, ground water and earth below the frost line, both of which are seldom less than 50F are good sources of heat in winter. Air, often at zero or less when the greatest indoor heating problem occurs, is less valuable. Other disadvantages, however, attend the first two. Water purchased from a municipality and wasted to the sewer is either too expensive or too great a burden on the water supply and drainage systems. The cost of obtaining ground water privately and dispersing it again to the earth is great. Treatment problems sometimes occur when water is hard or acid. Using the earth as a thermal reservoir requires the imbedment of an extensive coil system which is costly and demands space. It is virtually impossible in cities.

Because of these difficulties with earth and water, air has been most often used. It becomes inefficient, however, when the outdoor temperature drops below freezing. The replacement of the usual single-stage compression by double-stage has solved this problem *(Figures 1 and 2)*. Werden compares single-stage operation to throwing a tennis ball four stories and double-stage to throwing it two stories where an assistant throws it the remaining two. In any case, the new equipment operated in severely cold weather with 67 percent more output with less than half the input. It eliminates the electric resistance heating which was so commonly chosen to supplement air-to-air heat pumps at low outdoor temperatures. Because electric-resistance heating is often three times as costly as gas or oil, the use of air-to-air heat pumps has been largely confined to the south.

This interesting new development promises an extension of the use of the heat pump. An appraisal of its qualities is indicated.

Space: Heavy, water-filled boilers are eliminated. The equipment can be placed anywhere; in the Heironimus Store, it was in the penthouse.

Stack, fuel storage: Architects have been trying for years to get rid of the stack. Perhaps it is on its way out since none is required with the heat pump. Fuel storage and combustion problems can be transferred to the power company.

Initial cost: At least in the cases of the two buildings mentioned, the cost of installation was less than the combined cost of separate heating and cooling systems. It is hoped that the residential trend will be similar.

Operating cost: Experience to date shows the cost of operation as distinctly less than the combined expense for separate heating and cooling. No change is expected in this for locations as far north as Canada.

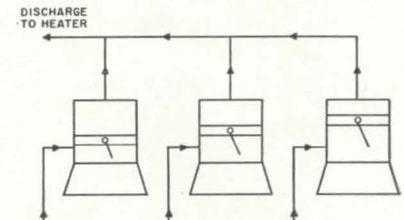
Municipal interest: Absence of smoke and fumes. Less trucking of fuel.

Utilities interest: A winter electric load to balance the summer demand for air conditioning power.

Dividend for owner: The electric demand places the consumer in a lower rate bracket which reduces his bill for power for other purposes.

General public interest: Any efficiency conserves our dwindling petroleum reserve.

Figure 1—schematic flow diagram of a conventional heat pump utilizing single-stage compression. For summer cooling, or for heating in temperate climates, single-stage compression is adequate. But in weather much below freezing, the compression ratio rises to a point that makes single-stage compression impractical for developing enough heat—requiring use of supplementary and expensive electric-strip heating.



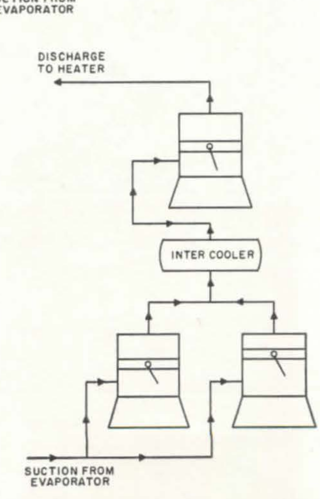


Figure 2—compound, or multistage compression is used in new heat-pump system to lower compression ratios and increase output during very cold weather, thus providing comfort heating for a building without the use of any supplementary heating. The new heat-pump system automatically switches from single-stage compression to compound compression when the outside temperature drops below a certain point.

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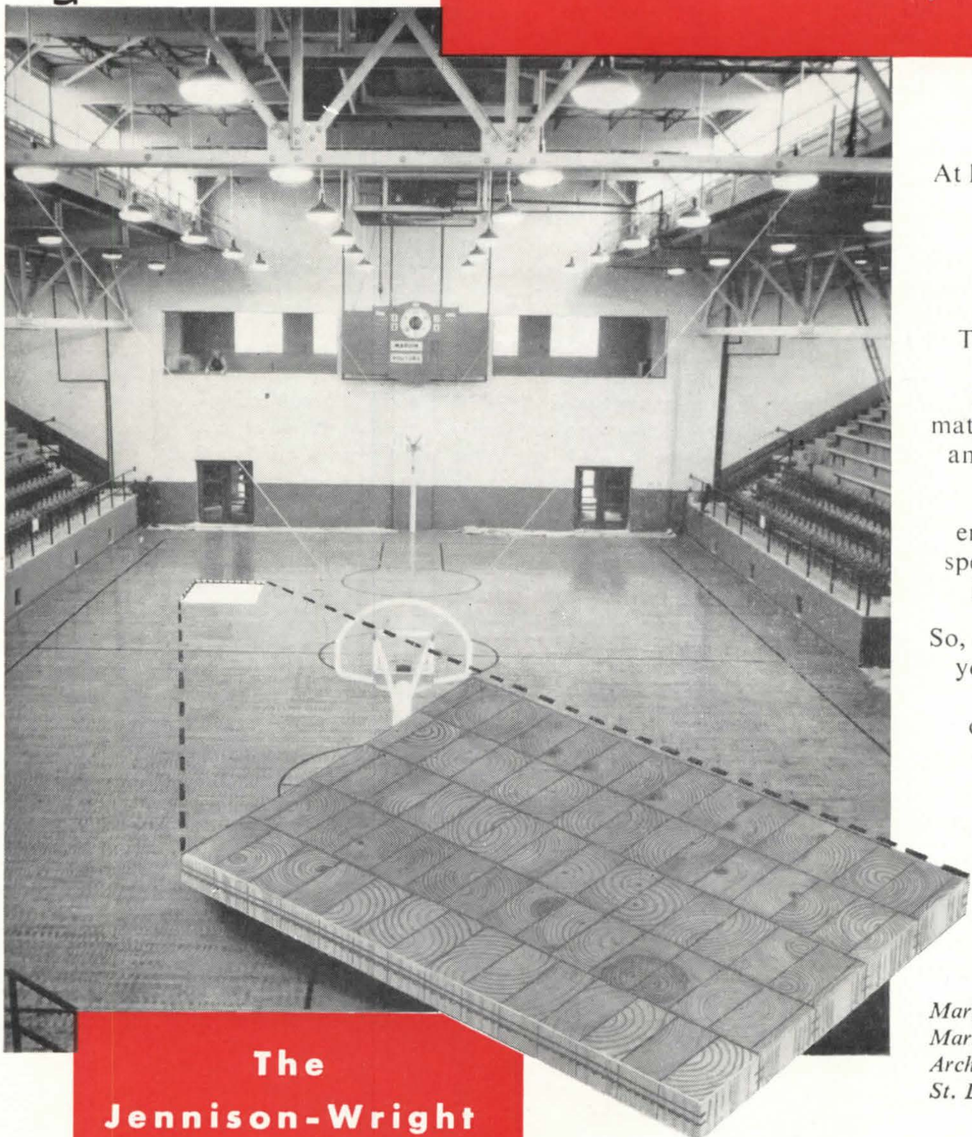

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Advertising for Architects

This* P/A Office Practice *article discusses a public-relations program of benefit to the architectural profession, developed and being carried out by New Castle Products, Inc., manufacturers of Modernfold Doors.

Architects can't advertise, and yet they want the general public to know more about their services. The AIA has a public-relations program, backed by a budget which seems large to the architects, and yet it can't begin to do the big, paid promotional job that other service and professional groups have undertaken.

A successful public-relations program involves many activities, the first of which is producing newsworthy accomplishment. The techniques of bringing an important story before the public by the written word, radio, and TV, and even word of mouth, are well known, and always possible of accomplishment through well planned, adequately financed, efficiently conducted activity. But one frustration continually annoys the architect; it is the perennial difficulty in obtaining reasonable newspaper coverage in the home-town local paper. Often, this is the fault of the architects themselves; too often, there is not full realization of the fact that *real news* must be supplied, and supplied in a way that is usable. But often, too, it is due to a feeling, usually by less progressive newspapers, that news of architecture is "not backed up by advertising," or, on the part of more progressive papers, a lack of full understanding that architects control, directly or indirectly, a huge volume of business in products which *are* advertised extensively, both on the national and the local level.

Much as we may dislike and disapprove this attitude on the part of a large segment of the American press, we still must live with the fact. Is there any way to demonstrate the local news value and the local business importance of the architect? Is there any solution to the problem of securing (architectural) editorial coverage, within the budget and the ethical code of our profession? Finally, is there any method of moving architectural groups from their own occasional lethargy in this area? The Modernfold Door people (New Castle Products, Inc., manufacturers, and their local distributors and agents in many cities) believe that they have found an answer; and P/A's Editors, after reviewing the program and its results, feel that here is an idea which benefits everyone, steps on no toes, and is capable of much greater expansion and wider use.

The program is basically a means of stimulating newspaper advertising by manufacturers of building products, in a way that will plug the architect without architects' endorsement of products, in as close collaboration with the AIA Chapter and the Producers' Council Chapter as possible—in response to which advertising revenue, the newspaper will be more inclined to devote editorial space to news of architecture. At first blush, this might sound cynical—and it might even sound ethically dangerous—but it has worked, and worked beautifully to everyone's benefit, in some 20 cities.

The idea was the brainchild of Arthur Heineman, now sales manager for MacArthur & Burke, Inc., Modernfold's distributor in Chicago (where the program is now underway). Heineman and Modernfold are completely sold on two things: the importance of the architect in his community; and the basic value of the architect's good will in selling any line of building products. It seemed to Heineman that these two beliefs met at an obvious point: the need for a company like his to *promote* the architect to the community. His first big try at an integrated program was in Pittsburgh. New Castle Products immediately saw the possibilities of extending the idea, and other local distributors have carried it out (some, perhaps, more successfully than others).

The program is in four steps—all *local* in origin and result. (In this way it differs from other institutional, pro-architect, advertising campaigns, such as Minneapolis-Honeywell's.) *Step One* is what Heineman calls the "spearhead ad"—an advertisement run by the Modernfold distributor (similar to the one illustrated) which plays down the company so far that one architect wrote, "I could scarcely find your name!" Before this is run, conferences are held with AIA Chapter representatives, the whole program is outlined and, of course, the coming benefits to the local profession explained. If *objective material* for inclusion in this first ad can be provided by the Chapter (in Chicago winners of the joint Association of Commerce and AIA Honor Awards were shown) so much the better.

Step Two involves bringing in other Producers' Council members, who are easily persuaded to do similar advertising of their own; and further meetings with the arcihtects, perhaps the Chapter executive committee. By this time, experience shows, the architects and manufacturers are beginning to realize that an unusually beneficial relationship is developing.

In *Step Three,* the total program is unfolded to the newspaper where the original ad is placed. There are conferences not only with the newspaper's advertising department (the possibility of a special section with a decent number of ads is very appealing), but also with the editorial staff (there is good, interesting, story material promised which, for once, will be backed up by advertising). The newspaper itself begins to take over at this point; the advertising salesmen know who the prospects are for ads, and, lo and behold, the editors *go to the architects* for news.

Step Four—the actual publishing of ads from many distributors as well as editorial copy on architecture—may vary from use of material scattered through the paper to a unified "special feature." One big splurge is not the end, however. It has been the experience in a number of cities that the newspaper selected for the experiment sees future and continuing possibilities so clearly that good editorial coverage

in France, too...

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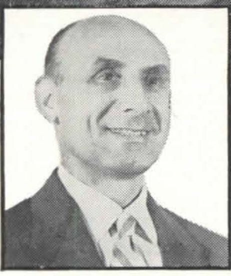

Jean Vafiades of Marseilles, France, is respected throughout Europe as an outstanding artist in floor design and installation. One of his best known achievements is this exquisite wood parquet floor in the reception room, prefecture of the administrative district of the Rhone Delta.

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Advertising for Architects

of architectural activity (and mention of the architect's name in published material) becomes policy for that paper. Furthermore, competing papers begin to see missed opportunities, and want to get into the act. (In Chicago, a rival paper called Heineman to find out "what was up" a half hour after the edition of the *News*, carrying the "spearhead ad," hit the streets.)

The program, in its entirety, has worked best where there has been full understanding and collaboration by all the groups involved. The architects cannot hope to sit back and have all this done for them with no effort and no response on their part. Letters of appreciation and approval, sent to individual suppliers, are necessary ammunition; there is nothing unethical in sincere gratitude for an objective service rendered to the profession.

In investigating results of the campaigns already conducted, P/A has found everyone seemingly pleased. The newspapers obviously benefit. The roster of architects who have applauded the results is an impressive one. The Chicago AIA Chapter's Public Relations Committee, through its Chairman, Edward Grey Halstead, reported that it had "unanimously voted to commend" the activity. Levon Seron, of Joliet, Ill., says, "It is just this kind of sensible co-operative thinking that makes for better relationships . . . in order to render the best of service to the owner." From Pittsburgh, Lamont H. Button comments, "As one of the architectural profession, I feel a debt of gratitude for a pioneering idea that may snowball into a crusade. . . . "

The Chicago Producers' Council Chapter puts it this way: "One of the most pressing needs of today is public relations in behalf of architects and architecture. No paid media are available [to the architect], and media people find it not too profitable to concern themselves over his plight. . . . Our Council, following the lead of other aggressive Councils in the country, has found a suitable plan in keeping with all established ethics, whereby we can with one fell swoop reverse this trend."

And finally, although New Castle is almost leaning over backwards to avoid any hint of selling its product in this program, the intangible value of good will on a local basis has impressed every distributor who has had a part in the program. W. M. MacArthur, President of MacArthur and Smith, Inc., in Chicago, comments, for example, that "this program seems to have given our architectural sales as well as our prestige a resounding boost. Its value to us as a jobber has been immeasurable." And R. H. McConville, New Castle's Merchandising Manager, says, "It proves again that, from a national program a local version can be evolved—from which everybody gains and nobody loses."

The thing that impresses most architectural observers about the program, as it has already been developed, is the fact that it could be promoted and used by a public-relations arm of an architectural society itself. An extension of the idea could well be carried out on a regional basis (as it has been, tentatively, in Texas) and perhaps even nationally—although the benefit of *local* promotion of the architect would then be lost. It could certainly be a continuing joint AIA-PC activity in nearly any area. The New Castle experience indicates that almost the only requisite is for someone to co-ordinate and carry through the entire program. Local representatives of the Modernfold organization are well versed in the program, and willing to help launch it in any community. Although there are certain benefits in having an individual sponsor and activator—primarily in avoiding long and cumbersome parliamentary procedures in both AIA and PC Chapters—it would nevertheless seem to be a productive activity for the professional public relations counsels now employed by many AIA groups.

A summary, then, of the advantages of this program seems to be five:

1. It is a method of "merchandising services" in keeping with present-day trends in other professions.
2. It is a public-relations activity ethically "safe" and at the same time effective and remunerative for all.
3. It is an activity of sufficient value to manufacturers and distributors for them to finance it.
4. It is designed to alter present media attitudes among local newspapers regarding editorial coverage of architecture and editorial credit to architects.
5. It could be a progressive means of attracting more members to AIA Chapters and strengthening the Chapters' own services to the profession.

PITTSBURGH POST-GAZETTE: MONDAY, MARCH 1, 1954

Architects Have Leading Part in Pittsburgh's Progress

Today's Building Problems Diverse

Architects Organized As National Association

Profession Represented in This Area By Pittsburgh's Chapter of the AIA

Architects' Work Shown in New Buildings

Redevelopment Program Reflects Architect's Role

All Projects Designed With Users' Needs In Mind, Based on Wide-Ranging Study

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Frank Lloyd Wright
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Meeting the architect's concept

High velocity air diffusion in the Price Tower

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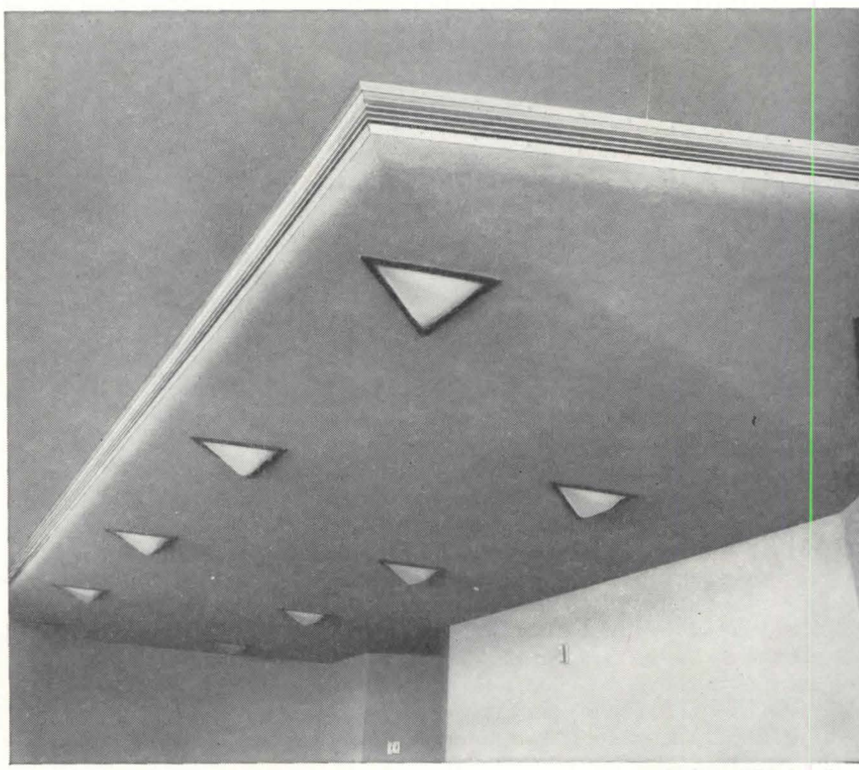
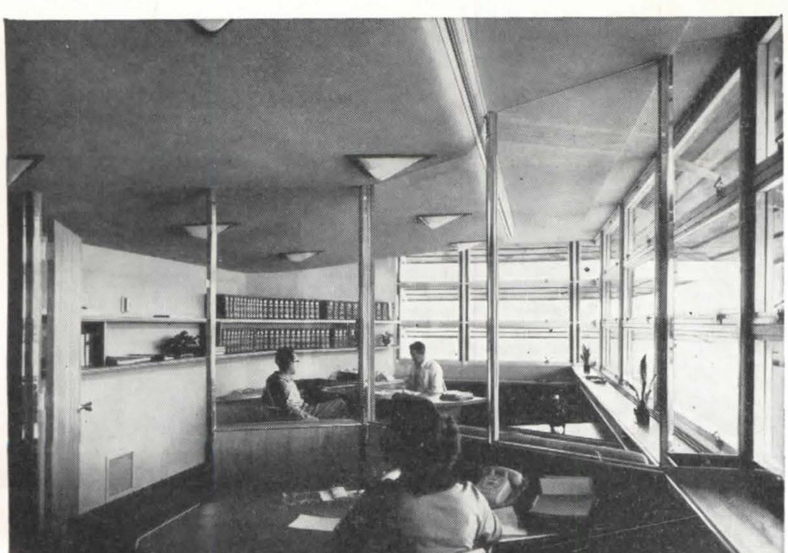
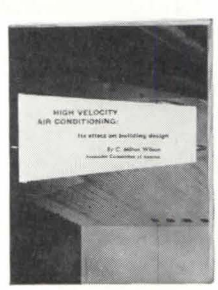


PHOTOS: JOE D. PRICE



See how Anemostat Straight Line All-Air High Velocity units are used in a typical office area.



Write for "High Velocity Air Conditioning: Its Effect on Building Design" to Anemostat Corporation of America, 10 E. 39 Street, New York 16, N. Y.

Anemostat—The Pioneer of All-Air High Velocity Systems

architectural education
can "prediction" become actuality?

Dear Editor: I was very interested in Ernest Wright's prognosis of things to come in architectural education during the next twenty years (*"Architectural Education—A Prediction," May 1956 P/A*). I share some of his views and hope with him that teaching methods can be so directed that the student will develop a sense of space as well as structure and esthetics—we might say of architectural reality. Whether this should be accomplished by continuous actual building as he suggests, or through a return to the apprentice system also proposed, or by completely new and untried methods, must in the last analysis be solved variously by each school with full consideration of its own location, facilities, and philosophy. Bill Wurster once said that an architectural school should be so organized as to utilize the strengths of the parent institution. I heartily believe that this is sound policy. Since our architectural schools are found in technical institutes, private universities with strong and broad liberal arts traditions, state colleges and denominational institutions, in urban locations and in college towns, it seems good common sense to shape the school to make best use of its situation. I am keenly aware of how variable these problems are, having taught for a considerable time in a large urban university before assuming the Headship of a state school in a college town. Some sort of clinical arrangement employing students and faculty might be most desirable in the educational program of a non-urban school. Such an office organization might have little merit in the university in a great metropolitan area where students and faculty alike are surrounded with construction and part-time employment opportunities.

I would certainly agree with Wright that Architectural History, and in fact all of the theoretical courses in architecture, should be taught more creatively. There is great room for imaginative exploration in this area.

The task before us is humbling when one considers the simple fact that the men entering in the collegiate schools of architecture this fall will probably still be practicing in the next century. The changes experienced in our own suggest the staggering developments to come tomorrow and the need for real education designed to enable future architectural practitioners to analyze and solve these building problems. We must be particularly wary lest we indulge in mere vocational education, or fashionable whims and excesses.

HARLAN E. McCLURE
Clemson College

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Dear Editor: My thanks for the splendid article on "Architectural Education—A Prediction," by Ernest Wright.

I was glad to note the emphasis on three-dimensional work by students. Having worked in the Taliesin Fellowship, I am greatly in sympathy with this approach. We require two summers of practical experience in construction and/or in the office before graduation. Furthering the three-dimensional idea, we require all architectural students to have three shop courses in machine, tools, methods and materials. They execute their own designs in wood, metal, and plastics.

GEORGE M. BEAL
University of Kansas

•

Dear Editor: The peek at the future noted in Ernest Wright's article should be essentially correct; actually, it doesn't seem to be a bold prophecy, for today many schools have courses beyond engineering design in *wood, steel, and concrete.* The curriculum at our School includes a fifth year in "structural

(Continued on page 14)

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REINHOLD

(Continued from page 13)

planning" in which experimental and developmental structural schemes are designed and analyzed though not generally figured. Students construct models of these systems. Actually, the teaching of the postulates of structures should be furthered.

I agree that full scale models would be more beneficial but costs and space for construction of problems need to be resolved. For further understanding of these systems advanced mathematics courses would be required. Perhaps in the future still greater stress will be placed on

(Continued on page 236)

historic "transition" zone

Dear Editor: I have especially enjoyed the June issue of P/A. You say in your P.S. editorial that one is impressed with the number of first-rate examples of residential design from which to choose, and "with the degree of both technical and esthetic advances." But I think one is also impressed by the immaturity of American designers in handling the important problem of providing zones, or "areas of transition," from "open sky to complete enclosure."

Someday it may be practical for a publication such as yours to present a series of historic structures—both in the West and in the East—which could help in the development of our architecture.

I take the liberty of enclosing an example of traditional Japanese design to illustrate. LESTER COLLINS
Washington, D.C.

various approaches

Dear Editor: Enjoyed your feature, "The New House-to-Site Transition," very much, making a wonderful choice of various kinds of approaches to the same goal.

Also, I do appreciate the velvet finish on the paper, which always makes for easier reading and distinctive presentation. I wish the whole magazine could be printed that way. H. H. WAECHTER
Creswell, Ore.

subject enjoyed

Dear Editor: I enjoyed very much your June 1956 P/A—especially the material and method of presenting the house-to-site article. In spite of

(Continued on page 16)

Peter Naylor

1839

MAN OF VISION

AIA FILE 20-B-1

Metal Lath News

UNITED STATES PATENT OFFICE.

PETER NAYLOR, OF NEW YORK, N. Y.

IMPROVEMENT IN THE MODE OF PROTECTING PLASTERED WALLS AND CEILINGS FROM FIRE.

Specification forming part of Letters Patent No. 1,087, dated February 22, 1839.

To all whom it may concern:

Be it known that I, PETER NAYLOR, of the city of New York, in the State of New York, have invented a new and improved mode of protecting the walls and ceilings of such apartments as are usually finished with lath and plaster against the effects of fire by substituting perforated plates of metal for the lath of wood usually employed; and I do hereby declare that the following is a full and exact description thereof.

I take thin sheets of metal, preferring, so far as my experience has gone, tin-plate as prepared for the purpose of manufacturing tin-ware, as I have reason to believe that the tinning protects the iron completely from the action of the lime used and from oxidation generally. I do not intend, however, to confine myself in this particular, but to use any kind of sheet metal which I may find adapted to my purpose. When tin-plate is used the distance of the joist or of the timbers generally to which it is to be attached must be within the limits of the length of such plates; but when sheet-iron or other metal is employed the distance may be greater. I take the sheet metal which is to be used and I punch numerous holes through it, in the manner of a grater, using either a round or chisel-edged punch, as may be preferred. The diameter of these holes may be from an eighth to a quarter of an inch. When the plates have been so punched I nail them onto the joist, scantling, or studs with the rough or burred edges of the perforations outward. For greater security I take strips of hoop-iron, which I nail on the timbers in strips before nailing the sheet metal, and when this is done it would be difficult to heat the metal through its two thicknesses sufficiently to set fire to the timber, even without the protecting influence of the plaster. The sheets of metal may be seamed together at their edges before nailing them on. When the sheet metal has been properly secured to the timbers I proceed to plaster the walls in the usual manner, omitting, however, the first rough-coat which is necessary when laths of wood are employed. The plaster will pass through the numerous perforations in the sheet metal, and will be as securely keyed and retained in place as when done in the ordinary way. It has been found, also, by experiments carefully performed that the plaster will not flake off by a long continued heat so readily as it does from wooden laths, which warp and twist, and thereby aid in loosening the plaster.

What I claim as my invention, and desire to secure by Letters Patent, is—

The employment of perforated sheet metal as a substitute for laths on walls and ceilings to be plastered, using and applying the same substantially in the manner herein fully set forth.

PETER NAYLOR.

Witnesses:
A. BOKEE,
K. S. VAN VOORHIS.

PATENT ON METAL LATH GRANTED TO PETER NAYLOR IN 1839

MAN OF VISION

Chronology of an Improvement in Building . . .

METAL LATH

1839 Few men have made a more significant contribution to the science of building than Peter Naylor. On February 22, 1839, he was granted Letters Patent No. 1,087 by the United States Patent Office for his claim to an invention as an *improvement in the mode of providing plastered walls and ceilings to resist fire.* By perforating metal sheets he had found by experiment that . . . *the plaster would pass through the numerous perforations . . . be securely keyed and retained in place . . . the plaster would not flake off by a long continued heat . . .*

This is still the basic principle that enables metal lath to maintain its never-challenged position as the best plaster base. Well over a century later, Peter Naylor could be proud to have aided in preventing death and damage from fire—as well as for his contribution to the greater beauty, economy, and durability of our present-day buildings.

1880 Peter Naylor's perforated sheets of metal were the forerunners of what we know as sheet lath today but without the features of the modern product. By the year 1880, the demand for sheet metal lath had grown because of its obviously desirable advantages. It was used in the construction of the Boston Post Office in this decade. Almost 50 years later, this building was demolished. Inspection of the sheet lath and plaster at the time of demolition demonstrated positively the lasting affinity of these two materials.

1884 In the year 1884, John F. Golding obtained a patent for a process of cutting parallel staggered slits in sheets of metal which were then pulled or stretched to both deform the planes of the metal strands that resulted and, at the same time, to produce diamond-shaped openings. The product was called "slashed metallic screening" and was not intended as a plaster base at all—it was invented as a material for fencing! Some 22 years earlier, Thomas Long of Middlesex County in England had secured a British patent on a similar process of expanding metal sheets to form a lace-like pattern of openings. Known as the guillotine method, this process was the predecessor of the one used today to produce millions of square yards of expanded metal lath annually to satisfy the extremely exacting demands of the architects who design our modern buildings.

1888 The Library of Congress, designed by Architects Smithmeyer and Fels with Architect Edward Pearce Casey later associated on the project, is an example of the lasting combination of metal lath and plaster. Murals, ornamental sculptured plaster, and plane wall surfaces are testimony after more than half a century that the architects were wise in the selection of metal lath as a plaster base for durability.

1892 The Columbian Exposition in Chicago, an important event in itself, was of exceptional significance to the metal lath industry. It was there that Golding's "slashed metallic screening" was converted into a base for plasters in the theatrical buildings of the so-called "White City" which were designed by such immortals as Architects Sullivan, Burnham, Root, and many others.

1898 To Frank Pitkin goes the credit for development of a rotary production method for diamond mesh metal lath which resulted in greater manufacturing economies.

1930 The Spanish-American War, the "panic" of 1907, World War I, and the business adjustments of the 1920's marked a period of feast and famine in building activity. During these years there were developments in metal lath manufacture as covered by patents which were secured by Fordyce and Duncan in 1900, by Curtis in 1905, and by Pearce who in 1930 obtained a patent on his inventions covering the small diamond mesh.

1956 To the improved methods of producing metal lath which have been developed over the years, there is now added a new on-the-job factor—machine application of plaster over the lath. The utilization of a machine or "pump" for applying plaster to metal lath is now an established reality. It promises advantages in the use of this versatile design material that would please Peter Naylor.

Metal Lath News

Don Graf, Editorial Consultant

Metal Lath and Plaster

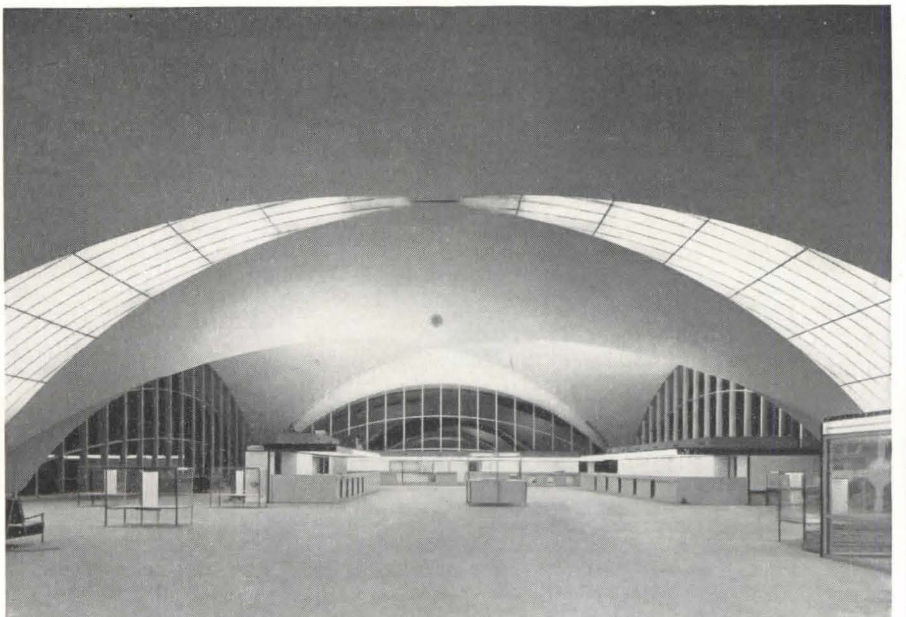
satisfies all four requirements . . .

1 FIRE SAFETY

In this hotel, constructed with wood-frame interior and masonry exterior walls, fire spread rapidly throughout the building because of unenclosed stairways. The metal lath and plaster protecting the wood framing thus was subjected to a severe test—and proved conclusively again the fire safety of this combination of materials. A member of the fire department publicly stated that metal lath and plaster enabled the firemen to save the building from destruction.

2 DESIGN VERSATILITY

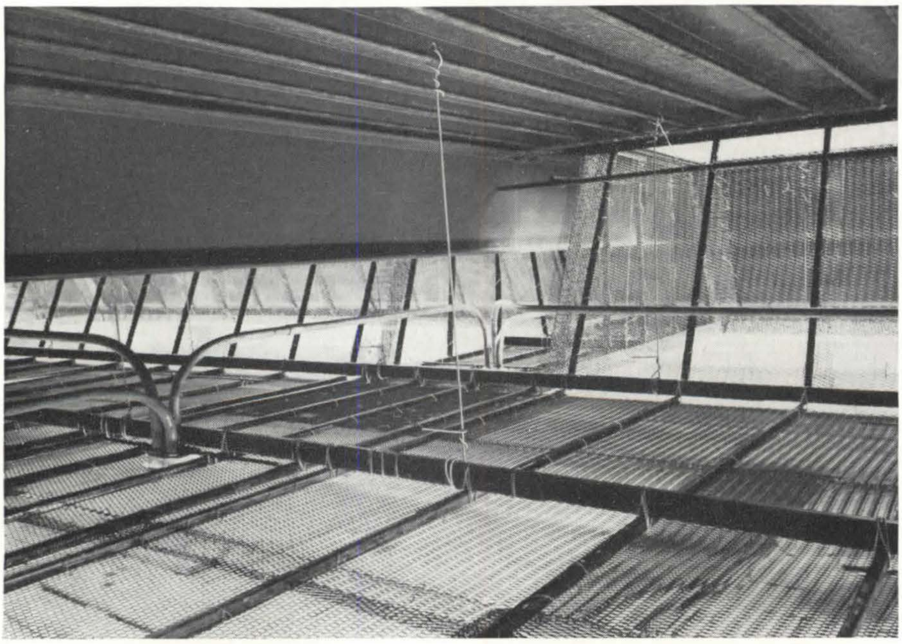
The groined vault-type ceiling in the new airport in St. Louis, Missouri, illustrates the design versatility of metal lath and plaster. Helmuth, Yamasaki and Leinweber, Architects and Engineers; H. Niehaus Plastering Company, Lathing and Plastering.



—Hedrich-Blessing

3 DURABILITY

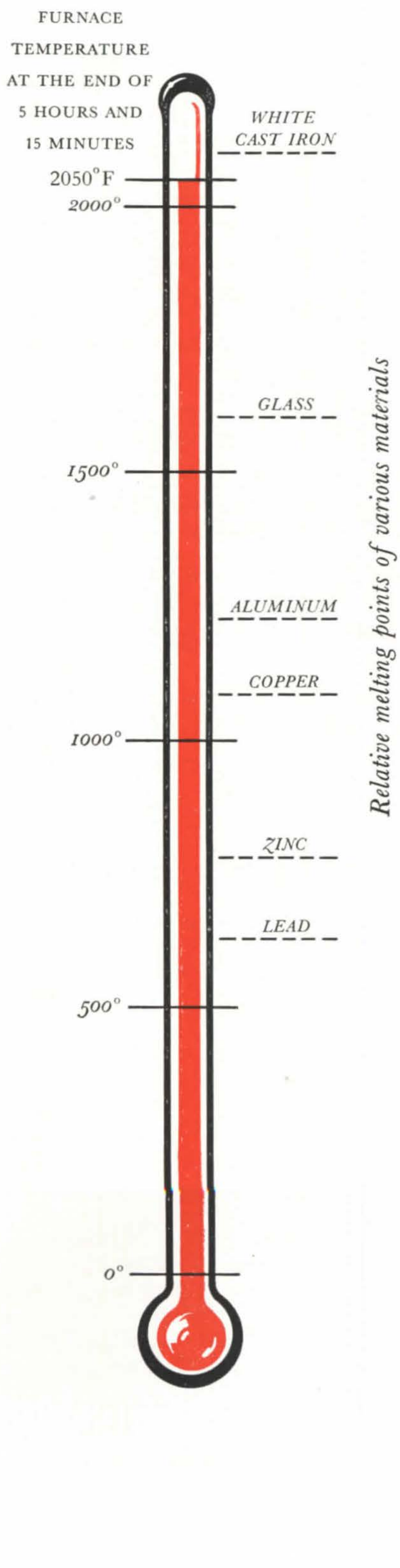
In the Library of Congress, Washington, D. C., built prior to the twentieth century, metal lath and plaster construction has proved its durability by well over 50 years of service. Smithmeyer and Fels were the Architects, with Edward Pearce Casey later becoming an associate.

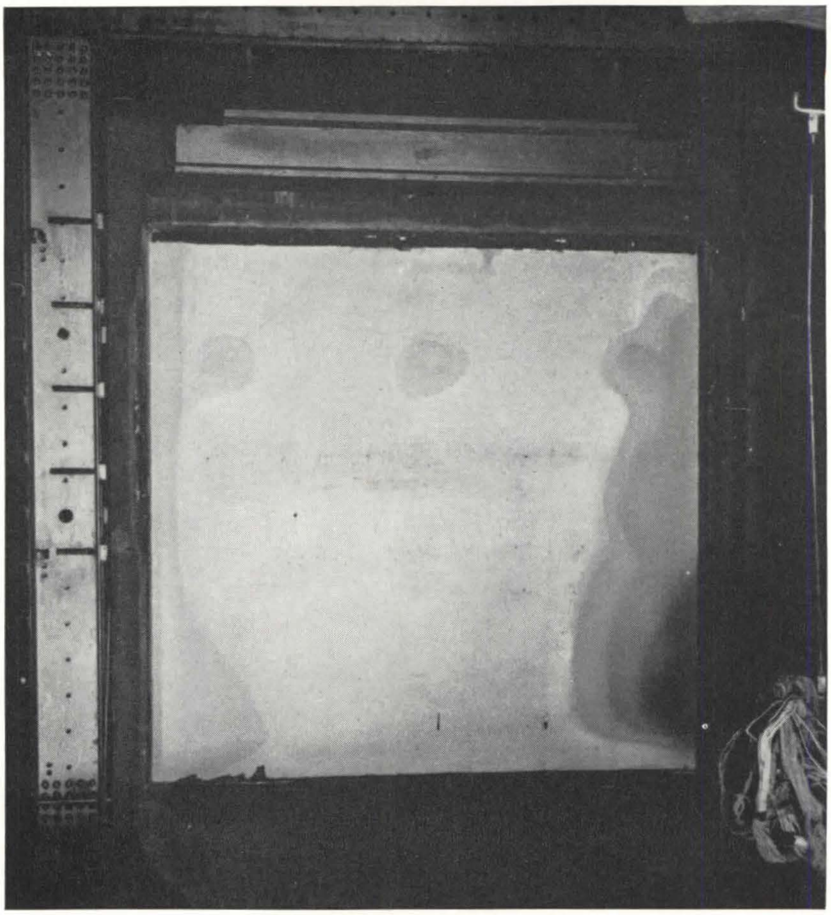


4 ECONOMY

This suspended ceiling of metal lath, after application of gypsum-lightweight aggregate plaster, will serve as membrane fireproofing for the structural steel members in the Cleveland Institute of Art, Cleveland, Ohio. There was a significant initial economy due to the reduced dead loads resulting from use of these fireproofing materials. Garfield, Harris, Robinson & Schafer, Architects; John Smallwood, Lathing and Plastering Contractor.

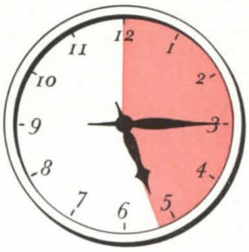
FIRE SAFETY





METAL LATH AND PLASTER PARTITION INTACT AFTER SEVERE FIRE TEST

Assembly was tested in furnace for a period of 5 hours and 15 minutes



The ability of a 2″ solid metal lath and gypsum-sanded plaster partition to resist destruction by fire has been proved. Subjected to intense heat in a standard test furnace in a nationally known laboratory for a period of 5 hours and 15 minutes, this partition successfully prevented the passage of fire. The partition did not approach collapse despite a maximum temperature of over 2000° F. in the furnace. There was no spalling of plaster. This is fire safety!

Experience and Tests establish Metal Lath and Plaster . . .

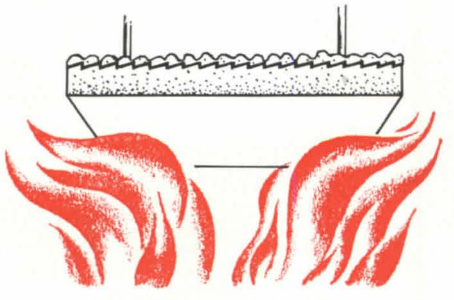
1 FIRE SAFETY

Metal lath and plaster construction has an established record over many years in stopping or delaying the spread of fire and the consequent saving of life and property. Both in the laboratory and in the field the unique resistance of this combination of low-cost building materials to the ravages of fire has been proved countless times.

When plaster is applied to metal lath, the plasticity of the mortar under the pressure of the mechanic's trowel, or the force of the plastering machine or pump, results in the formation of approximately 1000 keys for every square foot. These keys or "fingers" of plaster formed on the back of the metal lath tenaciously grip the strands of steel. The plaster and metal lath are virtually inseparable.

In laboratory tests far more severe than the crisis of an actual fire, two-inch-thick solid partitions of metal lath and gypsum-sanded plaster were exposed to the intense heat of a test furnace for *five hours or more!* The temperature of the furnace during the tests reached over 2000° F. After such demonstrations of fire resistance showing no imminence of collapse, the architect can specify metal lath and plaster with assurance of maximum fire safety.

Membrane fireproofing, consisting of metal lath and plaster, is the newest development for the fire protection of the structural steel frames of buildings. Light in weight and economical in cost, this modern method of fireproofing rapidly is becoming the choice of more and more architects and engineers in designing structures which will be safe from destruction by fire.



Floor constructions with metal lath and plaster ceilings on the underside have earned fire-resistance ratings in excess of four hours. Flames during these tests were stopped by the plaster which gripped the metal lath by means of over 1000 keys or "fingers" per square foot. This is fire safety!

DESIGN VERSATILITY

Design Versatility—The office of American Stove Company, St. Louis, Missouri, is an outstanding example of the manner in which metal lath and plaster can be adapted to ornamental requirements. Harris Armstrong, Architect; ceiling design by Isamu Nourchi; Robert Campbell Plastering Company, Lathing and Plastering Contractor.

—Hedrich-Blessing

Design Versatility — Whether the surface problem is a simple plane or a complicated contour, metal lath and plaster is the best solution. This suspended ceiling with concealed lighting in the Westminster Presbyterian Church, Detroit, Michigan, shows design versatility. Harold H. Fisher & Associates, Architect; Service Art Plastering Company, Lathing and Plastering.

Metal Lath and Plaster assures ultimate in . . .

2 DESIGN VERSATILITY

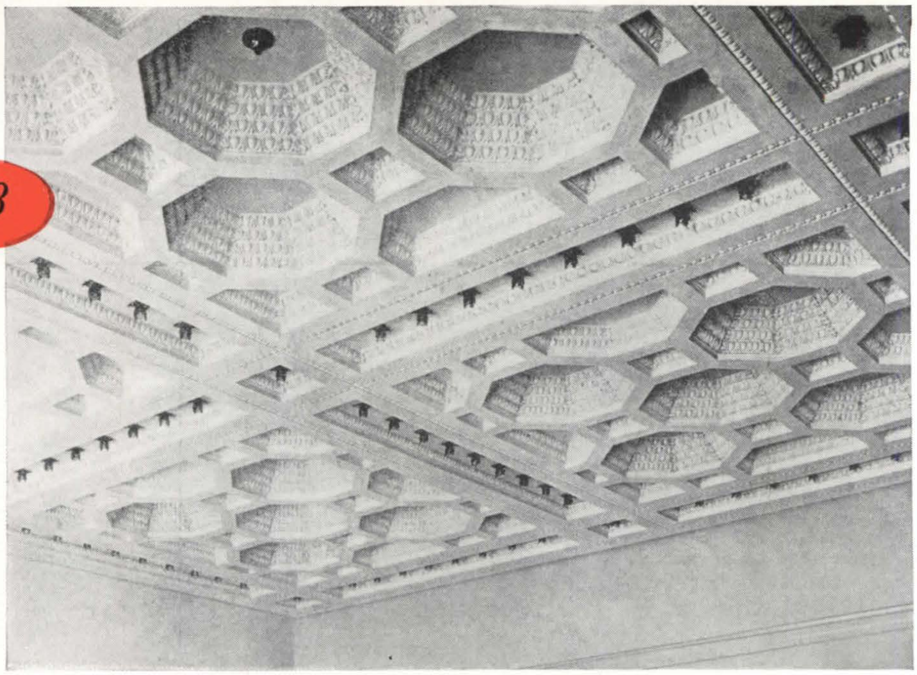
Generally the word "design" connotes how something *looks.* To the architect, "design" embraces strength and utility as well as beauty. No combination of wall and ceiling materials has greater versatility as a composite design medium than metal lath and the various available plasters.

Metal lath and plaster construction is adaptable to varied geometrical forms, offers a selection of surface textures, provides fire resistance, and enables acoustical treatment. Indeed, it is a fluid medium of design which permits the architect to meet readily the varied building requirements.

With metal lath and plaster, architect Harris Armstrong achieved, within budget limitations, the elaborate ceiling effect he desired for the lobby of the American Stove Company office building in St. Louis, Missouri. A cast ceiling would have been prohibitive in cost.

Architects may be certain that metal lathing and plastering contractors will respond promptly to inquiries on problems of imaginative design which can be solved by means of the versatile combination of metal lath, metal accessories, and various types of plasters.

DURABILITY



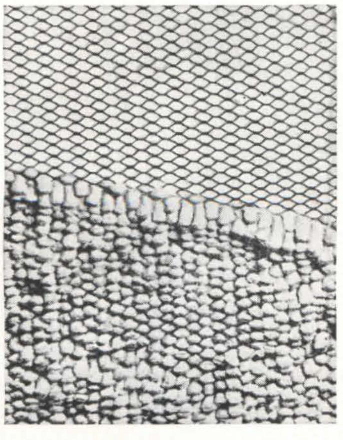
1898

Durability – The expanded metal lath industry began to thrive in the 1890's. Metal lath was specified for many important structures during that period including the Philadelphia City Hall. Designed by John McArthur, Architect, with John Rice, William Struthers and Elijah Jones as Associate Architects, this building was completed about 1894, ground having been broken in 1871.

This picture of an ornamental ceiling originally was taken in the coroner's office, Philadelphia City Hall. It appeared in the 1898 edition of the magazine "The Doings of Expanded Metal."

Here is the same ceiling today, now a courtroom. Its unfaded beauty attests to the durability of metal lath and plaster construction.

1956



Durability – These are the keys of plaster which so tenaciously grip the metal lath. With approximately 1000 of these "fingers" per square foot, a plaster slab reinforced with metal lath offers the utmost value in years of service and lasting newness.

Time attests to Metal Lath and Plaster . . .

3 DURABILITY

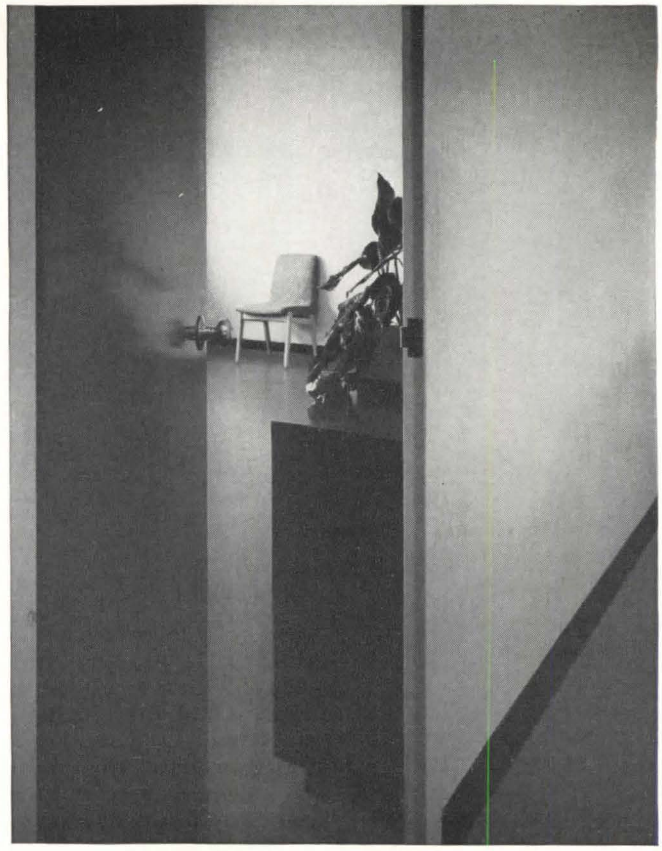
There is a phrase "profit by experience." The combination of metal lath and plaster has been improved, developed, and made available in more and better ways through the conclusive test of long experience. Perhaps it is a paradox that such time-tested materials as metal lath and plaster combine to express the most forward and newest ideas of architectural design.

Destructive disasters of floods, earthquakes, fires, hurricanes . . . have left in their wake the proof that metal lath and plaster construction not only resists damage to itself, but, at the same time, serves to protect human life and property.

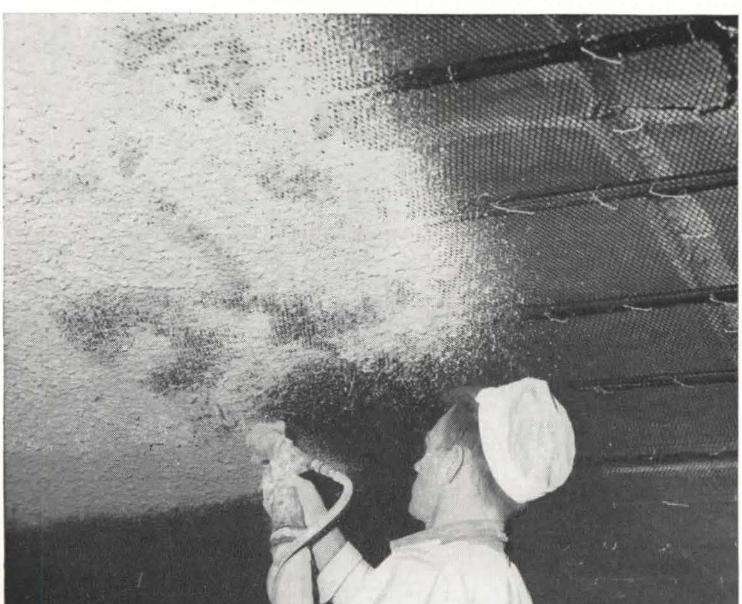
Whether from expected wear and tear, normal use, or from some unexpected demand by the elements, the profit of experience will dictate this combination of materials for durability. There can be no question of doubt on its past performance.

A piece of metal lath which was installed in the Masonic Temple, Detroit, Michigan, in 1904-05.

ECONOMY


—Hedrich-Blessing

Economy—This solid partition of metal lath and plaster, only 2″ thick, is low in installation cost and makes available many added square feet of useful floor space.



Economy—Machine or "pump" application of plaster is an important step toward reduced costs of buildings which must satisfy exacting demands of fire safety, durability, and design versatility.

Integral feature of Metal Lath and Plaster is enduring . . .

4 ECONOMY

The question of true economy has several parts . . . original cost . . . cost per-year-of-performance . . . lowest total cost in dollars for fire safety, pride of appearance, ease of redecorating, and minimum maintenance.

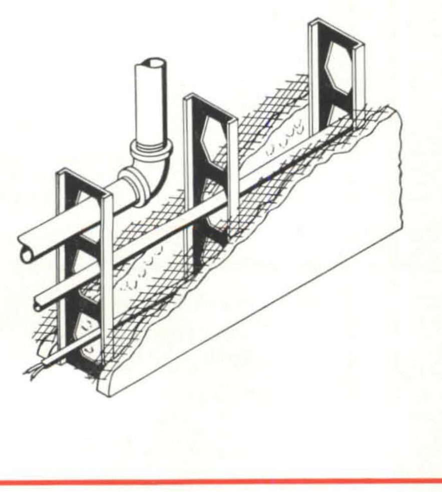
The many ways in which metal lath and plaster has been combined to perform so many functions in building construction has resulted in its universal acceptance as a mark of good judgment in the choice of building materials.

Two-inch metal lath and plaster solid partitions add surprisingly to the usable floor area, and, usually, at less initial cost than other types of partitions. The reduction in dead load as compared to other types of partitions results in savings in the cost of structural members.

Hollow partitions, readily accommodating mechanical pipes or ducts, are extremely light in weight and are exceptionally adaptable to job conditions when the actual installation suddenly is changed by some new or added requirement.

Completely complementing the several types and weights of metal lath is a wide variety of accessories. Metal base, casing bead, picture mold, corner bead, prefabricated studs, channels, cornerite, base screed . . . all are installed by a single skilled trade. The subcontractor for metal lathing and plastering will translate the architect's drawings into the three dimensions of reality with exactness. Here, too, is economy!

The fire protection of columns, beams, girders, and other structural elements with metal lath and plaster membrane fireproofing is a thoroughly tested, modern development. It saves cost and reduces weight, thereby saving dollars. There are countless numbers of existing structures which confirm the true economy of membrane fireproofing.

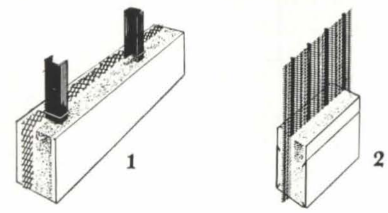
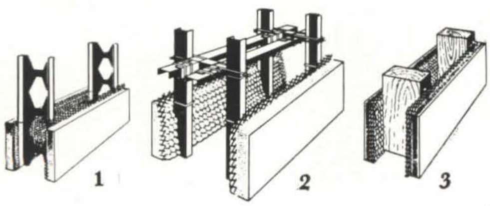
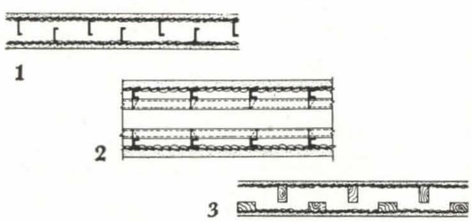


ECONOMY—Hollow partitions constructed of prefabricated metal studs with metal lath and plaster, offer a definite economy in installation of either horizontal or vertical mechanical lines. The convenience and ease with which the heating, plumbing and electrical contractors can install their work will be reflected in their bids.

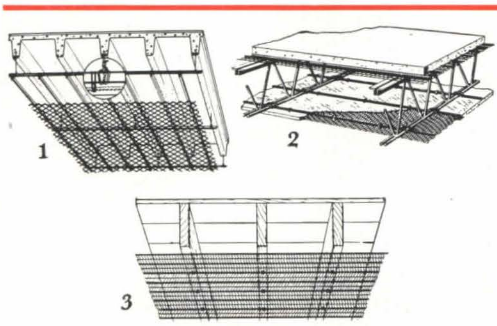
Metal Lath Construction Guide

Selection of proper materials for specific conditions and purposes for a building is often as important as the building design itself. Some of the fundamental points usually considered by designers when types and methods of metal lath construction are determined are noted below.

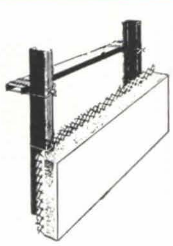
PARTITIONS

		Advantages
	SOLID PARTITIONS (1) CHANNEL STUDS (2) STUDLESS	Low initial cost Effective fire protection Minimum partition area required Impact resistant Good sound transmission loss Adaptability
	HOLLOW PARTITIONS (1) PREFABRICATED STUDS* (2) CHANNEL STUDS* (3) WOOD STUDS * *nonload-bearing*	In all metal construction, service lines can run horizontally or vertically Impact resistant Good sound transmission loss Effective fire protection Lightweight, strong and resilient Adaptability
	DOUBLE PARTITIONS nonload-bearing (1) STAGGERED PREFABRICATED STUDS (2) CHANNEL STUDS (3) STAGGERED WOOD STUDS	Excellent for sound isolation and reduction of sound transmission Flexible partition thickness Varied ceiling heights Effective fire protection

CEILINGS

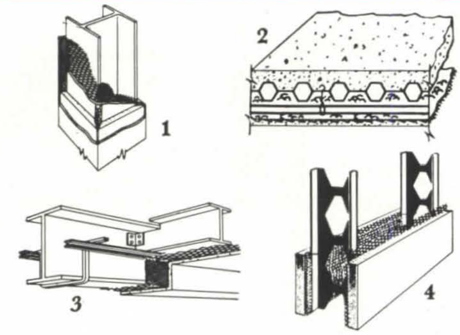
	(1) SUSPENDED (2) FURRED (3) CONTACT All may be supported from steel, concrete or wood	Effective fire protection Good sound transmission loss Acoustical treatment Flexible and versatile construction Concealment of utilities Architectural treatment Thermal insulating

VERTICAL FURRING

	WALL FURRING ENCLOSURES FOR SHAFTS, STAIRWELLS, COLUMNS, DUCTS, UTILITY ROOMS, AND OTHER LOCATIONS	Effective fire protection Provides concealment Sanitary and finished appearance Sound insulation Thermal insulating* Vapor barrier* Wall independent of structure* * *Applicable primarily to Wall Furring*

FIREPROOFING

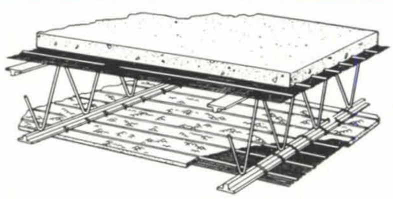
Advantages



MEMBRANE FIRE-PROOFING
(1) COLUMNS
(2) FLOORS, CEILINGS AND ROOFS
(3) BEAMS, GIRDERS AND TRUSSES
(4) WALLS AND PARTITIONS

Maximum fire protection
Economical
Lightweight
Rapid installation
Minimum thickness
Fire tested
Metal lath holds plaster in place continuously
Finish coat frequently unnecessary

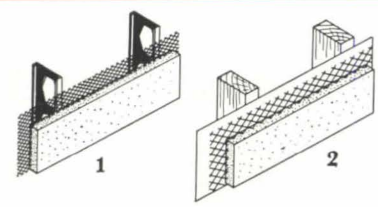
CENTERING



Type of supporting member
STEEL JOISTS
JUNIOR BEAMS
CONCRETE JOISTS

Eliminates need for expensive forms
Reinforces concrete
Minimum deflection with wet concrete
No stretching required, will not rotate joists
Fulfills fire-resistive requirements

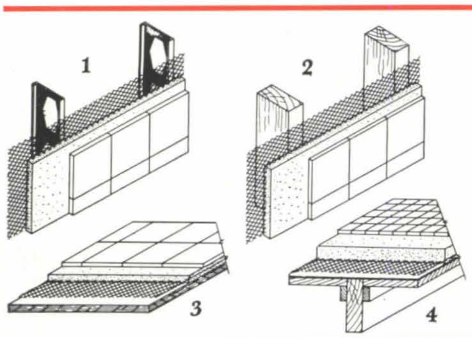
STUCCO



Type of supporting member
(1) STEEL STUDS
(2) WOOD STUDS

Monolithic surface
Low maintenance costs
Durability
Architecturally versatile
Weather resistant
Effective fire protection

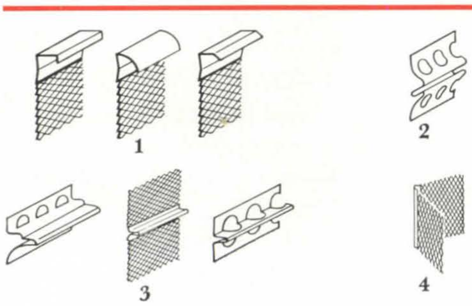
CERAMIC TILE



Type of supporting member
(1) STEEL STUDS
(2) WOOD STUDS
(3) WOOD COUNTER TOPS
(4) WOOD FLOORS

Supports mortar setting bed in place with positive mechanical bond
Steel reinforcement of mortar
Easily formed to suit contours
Easily cut for installation of miscellaneous fixtures

ACCESSORIES



(1) CASING BEAD
(2) CONCEALED PICTURE MOLD
(3) BASE SCREED
(4) CORNER BEAD

Less expensive than conventional trim
Hold plaster to a true line assuring full thickness
Protect plaster from damage
Flush with plaster surface
Invisible when decorated

Technical Bulletins Available

1

2

3

1 Types of Metal Lath and Their Uses

2 Studless Metal Lath and Plaster 2-Inch Solid Partition

3 Metal Lath Membrane Fireproofing for Steel Buildings

4

5

6

4 Reinforcing Plaster with Expanded Metal Lath

5 Metal Lath and Plaster Solid Partitions with Channel Studs

6 Metal Lath Centering

7

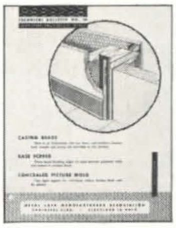
8

9

7 Metal Stud Nonbearing Hollow Partitions

8 Fire-Resistive Ratings

9 Reinforced Portland Cement Stucco



10

11

12

10 Casing Beads, Base Screed, Concealed Picture Mold

11 Sound-Insulating Partitions and Floors

12 Suspended Metal Lath and Plaster Ceilings

13

14

15

13 Sound-Insulating Double Partitions

14 Vertical Furring

15 Hollow Partitions with Channel Studs

16

17

18

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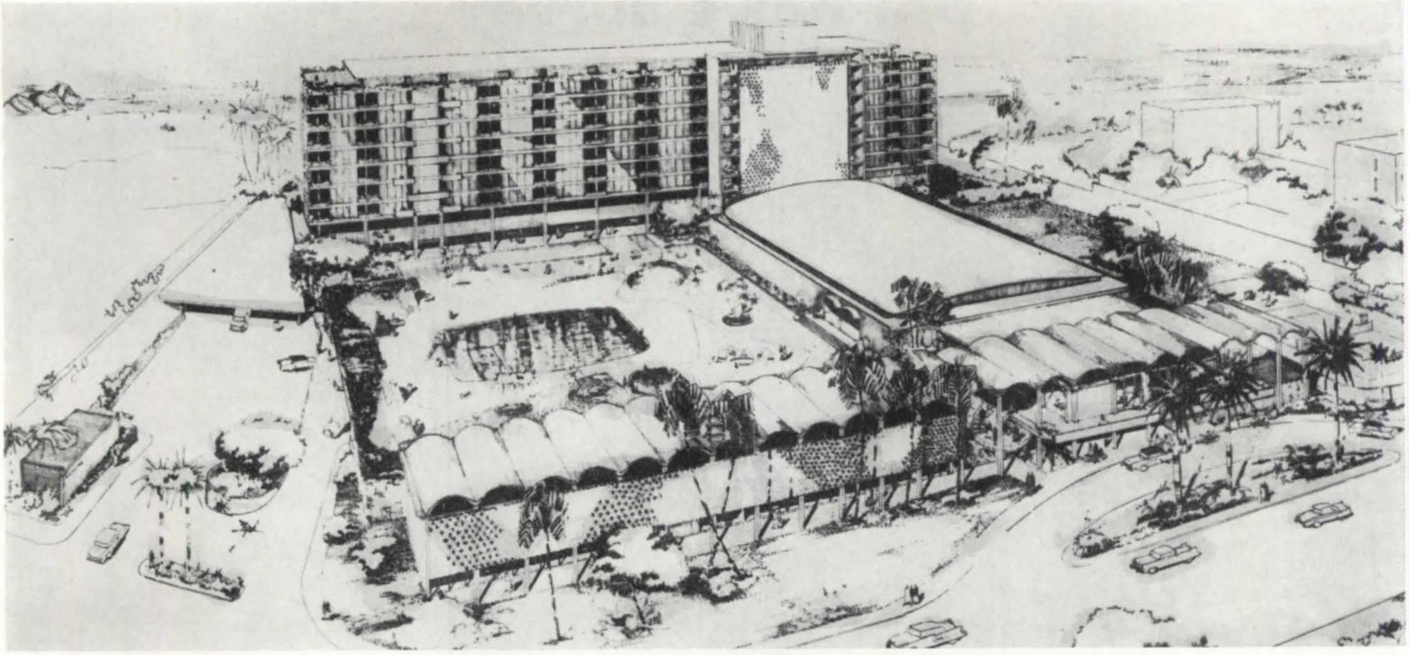
p/a news survey

Hedrich-Blessing

LUTHERAN BROTHERHOOD BUILDS MINNEAPOLIS HOME

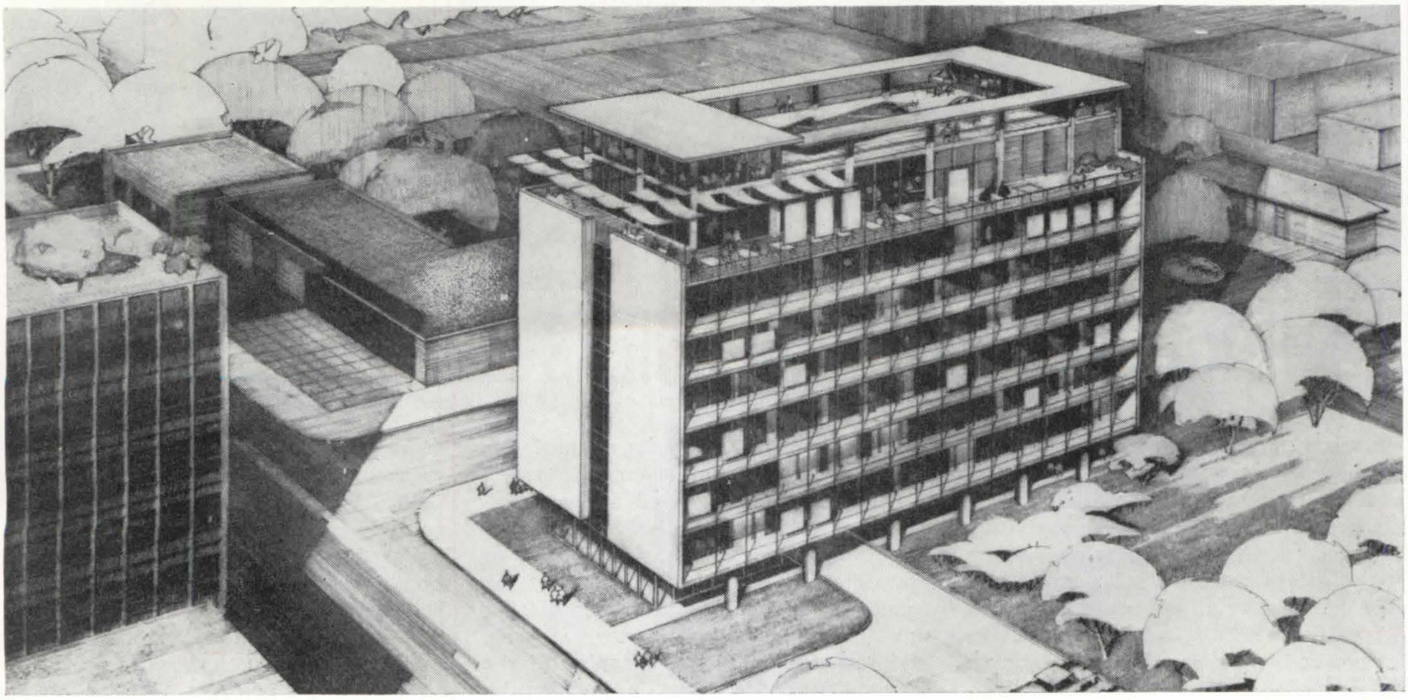
MINNEAPOLIS, MINN., Aug. 15——In designing this home office building for the Lutheran Brotherhood, fraternal life insurance and benevolent organization, Architects Perkins & Will took advantage of the site to provide a below-street-level floor bordered by a landscaped courtyard. Upper floors of the reinforced-concrete-framed building are enclosed by a curtain wall, cantilevered 5 ft beyond the structural columns, that consists of insulated, blue-green, porcelain-enameled steel panels and insulating window areas composed of an outer light of tinted, heat-absorbing glass and an inner light of plate glass. The horizontal bands of the spandrels and double-insulating glazing are broken only by narrow, snap-on, stainless-steel mullions. Cleaning of the air-conditioned building is handled by means of a trolley-like apparatus that runs on rails around the edge of the roof. Reddish-brown glazed brick surfaces the spandrel area between garden and street levels. At the garden level are a dining room, lounge, and auditorium. The street floor houses executive offices, a library, and—in a separate wing—offices of affiliated local agencies. Upper floors are for the general offices.



TWO HOTELS PLANNED FOR MOTOR AGE

A welcome trend in hotel design—inclusion of underground parking space—is illustrated in the two new hotels shown here. One is in Puerto Rico, the other in Colorado. The La Concha Hotel (*above*) is being built on San Juan's Condado Beach. To minimize building height, steel columns with shear plates and flat concrete slabs have been designed for the two, below-grade parking levels. Superstructure is reinforced concrete, using bearing partitions on 28-ft centers with longitudinal-beam bands for earthquake safety. The hotel will offer such resort amenities as a swimming pool; cabanas; ballroom; shopping arcade; and beachside dining terrace shaded by a giant concrete "seashell." It was designed for the Puerto Rico Industrial Development Company by Architects Toro & Ferrer, Puerto Rico, and Charles H. Warner, Jr., New York.

The Bison Motor Hotel (*below*) scheduled for construction in Boulder, Colorado, by the Boulder Acceptance Corporation, was designed by Architect James M. Hunter. In this scheme, the entire building is raised on stilts for maximum ground-level entrance of cars, and ramps lead down to an underground parking level. Otherwise, the first floor contains only a few small shops and an elevator lobby, with clerk's desk and space for bellhops. Guests drive right under the hotel, and their cars are taken down to the parking level. All except the two top floors are guest rooms, the concrete shell and cantilever system being so devised that all rooms have a small balcony. On the top floor is the hotel lobby and swimming pool; dining rooms occur on the floor below.



PERMANENT HOME RESEARCH CENTER LAUNCHED

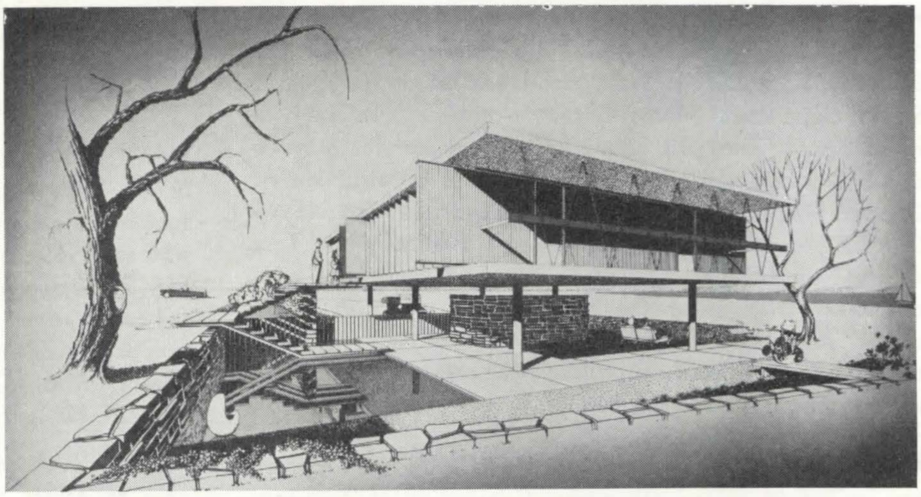
GRAND RAPIDS, MICH., Aug. 20——The Homestyle Center, a project of the Home Research Foundation, Inc., and co-sponsored by civic groups and the National Association of Home Builders, has started construction of a housing-research village on an 80-acre site in Grand Rapids, Michigan. Eventually to include 50 houses, the project will be a permanent display and research center aimed at raising the level of home design, construction, furnishing, and equipment. Once the village is completed, present plans are to replace from 5 to 10 of the houses annually with new ones.

Of the initial 25 houses to be built, 17 are the work of the following Architects: Robert Little **(1)**; Wurster, Bernardi & Emmons **(2)**; Kazumi Adachi **(3)**; Ralph Rapson **(4)**; John E. Dinwiddie; Alden Dow; R. Buckminster Fuller; Harwell H. Harris; Jones & Emmons; George Nelson; Eliot Noyes; Painter, Weeks & McCarty; Paul Rudolph; University of Illinois; Royal Barry Wills; Clifford D. Wright; and Gene Zema.

Included on the design teams are Interior Designers Norman Hansen, Eleanor Whaley, Margaret Sedwick, Harry Saunders, Garth Andrew, Eszter Haraszty, Hugh Smallens, James Cleveland, Meg Torbert, Phillip Hall, Benjamin Cook, Henry Demant, Knorr Interior Planning, Inc., and Walt L. Kerr. Also, Landscape Architects Francis Dean, Robert Wreich, Edward Laird, Richard Myrick, Garrett Eckbo, Henry Pree, James Rose, Even Harding, John Scruggs, E. J. Phelps, Fredric Stresau, Olmsted Brothers, H. F. Klein, Lawrence Halprin, and William G. Teufel.

In addition to these team-designed homes all of which will be open to the public for a small admittance charge, there will be a purely experimental project; a builder house; prefabricated houses; a remodeled house; and a house imported from Europe. Homestyle Center's Design and Standards Committee that selects the design teams and passes on the designs and materials to be used consists of Pietro Belluschi, L. Morgan Yost, Kenneth C. Welch, Rodney M. Lockwood, David C. Slipher, Martin L. Bartling, Sidney N. Shurcliff, James P. Erdman, and Arleigh C. Hitchcock.

Adjacent to the home-display area, there will be a research center for study and field testing that will have facilities for testing materials, structural methods, equipment, and appliances. Information developed at this research center will be distributed to architects, interior designers, landscape architects, industrial designers, builders, and the manufacturers and suppliers of building products.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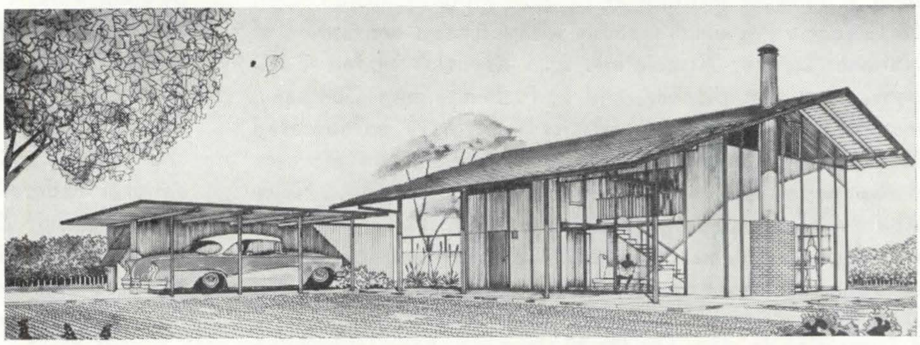
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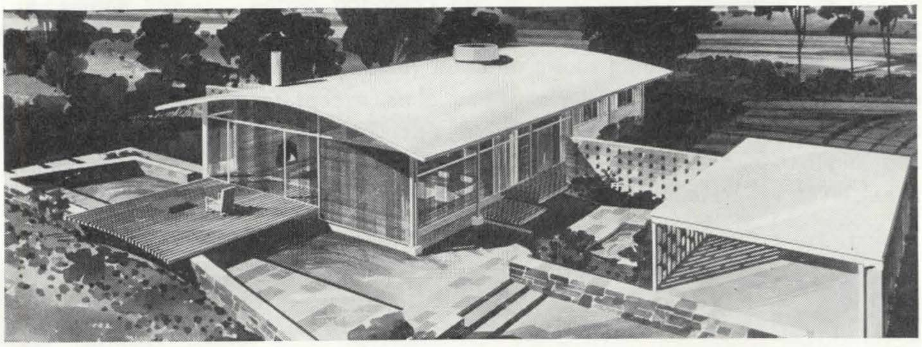
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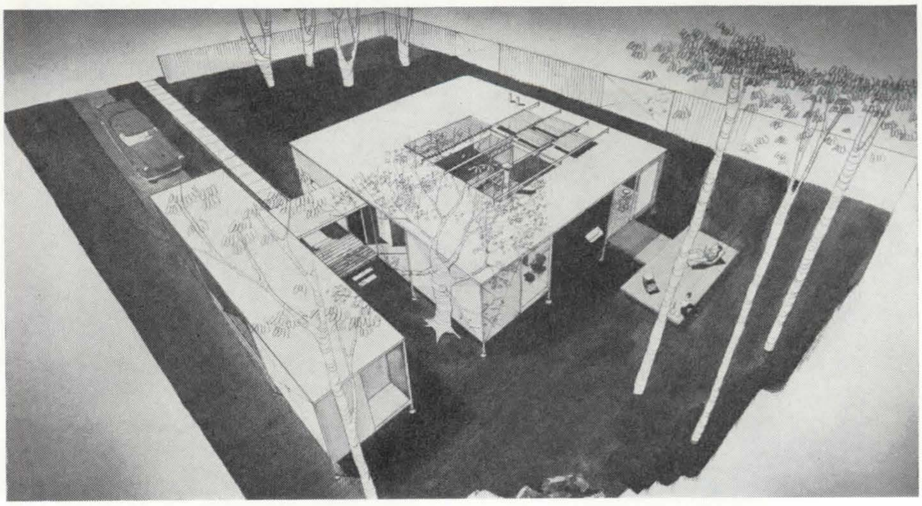
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News Bulletins

• In New York, Mayor Wagner appointed three nonsalaried members to newly created Brooklyn Sports Center Authority. These are: Charles J. Mylod, President of Goelet Estates Co.; Robert E. Blum, Vice-President of Abraham & Straus department store; Chester A. Allen, President of Kings County Trust Co. Latest estimate of cost for redeveloping Brooklyn downtown area, including construction of Dodger Stadium, is set at $250 millions (see also NEWS SURVEY November 1955 P/A). . . . Port of New York Authority is building $320,000 commercial helicopter base on 400-ft strip along the Hudson River. First pile was driven July 10 and project, consisting of two 160-sq-ft concrete landing pads and 100-sq-ft inshore mooring space, will be completed this September.

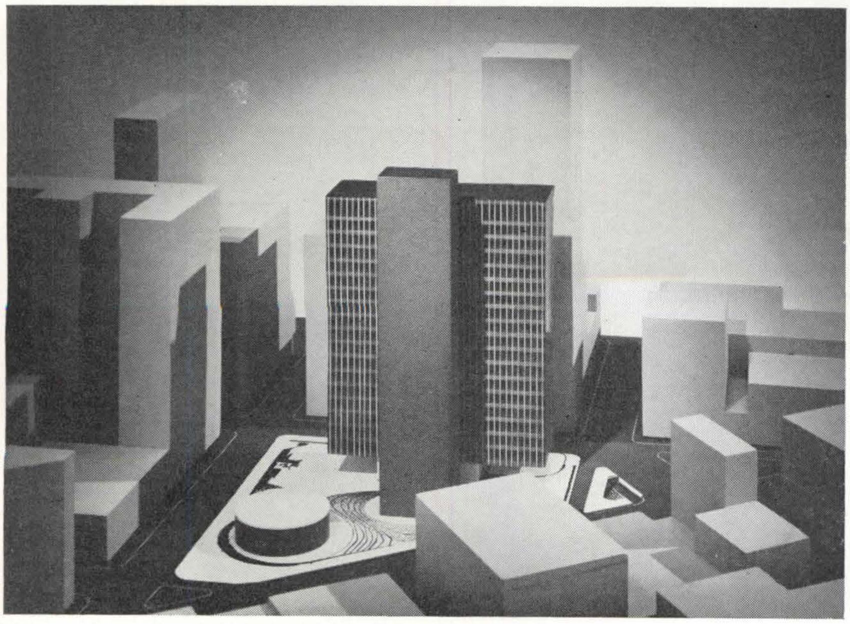
• Members of architectural woodwork industry and suppliers are invited to attend 4th annual Convention of Architectural Woodwork Institute at La Salle Hotel, Chicago, Oct. 18-19, occurring simultaneously with Chicago convention of National Lumber Association. . . . Reynolds Metals Company, aluminum pioneer, and E. F. Hauserman Company, manufacturer of movable interior walls, have collaborated to produce a new line of lightweight-aluminum movable partitions for commercial or institutional interiors. . . . Noise Abatement Symposium in Chicago, Oct. 11-12, will deal with legal problems of industrial hearing loss; control of environmental noise generated by machinery.

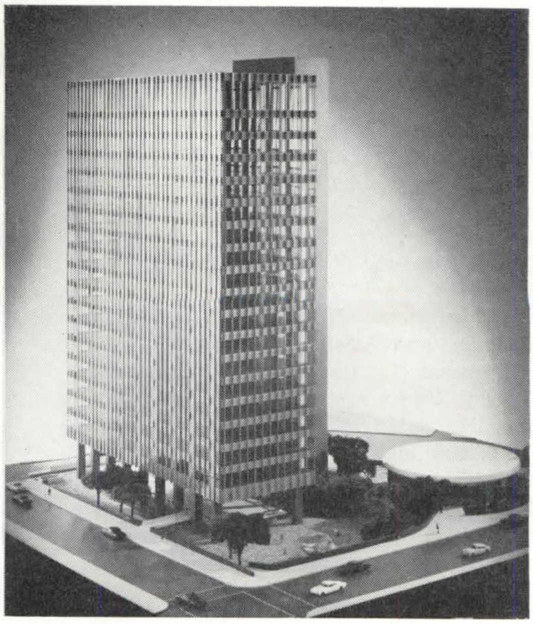
• Demolition to clear site for 20-story headquarters building of Crown-Zellerbach Corporation in San Francisco began in mid-July. Designed by Skidmore, Owings & Merrill and Hertzka & Knowles, building shown in model (below left and right) will be enveloped in aluminum and glass, except for concrete utility core projecting from one side. Steel frame and eight-ft-thick concrete-mat foundation 30 ft below street level will be engineered to resist earth tremors. Surrounding area (2/3 of site) will feature reflecting pool, gardens, and walkways open to public.

• Beaux Arts Institute of Design, now diverging in principles and activities from its namesake, recently adopted new title, "National Institute for Architectural Education" and outlines an expanded program to aid architectural students; to encourage balanced curriculum of high standards; to facilitate exchange of ideas and information among students.

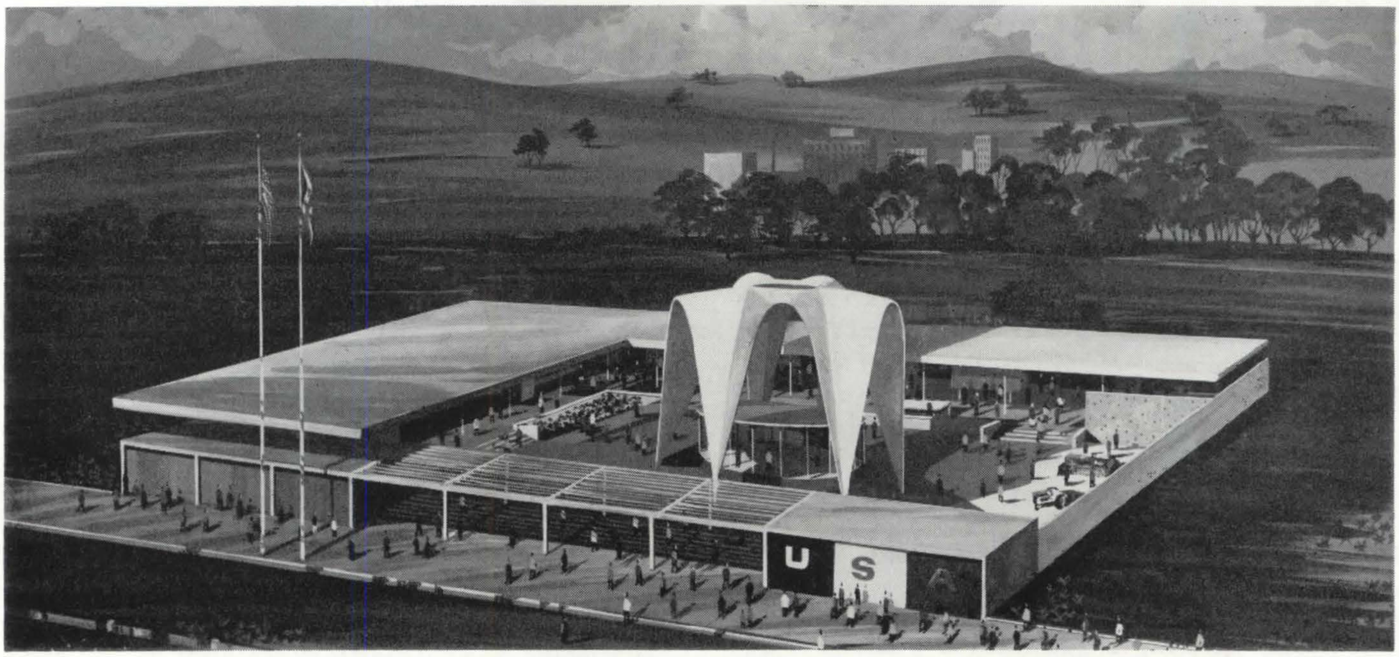
• ACTION—American Council to Improve Our Neighborhoods—recently announced 1956 campaign has been extended to cover neighborhood and urban redevelopment; whereas 1955 campaign—the first—was concerned primarily with housing conditions. . . . "Man of Action," 3½ minute, full-color, 16mm film loaned free for showing before civic groups has been contributed by Continental Can Co. For details write: ACTION, Box 462, Radio City Station, New York 20, N. Y.

• American Academy in Rome has several fellowships available to artists and students showing ability to do independent work in historical research, art, or architecture, for one year beginning Oct. 1, 1957. Work submitted in prescribed form and applications are due Dec. 31, 1956. For details write: Executive Secretary, American Academy in Rome, 101 Park Ave., New York 17, N. Y. . . . "The City and Its Surroundings," was theme of 23rd Congress of International Federation for Housing and Town Planning held in Vienna, July 22-28. International Challenge Cup for films was won by the University of Pennsylvania. Meeting of 25th Congress will occur in Puerto Rico, 1960—first one in western hemisphere since 1938. . . . Georgia Tech exhibit, "A Half Century of Architectural Education," was chosen by Chamber of Commerce to appear at International Trade Fair in Zagreb, Yugoslavia, Sept. 7-20, 1956. Exhibit, showing buildings designed by alumni, includes American Bank and Trust Co. Bldg., Philadelphia, by W. Pope Barney and Roy W. Banwell; proposed solution for Berlin Conference Hall, Germany, by Hugh Stubbins & Associates (see also NEWS SURVEY, September 1955 P/A).





Photos: Morely Baer



• Two hundred aviation cadets participated in dedication of "International Flight Mall" at Roosevelt Field Center on Long Island, N. Y. Former airport is currently being developed by Webb & Knapp into a community business and social center. Latest reports announce: ice-skating rink 85'x100' will open in November; 110-store shopping center will open Aug. 29; industrial center has eight plants in operation; office-building center is under construction; parking facilities will accommodate 11,000 cars; new Meadowbrook Parkway with two cloverleaf interchanges entering parking areas will soon be initiated (see also September 1955 P/A).

• First exhibition of architecture in National Gallery of Art, opening May 14, 1957, will coincide with AIA centennial. Under direction of Frederick Gutheim, exhibition will feature large color transparencies stressing characteristics of contemporary work portending future directions (see also NEWS BULLETINS May 1956 P/A). . . . American Society of Civil Engineers will hold first commercial exhibition as part of annual convention at Hotel Statler, N. Y., Oct. 14-18, 1957.

• Tile Council of America, Inc., venturing into academic field has prepared new scholarship program for architectural students in third, fourth, or fifth year of any recognized school of architecture in U. S. Write: Tile Council of America, Inc., 10 E. 40 St., N. Y. 16, N. Y.

• Small atomic reactor intended for display at 1958 International Exhibition, Brussels, was barred from fair by Belgium Government to pacify disquieted citizens protesting on health grounds. Exhibition site of nearly 500 acres divided into Belgian, Foreign, and International Sections involves huge planning problems. Tunnels for suburban trams, roads, aerial bridge, and monumental exhibition halls are scheduled for construction. One principal attraction is 360-ft-high Atomium composed of nine 59-ft-diameter steel spheres and connecting tubes—a symbolical crystal form—sheltering scientific exhibition of Belgian Metal Industries.

• American exhibit at International Trade Fair in Damascus, Syria, Sept. 1-30, will be housed in building designed by Raymond Loewy Corporation (above). Dominating exhibit expected to cover 24,000 sq ft will be a 40-ft-high pavilion formed of five intersecting parabolic arches that enclose circular stage and TV studio. Walls of white cement block, pierced concrete, and 60-ft section of highly polished marble give textural variety. White-metal vertical-framing members of elevation set on 24-ft module accent central canopy. Displays will emphasize role of technology in American life.

• Stained Glass Association of America recently announced winners of 1956 Apprenticeship Competition in Boston. First-Prize panel, "The Magi," by Donald Erik Erikson, Cleveland, depicts awe-struck Magi recognizing Child Jesus (below left); Alfred McArdle, Philadelphia, won Second Prize with slab glass in concrete panel showing symbolical dove and ruby chalice to represent "Descent of the Holy Spirit at Communion" (below right). Honorable Mentions went to: Robert Anderson, "Head of St. Paul," and Robert Johnson, "Nativity," both of Milwaukee, Wis.; and Richard Millard, "Hypocrisy," of New York.

Washington Report

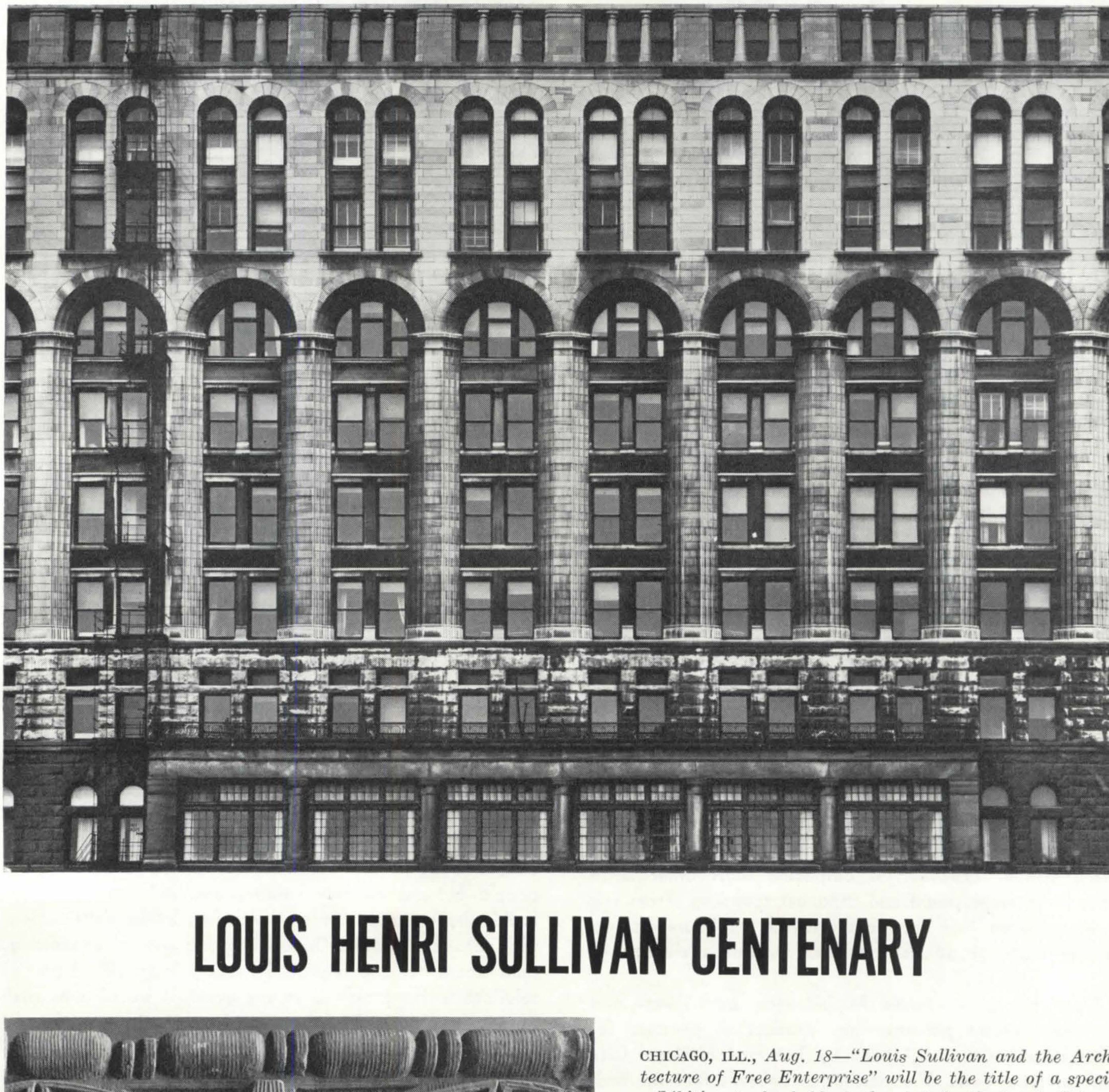
by Frederick Gutheim

The closing days of the session brought Congressional action on several programs of interest to architects. Of greatest importance were the enactment of new housing programs and initiation of a substantial program of Federal aid for health research. The failure to enact any program of Federal aid for school building is the greatest omission in the Congressional record, although many architects will also feel that what has been done in health and housing is far short of what is needed or desirable. The housing law enacted was precisely that recommended by the Administration, and represents another victory for Housing Administrator Albert M. Cole. It is strictly a middle-of-the-road program, attacked equally as too much or too little. That it was enacted at all—in a typical photo-finish—is remarkable. The bill actually provides for substantial measures liberalizing the FHA program, and a public-housing program of 35,000 dwellings in each of the next two years. While it holds the line fairly well as an economic measure, it does open the way to considerable experimentation in such areas as co-operative housing and housing for elderly persons. A considerable expansion of the highly successful college-housing program will result from the increase in the revolving loan fund from $500 millions to $750 millions, and the decision to hold interest rates in this program at their present levels. Among the changes in FHA provisions were steps to liberalize home modernization and the purchase of existing houses.

In other legislation enacted earlier this year, Congress opened a new phase of military housing by permitting insurance of mortgages on houses owned by essential civilian employes of the Armed Forces. It is also worth recording that while far from a genuine research program, the "testing" program Congress has authorized FHA to undertake will be of some help in overcoming the vagaries of existing MPR's. Taken in all, it is hard to disagree with Senator Sparkman's final estimate of the housing bill as given in the Congressional Record for July 27. Indeed, his retort to Senator Lehman leaves little doubt that housing has been taken out of the Presidential campaign as a partisan issue.

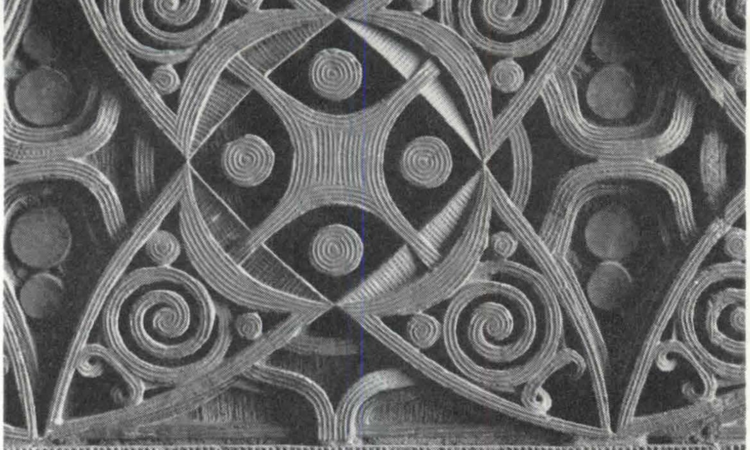
The President's signature on a $90-millions program of Federal grants-in-aid for medical-research facilities starts his program to improve the "wholesale" aspects of medical care—a step which many progressive Republicans see as the practical alternative to improving the "retail" aspects via some Federal program of socialized medicine. In a measure, the program follows the steps of the Hill-Burton hospital-construction act. While far short of the $250-millions program urged by the Department of Health, Education, and Welfare, the *currently* approved program of research facilities should be followed in another year by similar authorization to finance medical-education buildings.

• The American Battle Monuments Commission last month dedicated cemeteries designed by American architects and artists in Cambridge, England; St. Laurent, St. James, Epinal, and Draguignan, France; and Nettuno, Italy. While I am familiar with the program through drawings of these projects, I must confess to the shocking reality of the experience of visiting Nettuno a day or so before the dedication ceremony. Designed by Eric Gugler, with sculpture by Paul Manship, it is like the work of another century rather than a thing of our own generation. But apart from this design characteristic, which is shared by the other military cemeteries, the Nettuno memorial chapel struck me as almost vulgar. Nothing about it seems sincere or direct. In the cemetery, the thousands of white marble crosses are of an unreal whiteness and uniformity, and designed to curve slightly to appear less brutal—an effect denied by their machinelike uniformity. Similarly, the cemetery is laid out in gentle curves which somehow only make the graves seem more numerous and the effect no less regimented. The turf and the gardens, made possible in this dry area only by an obtrusive irrigation system, have the lushness of funeral flowers. The chapel itself is a little, symmetrical temple in marble and travertine. The central court holds Manship's sugary statue of two idealized servicemen, stripped to the waist, gazing vacantly into space. To either side are a chapel, the walls of which are covered with the names of 7862 servicemen buried here and 3000 missing in action, and a memorial hall, with maps tracing the campaigns from Sicily to Rome in which they died. The front of the chapel is dominated by two more of Manship's large figures, mounted on the marble walls: angels, this time, on clouds as substantial as loaves of bread. The great, fat columns holding up nothing somehow summed up this contradiction of material richness and spiritual poverty. It is certainly a fact, I thought, driving back to Rome, that we Americans don't know what to do about death, and the Nettuno cemetery (which at home might be more tolerable) in Italy uncomfortably reminds one of a gangster funeral. So I stopped at Fosse Ardeatino, where are buried some 300 Italian partisans slaughtered by Nazi troops in the caves where they were hiding. Here I found what is *lacking* at Nettuno—an idea. The details of design, from the oleanders to the arbitrary masonry, are hardly different. But hardly any part of this remarkable cemetery fails to make its contribution to memorialize this atrocity. What is squeezed dry at Nettuno is the glory and the sacrifice, the valor and the tragedy, of those buried here. These qualities are not to be commemorated in vapid sculptural forms and architectural richness and refinement. The cemetery at Nettuno, and I fear the others, too, are artistic failures not far short of a national disgrace.



Authenticated News

LOUIS HENRI SULLIVAN CENTENARY



CHICAGO, ILL., *Aug. 18—"Louis Sullivan and the Architecture of Free Enterprise" will be the title of a special exhibition to be held at the Art Institute of Chicago, October 25-December 2, commemorating the 100th anniversary of the birth of Louis Henri Sullivan—master of the "Chicago School." Huge photographs, large-scale images projected in color, actual samples of Sullivan's rich ornament, and original sketches will recall the architect's work—grouped according to the following themes: 1. Sullivan's Significance Today; 2. Formative Years; 3. Adler & Sullivan; 4. Sullivan Alone; 5. Sullivan's Ornament. Edgar Kaufmann, Jr. has been appointed to direct this major architectural exhibit for the Art Institute; Daniel Brenner, Chicago Architect, will design the installation; John Szarkowski (whose handsome book of contemporary photographs of Sullivan's structures, "The Idea of Louis Sullivan," will be published next month by University of Minnesota Press) is the Photographic Supervisor.*

Representative of Sullivan's work are the Auditorium Building (above), *Chicago; and the detail of the original entrance of the Wainwright Building* (left), *St. Louis, Missouri.*

Financial News

by William Hurd Hillyer

Only the fourth quarter now remains of a year that from the outset defied forebodings. By any proper prognostic, it should have brought violent readjustments which, because of the basic economic position that the architect enjoys, might have wrought curtailment of his practice. Instead, as intimated in our column for May 1956 P/A, this has so far proved "a Santa Claus year" to the generality of business and construction. In the residential realm, where the greatest fears of recession were entertained, the surprise has been pleasant. As reported by a New England mortgage news authority, there has been a steady absorption of new houses—"a demand which will unquestionably last for some years"—and this upgraded condition extends into the area of comparatively small and inexpensive dwellings.

The nation's output of goods and services, on which the building market directly depends, has continued to move upward during the past six months, reports the Federal Reserve Bank of Chicago. Though much of this gain reflects a price uptrend, total U.S. output's record $409 billions annual rate in the April-June quarter was $6½ billions above year-end figure. This new high, says the bank, represents a rise of $51 billions, or 14%, from the early '54 low. However, the Chicago Federal Reserve sees divergent drift nationwide, thus creating substantially different patterns. Milwaukee, for example, predominantly a "hard goods" producer, is outpacing most other large cities as to employment and consumer spending. From this it would seem that the accent is still on "durables"—a healthy state of affairs from the architect's standpoint.

• Tight money continues to influence both long- and short-term credit policies—the "product of pressure for funds in a boom year," seen by The First National City Bank of New York. That institution believes that the Federal Reserve Board's loosening of restraint during recent weeks has doubtless been influenced by a slackened expansion of mortgage and instalment credit, by the leveling course of industrial production, and by expectation that business concerns would borrow more money to carry out their expansion programs. In addition, the corporations were faced with a speeded-up tax schedule that in fact did deplete their cash. These several factors pulled down their corporate cash holdings some $1.5 billions and Federal bond portfolios about $2.1 billions, at a time when business customarily builds up reserves to take care of the fall. This situation is now righting itself, but meanwhile the business corporations have borrowed $1 billion more from the banks. Chances for normally loose money are slender during remainder of '56.

Indirectly beneficial to architects will be the new rule for "Fannie Mae" (Federal National Mortgage Association), designed to increase mortgage-buying abilities. Her function is to buy Federally guaranteed mortgages when offered for resale. Heretofore, the seller has been required to purchase stock in "Fannie Mae" equal to 3% of the mortgages' face values. This will be reduced to 2%, insiders predict, as soon as the revised housing *bill is signed* by the President.

Bankers throughout the country will soon be living in glass houses, literally as well as figuratively, if nationwide trend continues. Latest among contenders for the crystal cup is the Bellevue branch of the Washington State Bank (Snoqualamie, Wash.) The new structure is walled on three sides with tinted double glass. An arresting feature of the design is the aquarium effect, produced by broad vertical panels with no frame at the top. Inside, ceiling-to-floor draperies of glass fiber achieve heat, light, and sound control. From the opposite end of the time-scale comes Atlanta's C&S National Bank Pioneer Post, temporary Howell Mill Road branch of the Citizens & Southern. A log cabin of the authentic 1833 Marthasville style, the edifice is provided with false-front second story and its interior is lit from wagon-wheel chandeliers. This already popular counting house betokens perhaps a nostalgic trend while preserving whatever is soundest in modern design and equipment.

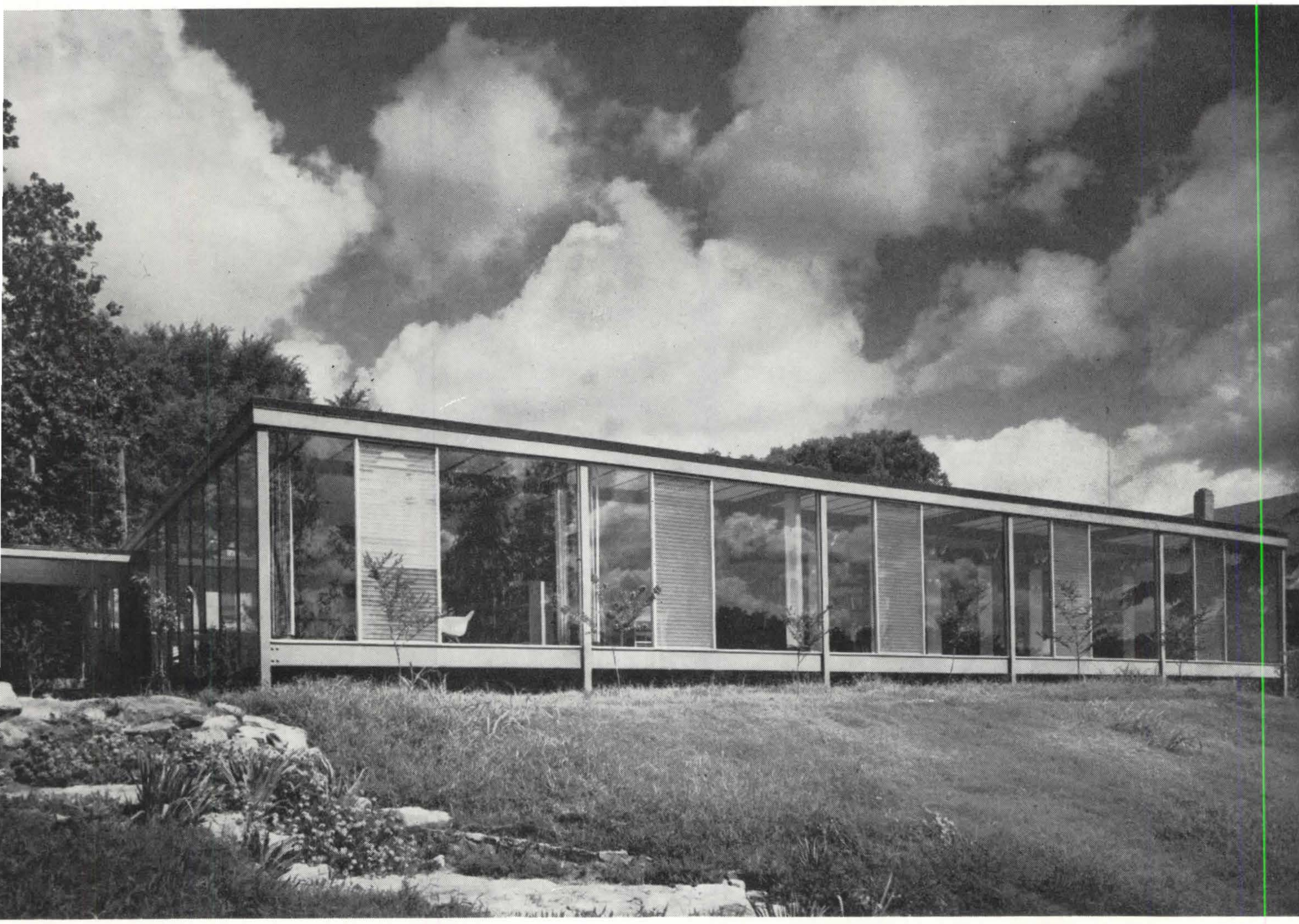
• The banker's stake in urban development is appraised in the American Bankers Association's magazine for August, particularly as to branch bank location. The point is made that haphazard growth has bestowed upon the average urban area a heritage of decay, overcrowding, and "chronic municipal financial difficulties." Such deteriorating influences, it is stated, have been the largest contributing causes of the hegira to the suburbs. Involved are not only people, but also business, industry, and architects' practice. In this shuffle, urban centers—including banks—lose custom with untoward effects. Drive-in banking and merchandizing, slum clearance, and improved housing, may afford partial solutions to the problem. In any event, it would seem that here is an opportuntiy for the local architect to collaborate with civil and financial bodies, producing mutually good results without impairment of professional dignity.

• Settlement of the steel strike has released fresh energies in the nation's economy. Among these are consumer buying, which should take a fresh spurt "stemming from wage increases." In addition, government programs (particularly schools) will move forward. Meanwhile, private industry seems to exhibit great underlying strength and the economic situation, says The Chase Manhattan Bank, "shows no disposition to cut back capital expenditure plans. . . ." Consequently, it would seem that the next note may well be struck from "the gong of inflation." If so, national economic policy, that institution believes, will again face the dilemma of "containing" inflationary pressures without interfering with normal growth of production and employment. The recent upsurge in bank loans (2½ times the 1946 total) is regarded as in line with the broad sweep of normal banking trends in commercial and industrial categories, besides reflecting a healthy growth in real estate financing.

parish library

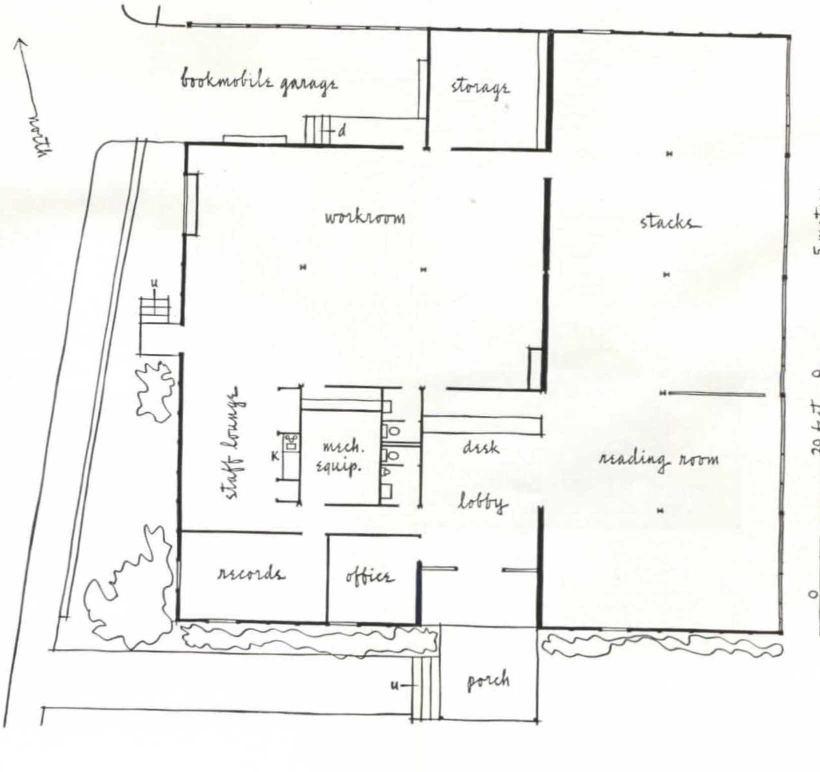
location | Natchitoches, Louisiana
architects | Barron, Heinberg & Brocato

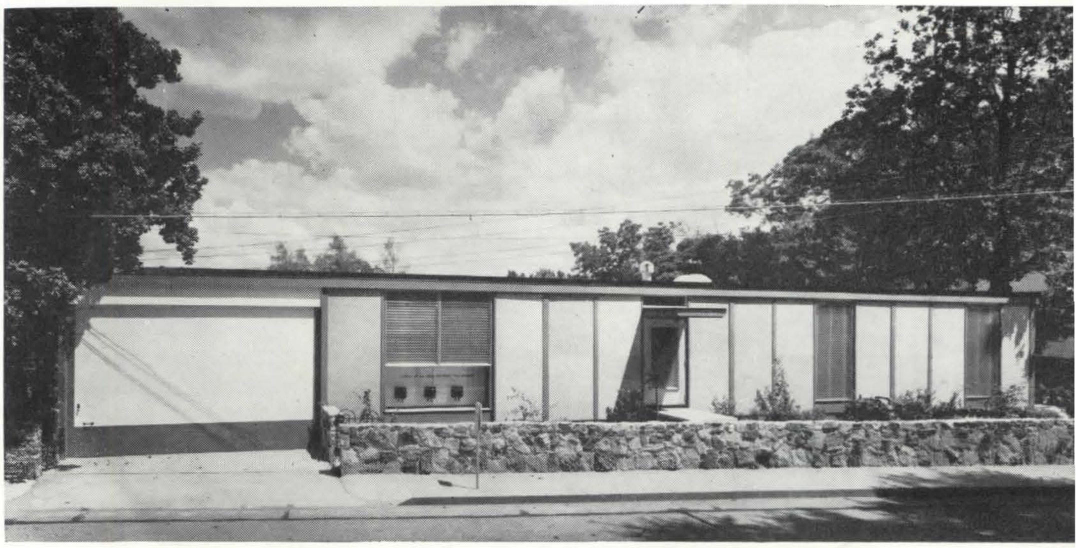
parish library



"The first reaction to a contemporary public building in this Southern community, steeped in history and tradition, ranged from heated disapproval to enthusiastic support. After the building was occupied, acceptance seemed to be widespread and public use of the library facilities showed a marked increase. The library staff reports that the building functions smoothly and are pleased to note numerous compliments from visitors. A small group of public-spirited citizens, headed by members of the library board, have taken charge of landscaping the site and providing certain furnishings. Their enthusiasm and cooperation were largely responsible for the generally satisfactory end result."

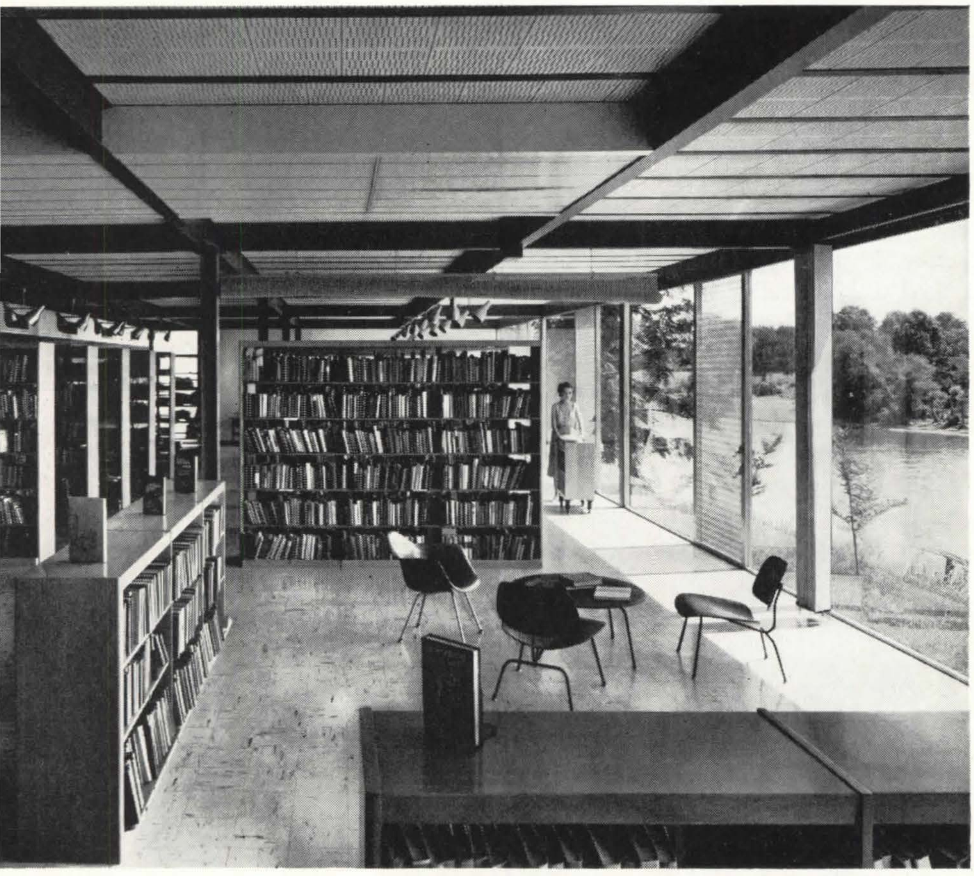
BARRON, HEINBERG & BROCATO





This parish library is situated in the oldest city of the Louisiana Purchase and has as neighbors many fine antebellum buildings. It is bordered on one side by a busy thoroughfare. Opposite, a scenic lake provides the quiet and relaxing atmosphere so desirable for a library setting. For the benefit of those using the library, it seemed logical to face the reading room (*acrosspage*) toward this pleasant prospect. A garage for the book mobile unit—a very important function of this library—was accommodated on the street side (*above*), together with an extra large workroom made necessary by the popularity of the mobile unit. For supervision of the library by a staff often limited to one person, it was imperative to place the control desk centrally. With these space allocations, a side entrance (*below* and *opening page*) suggested itself. Since erosion along the banks of the lake made surface soil unstable, the building—a steel frame—was raised off the round onto reinforced-concrete floor joists. "The visual continuity of the steel structure," explain the architects, "is the most salient architectural expression of the building. Hence the exterior walls—marble panels backed with insulation and plaster—were designed to leave the columns exposed inside and out. Interior partitions are similarly disposed. The roof is a poured-gypsum deck which leaves the roof framing exposed within." Others who contributed to the success of this noteworthy little building are: Leroy A. Staples, Structural Engineer; deLaureal & Moses, Mechanical-Electrical Engineers; Leon Roy, General Contractor.

parish library



At window wall of stack-and-reading room (above, *also* SELECTED DETAIL) *clear glass panels alternate with glass-jalousie panels. Acoustical board, used throughout the building, also served as formboard for the poured-gypsum roof deck. Flooring is asphalt tile. General illumination is by fluorescent units concealed behind louvered, plastic grills. Incandescent fixtures, above the open stacks* (left), *are mounted on trolley ducts for flexibility. From central control desk* (below), *librarian can supervise reading room, main entrance, book stacks, and workroom which is accessible through door behind desk. Colors throughout the building are subdued, ranging from white through various shades of gray, to black accent lines. Intense primary colors are reserved for such items as display panels, furniture, and screens.*

Photos: Frank Lotz Miller

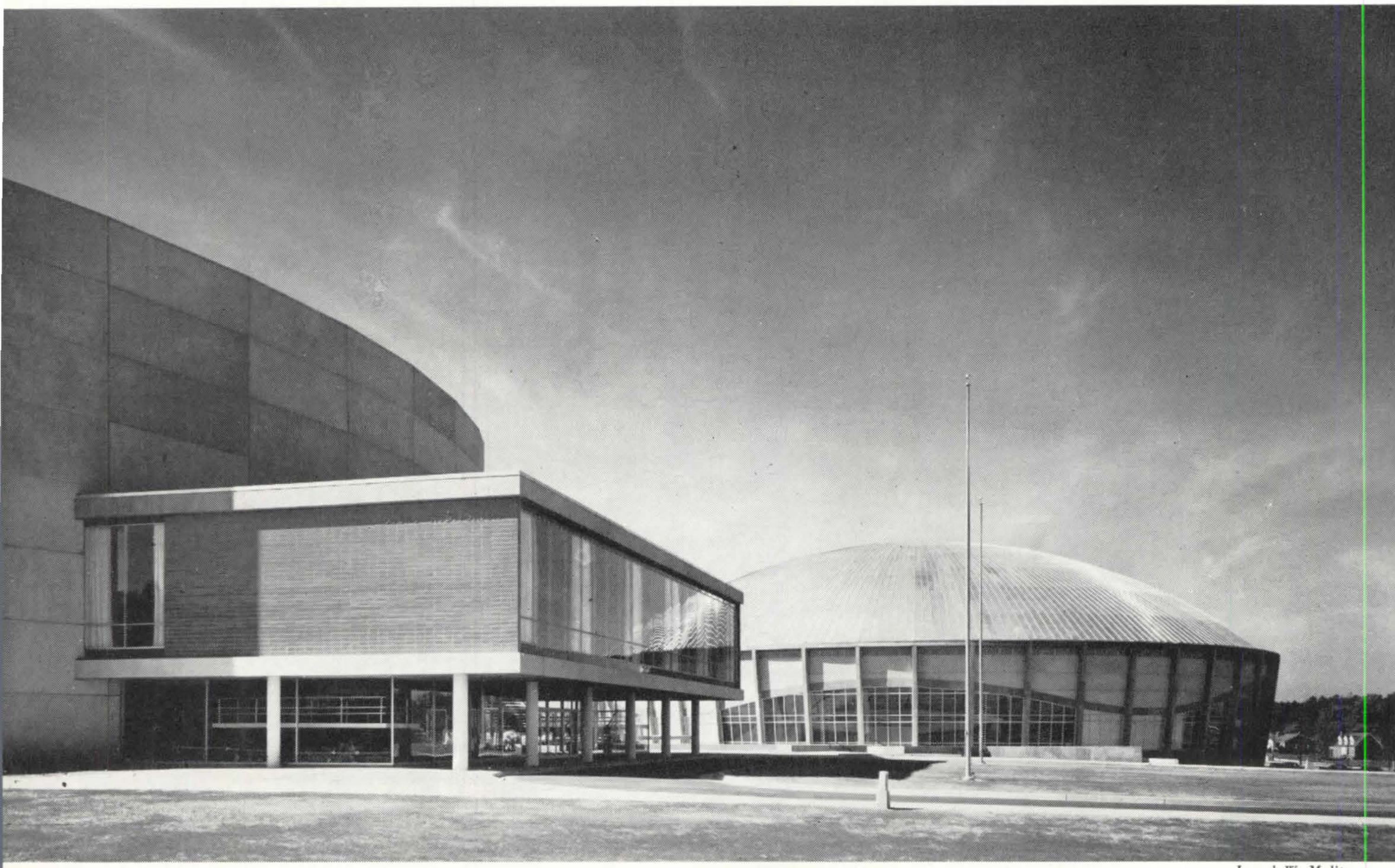
All photos (except as noted): Alderman Studios

auditorium and coliseum

location | Charlotte, North Carolina
architects | A. G. Odell, Jr. & Associates

auditorium and coliseum

Exterior masonry panels of auditorium and coliseum are of precast concrete slabs, approximately 22 ft x 7 ft.



Joseph W. Molitor

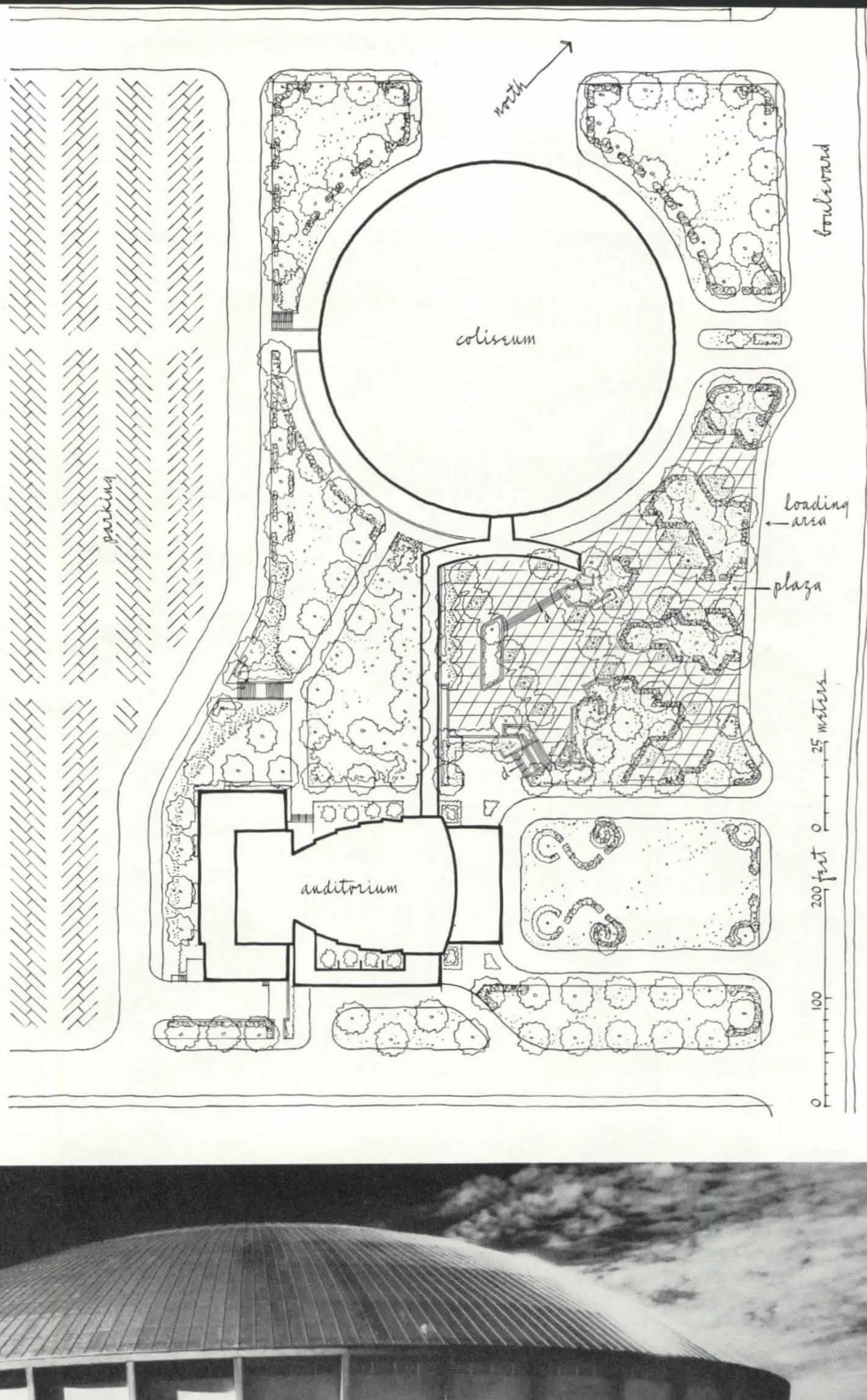
The Carolinas' cultural and civic progress is again evidenced by the near completion of Charlotte's Auditorium and Coliseum, financed by bond issue voted by the public. Located within one hour's driving time for more than a million residents and within 15 minutes of Charlotte's business district, the center will probably become the meeting place for the entire region. On the 23-acre site at this time are two buildings: an auditorium seating 2500 persons for the presentation of concerts and theatrical performances; and a coliseum providing 13,500 seats for athletic events, circuses, ice shows, and similar activities. A third structure is proposed between the two, to house exhibitions, meeting rooms of various sizes, and related facilities. The architects' major problem—the proper relationship of the gigantic coliseum to the relatively small auditorium—has been well resolved by separating the buildings by about 200 ft and also by placing the coliseum on the lower portion of the site. The 200-ft spacing between buildings, which will help to keep sound transmittal to a minimum, will provide the appropriate location for the future exhibit structure, envisioned as a horizontal, two-story link between coliseum and auditorium. Access to the center is from streets surrounding the entire property and radiating from it. Parking lots thus may be emptied within 15 minutes. At present, a paved and lighted parking area accommodates 1200 cars. Additional adjoining property has been leased and developed for the parking of another 2400 cars. Total cost of project was $4,698,000.

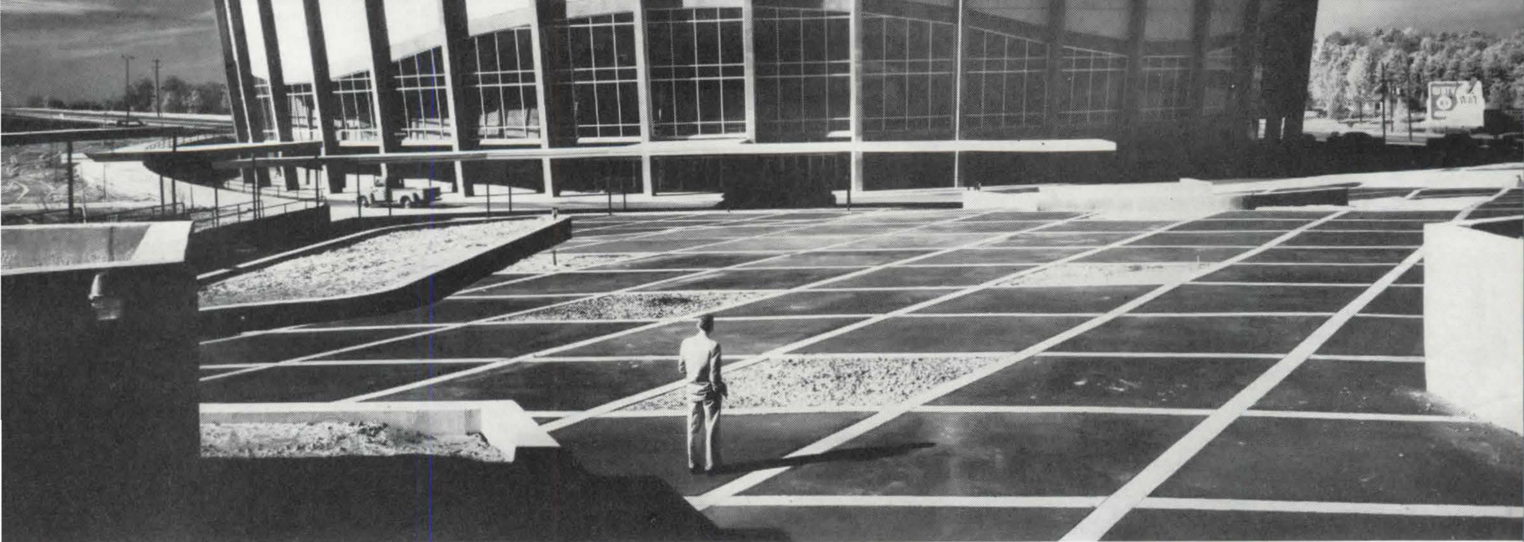
Others contributing to the successful realization of the plan, under the direction and co-ordination of the Architects were: Severud-Elstad-Krueger, Structural Engineers; W. P. Wells, Mechanical Engineer; John Bolen, Electrical Engineer; John A. Heinzelman, Ice Rink Consultant; Bolt, Beranek & Newman, Acoustical Consultants; Wilbur Smith & Associates, Traffic and Parking Consultants; John Lippard, Landscape Architect. Thompson & Street Company was General Contractor.

the auditorium

Basic shape of the auditorium and its seating plan were determined primarily by acoustical considerations. The interior design incorporates not only the latest thinking in reverberation control in the form of distributing needed sound-absorbing material in strips at various locations, but also in the shaping of surfaces to direct sound from the stage area to listeners in the most efficient fashion. Thus the shape that evolved was framed most economically by a combination of reinforced-concrete, precast-concrete, and structural-steel components.

The entire auditorium building is air conditioned, except for machinery spaces. All heavy machinery for the building, other than air-handling equipment, is located in the boiler room under the work area (at southeast corner of basement). Air-handling equipment is located in two air-conditioning machinery rooms—one at the rear of the building, adjacent to the boiler room, and another at front, beneath the lobby. Chilled water is supplied to all air-handling units by a 250-hp centrifugal refrigerating machine. Fans serving five primary areas —main auditorium, areas above and beneath balcony, lobby, and lounge—all operate from a central built-up air-conditioning station comprised of electrostatic return-air filters, activated-carbon filters for odor removal, and the chilled-water conditioner. The temperature condition in each of the five areas is individually controlled by face and by-pass dampers on the inlet side of each fan. Heating coils for each zone are installed





Joseph W. Molitor

in the by-pass to each fan around conditioner. All other areas, dressing rooms, stage, etc., are served by fan-coil-type air-conditioning units with steam-heating coils, chilled-water cooling coils, and face and by-pass dampers.

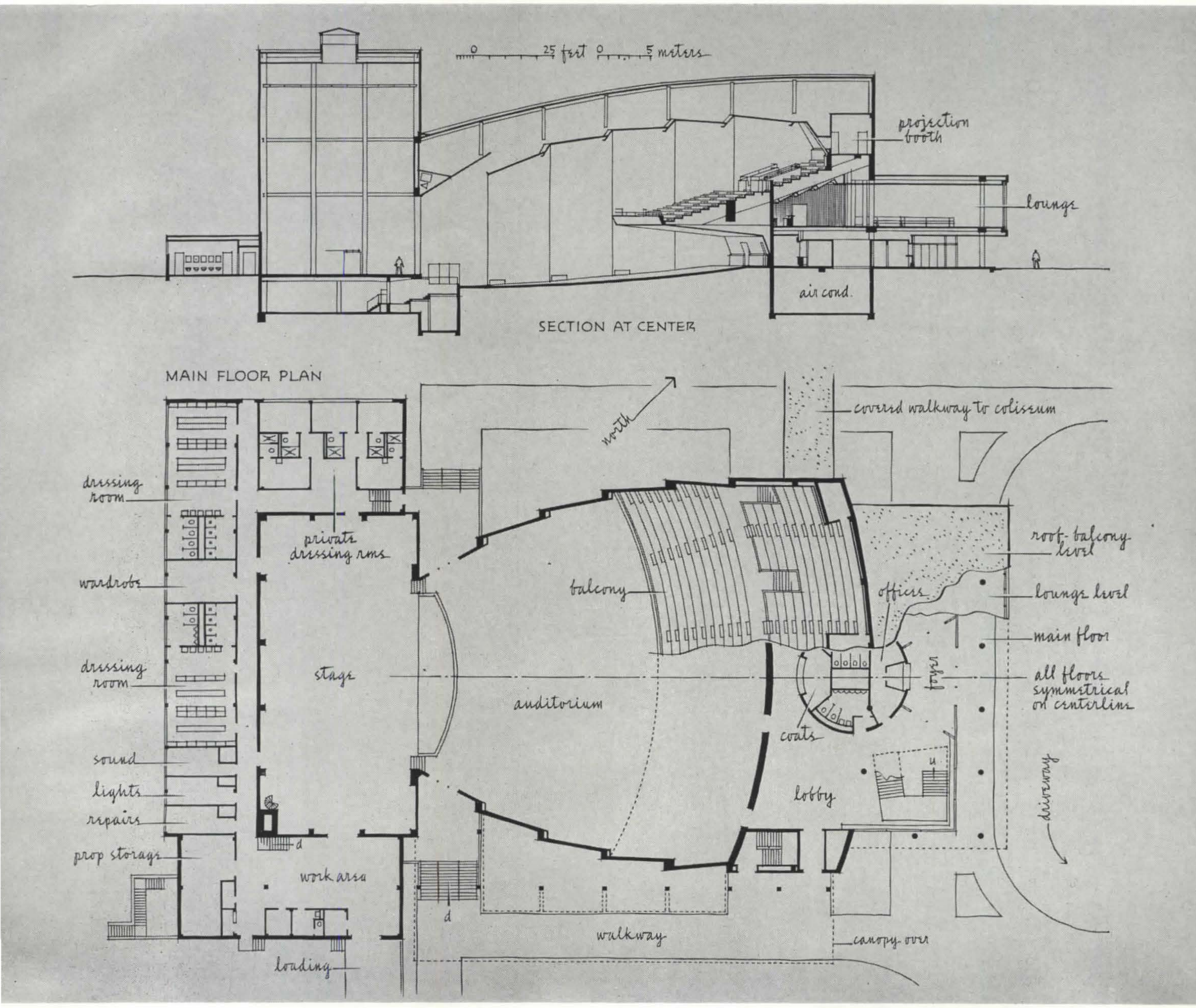
Heating for the entire project (including coliseum) is supplied from the auditorium boiler room. The plant consists of two 400-hp water-tube boilers fired with heavy-oil-type burners. A 70-hp fire-tube boiler, firing light oil, heats office and work areas at times when the main boilers are not in operation.

Air-distribution system is low velocity using standard sheet-metal construction. Masonry return-air ductwork beneath the auditorium and lobby floors provides the greater percentage of return air to the central-station conditioner. In order to obtain satisfactory distribution of air in the balcony, approximately 425 three-in. holes were formed in the risers carrying the balcony seats. Air returning through these same holes to the space beneath the balcony is then directed to the main conditioner. Air distribution for the stage is handled by two main ducts which run down the sides of the stage area—above and outside all curtains and drops.

Temperature-control system for the auditorium is of the pneumatic type.

After a careful study of various supply voltages, 600-v delta was selected. In the *judgment of the electrical* engineers, the size and application peculiarities of the project (auditorium and coliseum) did not justify a high-voltage system (2400-v and over); however, the conditions did justify the highest low-voltage system (600-v and less). Thus, all integral horsepower motors are fed with 600-v supply.

In the lobby, the light-terrazzo floors,



colored walls, and glass walls are combined with a high lighting intensity, from recessed, incandescent fixtures, to achieve a sparkling effect. Special incandescent-lamp fixtures are placed in the lounge ceiling. They have a gold color plated on the lower portion of their reflectors and star cutouts in the ceiling plates. Placed against a deep-blue ceiling in random pattern, these units provide a star-like effect. The gold color on the inner reflector reflects enough light to illuminate the lobby adequately but not brightly.

The main auditorium is lighted with a series of coves for soft, general lighting and with recessed, high-intensity, incandescent downlights for seeing. The low-ceiling area beneath the balcony, not being suitable for recessed downlights, is illuminated with recessed domelights. All incandescent house lights are on a conventional dimmer bank (located in the attic) and can be controlled either from the projection booth or the central console on stage.

Principal stage lighting is provided by border lights carried on pipe battens. Auxiliary lighting power can be obtained from receptacles in the border lights and by floor-pocket receptacles. A battery of spotlights is located on an attic bridge in front of the proscenium opening. The dimmer bank (in the basement) is remotely controlled at an on-stage console. Total dimmer capacity is 158,400 watts; total fixed lighting in borders, footlights, and spots is 100,000 watts. A dead-front cross-connecting panel on the stage platform permits the connection of any one or all of the 124 stage circuits to any chosen dimmer—thus insuring extreme flexibility of control and high use factor of dimmers.

auditorium and coliseum

Protruding second-floor lounge (left) partially covers driveway for weather protection of visitors at entrance. Stairs of terrazzo connect brilliantly lighted first-floor lobby with semi-darkened lounge on second floor. Blue ceramic tiles surface walls at either end of lounge.

Materials & Methods

construction

Foundation: piles—Raymond Concrete Pile Company. **Structure:** concrete; precast concrete—Lehigh Portland Cement Company; structural steel—Southern Engineering Company, Bethlehem Steel Company, and Tennessee Coal & Iron Division of United States Steel Corporation; steel welding equipment—The Lincoln Electric Company; precast roof deck—Porete Manufacturing Company. **Windows:** sash—Truscon Steel Division of Republic Steel Corporation; glass: clear—Libbey-Owens-Ford Glass Company, polished wire—Mississippi Glass Company; store fronts—Kawneer Company, metal access panels—Morris Kurtzon, Inc.; skylights—Wasco Products, Inc. **Partitions:** millwork—Wearn Lumber Company; metal toilet partitions—Sanymetal Products Company, Inc. **Doors:** metal doors and frames—Atlantic Metal Products Company; overhead doors—Overhead Door Corporation; steel rolling doors—Edward Cahill, Inc. **Hardware:** lock sets—Schlage Lock Company; door closers—L C N Closers, Inc.; hinges—Lawrence Brothers, Inc.; door holders and stops—Glynn-Johnson Corporation; push and kick plates—Trego Industries; exit bolts—Sargent & Greenleaf, Inc. **Surfacing materials:** glazed tile—Natco Corporation; ceramic tile—The Mosaic Tile Company; quarry tile—Carlyle Tile Company; marble chips—Willinghem Little Stone Company; terrazzo divider strips—Manhattan Terrazzo Brass Strip Company, Inc.; porcelain enamel—Davidson Enamel Products, Inc.; laminated plastic—The Formica Company; roof: aluminum sheathing—Aluminum Company of America and Aluminum Structures, Inc.; acoustical insulation—Johns-Manville. **Drainage:** roof drains—Josam Manufacturing Company; parking-area drain gratings—Borden Metal Products Company. **Paint & stain:** Barreled Sunlight Paint Company and Benjamin Moore & Company.

equipment

Lighting fixtures: Wheeler Reflector Company; Pittsburgh Reflector Company; Day-Brite Lighting, Inc.; Garden City Plating & Manufacturing Company; Perfeclite Company; Rambusch Decorating Company; Holophane Company, Inc.; Silvray Lighting Company; Kliegl Brothers; stage lighting: dimmers—Ariel Davis Manufacturing Company, borderlights—Major Equipment Company, portable lighting—Century

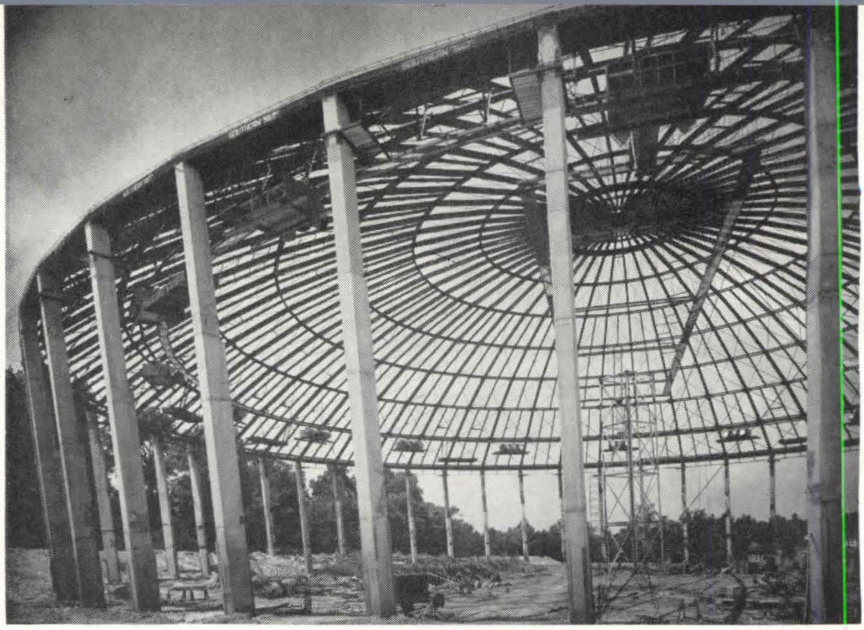
Details of second-floor lounge (above *and* top right) *reveal design character of interior finishes and furnishings, in comparison to utilitarian aspect of coliseum interior. Mural behind concession counter was executed by Elizabeth Mack.*

Auditorium interior (right) *is of simple architectural form but rich in color. Ceiling is dark blue; wall panels are in shades of blue; seats of seven different colors, from light pinks and blues to dark blues, reds, and purple. Aisle carpeting is bright red. Contour curtain is pale pink; backdrops range from deep pink to dark red.*

A. C. "Bill" Summerville

Lighting, Inc., spotlights—Knoxville Scenic Studios and Genarco, Inc.; exterior lighting: light poles—Revere Electric Manufacturing Company, fixtures—Russell & Stoll Company, Inc. **Electric distribution:** substation equipment, panels, and stage switchboard—General Electric Company; wire—Anaconda Wire & Cable Company; conduit—Walker Electrical Company, Inc.; lightning protection—St. Louis Lightning Protection Company; electric motors and starters—Westinghouse Electric Corporation; generators—Fairbanks, Morse & Company; floor boxes—Hope Electrical Products Company; exterior lighting: transformers, switches, and panels—General Electric Company. **Heating & air conditioning:** units—Marlo Coil Company; boilers—Erie City Iron Works and Fitzgibbons Boiler Company, Inc.; pumps and compressors—Worthington Corporation; air-handling equipment—American Blower Corporation; diffusers—Anemostat Corporation of America; grills—Tuttle & Bailey, Inc.; filters—Connor Engineering Corporation; thermostats—Minneapolis-Honeywell Regulator Company. **Ice rink:** evaporative condensers and equipment—Buildice Company, Inc.; compressors—Worthington Corporation; gages—James P. Marsh Corporation; motors—Howell Electric Motors Company. **Plumbing & sanitary:** plumbing fixtures and shower valves—Kohler Company; toilet seats—Swedish Crucible Steel Company; water heater—Crane Company; floor and shower drains—J. A. Zurn Manufacturing Company; soil pipe and fittings—Charlotte Pipe & Foundry Company; circulating pumps—Bell & Gossett Company. **Special equipment:** aluminum plaque and letters—Michaels Art Bronze Company, Inc.; fire-protection equipment—Elkhart Brass Manufacturing Company; sound system—Altec Lansing Corporation; public seating: American Seating Company, Ideal Seating Company, Shwayder Brothers, Inc., and Sico Manufacturing Company, seating upholstery fabrics—Collins & Aikman Corporation; scoreboards—Spencer Display Corporation; portable basketball floor—Cincinnati Floor Company; concession equipment: bottle coolers—LaCrosse Cooler Company, dispensers—Bastian-Blessing Company, grills and popcorn machine—Star Manufacturing Company, Inc., stainless-steel sinks—Legion Stainless Sink Corporation; carpeting—C. H. Masland & Sons, carpet pads—General Felt Products Company, draperies—Wil-Kin Theatre Supply, Inc.

auditorium and coliseum



No steel member of the dome, except for compression ring (photos here *and* section acrosspage), *is deeper than 18 in. All-welded construction helped to lighten dead load, which is only 22 psf, including continuous, structural-steel, perimeter, tension ring. Dome is covered with three-in. precast wood-fiber planks (which also have necessary insulating and acoustical properties) on bulb tees, topped with approximately one-in. concrete parge which in turn is covered with sheet aluminum* (see June 1955 P/A). *All roof steel, contiguous utility piping, and conduit-duct work were painted from top prior to installation of prepainted roof planking.* Photos: Joseph W. Molitor

the coliseum

Primary considerations influencing the coliseum design were economy of construction and future maintenance, flexibility of use, and ease of circulation. Its circular shape allows a remarkably economical roof structure, greatest square footage for perimeter, and maximum number of seats on either side of the arena.

Heating and ventilating equipment consists essentially of the following:

1. Sixteen air-handling units located around the periphery of the building (*note photos above*). These units (each moves 20,000 cfm) may be operated on 100 percent return air, 100 percent outside air, or a mixture of the two as determined by the operator and/or the automatic temperature-control system. Temperature controls for each unit provide a cycle operation which uses 100 percent return air during warm-up period. As temperature reaches the thermostat setting, a further rise in temperature shuts off heating coil and begins to open outside-air damper while closing the return-air damper. The outside- and return-air dampers may also be manually controlled from a central control panel to introduce 100 percent outside air whenever required.

2. A series of propeller-type exhaust fans is mounted behind aluminum louvers, 2½ ft deep, which encircle the structure below periphery of dome. The louvers are used to obtain fresh air for the units or to exhaust air from the building.

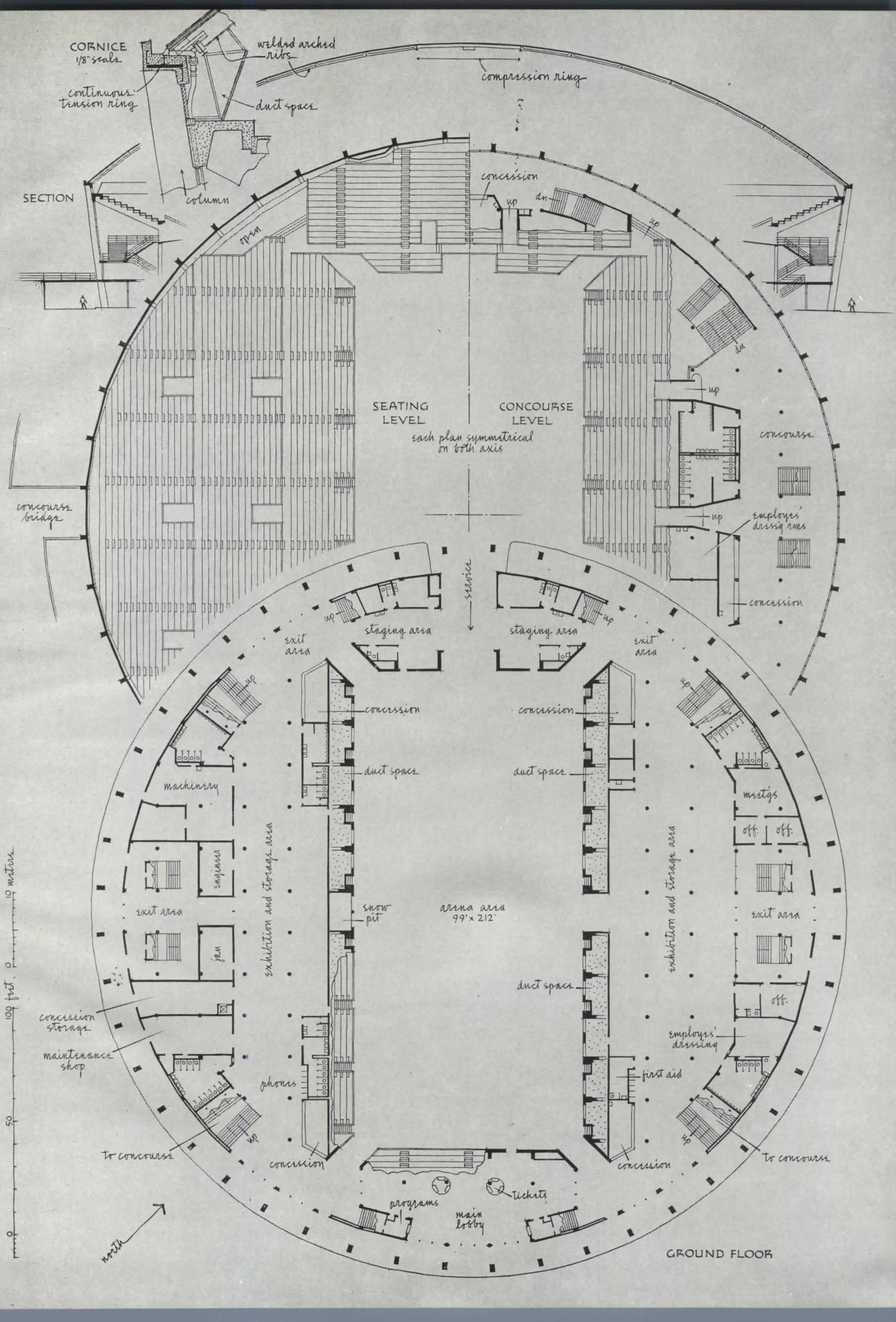
3. Four, large, double-inlet, centrifugal fans are situated immediately behind the arena floor wall. These exhaust air from the floor level through grills in the arena-floor wall and discharge it through ductwork beneath seats to the upper ring of louvers. There, air may be either exhausted or returned to certain air-handling units for recirculation.

Auxiliary heat is supplied in concourse and work and office areas by means of unit heaters and cast-iron radiation.

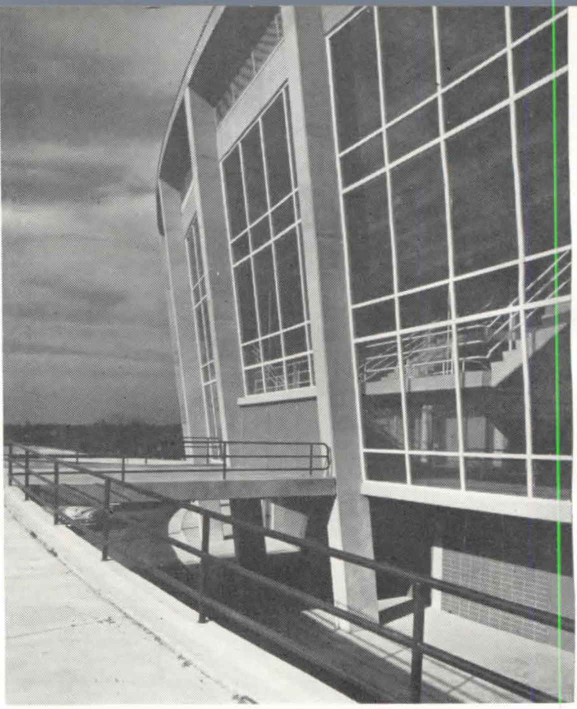
As cited earlier, steam is brought to the coliseum from the main boilers in the auditorium. At the coliseum, the steam main raises to feed a main distribution steam loop which encircles the building at an elevation just above the air-handling units. All heating units are down fed from the loop except for unit heaters and radiation at ground level.

An ice-rink floor, 200 ft x 85 ft, is served by a circulating brine refrigerating system consisting of a brine chiller, brine-storage tank, two 125-hp reciprocating compressors, and two evaporative compressors. Both compressors are in operation only when ice is being frozen.

All coliseum lighting, with the exception of some fluorescent in the exhibition area, is incandescent. Units over the seating area are high-bay and low-bay lamps in 500-, 750-, and 1000-w sizes. These are hung by disconnecting-type hangers which permit them to be lowered for relamping and maintenance. Lighting over the arena proper consists of one hundred and thirty 1500-w high-bay units mounted on seven 85-ft long steel-tube frames that can be raised or lowered by winches on catwalks above. Maximum clearance of frames above floor is 65 ft; minimum level is five ft. When positioned at 35 to 40 ft, an illumination of well over 100 ft-c maintains at floor level so that color photos or movies can be taken without auxiliary lighting. Spotlighting is accomplished by eight 3000-amp arc-type spots on special platforms placed above the seating area near the perimeter of the building. Largest motor load comes from the two refrigeration compressors of the ice-rink equipment.

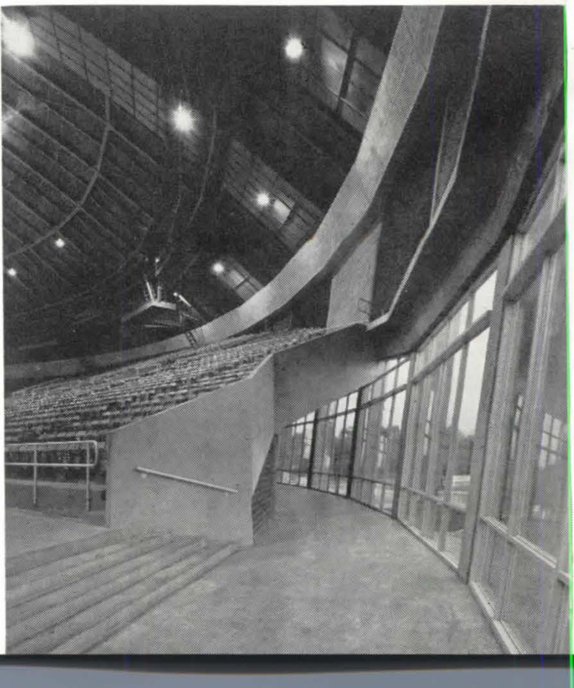

CORNICE
1/8" scale
welded arched ribs
continuous tension ring
duct space
column
compression ring
SECTION
open
concession
up
dn
SEATING LEVEL
CONCOURSE LEVEL
each plan symmetrical on both axis
concourse
concourse bridge
employes' dressg rms
concession
service
staging area
exit area
up
concession
duct space
machinery
mtgs
off.
engines
exit area
fan
exhibition and storage area
snow pit
arena area 99' x 212'
concession storage
maintenance shop
employes' dressing
first aid
phones
to concourse
concession
programs
tickets
main lobby
north
GROUND FLOOR
10 meters
0
100 feet
50
0

auditorium and coliseum



Bridge (above) *leads directly from parking lot to second level of coliseum, from which seats can be reached directly through the vomitories. Blue ceramic tile covers exterior walls of coliseum up to the continuous overhang. Continuous open concourses* (left) *encircle the building at this level. Interior open stairs connect with first level 15 ft below. Time tests show that building is normally evacuated within four minutes.*

Colorful panels of painted, precast, wood-fiber planks were placed at opposite ends of arena (acrosspage), *for acoustical reasons.*



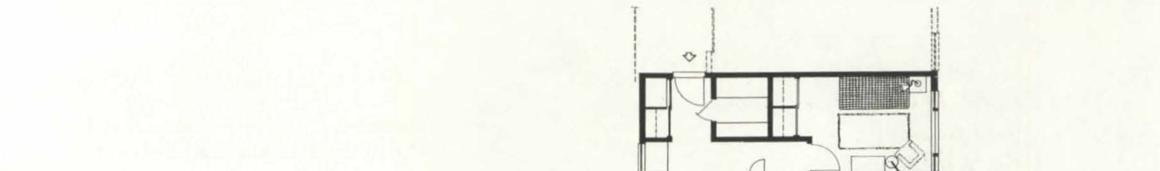
house

location | Weston, Connecticut
architect | Huson Jackson
associates | H. Seymour Howard, Jr., and Harold Edelman

The large family for which this house was designed—three unmarried children living at home; two married children and numerous grandchilden living near by—enjoys large-scale, all-day get-togethers as well as occasional evening parties for up to 100 guests. The need, therefore, was for some large area where groups could be readily accommodated; yet sufficient separation of activities so that children would not be disturbed by grown-ups' parties and vice versa. The solution is a huge, only partially subdivided living/dining space extending through the center of the house, while the bedroom wing is placed on a lower level and insulated from the family living space by baths, storage units, etc. In the opposite wing are kitchen, general service facilities, and rooms for two servants.

The site offered problems, as it was one of the last available pieces of land in an area near summer recreational facilities, and it included a swamp and a tangle of fallen trees and glacial boulders. The unusual shape of the house is largely a reflection of the limited area on which building was practicable.

Bedroom and living-room wings of the essentially frame house have roofs of plank and laminated-beam construction. Forced hot air is used for heating. To control sound, walls between bedrooms are framed with staggered studs, with insulation batts woven between. General Contractor: Olof Theander.



Plan from architect's office.

house

On the east side of the house (top) *a terrace extends the living/dining space outdoors: exterior siding is cypress.*

On the approach side of the house (left) *a garage that will be added to the service wing "will improve the proportions of the design," in the architect's opinion.*

Much of the furniture was architect-designed and built by Cabinetmaker Harvey Blackman.

The architect feels that the plank-and-beam construction used in the family-living space "achieves a greater sense of enclosure, quiet, and domestic scale than would have been possible with trusses or rafters and tie beams." Photos: Louis Reens

laboratory equipment by Edward Grey Halstead*

Institutions (such as schools and hospitals), industrial organizations, and other groups whose buildings require installation of laboratories for research, for testing and quality control, or for instructional purposes are demanding more and more from the architect in the design and detailing of these units. The successful architect has kept abreast of changes in the various related technical fields so that his clients can be assured of receiving the facilities they need, and so that his projects in their entirety can be planned and co-ordinated with construction most economically.

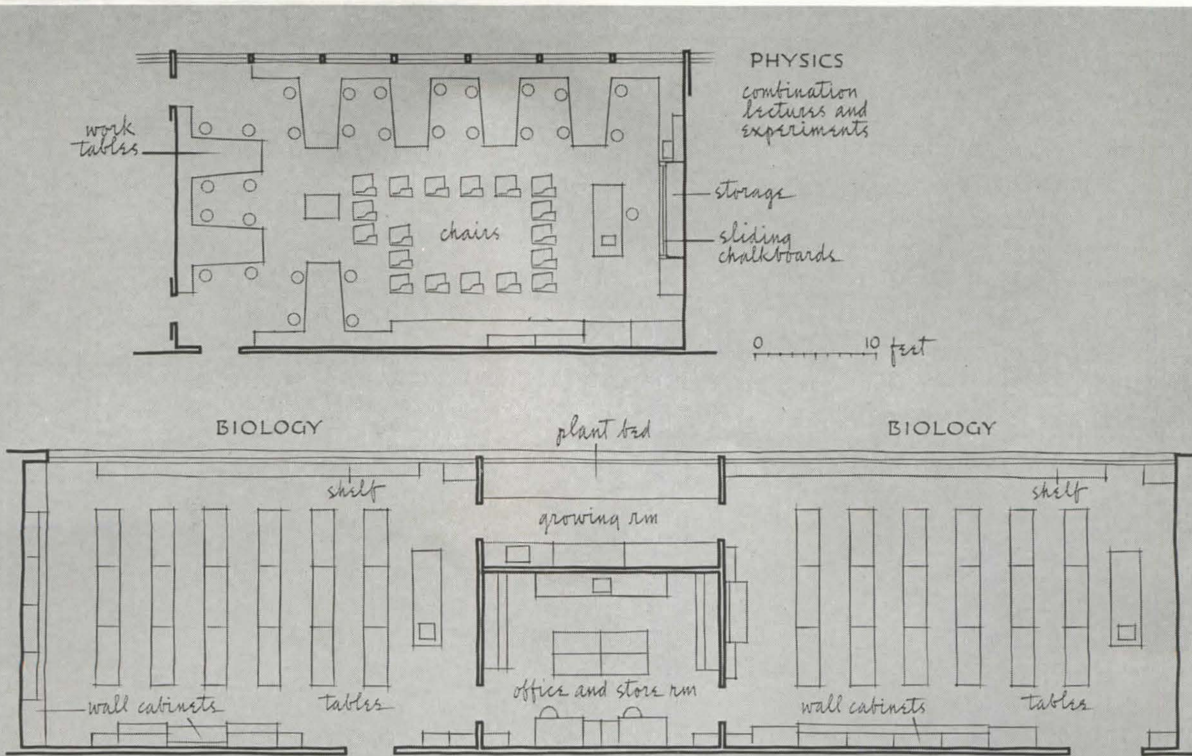
Hand-in-hand with this growth in demand has been the expansion of a highly specialized industry devoted to the design and manufacture of laboratory equipment. The importance of this industry—basic to the nation's scientific and technological progress—has been recognized ever since World War I, when too great a dependence on foreign suppliers for highly specialized equipment taught the United States many lessons.

Constant liaison with the country's architects in developing adequate and workable science and engineering laboratories is a factor that has helped, in no small way, the growth of the laboratory-equipment industry in this country. Other factors include competent engineering and design departments within the industry itself and the co-operation of scientists and research engineers. As a result of the co-operative endeavors of the architect, the equipment manufacturer, and the ultimate user in meeting the changing needs of developing technologies, the

* *Member of Jensen & Halstead, Architects, Chicago, Ill.*

Combination lecture room and physics laboratory for a high school (below, top) *illustrates perimeter planning.*

Biology suite with growing room and storeroom (below, bottom) *illustrates high school or junior-college plan.*



architectural profession has been provided with invaluable services including design of specialized units, custom manufacture of these units, and properly controlled installation.

These services, geared as they are to the highly specialized laboratory-equipment needs of our growing technology, have made the role of the so-called "millwork" producer of a previous generation practically obsolete and, in most instances, certainly insufficient as far as the modern laboratory is concerned. This obsolescence can easily be seen in a comparison of the laboratory devices illustrated in catalogs in the early 1900's with the complexity of the units shown in current catalogs.

In contrast with the old-style catalogs, laboratory equipment is classified today into several application and usage groups to meet the needs of specialized laboratories. The principal groups are:

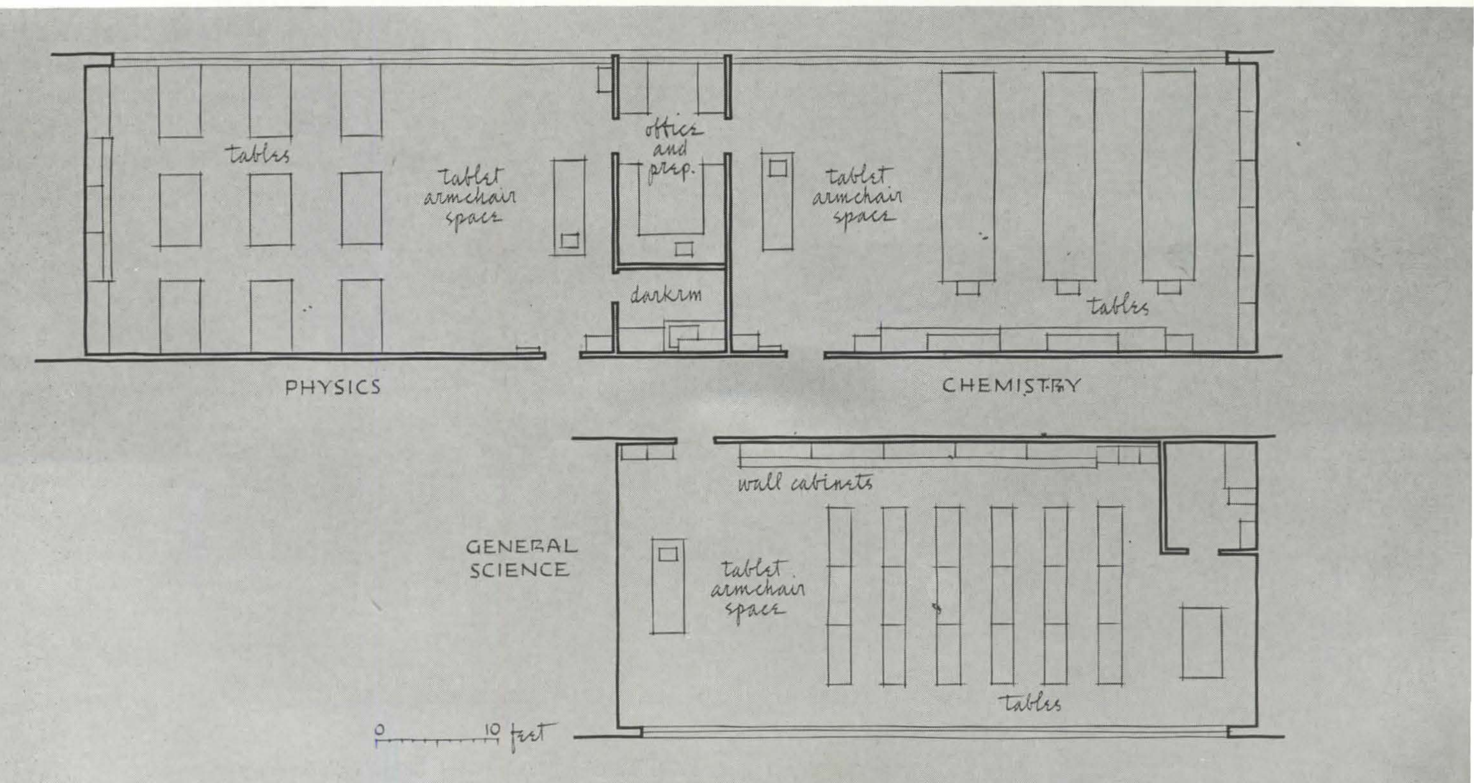
1. *Working surfaces* and *specialized plumbing and electrical fixtures.* Worktops and fixtures will vary with the nature of the work to be done and type of reagents and materials to be used.

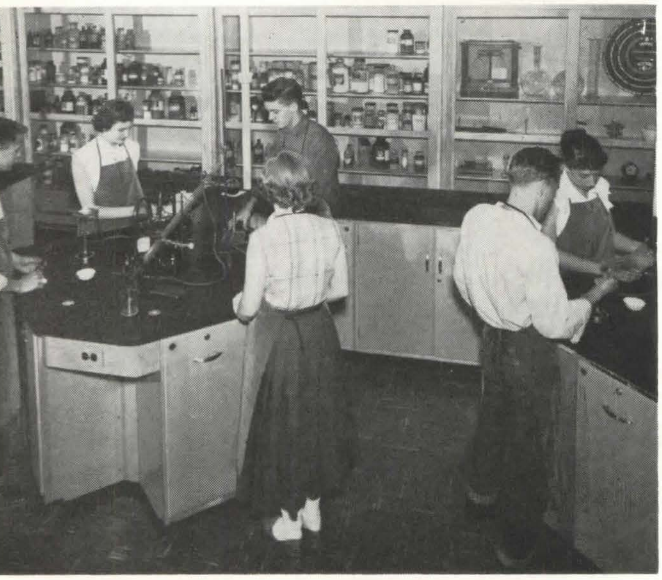
2. *Base units and other top supports.* Determined by desirable storage procedures and the work to be performed at each station.

3. *Sinks, drainboards, and troughs.* Amount of work involved in the laboratory, the types of solutions, and function of the laboratory govern selection of these items.

4. *Hoods* and other fume-disposal units. These are particularly important where heating or other high-temperature work is required and demands special consideration if materials, which may generate

Physics and chemistry laboratory suite with lecture space in each laboratory for average high school. Darkroom, storeroom, etc. separate the two basic functions. Arrangement of general science lab is similar.





Students conduct experiments around multipurpose science tables in high-school science laboratory.

toxic fumes, are a part of the laboratory work.

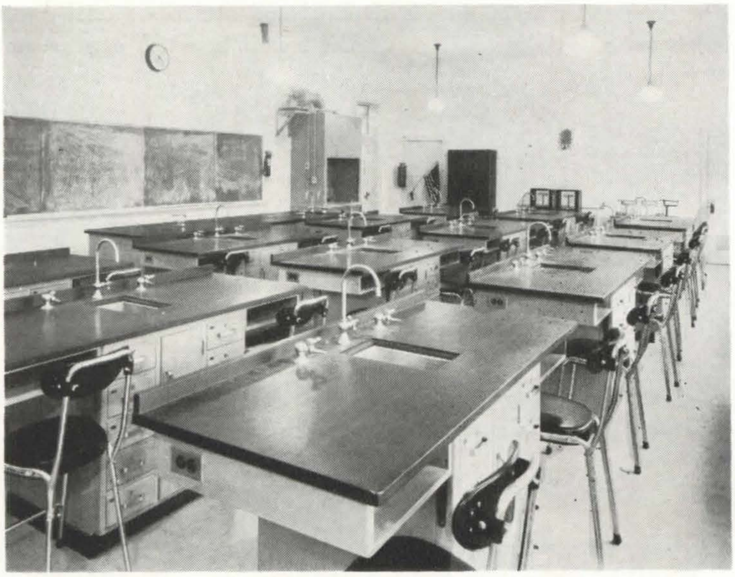
5. *Storage and display cases* other than table assemblies. These vary, obviously, with the amount and type of material to be accommodated, and become increasingly important if refrigeration or constant temperature and humidity are required.

6. *Accessory equipment*—baths, hot plates, centrifuges, autoclaves, etc. The manner in which this type of equipment is handled can greatly effect the flexibility and operation of a laboratory. Sometimes it is proper for these to be built-in, often they must be portable so that they can be shifted from station to station.

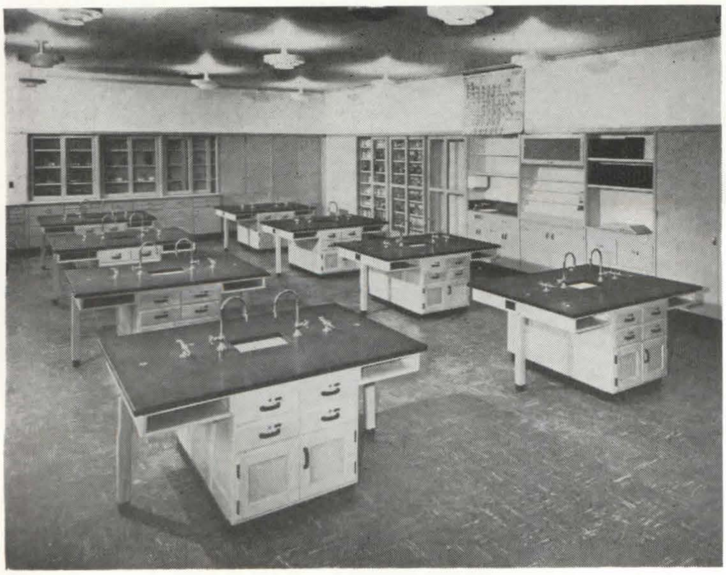
7. *Electrical service fixtures*, mains, branch lines, and outlets. Require careful analysis by the architect and must be related to future expansion or alteration of the laboratory. A well-planned laboratory can be altered to meet new functional requirements relatively easily.

8. *Piping* for water and other liquids, waste lines, and traps. Must be placed with the same care as the electric services. Laboratories where these lines are not placed with changes in mind are expensive to alter.

The development and design co-ordination of these various components of a laboratory in such a way that two or three, or several units, can be fitted or installed in a "modular-like" manner, is one of the major responsibilities of the



General-science laboratory is equipped with two-student tables (left, center).



Combination high-school science laboratory with four-student tables.

equipment manufacturer. It is also his basic contribution to the architect.

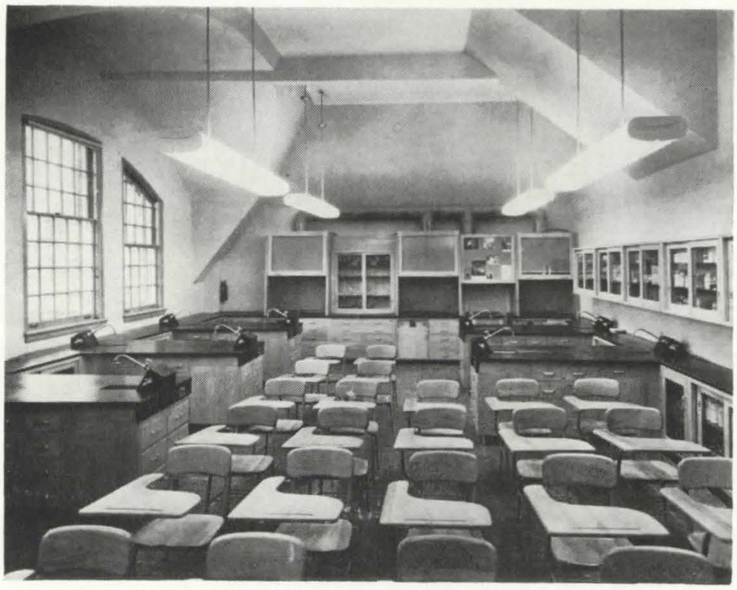
The architect can often save his client money by using standard production units which the manufacturer has designed to be assembled to meet various laboratory requirements. It is seldom necessary to design and specify a completely custom-built installation. But close co-ordination with the maker is required in order to obtain from standard units the neat, unified appearance necessary in an orderly, functional laboratory.

Where intricate and complex special equipment is a part—major or minor—of a laboratory installation, the manufacturer of the standard units can ordinarily be depended upon to design the special units so that they will harmonize with the over-all pattern established by standard unit assemblies.

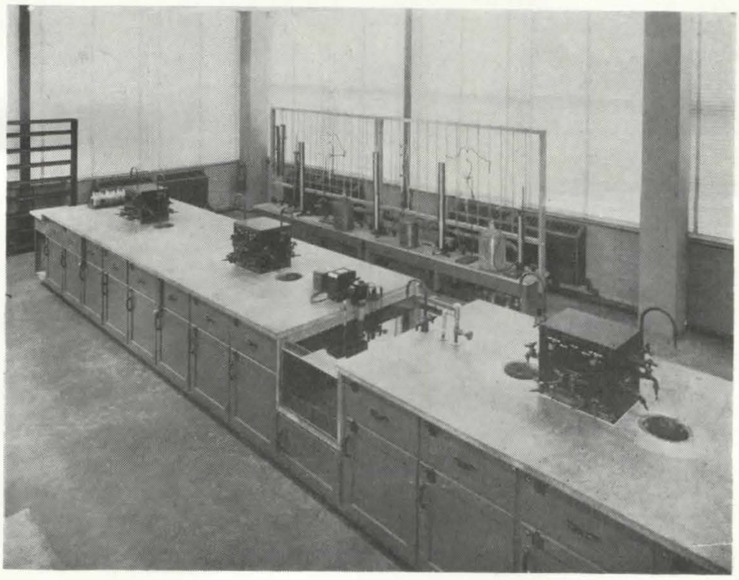
If the installation of a laboratory or of laboratory equipment is to be co-ordinated properly within the construction schedule, the planning must be considered in two stages. The first being the provision of what might be called adequate "lead time," which is another way of saying that the laboratory and laboratory equipment must be thought of by the architect as a unit. Deciding only on the dimensions of the space that the laboratory is to occupy at the design stage is insufficient. It is better practice to indicate the placement of the equipment on the drawings at the same time. When working drawings are pre-

Combination lecture-laboratory chemistry installation for high-school level (right).

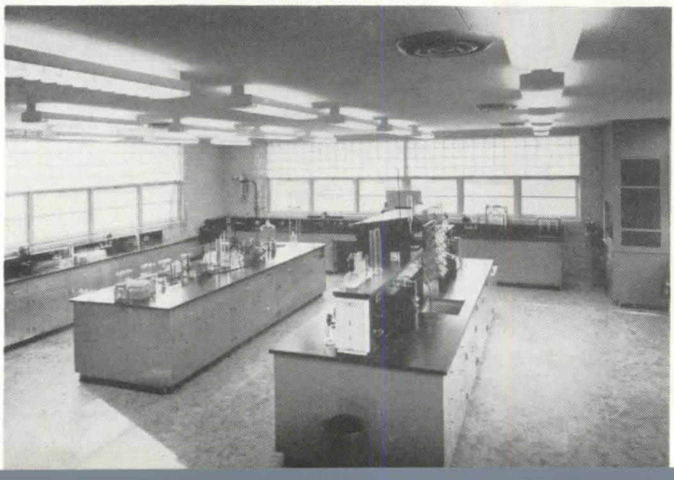
Perimeter-planned science laboratory with tablet-arm chairs for lecture area (right, center).



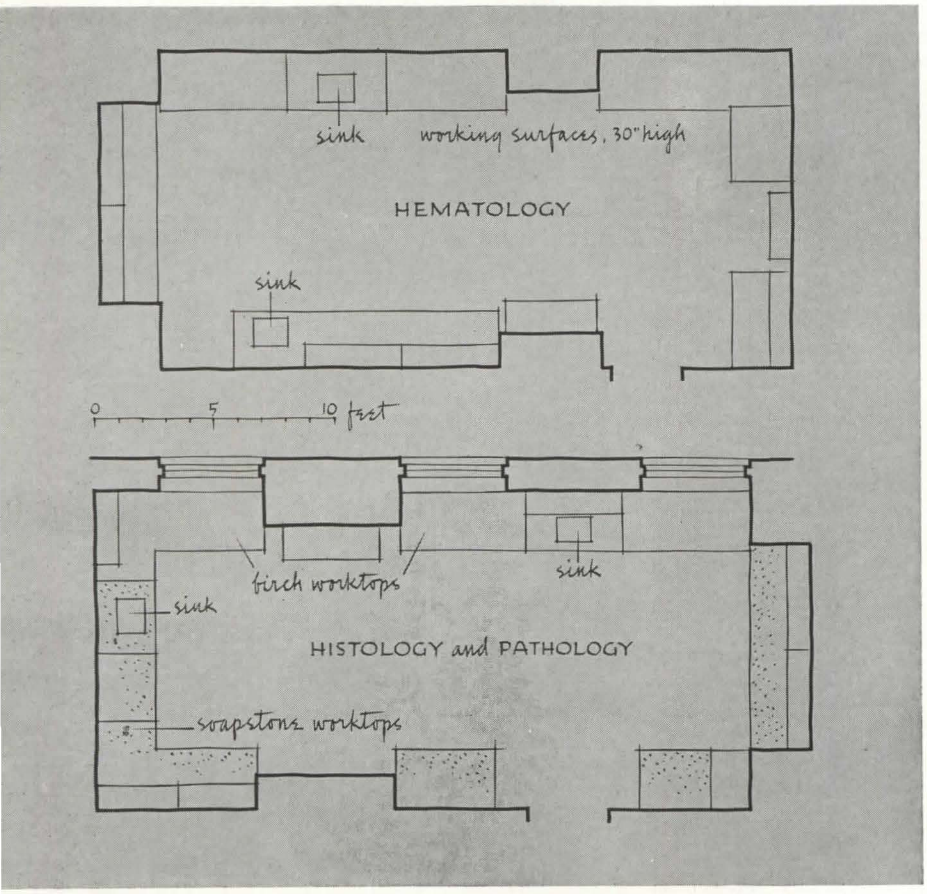
Physical chemistry and/or chemical engineering laboratory for college or university level (right, bottom).



City laboratory for sewage-treatment plant.



Hematology laboratory adaptable to increasing investigative work loads in the modern hospital.



Proper arrangement of equipment for hospital histology and pathology laboratory that provides adequate work areas.

pared, if placement is not shown, other considerations than location of equipment may control the location of utilities lines. Often, it is prudent to specify the laboratory units at an early stage, so that plans for their manufacture and installation can proceed with the over-all plans for the entire structure and delays at crucial moments, because of special equipment in the laboratory, can be eliminated.

From the laboratory-equipment manufacturer's point of view, there are twelve steps that should be followed in planning and constructing a satisfactory laboratory installation. These are planning, specifying, bidding, field checking, detailing, scheduling, fabricating, finishing, trimming, inspecting, shipping, and installing.

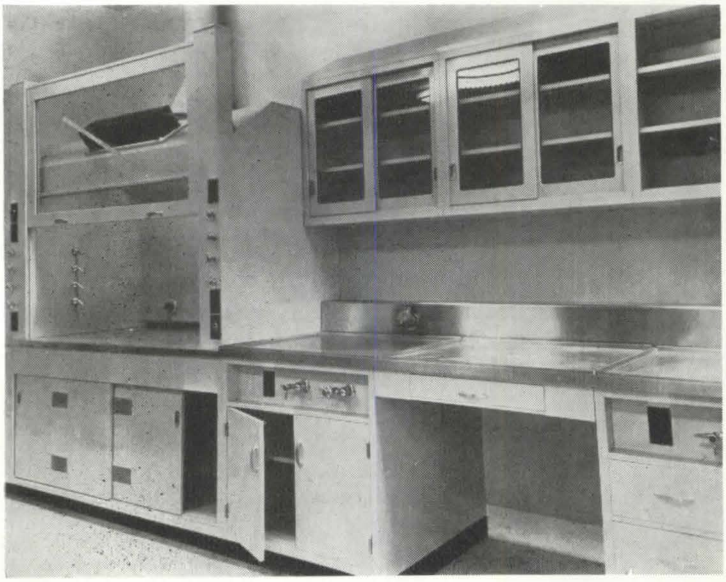
The first two of these are, naturally, the function of the architect, and the remainder are peculiar to the manufacturing of the equipment specified.

Planning by the architect is basic, of course, and all functionally co-ordinated installations have their origin in this stage. The fundamental problems of number and duties of the students, researchers, or technicians involved, the function or objective of the laboratory, anticipated flow of traffic and materials, and the area required for the people and equipment to work properly, are all influential in the planning. The service facilities, plumbing requirements, light and air available, and other factors must be developed after the fundamental problems have been solved. Additional thought must be given to supplementary work surfaces, storage facilities, and safety regulations.

Typical floor plans (as shown) are intended to indicate how planning can include the types of equipment as well as general dimensions. The designs of the laboratories illustrated are based on experience and can serve as suggestions in providing for specific uses of the scientist, engineer, researcher, and teacher.

Architects can obtain valuable data, which can be used in solving planning and design problems related to laboratories and laboratory installation, from manufacturers of such equipment. Industry-wide figures compiled by the Scientific Apparatus Makers Association indicate that almost 10 percent of the total-industry labor force is made up of layout men,

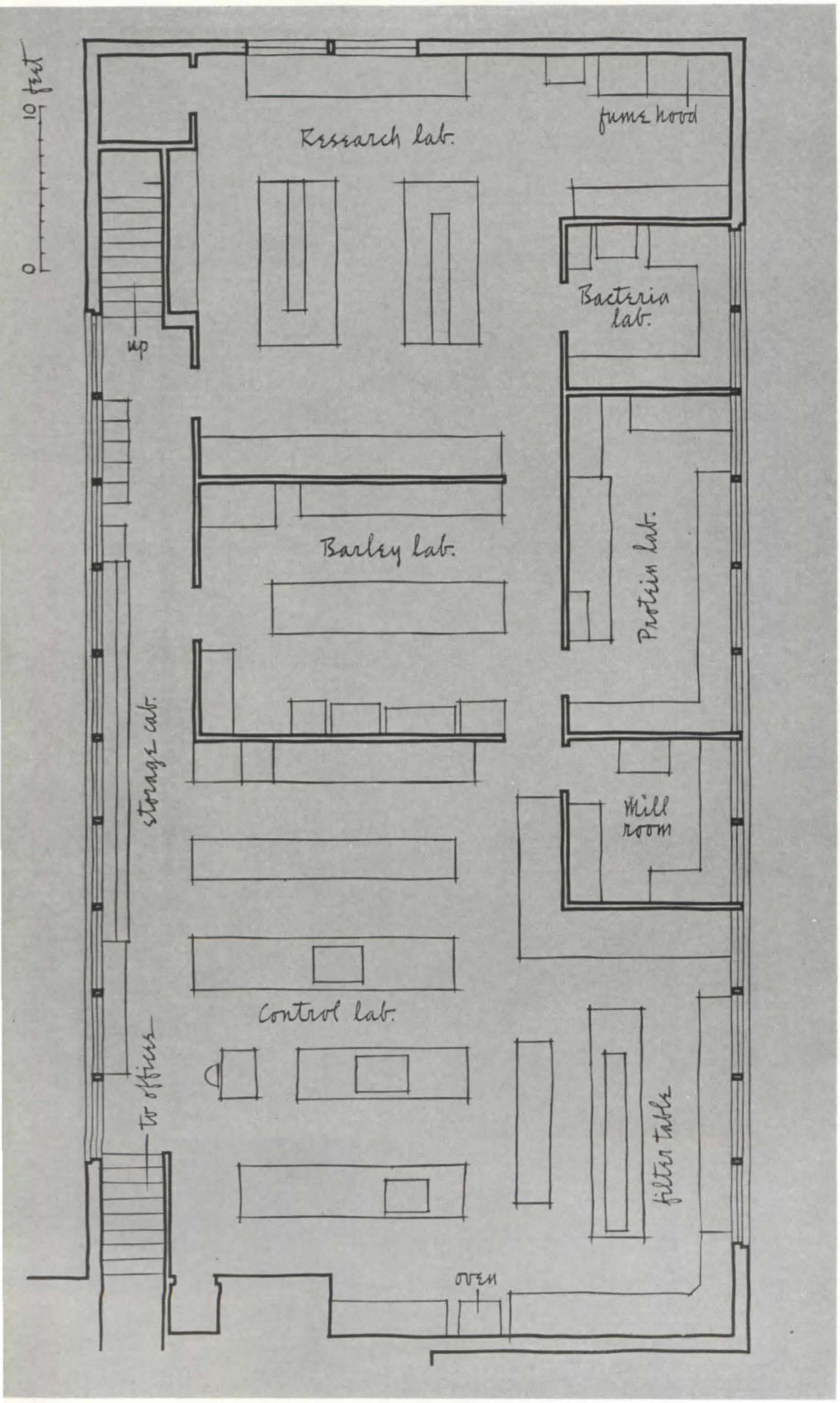
General-purpose hospital laboratory section.



Specialized laboratory equipment for hospital radioisotope laboratory.

Health-laboratory glassware-cleaning department, state office building.

Plan illustrates section of research and quality-control laboratories in malting company, showing specific work areas.



draftsmen, and engineering personnel. While the services of these men are available to assist architects in design problems on the same basis that consultants are available, the internal workings of the industry demand that these men do research in planning, construction, and development of laboratory equipment. Similar services are available to contractors in helping them develop and maintain construction schedules and to link utilities with the laboratory equipment in the proper manner.

To whatever degree consultation with a laboratory-equipment specialist is required, it will be an invaluable service. These specialists are familiar with problems that every architect must consider when designing a technical laboratory, whether it is a building in itself or a single part of a larger facility, such as a quality-control unit in an industrial plant, a science or chemistry room in a school, or a testing laboratory in a hospital.

There are, of course, problems which are definitely architectural in nature and which, in effect, relate the laboratory to the over-all service and utilities scheme of the building. The architect alone can be expected to perform this type of planning and co-ordination. This is particularly true when it is remembered that each project is an individual architectural concept and no specific comments can apply equally to all laboratory installations.

Sound architectural practice requires that ventilation and air-change problems receive special consideration. Air conditioning is virtually essential in hospitals and industrial laboratories. Ordinarily, the system should provide both temperature and humidity control, filtering equipment of very high quality, and an electrostatic system—the ideal system being one of double ducts with individual room control.

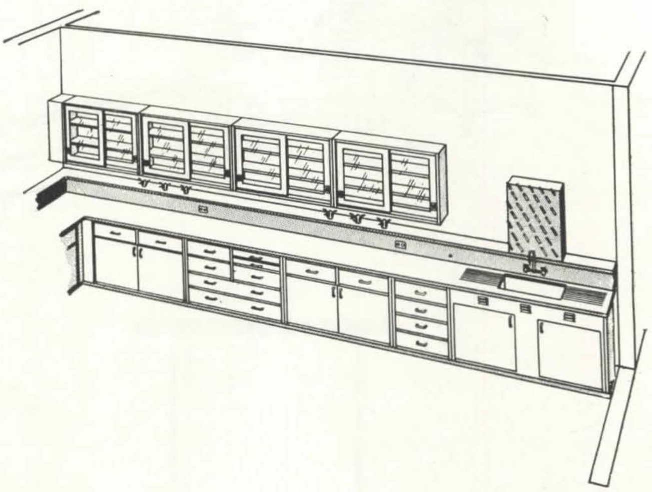
Better practice suggests that the exhaust-ventilation system for the laboratory be separate from the remainder of the building. The system for laboratory exhaust should be so designed that it carries laboratory air directly outside to an area where wind currents or the prevailing winds will not carry the exhausted air back into the building through windows, air intakes, or other openings.

A separate exhaust system may require extra care in planning the air intake and the heating system. Air-change loads must be balanced carefully, because of the somewhat artificial atmospheric conditions created by the air conditioning. The additional exhaust system, if not compensated by air intake, can reduce barometric pressure sufficiently to affect the readings of delicate laboratory instruments.

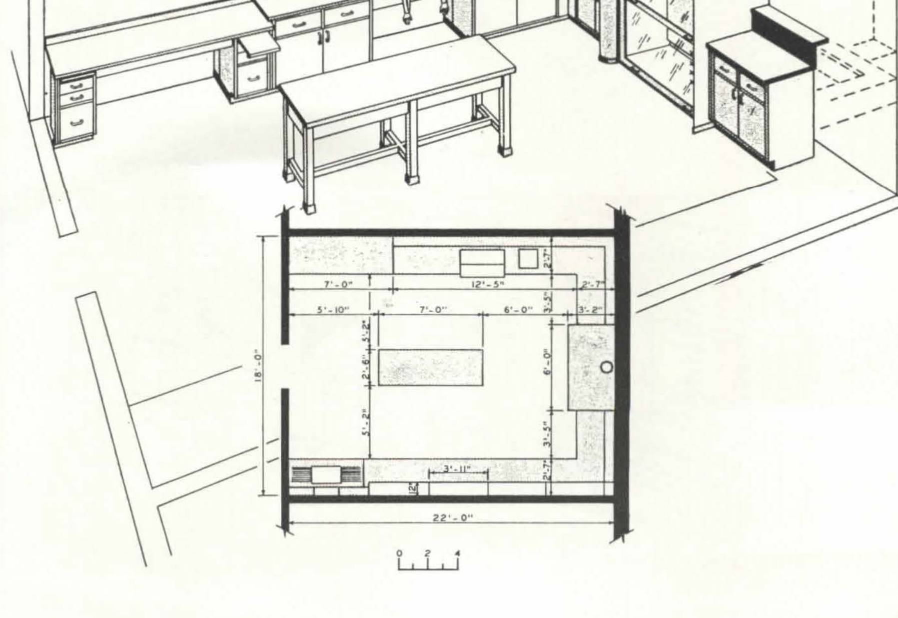
The air-change system should have a 100 percent capacity so that it can accommodate odor removal quickly.

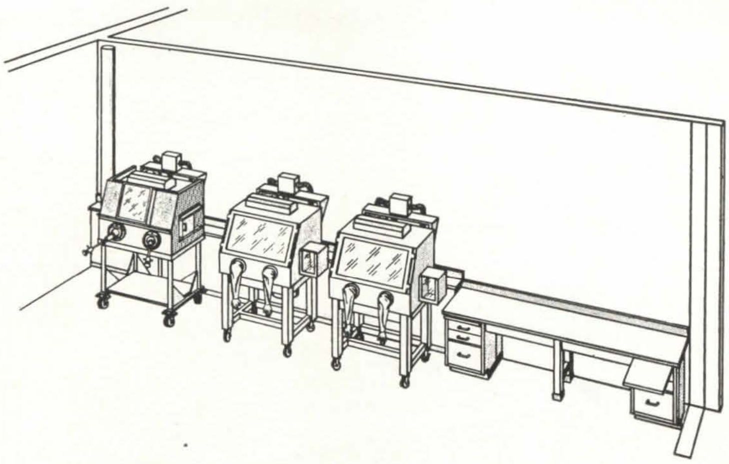
Virtually integral components of the laboratory ventilation system are the exhaust hoods which serve to draw toxic fumes, unpleasant odors, and heat out of the laboratory. These hoods influence air change and air flow considerably. Ordinarily, hood stacks should be extended directly to the outside or into a separate exhaust system if direct outside disposition is not possible. A minimum number of changes in directions is also desirable. The same considerations apply to these ducts as to the ventilation system in regard to re-entry of fumes into the building. Each hood should have an automatic damper in its exhaust duct which can be closed if the hood is not in use.

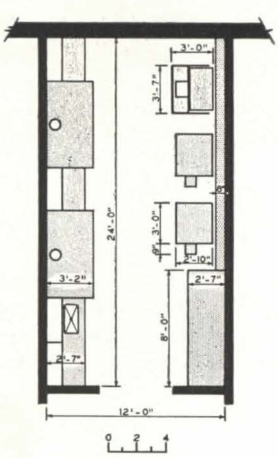
Careful investigation may be required into the material of which the ducts are to be made, depending on the nature of the fumes to be exhausted. Generally, stainless steel is used, although other materials are suitable. In the event of extreme temperature variations or wind



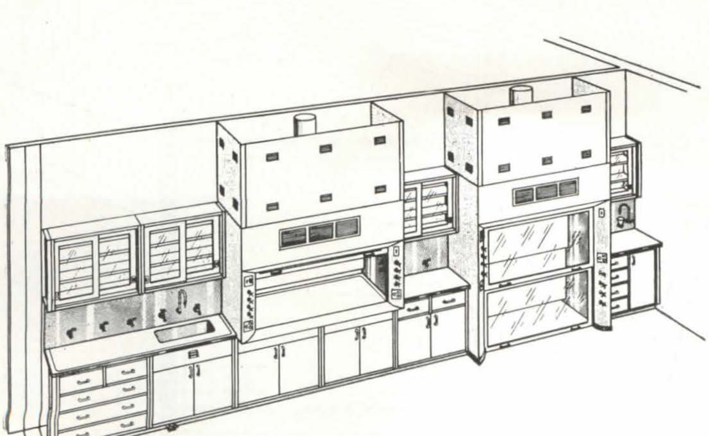
Chemistry laboratory for industry adaptable to organic and analytical chemistry. Note desk space for personnel; laboratory was sized to accommodate two or three persons. Equipment is shown along three walls (above *and* below).







Radiochemical laboratory—high and low-level isotopes. Suggested floor plan offers wide variety of laboratory working space areas. Equipment along opposite walls is shown (above *and* below).



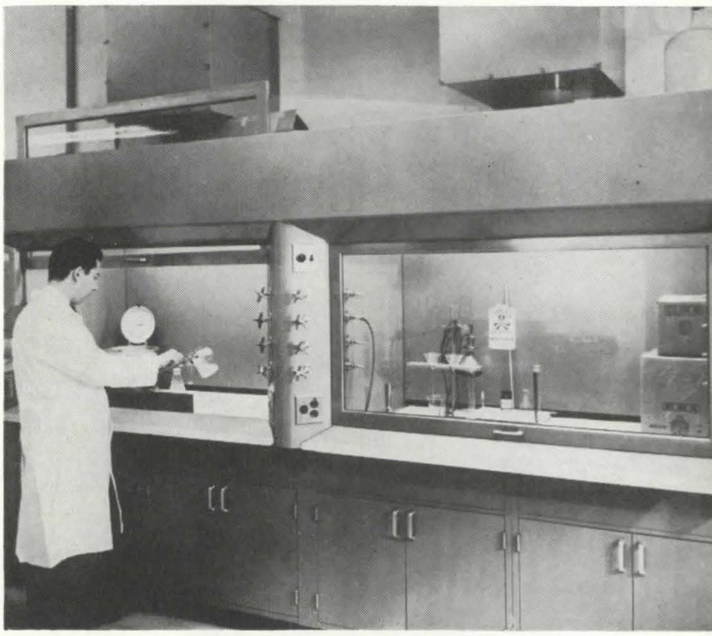
velocities, special consideration as to size of the duct and its insulation will be required.

Corrosive action of waste will be a major factor in the selection of drain materials. Local plumbing or building codes will often cover special cases and specify what type of materials are to be used and how the drain lines are to be vented. Venting becomes especially important where more than one laboratory operation empties into a common line, because of the development of unpredicted mixtures which conceivably may become explosive or toxic. Vent and waste lines should be at least one size larger than for a conventional system and the pipe material should be resistant to chemical action.

The architect must also give particular attention to alterations and potential remodeling in the laboratory itself when laying out drains and other facilities. Frequently, the function of a laboratory is changed; often the original equipment installed becomes obsolete; many times special testing apparatus or pilot plants must be installed for a short time only; this makes it mandatory that drain lines, plumbing, water supplies, electrical outlets, and other facilities be laid out with change rather than permanency in mind.

More than likely, local codes will govern sizes and materials for water lines and sanitary facilities. However, these codes may not cover the unusually large demands for water which may be made by some laboratory operations. An architect should be sure that water supply to the laboratory is adequate to service all outlets at all times.

This usually can be assured by specifying larger pipes in the laboratory system than in the remainder of the building. A hot-water-return system should be used.



Hood facilities for industrial radioactive laboratory.

Particular importance is given to clean-out facilities, which ought to be more easily accessible in laboratories than in other installations. Frequently, there is danger of heavy sediment or aqueous-setting materials entering and clogging the drains.

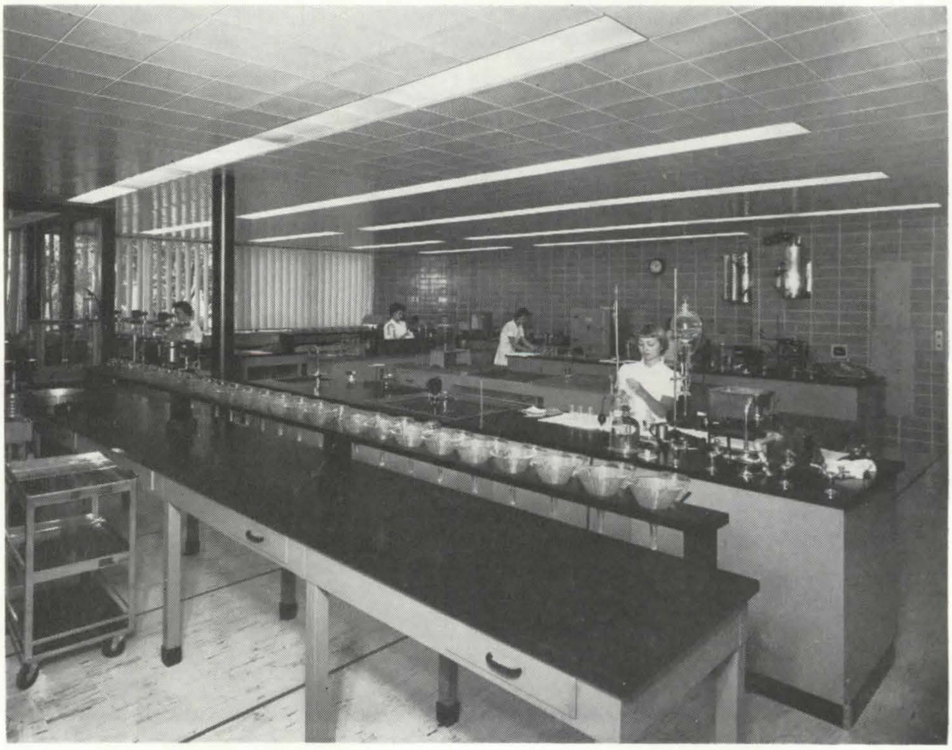
Emergency shut-off controls are a desirable safety measure. They can be installed to handle the entire laboratory or each piece of equipment, such as fume hoods. Color coding will help laboratory technicians if services other than hot and cold water are provided through similar or adjacent outlets. A large variety of services is possible. In addition to the ordinary hot (180F) and cold water, a line for distilled water may be required; a steam line with 35-lb pressure may be needed for fume hoods as well as at sterilizers and autoclaves; other lines will carry compressed air, gas, vacuum, oxygen, and other special gases, and special liquids such as solvents.

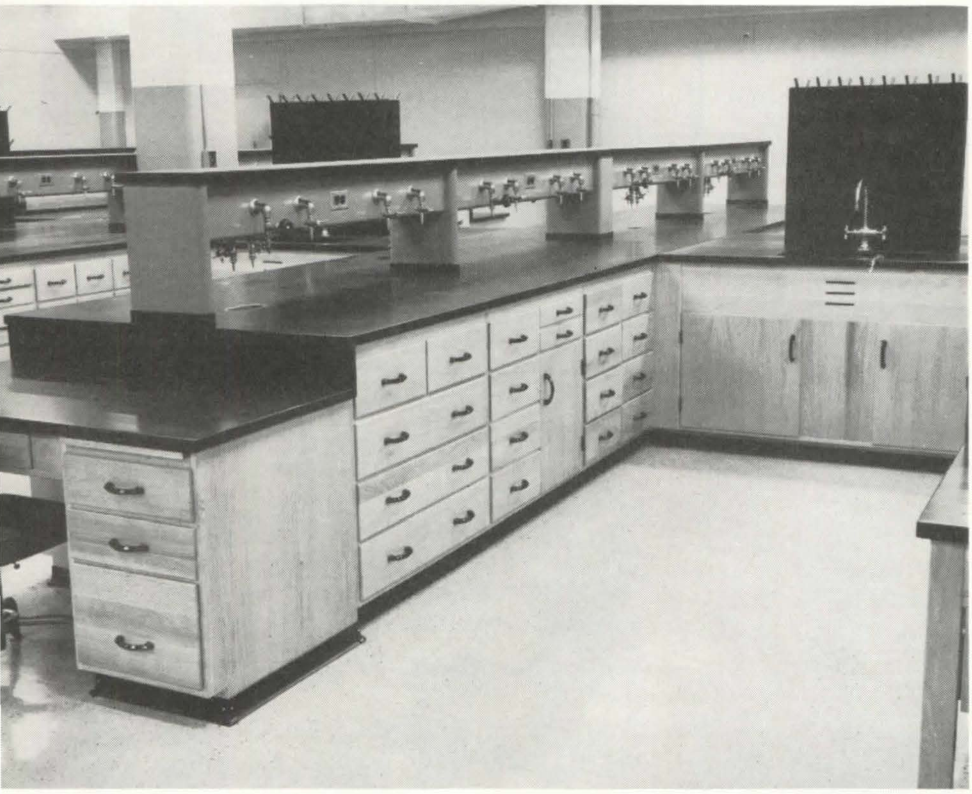
All of these services, as well as electricity and utilities should be provided in a valved grid system, so that laboratory alterations and changes can be made efficiently.

Most laboratories of any size will need a distribution panel to control electricity; this is another instance where the anticipation of future requirements can pay off well. Naturally, careful study will be made of current needs before scheduling and wiring of circuits, and more than one panel will be used when several types of power are required. Generally, at least two a-c voltages will be needed. Convenient location is necessary for all control panels, though care must be taken, particularly in school laboratories, that these are not easily available to unauthorized persons.

Electric lighting for laboratories must meet high standards. It should be dif-

Section of industrial research and quality control laboratories.





Section of industrial research laboratory.

fused, glareless, and have a rating of 60 ft-c at each bench. The fixtures should be located so that they can be easily cleaned and so that shadows on tables and working surfaces are minimized. Control of lighting is important and a modulating control system may offer advantages in some laboratories.

Natural lighting should be provided, if at all possible, but precautions are necessary to control direct rays of the sun by use of darkening shades or some other device. These rays must be controlled to eliminate glare and reflection; furthermore, many instruments and materials are affected adversely by direct sunshine. Window sills should be higher than the top of the benches or tables, if feasible, to prevent the collection of refuse on the sills. Double glass may be installed in the windows where temperature control is important.

Temperature and humidity control are often particularly important in storage areas and it is considered good practice to provide separate areas for storing wet materials and for storing dry matter. Generosity in allocating storage space is essential. In large installations, purchasing for inventory may be governed by market prices. This will lead to larger purchases when prices are low even though anticipated usage is some time in the future. A cold room with a constant temperature of 35F will be required in many cases, particularly if heat-sensitive drugs and chemicals are required in the laboratory work. When narcotics are involved, special locked-storage spaces are required.

At each station, some storage space will be required for reagents and other items used with some degree of regularity.

If radioactive materials are to be used in the laboratory, extra precautions are required. The room must be completely shielded with lead on all sides, as well as in the ceiling and floor. A separate air-conditioning system is a must, and air from such space should be 100 percent exhausted and filtered before discharge. Electric shut-off switches should be on the outside of the room, doors must be fitted closely, and working surfaces should be of material that will not absorb nor retain radioactive particles.

Wall, ceiling, and floor finishes in a radioactive laboratory should be of a finish that can be readily and thoroughly washed. Even in laboratories, where radioactivity is not a matter of concern, cleanliness of walls and floors should be relatively easy to maintain. Wall surfaces should be a smooth finish with a hard-gloss or semigloss material. Floors must be nonabsorbent and in some laboratories, special consideration will be given to the floors since laboratory work may require materials or liquids that tend to cause deterioration in conventional flooring materials.

All possible safety precautions should be included in planning the laboratory. Emergency showers should be built into the laboratory itself, conveniently located so that injuries from chemical burns and minor explosions can be reduced. An electric switch, to cut off all power, should be near the door, clearly marked, and an emergency-power circuit for safety lighting should be installed. Most industrial laboratories, and many others, will have to be electrically grounded. First-aid supplies should be easily available and their location well marked. To handle fire emergencies, the laboratory should be equipped with an adequately coded fire alarm and an overhead sprinkler system, preferably using carbon dioxide.

All of these many factors influence the laboratory and each factor must be co-ordinated into the general plan of the building.

The problem is sufficiently complex as to require the design development of the laboratory to proceed concurrently with the design development of the entire building. Co-ordination will suffer if the entire laboratory design is not carried through as the building layout is developed. Giving the laboratory primary consideration throughout the design stage of the structure, whether it is a building in itself, or located in an industrial plant, hospital, or school, will provide a functional installation with virtually complete correlation of the many diverse features of an efficient and economical laboratory.

Following careful planning of the building, the laboratory specifications must be prepared and arrangements made to obtain laboratory equipment, which will meet the prescribed specifications, and for its installation. Purchasing procedures which will obtain maximum benefit from the careful planning should be used.

For the full protection of the owner, and to maintain satisfactory bidding and purchasing procedures, the specifications should be prepared in sufficient detail, to assure obtaining the specialized equipment required. Furnishing and installing laboratory equipment can be a separate prime contract or it can be covered by a general contract. The qualifications of the organization which will manufacture and install the equipment must be clearly and concisely stated whichever method is used and, where possible, the bidding should be limited to qualified firms. It is possible to work with one or more manufacturing firms so that the bidding will be relatively competitive among qualified organizations.

It is almost mandatory that specifications for laboratory equipment be separated from the general contract, or at least demarcated in such a way that there is a clear, comprehensive, and accurate statement of what is wanted.

Specifications, in discussing scope of the work, should state clearly both what is wanted and what is not wanted and, depending on the nature of the project, the bidders should be requested to submit samples, with their proposals, of top materials, construction details, hardware, plumbing, electrical fixtures, and finish swatches or panels. These various samples are to be used primarily for testing as well as to determine that they meet the specifications in other ways. It is most important that the finish of tops and other surfaces withstand the corrosive action of reagents and fumes.

Bidders must be required to state their qualifications and to list their facilities to be certain that they can adequately fulfill the contract. They may also be required to submit a list of similar laboratories which they have installed and perhaps a statement to show that they are financially able to take on the contract. A one-year guarantee on materials and workmanship should be required.

The specifications should require that the contractor submit for approval dimensioned laboratory-furniture drawings with roughing-in dimensions, shop drawings, and installation drawings. This is particularly important where custom furniture is involved.

The specifications should cover not only the equipment and its installation, but the construction details as well, so that the work of the general contractor and the equipment contractor is clearly stated and each knows the scope of the work to be undertaken by the other. It is generally recommended that the furnishing of all service and waste lines and their connection to fixtures and traps, and the pulling and connection of wires to electric fixtures be included in the general contract so the responsibility for this work will not be divided.

It is only through careful and complete preliminary work of this type that the detailed planning done by the architect and the co-ordination carried out by the general contractor will create the laboratory which meets the owner's wants and needs. The laboratories in the accompanying illustrations show the many values of a close co-operation between all concerned in developing a modern technical laboratory—the owner, architect, contractor, and the manufacturer of the specialized laboratory equipment.

our architectural heritage

Newest of P/A editorial features begins with this issue (*acrosspage*) as announced in June. The series, documenting the significant contributions made to development of architectural form and meaning in the United States over the past 300 years, will consist of two-page and four-page monographs prepared for our architectural audience by Ada Louise Huxtable, architectural historian and experienced research authority, with advice and assistance of The Society of Architectural Historians.

The wide range of our architectural heritage will be examined through random sampling by Mrs. Huxtable in her research—supplemented by the specialized assistance of architectural historians and P/A readers, many of whom have already offered suggestions, possible subjects, and rare data—though the monographs will not appear chronologically or by categories, since thorough research does not fall into any such continuous pattern. The Cleveland Arcade, chosen to initiate the series, illustrates the style of plate presentation and the spirit of PROGRESSIVE ARCHITECTURE IN AMERICA as described by Mrs. Huxtable:

"The growth of the United States as a nation reflects a period of transition unparalleled in the history of man, unprecedented in its influence on his environment and way of life. American architecture, in its brief 300-year span, records this transformation to an amazing degree. Despite lip service to Europe and the popularity of revived styles, it is vital, original, experimental. To the extent that American building has utilized the discoveries and inventions of the Industrial Age that are its birthright, progressive architecture in America is a story of particular significance. To the degree that it has contributed creative solutions to the sociological problems of our time—in terms of imagination, ingenuity, and high standards of design—it is a story of greatness."

We hope that P/A readers will enjoy this series, learn of many interesting achievements of their professional forebears, and nurture increased respect for our architectural progress. All are invited to join in calling attention to the buildings of their own localities which merit inclusion in this continuing documentation. **THE EDITORS**

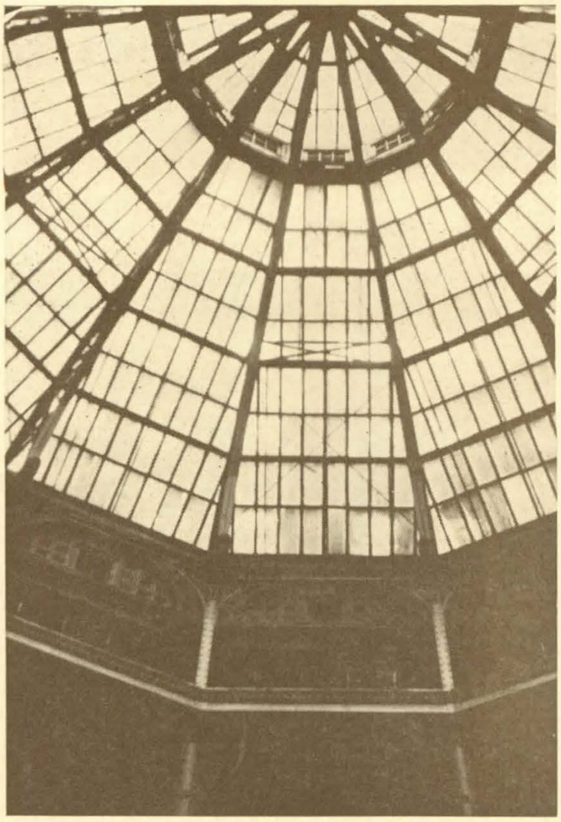
Cleveland Public Library

During preparation of the brief monographs comprising PROGRESSIVE ARCHITECTURE IN AMERICA, *Ada Louise Huxtable has discovered that the fruits of research not infrequently exceed expectations—as well as space for presentation. Assembling data and illustrative material on The Cleveland Arcade, for instance, Mrs. Huxtable found it notable politically as well as structurally when the files revealed a yellowed illustration titled, "National Convention of Republican Clubs Banqueting in Cleveland Arcade, June, 1895." This event was attended by 2000 delegates and their friends, whose reply to the Democratic battle-cry, "Free Silver and Sixteen-to-One," was "The Full Dinner Pail and The Gold Standard." Notables there included Governor McKinley and Senator Hanna. "Other thousands viewed the brilliant, flashing scene from the galleries." The then-new Arcade was proudly described as "warm in winter, cool and shadeful in summer."*

PROGRESSIVE ARCHITECTURE IN AMERICA

THE CLEVELAND ARCADE—1888-90
Cleveland, Ohio
John M. Eisenmann, George H. Smith, Architects

Cleveland Arcade Corp.



Lanier Campbell Greer

Cleveland Arcade Corp.

Industry and transportation created the 19th Century American city; commerce and technology built its monuments. Its palaces of iron were dedicated to trade. Although many of these structures have made way for the modern skyscraper, the Arcade Building in Cleveland still stands, offering an opportunity to study the genre at first hand.

The Arcade typifies two of the most important architectural trends of the 19th Century: the development of the commercial building and the evolution of the metal frame. Progress in iron construction was one of the period's most dramatic advances. As early as 1858, Henry Van Brunt had observed to the AIA, "This is the Iron Age—for no other material is so omnipresent in all the arts of utility. . . ." By the end of the century, spectacular structural strides in iron and steel had made possible the spanning of spaces and enclosures of unprecedented size: bridges, train sheds, exhibition halls, and business buildings were constructed on a scale that had existed previously only in men's dreams.

Such a building was the Cleveland Arcade. A late, full-blown product of the Iron Age rather than one of its pioneering experiments (the magnificent Galleria Vittorio Emmanuele had been built in Milan more than twenty years before) this commercial Arcade is a particularly noteworthy example of the architectural philosophy and practice of its day. The exposed iron framing, still something of a novelty, was exploited for its psychological and esthetic effect as well as for its structural advantages; the display of conspicuous size and technical innovation served as a visual measure of the growing prestige of the commercial community. Characteristically, the building's organizers included such figures of finance as Myron T. Herrick, John D. Rockefeller, and L. V. Harkness.

Construction is of cast and wrought iron, some structural steel, and masonry bearing walls. Interior cast-iron columns are carried on floating spread foundations in quicksand and sandy soil, and the exterior masonry walls receive the lateral thrust of the large wrought-iron ceiling trusses. The court measures approximately 300 feet long, 60 feet wide, and 100 feet high, providing space for five tiers of offices and shops. Including the ten-story masonry office structures at either end, the full depth of the building is 378 feet, with frontages of 132 feet on Euclid Avenue and 180 feet on Superior Avenue (*illustrated*). These exterior façades are of dark, Anderson, pressed brick and Pennsylvania red sandstone in the then-popular "Byzantine-Romanesque" style. The original fireproofing consisted of porous terra cotta tiles for office partitions, mineral wool between partitions and floors.

It is significant that no ordinary contractor would take the job of the iron framing and that the Detroit Bridge Company executed the work. Bridge engineers played an important role in the development of metal construction for architecture, since their practical experience supplied much of the limited proved knowledge of the properties of iron and steel. Because standard tests and specifications were still in the future, each new design was in the nature of an individual experiment, based on theoretical calculations. There was considerable fear, in the case of the Arcade, that the lack of cross bracing would lead to the collapse of the roof and a pushing-out of the walls. This thrust was compensated for by diagonal or lattice bracing, similar to present-day wind bracing, between the vertical columns supporting the roof.

The iron framing was originally painted in "bright, agreeable colors" and the fanciful, foliated "gryphons" of the top story had white teeth, red tongue and gums, and blue eyes, which must have been an awesome sight in the light of the incandescent burners that they carried in their mouths. According to a contemporary account, the Arcade was built "pursuant to the most modern methods. . . . The quality of the castings was highly superior, the framing thoroughly and accurately connected and the whole erected promptly and, despite the hazard that usually attends such undertakings, without accident of any kind." ADA LOUISE HUXTABLE

Special information and reference material: Lanier Campbell Greer; Cleveland Arcade Corporation; Western Reserve Historical Society; Cleveland Public Library.

"Nobody has a title," says Butterfield of the N&B staff: (standing) *Robert Liebreich; Richard D. Butterfield; Christopher Winsor;* (seated) *Raymond Wisniewski; Bryce Roberts; Norman Douttiel; Julian Elias.*

fields of practice: school design

Nichols & Butterfield, Architects

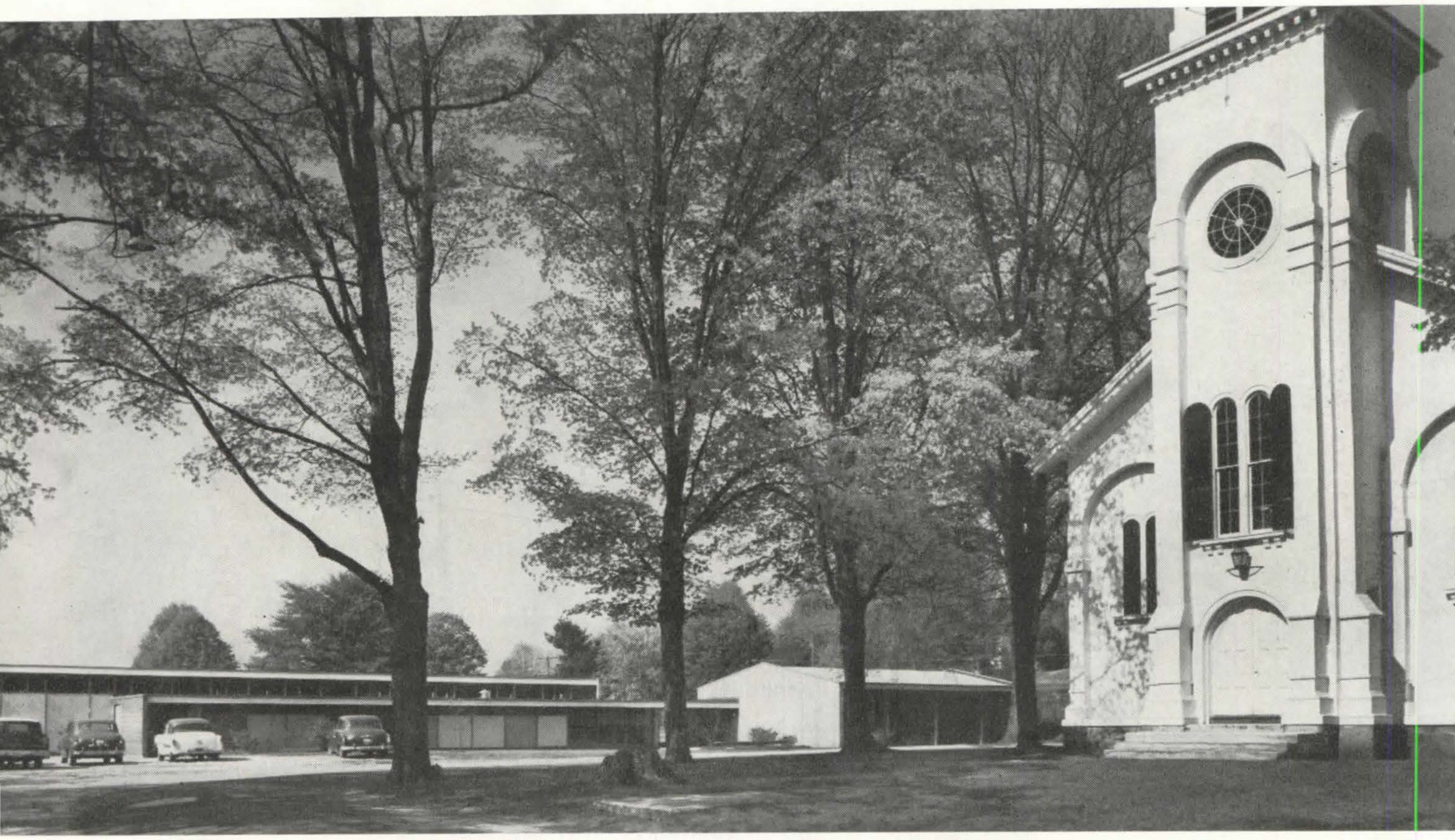
Since World War II, readers of architectural and educational magazines have been increasingly aware of the firm of Nichols & Butterfield, of West Hartford, Connecticut, as architects of school buildings. In the firm's brief span of seven years, the New England countryside has been dotted with some fifteen new Nichols & Butterfield schools, plus at least as many additions to existing plants. In this latest of our continuing series of studies of progressive firms that specialize in one design field (in the case of Nichols & Butterfield, schools account for about 95 percent of work), we will discuss the background of this successful practice and related matters.

Tragedy attended the firm's founding, with the death of John Nichols, one of the partners, just a few months after the partnership was established. Many of his school-planning studies and theories have been—and continue to be—major factors in the firm's approach to design. Nichols had spent nearly eleven years as Supervisor of School Buildings and Plans for the Connecticut State Department of Education and had done extensive school survey and consulting work. Richard Butterfield, who now heads the office, is the first to credit Nichols with a large share of the firm's performance and progress. P/A's readers may recall that this young firm, in two of the three Annual Design Awards Programs we have conducted, walked off with Award Citations.

Butterfield, too, had an exceptional background for the conduct of a school-design practice. His father served as Commissioner of Education, first in New Hampshire; later, in Connecticut. His father-in-law was Superintendent of Schools in several large communities and ended his active professional career as Professor of Education at Dartmouth College.

After graduation from Dartmouth in 1930, Butterfield worked for J. Fredrick Larson, a college-planning specialist. He then attended Yale, receiving his B.F.A. Degree there in 1934. Subsequently, he worked in a number of small offices, in Massachusetts and Connecticut, and (1939) hung out his shingle in Hanover, New Hampshire, where he accomplished some residential work and two recreation buildings. After war work in the machine-tool industry, up went his shingle again—this time, in Perkins-

school design: Nichols & Butterfield



ville, Vermont, where "for five years, I operated the smallest, most pleasant and hardest-working rustic office that you could imagine." Butterfield's close personal association with professional educators gives the firm an exceptional and highly knowledgeable "in" with School Boards, Superintendents, and others concerned with the commissioning of school buildings: "We find that we understand professional educators better than many architects do." He firmly believes, "the best schools stem from a Superintendent with leadership and vision who can convince the committees that all schools and all architects are not alike."

As the schools shown in this study reveal, there is extreme variation in the size of Nichols & Butterfield jobs. A by-product of such a practice is that the tiny job (seldom a money-maker) can and sometimes does lead to later major commissions. Money-making as such? "We know it can be easily done by using the same old details year after year," Butterfield comments. However, "for better or worse, there seems to be very little about our buildings to identify them as 'N&B' to the casual observer." In going before school-building committees, he makes a point of having the firm appear as advisors and *never* as architects who attempt to "sell" a predetermined type of scheme.

Butterfield likes to emphasize the firm's good fortune in having a top-flight engineering firm—Marchant & Minges—located just across the street from N&B's offices. "They realize, as we do, that structural and mechanical

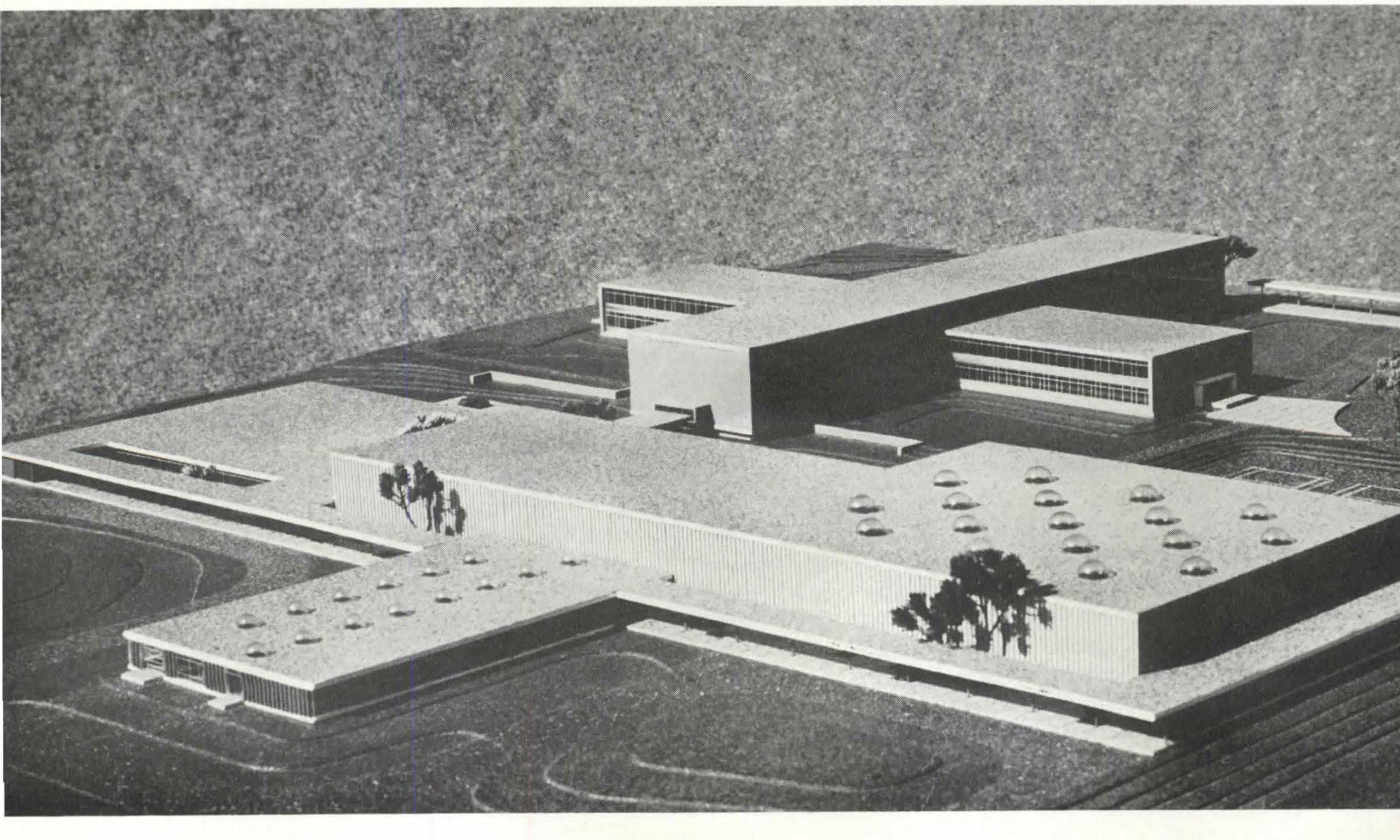
Photos: Louis Reens

systems are continually changing, and they are quite willing to compare several systems on any given project."

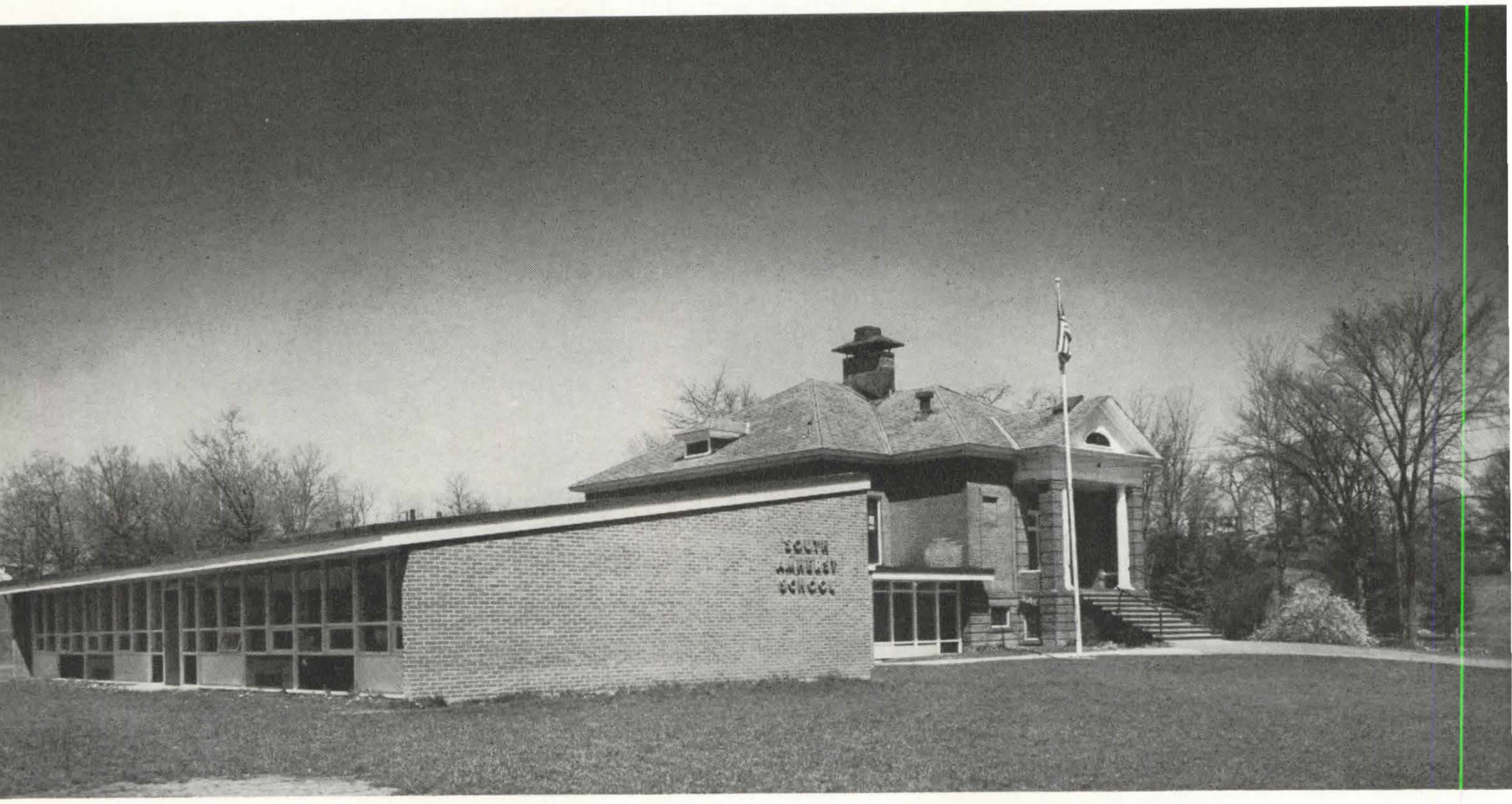
As with any progressive firm, the problem frequently arises as to how far to let designers go with untried ideas, or (on the other hand) how much to allow the old-time teachers to dictate architectural decisions. "Many of the previously untried ideas pay off," he maintains. "But there are others that either turn out to be very bad, or the school people steadfastly and stupidly refuse to use them to their own advantage. For instance, in the design of a school library, the idea of placing all stacks in the center of the room, allowing full-height windows on two exterior walls, met the worst kind of reception. Our advisor at the State level said it couldn't be done, but as soon as we showed the idea in graphic form, she fell for it completely. The librarian of the school resigned a year early so that she would not have to use this room! I believe it is one of the most successful rooms we have ever created."

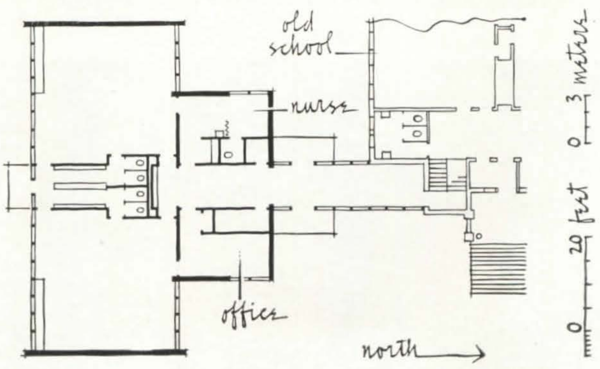
As now constituted, there are eight persons on the Nichols & Butterfield staff. The setup is that of one principal and several associates. "We have found that this arrangement must be flexible enough so that associates can be added or subtracted. I wish to keep the office relatively small—the maximum, about 12—so that I can keep in personal touch with all designs and construction. I find that the best way to keep this contact is by writing the specifications myself, headache though this may be." He tries to give each man in the office maximum responsibilty and opportunity to develop. "An advantage of an office of this size is that the man has a chance to see a project from design stage to working drawings," he points out, "and to completion, through frequent field trips."

New work from the boards of N&B ranges from the four-classroom New Preston Elementary School, Washington, Connecticut (acrosspage), *to a 1700-student high school now being built in West Hartford* (below).



school design: Nichols & Butterfield



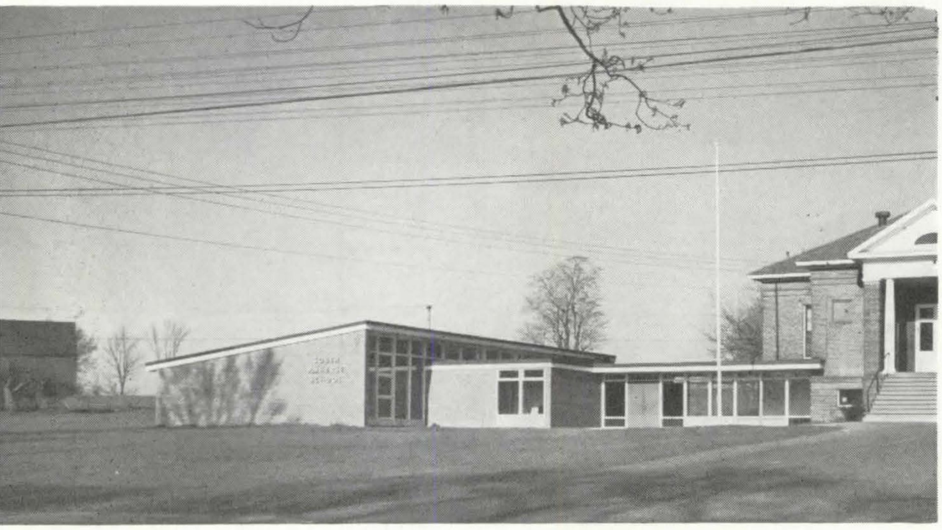


Amherst, Massachusetts—elementary-school addition

In expanding the South Amherst Elementary School, the architects were faced with the problem of adding two modern classrooms (with office, health room, and toilets) to an existing, two-classroom school building of redoubtable design and sturdy construction. The spacious site faces the Common of the rural community. The design approach was to provide a decent separation between the old and new units, yet link them in such a way that a unified total would result. Similar finish materials and colors tend further to blend the disparate elements.

The building has a steel frame (lally columns and beams), with bearing end walls of brick masonry; backup walls are of cinder block. The roof consists of wood joists on the steel beams and built-up surface. Because of the small size of the addition, the school is exceptional in having bilaterally lighted classrooms spanning the full depth of the building, yet no exterior corridors. Toward the south, low windows control sun; to the north, windows are full height.

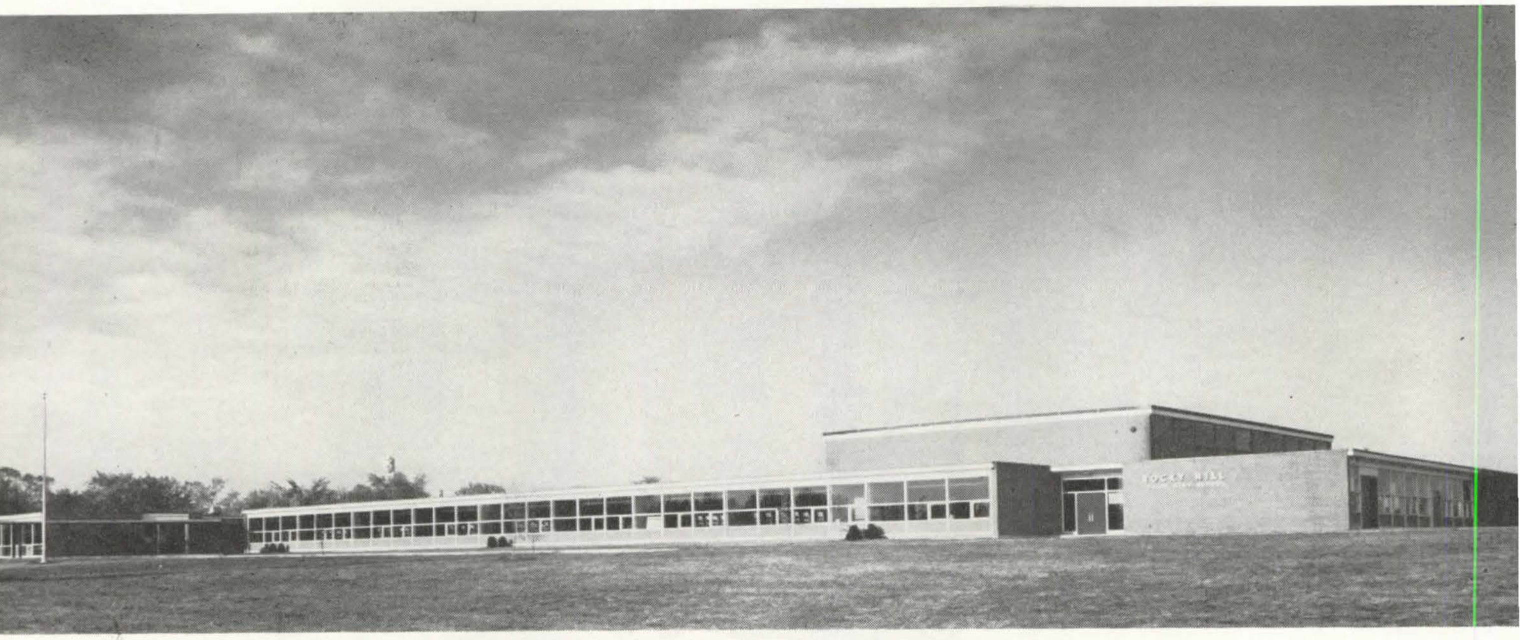
Flooring is asphalt tile; ceilings are finished with acoustical tile. Heating, ventilating, and electric-distribution systems are all extensions of existing installations. Cost, including all built-in equipment, but excluding site and drainage work and alterations to the old building, came to $12.75 per sq ft. Marchant & Minges, Engineers; Philip E. Shumway, General Contractor.



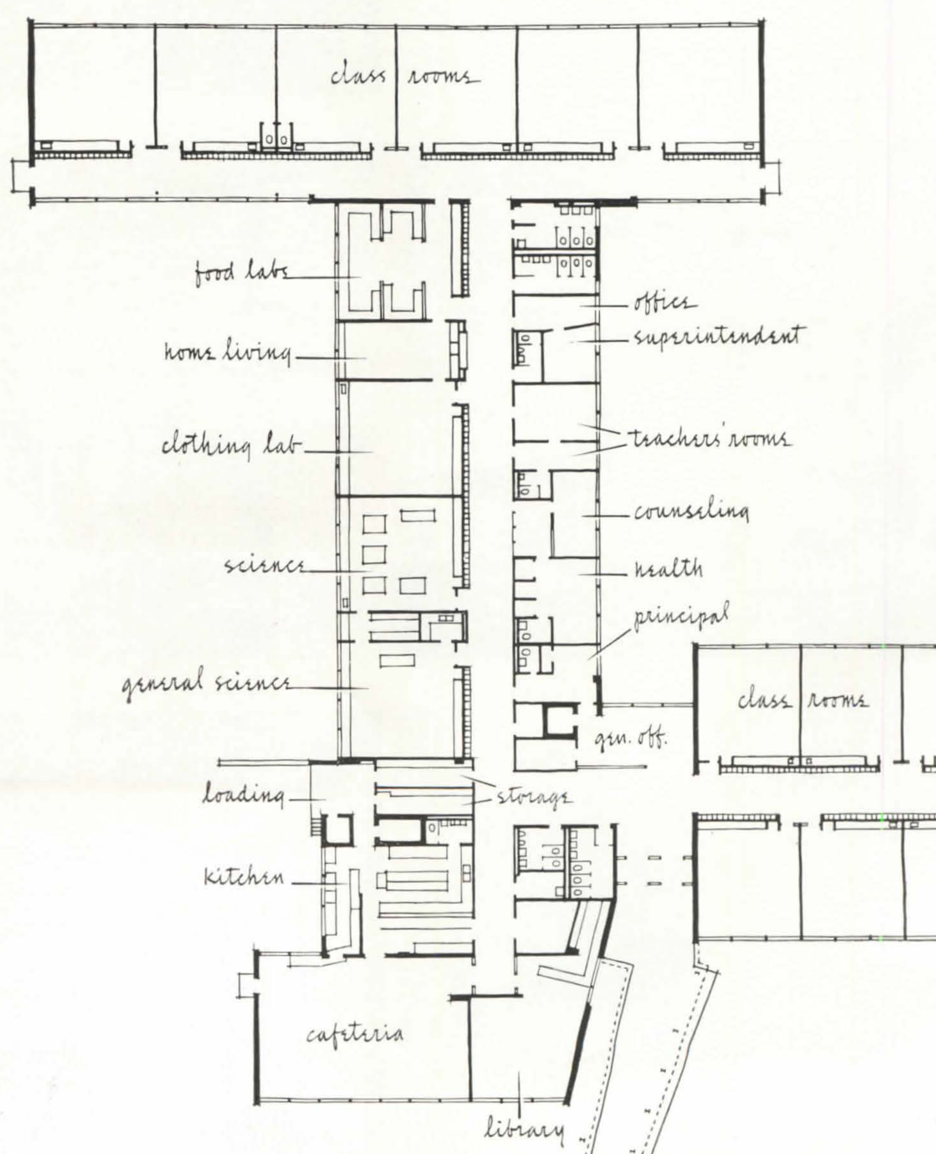
Suspended fluorescent fixtures provide artificial lighting in the classrooms (above).

Child-scaled storage bins, work counter, and sink (bottom) *occupy a niche in each room.*

school design: Nichols & Butterfield



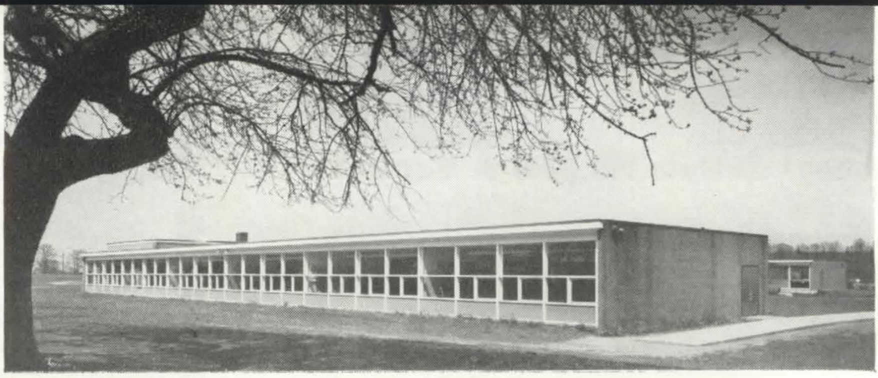
Rocky Hill, Connecticut—junior high school



The gymnasium serves as a buffer zone between classrooms and workshops.

The elementary classroom wing (right) *faces away from the rest of the school.*

The steel-framed entrance canopy (below, top) *leads to the main lobby and school office* (bottom).



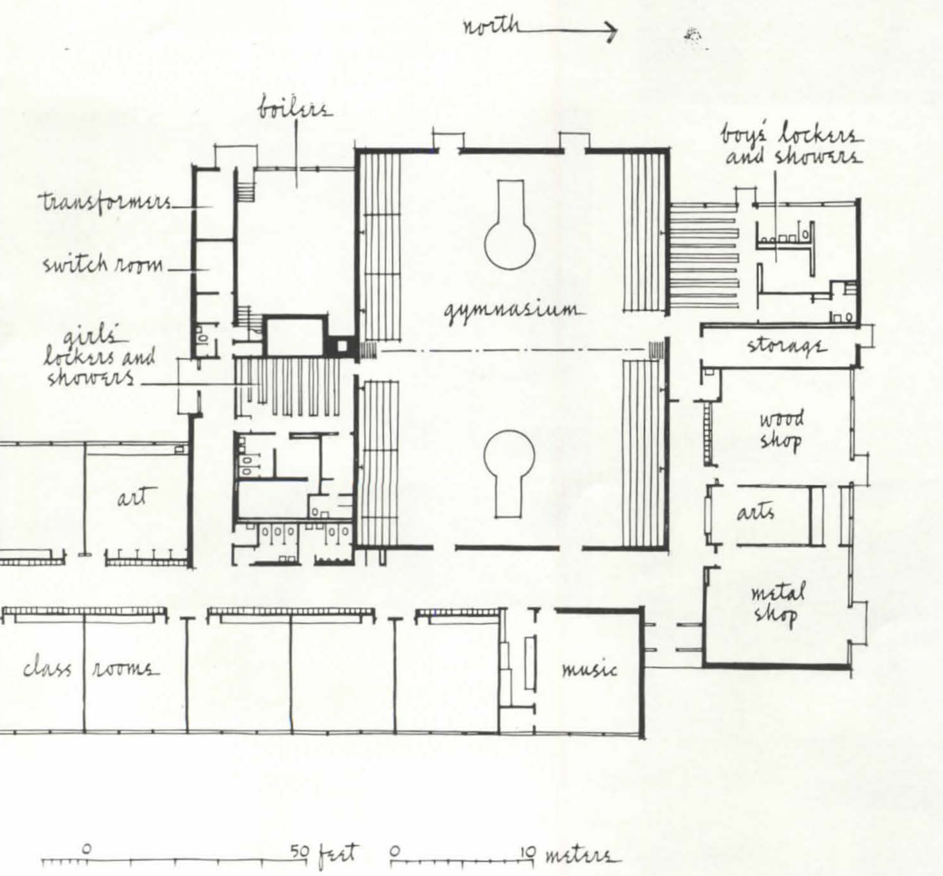
Winner of an Award Citation in P/A's Design Awards Program in 1954, the 400-student Rocky Hill Junior High School contains six elementary classrooms in addition to fourteen academic rooms. The two parts of the school (and their playgrounds) are separated by a centrally placed element that contains such common-use rooms as school library, cafeteria, and offices.

Actually, the present school is at an interim stage and, when present tuition arrangements with a neighboring town expire, will be expanded and converted into a Junior-Senior High School. Classrooms will be added around the court, and an auditorium and new art and music rooms will be constructed at the northeast corner of the present building. The major design problem, the architect tells us, was "to fit the space requirements into a too-limited budget that was established before the program was written or the architect selected."

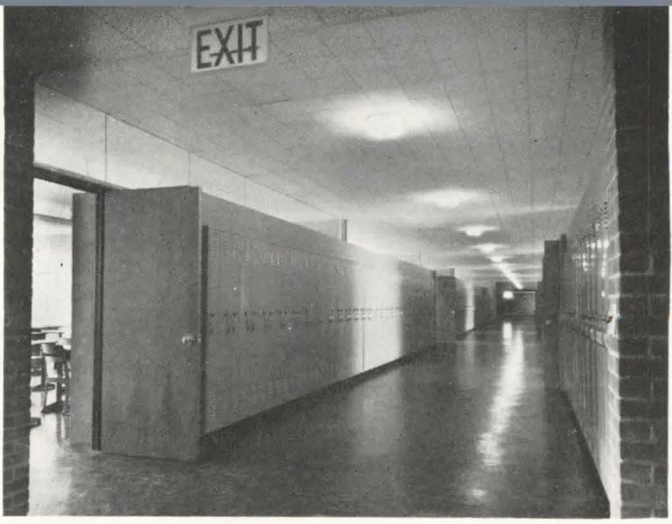
The building is framed in steel, using open-web bar joists and steel roof decking. Exterior walls are of brick, wood window walls with colorfully painted panels, and aluminum sash. Back-up walls are cinder block. Floorings include asphalt and vinyl-plastic tile.

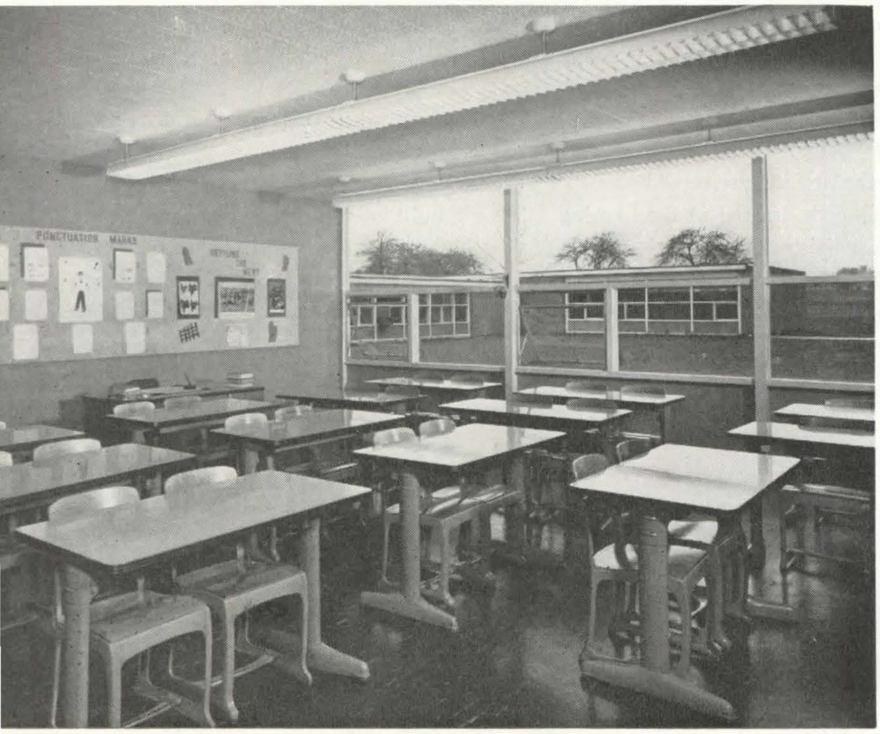
Heating and ventilating are combined in a glass-fiber-insulated, double-duct system equipped with individual room controls. Fluorescent units light all instructional areas, while incandescent fixtures are used elsewhere.

Cost came to $13.75 per sq ft including all built-in equipment but excluding site work and sanitary system. Marchant & Minges, Engineers; The G. S. Jones Company, General Contractor.



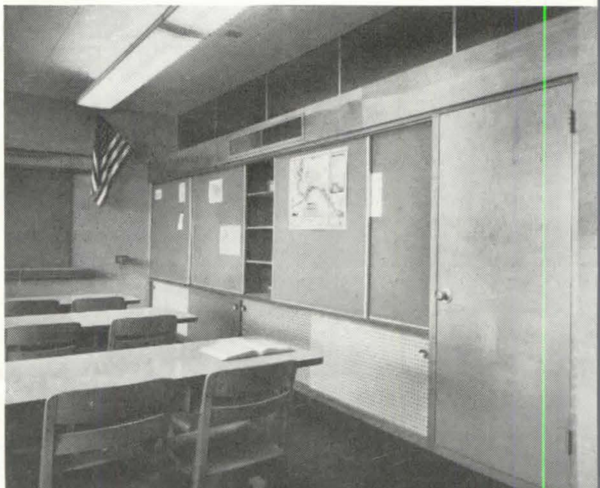
school design: Nichols & Butterfield





In the locker-lined corridors, continuous bands of wire glass extend between locker tops and ceiling.
In typical classrooms (left), *window walls are framed in wood; partitions are painted cinder block. Ceilings are surfaced with acoustical tile.*

Varying types of storage units back up the banks of corridor lockers. In some rooms, sliding tackboard panels (below) *serve as doors to shelving. In others* (bottom), *a work counter and sink occur between storage cabinets below and above. Even in black-and-white photographs, use of color is evident.*

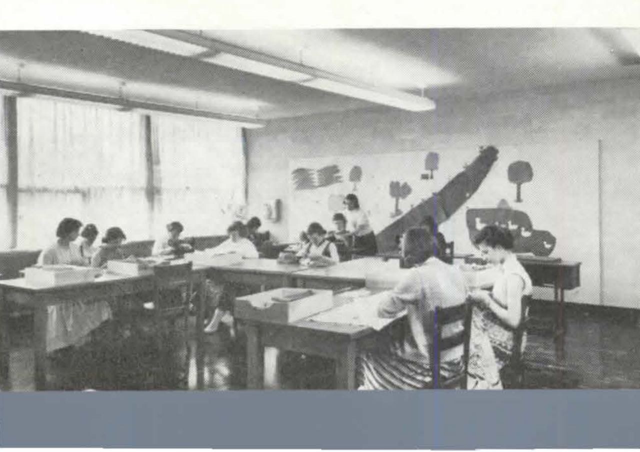


Rocky Hill, Connecticut—junior high school

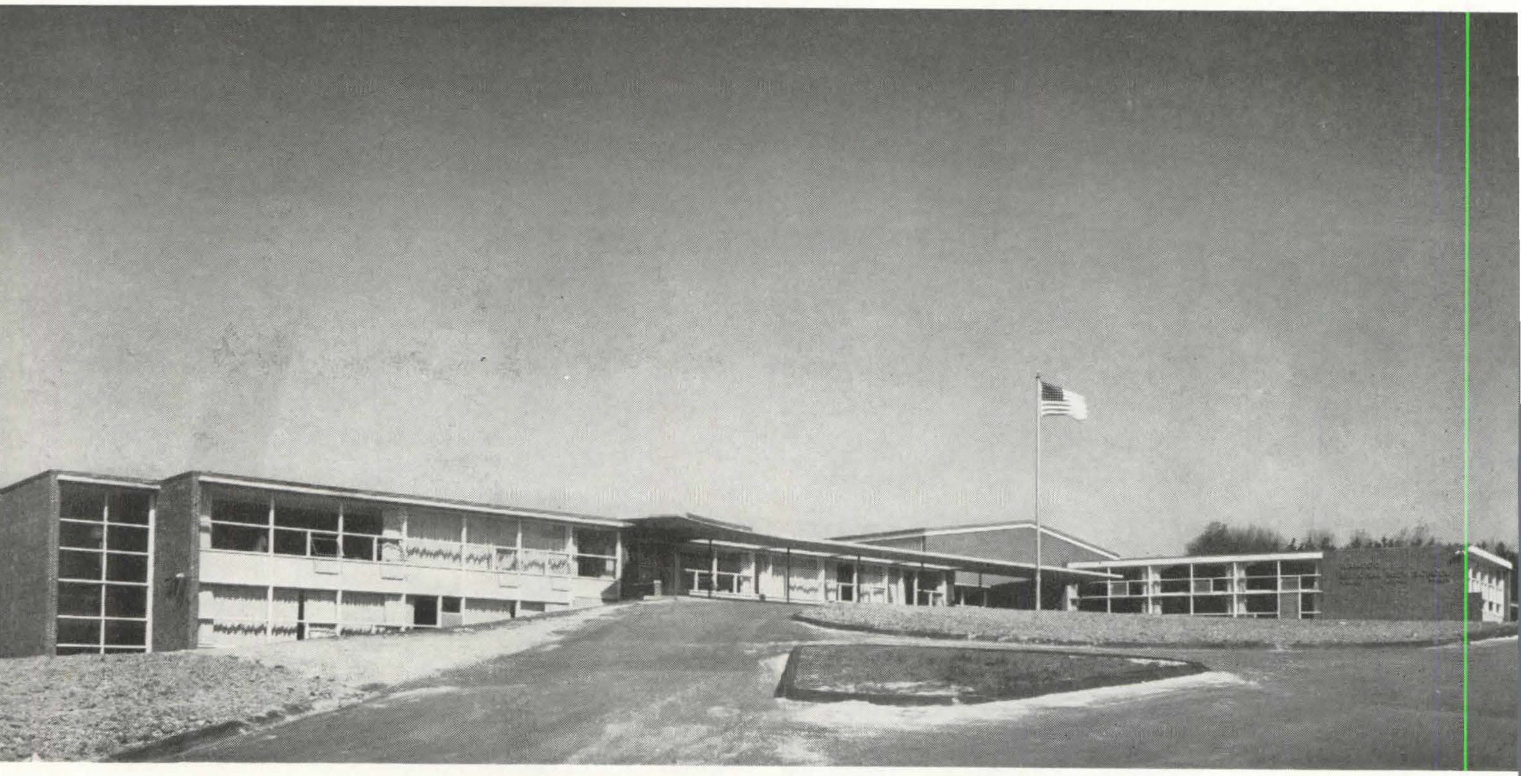
The large gymnasium is divided into boys' and girls' gyms by means of folding, sliding doors.

Windows in the centrally placed graphic arts room provide supervision for both wood shop and metal shop (right).

The clothing laboratory (below) *occurs in the wing joining elementary and academic areas.*



school design: Nichols & Butterfield

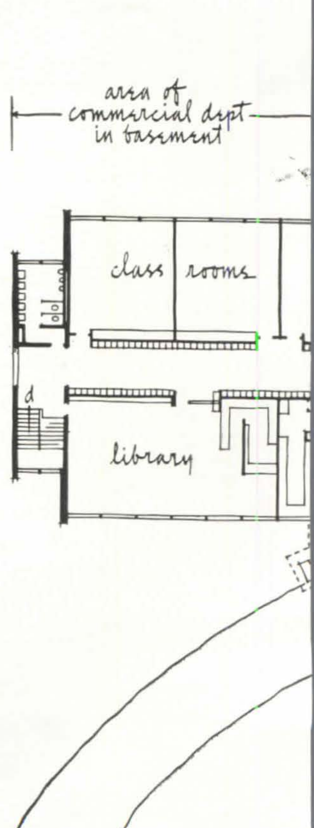


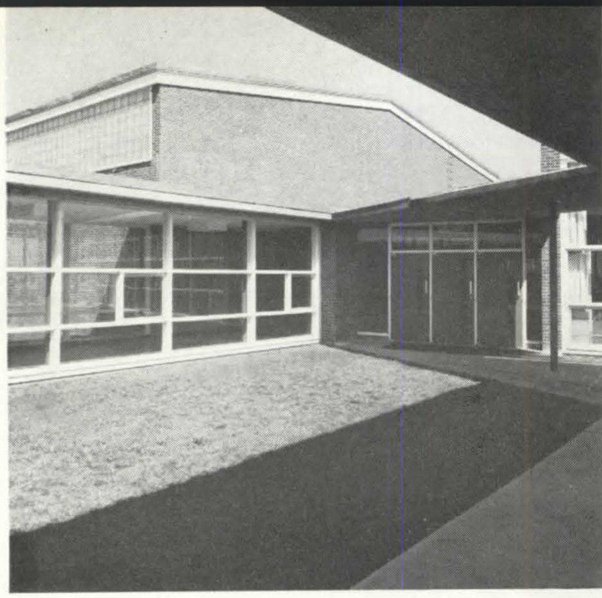
Litchfield, Connecticut—regional high school

The Wamogo Regional High School (the curious name Wamogo deriving from the first letters of the three rural towns it serves—Warren, Morris, and Goshen) is disposed on a magnificent, 35-acre hill-top tract with views to east, south, and west. The design wish, which seems happily realized, was "to place an informal plan gracefully on the sloping site, focusing such areas as cafeteria, library, and offices onto the best vistas."

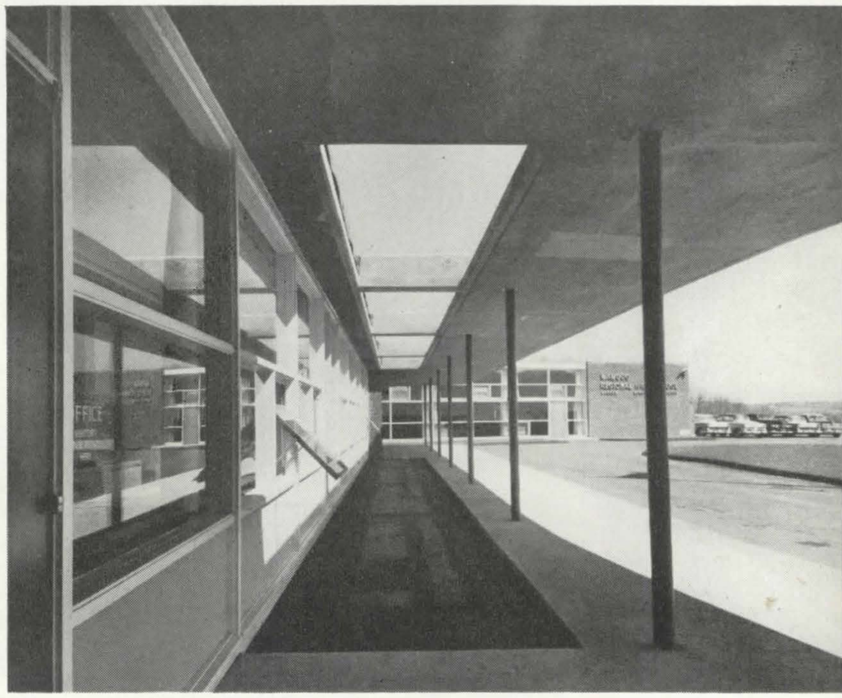
In order to come within a very limited budget, the cafeteria doubles as the assembly room, and the stage is used as the music room. An exceptional provision is a sizable department for instruction in vocational agriculture. Following the site contour, a lower floor occurs under the end of the south wing and contains three conventional classrooms and two rooms for business and commercial instruction.

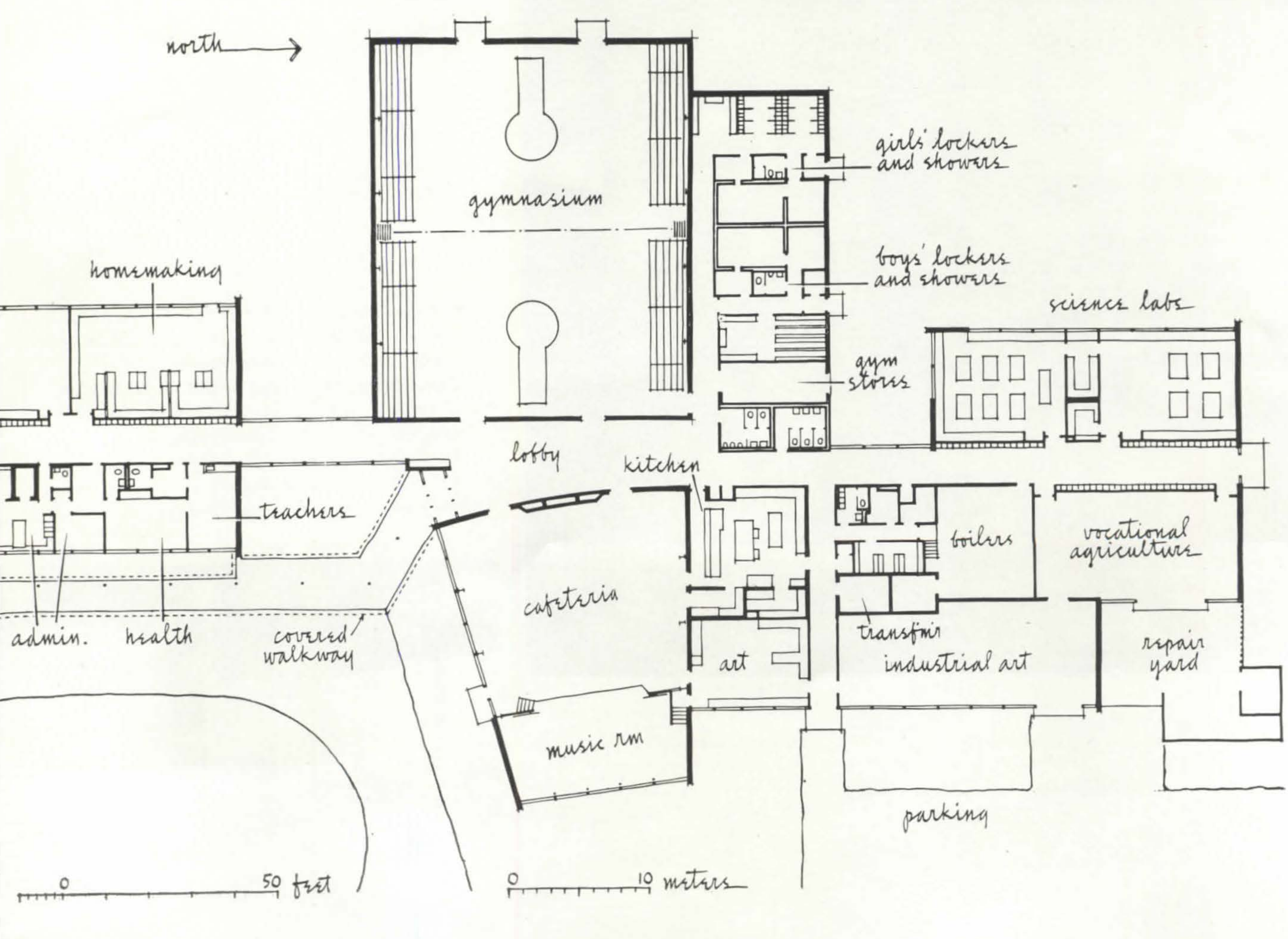
The building utilizes both concrete and steel columns and has flat-slab floors and roof. Gym and cafeteria areas have rigid steel frames, and a "shredded wheat" type structural decking is used for sound control. Individual room controls govern a double-duct, combined heating-and-ventilating system. Window walls are wood framed, with aluminum operable panels. Continuous fenestration is used wherever possible; in the south wall of the gym directional glass blocks are used, while plastic sky domes light the kitchen. Cost of the building, including all built-in equipment but excluding site work and sanitary system was $13.50 per sq ft. Marchant & Minges were Engineers; The New England General Contracting Company, General Contractor.





Sheltered, bus-loading walks lead both to the main lobby, the offices, and classroom corridor.



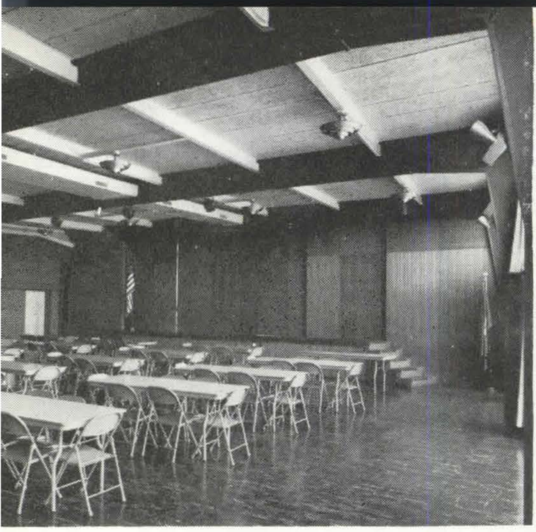


school design: Nichols & Butterfield

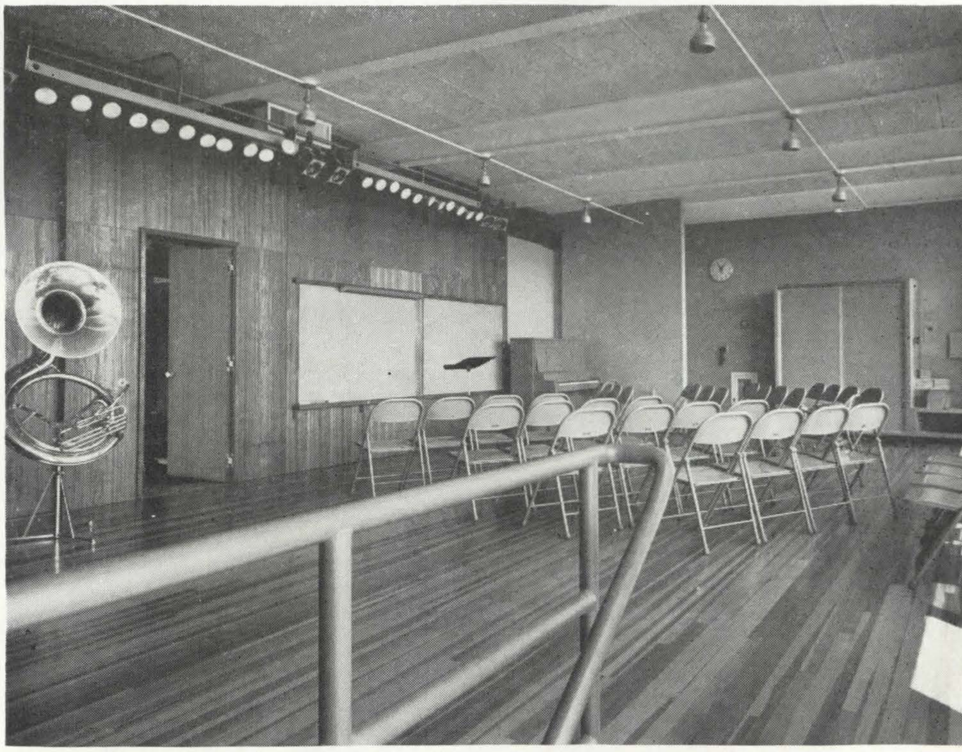
The commercial and office practice rooms (top) *occur on the lower floor. Asphalt tile is the flooring in all instructional areas.*

The library (left) *has wall-to-wall windows and colorful display panels. As in the classrooms, acoustical tile is the ceiling finish.*

In the waiting room of the main office (below) *is an electronic sound system, including switchboard, speakers, and phones.*



Litchfield, Connecticut—regional high school



The cafeteria/assembly hall (above) *is equipped with a stage which, with sliding panels pulled across, serves as the music room* (right).

Both the gym (bottom) *and cafeteria elements are framed with rigid steel bents. End walls are of brick outside; cinder block, within.*

Does concentration of work in a school-design Field of Practice stultify creative imagination? Richard Butterfield says: "The boys in the office occasionally seem restless . . . but then they find that each school is different . . . and discussions of new ideas advanced by the younger men highlight our regular, informal staff meetings."

"P" Pricer

If you do residential work, I think you will enjoy thumbing through Pease Woodwork Co.'s *Pease Pricer No. 326 for '56.* They are in Cincinnati, Ohio. This handy little booklet is well illustrated and lists sizes and prices of hundreds of construction items. I found it most informative—and am certain you will, too.

curtains

What's going on with this curtain-wall business? Some of the examples I have seen recently have been just plain miserable, from design and construction points of view. Metals are too, too thin and tin-canny, buckling with every breeze. The calking goo does not caulk, thereby converting curtain walls into wailing walls. Stains, poor alignment, inadequate provision for expansion and contraction, poor s o u n d-deadening against rain and wind, poor internal ventilation and drainage are some other annoying bugs. We have come a long way in masonry know-how. Why do we ignore this knowledge in making the transition from masonry to metal? Curtain-wall manufacturers should cook up a performance specification, if only to straighten out, among other things, a little item like their "Work Not Included" recommendations. For example, listen to this: Manufacturer "A" says, in effect, that he does not furnish structural steel, back-up walls, convector covers, metal stools, glazing materials (except continuous glazing bead), glazing, finish calking, wall cleaning after erection and preparation for attachment of mullion anchoring clips (this refers to punching structural steel and to installing inserts in concrete).

Manufacturer "B" excludes only structural-steel supports, eave flashings and sash-girt flashings.

Manufacturer "C" excludes only structural-steel supports and all field painting.

Manufacturer "D" suggests to the specifier three choices as follows: "All fastening materials shall be (1) furnished and installed by this contractor, (2) furnished by framing manufacturer and installed by this contractor, (3) furnished and installed by the framing manufacturer."

Manufacturer "E" includes calking and gasketing material, and so on. See what I mean?

I gave this pitch to the Michigan Society of Architects early this year and told the story of my conversation with a leading curtain-wall manufacturer. I asked him "how come" and before we could say "whoinhell designed that panel" he gushed forth with the following:

"Here we are, about the oldest established curtain-wall makers, and suddenly we find ourselves competing with jokers who buy a window here and a panel there and get someone else to do the erection and off they go dividing responsibility all over the lot and stigmatizing our trade as a bunch of opportunists. First thing you know, architects will throw us out as they have other trades where difficulties had become unbearable. No legitimate curtain-wall manufacturer should permit any erection gang to put up his stuff, other than the manufacturer's own trained crews. For true economy, the curtain-wall assembly must be fabricated in its entirety in the manufacturer's plant. Architects should become increasingly aware of the fact that the biggest bugaboo in curtain-wall construction is leaks, first; then—for the erection crews—problems of proper alignment; then, proper allowances for field tolerances to accommodate the inevitable construction inaccuracies; and, then, a thorough recognition that buildings are not static and therefore require ample provision for expansion and contraction in all directions."

In my office on a recent, large, curtain-wall project we called in two reputable manufacturers, made sure we were talking to their technical "low pressure" people, and squeezed their best advice out of them. We think it well to talk to more than one manufacturer just to double-check several approaches to a given problem. On our public and private work, our specifications stress performance objectives not unlike the approach we take in waterproofing specifications. We all know it is foolhardy to specify each and every grunt in a waterproofing system and then blithely require the Contractor to furnish a guarantee.

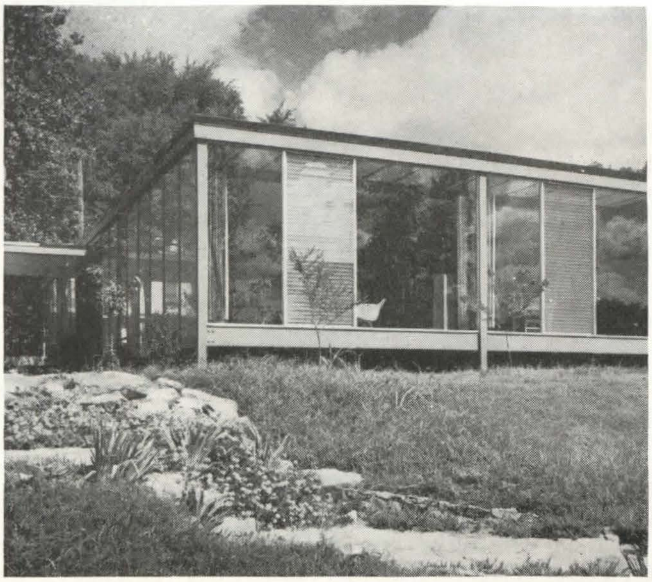
When the shop drawings for our curtain-wall system come in, these are viewed with excitement paralleling a ship launching. We study these to see what is being offered and how well they comply with the requirements of the Contract Documents. The sample examination stage is important, too. We usually take the assembly apart and perform an autopsy that would make a medical examiner beam. Do we take ourselves seriously at this point! The background of the proposed curtain-wall subcontractor is also examined with great care. In the main, we exercise more than reasonable care from birth to "in situ" of the curtain walls, for, if we don't, on this increasing complex phase of practice, it could be curtains for us.

chopping blocks

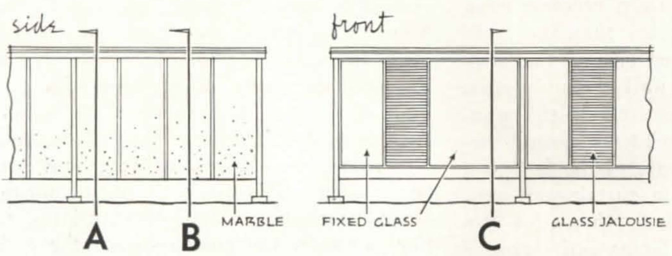
Did you get to notice the inroads being made by Kreolite end-grain, flexible-strip, wood-block flooring made from kiln dried Southern Yellow Pine not over 2″ x 4″ in cross section and assembled in flexible strips 2′-0″ to 8′-0″ long, 1½″ in depth parallel to the grain of the wood and approximately 3½″ in width for use in gymnasiums, et cetera, et cetera (pause for deep breath), question mark. The "what's-new" in the above brief question is the 1½″ depth which makes the product nicely competitive with the kind of flooring you specified the other day in that there new low-cost school. Of course, wood-block flooring in itself is not new. The basic theory of wood-block flooring is actually centuries old. For example, the ancients used the end grain of logs to make "chopping blocks" because the tough end-grain wood absorbed and withstood the heavy blows of hammers and knives without splintering. Many modern butcher shops, both kosher and nonkosher, still use these end-grain chopping blocks. About 1901, end-grain wood blocks were first used for street paving. Their durability indicated they would prove ideal for super-tough flooring in industrial plants. **For nearly 50** years, Kreolite has been used successfully in industrial plant areas where heavy traffic would ruin normal floors. The Jennison-Wright Corporation, manufacturer of Kreolite wood-block floors, offers this time-tested principle of end-grain construction as a beautiful, light-colored flooring designed specifically for school activity centers, such as gymnasia, multi-purpose roomsia, vocational shopsia, and laboratoria. This flooring combines the rugged durability of end-grain woods into the mosaiclike beauty of natural-finish continuous-strip flooring. You might like to know that the individual end-grain blocks are bonded into strips by galvanized steel-wire trusses tightly embedded within their sides at right angles to the grain and that the assembled strips are then impregnated with a special pentachlorophenol solution, transparent preservative for moisture protection and that the whole mess is laid in a white adhesive, each strip is interlocked to adjoining strips by steel-wire splines and that you can get more precise dope by looking it up yourself.

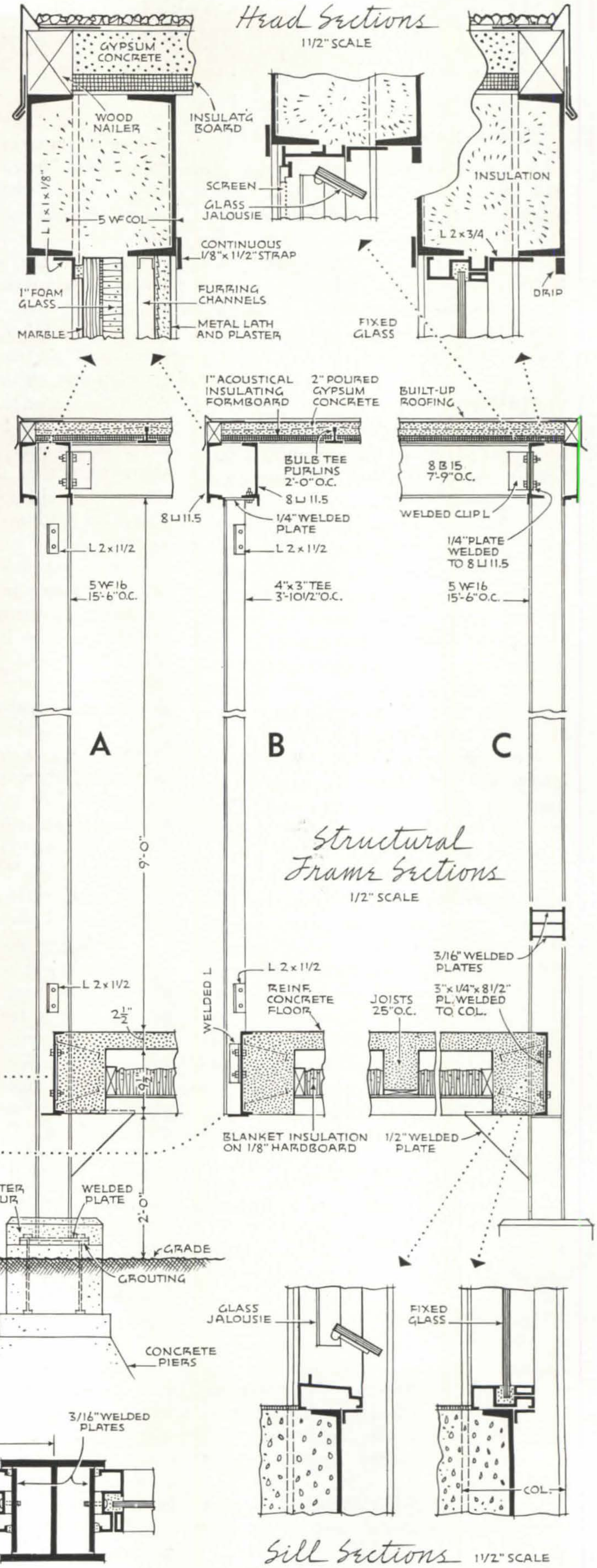
p/a selected detail

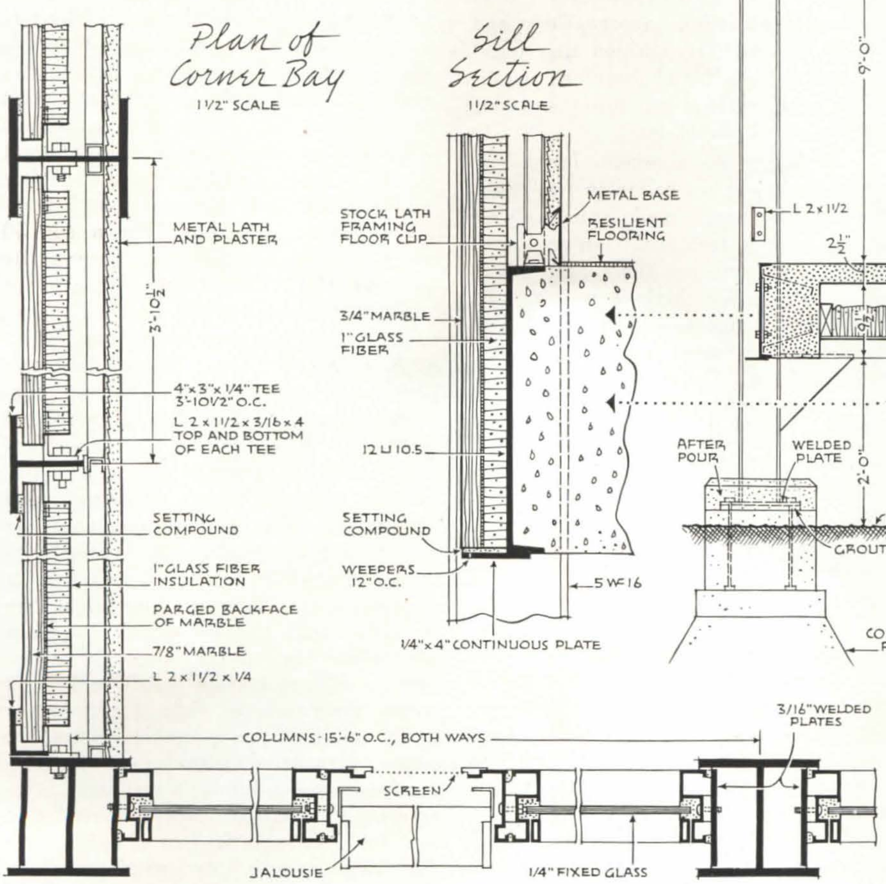
window wall



FRANK LOTZ MILLER





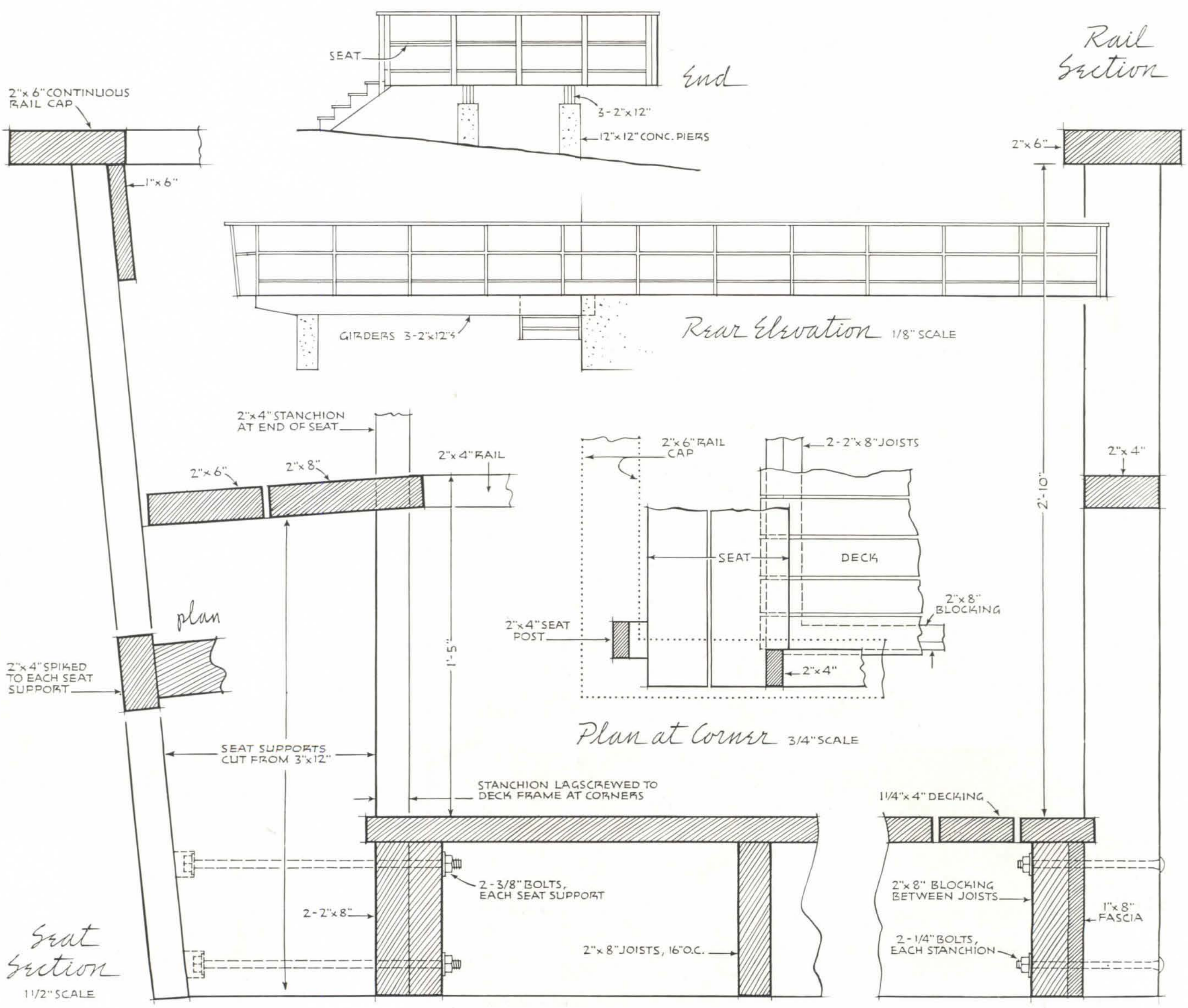


LIBRARY, Natchitoches, La.

Barron, Heinberg & Brocato, Architects

deck railing

LOUIS REENS

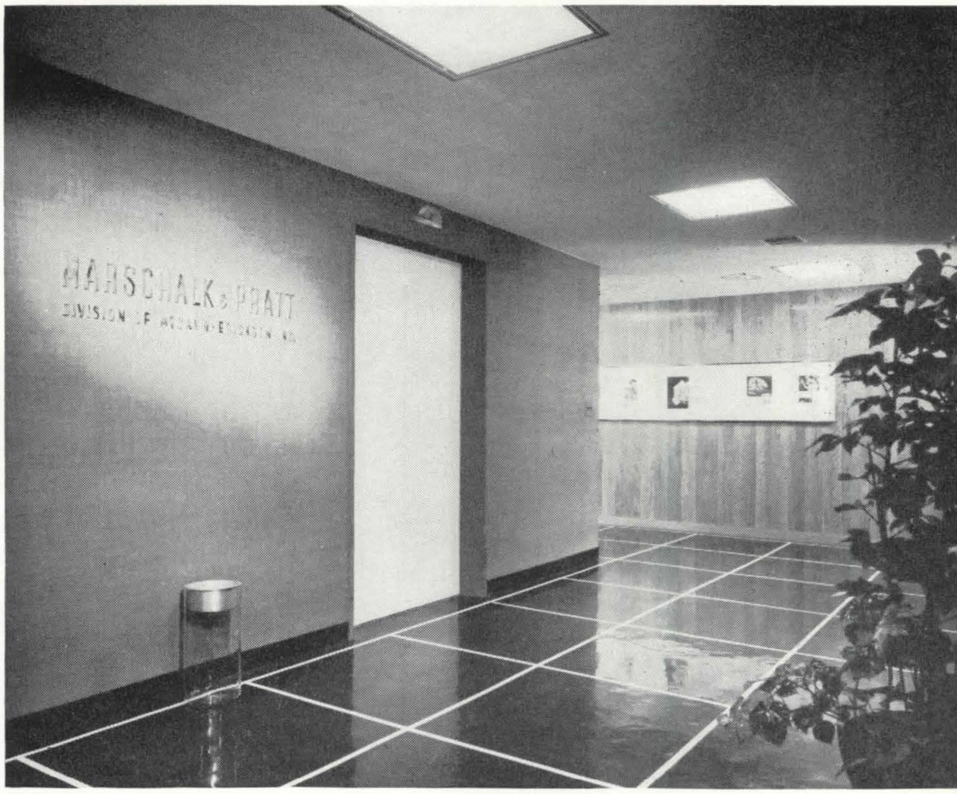


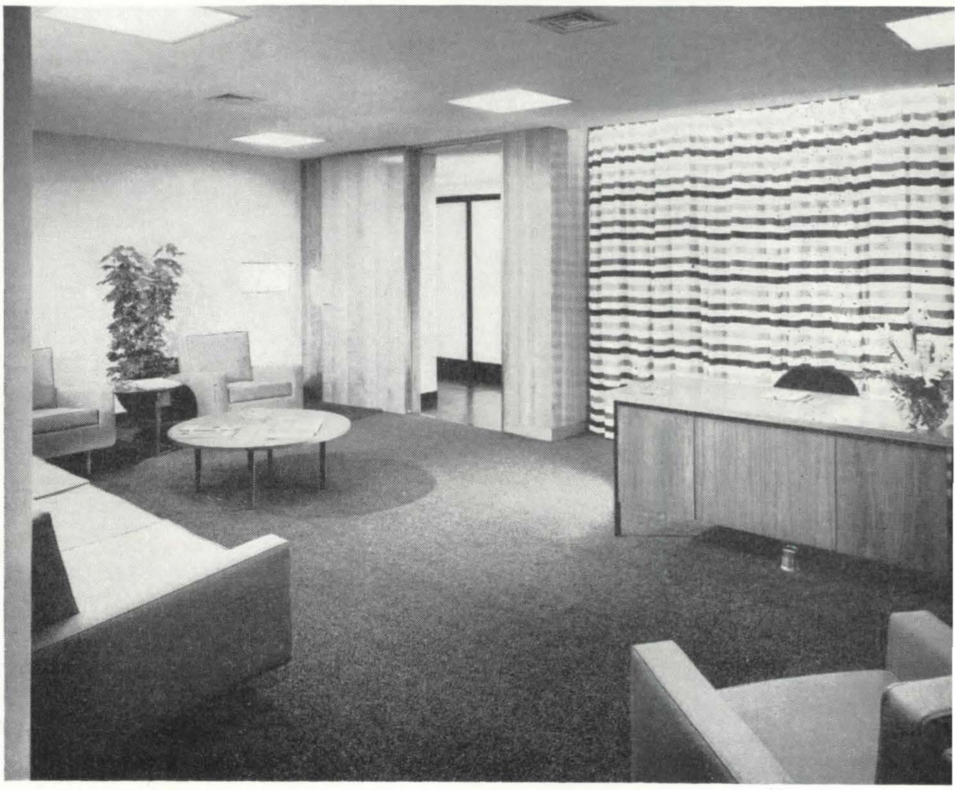
HOUSE, Weston, Conn.

Huson Jackson, Architect

advertising agency and architects' office

by Louise Sloane





Photos: Ezra Stoller

The two office suites that we show this month, solving the problem of complete space planning, are primarily examples of interior architecture, enriched by a genuine concern for the esthetic values of color and texture.

advertising agency

Carson & Lundin's sensitivity to the functional and emotional needs of advertising agency personnel produced the stimulus of high-key colors against a crisp chiarascuro background *(photos here* and *overpage).* Beginning with the elevator corridor *(right),* color and design immediately announce that "creativity lives here." Combine olive-green, vinyl-plastic, washable walls; black vinyl floor with white checkering; polished-brass lettering and display framing; narrow cherry-strip paneling; luminous ceiling panels; and planting—and the effect is achieved.

The reception room *(right)* establishes the color theme that prevails throughout the entire suite—black-and-white with vivid color contrasts. In this case, the contrasting colors are red and olive-green, combined in the wall drapery behind the desk. Carpeting throughout is pebbled black and gray. Office backgrounds are gray, with primary colors introduced in the upholstery fabrics, in the metal doors of the partitioned areas, and again in the free-standing columns.

The over-all space layout was designed for maximum effectiveness, employing industrial-engineering principles to keep the total work-load in efficient flow. Equipment — including lighting, air conditioning, and data-processing machines — is planned for maximum employe comfort. Movable partitions allow for relocation without equipment revision.

client	Marschalk & Pratt Division of McCann-Erickson, Inc.
location	New York, New York
architects	Carson & Lundin

office suites

turquoise-and-red drapery

controlled diversified lighting

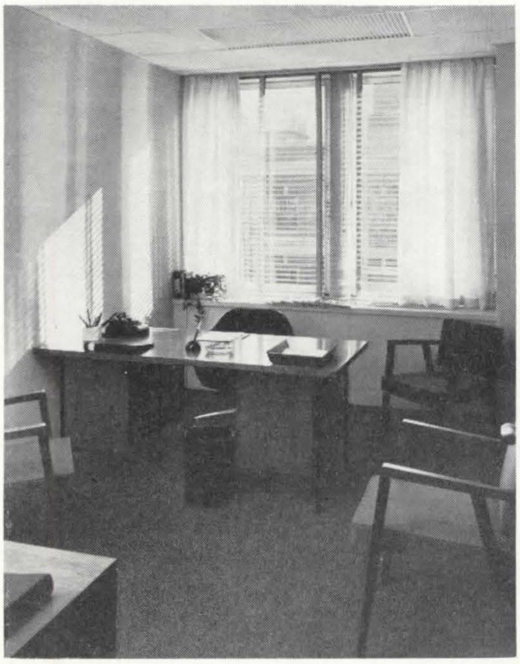
display board with shelf

black-and-gray carpet

advertising agency (continued)

Conference room serves also as auditioning studio and screening room. Behind chairs in foreground, out of camera range, is an entire storage wall containing sound and projection equipment. Diversified lighting plan provides controlled lighting for varied uses of room. Red-and-turquoise upholstery and draperies accent black-and-white color scheme.

company executive's office



account executive's office

secretaries' row

data

equipment

Sound: Commercial Radio-Sound Corp., 652 First Ave., New York, N.Y.

furniture, fabrics

Secretarial: metal/ All-Steel Equipment, Inc., 245 John St., Aurora, Ill.

Executive: Knoll Associates, 575 Madison Ave., New York, N.Y.

Upholstery, Drapery: Knoll Associates; Dan Cooper, Inc., 15 E. 53 St., New York, N.Y.

lighting

Luminous Panels: Solux Corp., 58-17 28 Ave., Woodside 77, Long Island, N.Y.

Special Downlites: Gotham Lighting Corp., 3701 31 St., Long Island City, N.Y.

walls, ceiling, flooring

Partitions: metal-and-glass/ 7'-0" high/ movable for maximum flexibility/ white panels, black posts/ unpolished plate glass/ metal doors painted in primary colors/ E. J. Boyle, 575 Fifth Ave., New York, N.Y.

Corridors, Columns: "Vicrtex" linen/ L. E. Carpenter & Co., Inc., 350 Fifth Ave., New York, N.Y.

Ceiling: general areas, "Stria"; special offices, "Textured"/ Fiberglas/ Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo, Ohio.

Carpet in Offices: special order/ Archibald Holmes & Sons, Erie Ave. and K. St., Philadelphia, Pa.

Flooring: "Flexachrome"/ vinyl-asbestos tile/ Flintkote Co., 1232 McKinley Ave., Chicago Heights, Ill.

office suites

client-architects | Copeland, Novak & Israel
location | New York, New York

architects' office

In designing their own office, the architectural firm of Copeland, Novak & Israel felt the need to satisfy the most rigorous standards of functional convenience in planning, and to establish a design character representative of the quality of the firm's work. It was economically necessary to allocate the largest portion of space to the drafting studios (including the interior design department). Consequently, the general

reception area, light persimmon, deep yellow, walnut

office, partners' offices, conference room, and miscellaneous spaces were planned in the most compact manner.

The resulting solution is indicative of the firm's conception of fluent interior space. Separate functions are defined and articulated by means of architectural and furnishing elements, to provide well balanced space relationships. Materials chosen and modern principles of illumination give tangibility to the planning ideas.

library

contractors' table

conference room, curry-yellow tones

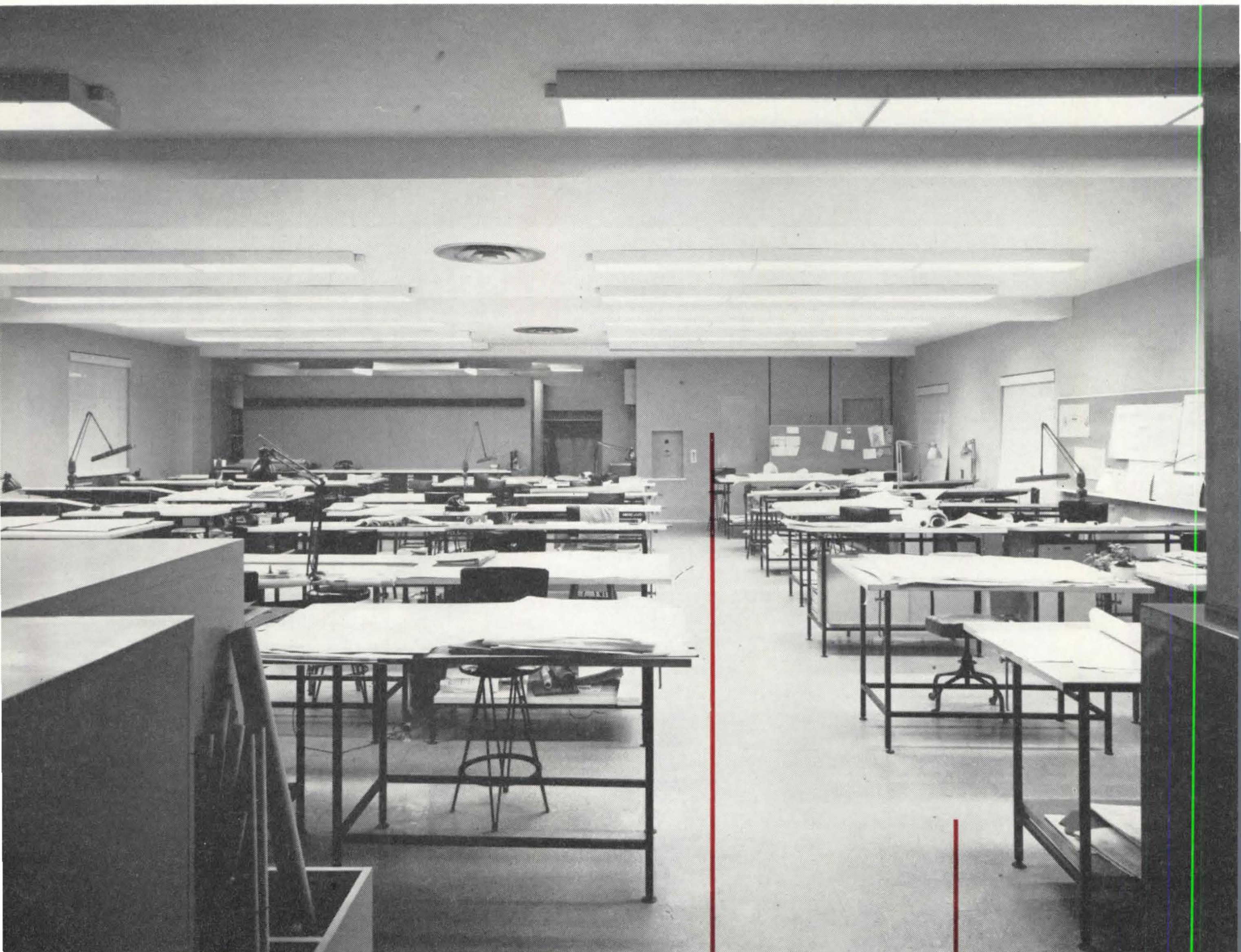
cork tackboard

secretarial area

divider-storage-work surface

office suites

architects' office (continued)



drafting area

beige walls

beige-and-white vinyl tile

Novak's office

Israel's office

data

Color Plan: The reception area in white plus bright, exciting colors reflects the busy quality of this office doing contemporary work. The principals' offices are color-planned to suit each occupant's personality: Copeland's office in white, turquoise, and black; Novak's office in warm-beige and persimmon with black accents; Israel's office in white and Air Force blue, with natural-wood tones. In the conference room, tones of curry yellow are used in a cheerful and relaxing monochromatic scheme. The drafting area has medium color values, to avoid hard reflective light on drawing boards. Spots of brilliant color are introduced throughout, in contrast with natural-beige tones of walls and floor, to relieve eye fatigue.

cabinetwork

All: Hinzmann & Waldmann, 80 Third St., Brooklyn, N.Y.; Brooklyn Cabinetwork Corp., 391 Leonard St., Brooklyn, N.Y.; Carmel Construction Co., 582 Union Ave., Brooklyn, N.Y.; Sivakoff & Minor, Inc., 581 Broadway, New York, N.Y.

windows

Roll-Up Shades: white matchstick bamboo/ Windowcraft, Inc., 104 E. 52 St., New York, N.Y.

furniture, fabrics

Chairs: principals' offices, conference room, at contractors' table/ J. G. Furniture Co., Inc., 543 Madison Ave., New York, N.Y.

Secretaries' and Receptionist's Chairs: Knoll Associates, Inc., 575 Madison Ave., New York, N.Y.

All Other Chairs: designed by Copeland, Novak & Israel/ custom built.

Upholstery Fabrics: chairs in "Naugahyde"/ U. S. Rubber Co., Naugatuck, Conn.; settees in texture, linen/ Jack Lenor Larsen, 60 E. 58 St., New York, N.Y.; settee in kerry linen/ Knoll Textiles, Inc., 575 Madison Ave., New York, N.Y.

Drapery Fabrics: reception area, "Sesame"; Copeland's office, "Conifer Tree"; Novak's office, "Lineal"; Israel's office, "Buttony"/ Jack Lenor Larsen; conference room, "Lazy Lines"/ Knoll Textiles, Inc.

lighting

All: Gotham Lighting Corporation, 37-01 31 St., Long Island City, N.Y.

walls, ceiling, flooring

Walls: painted plaster.
Ceiling: "Celotone"/ Celotex Corporation, 120 S. LaSalle St., Chicago, Ill.

Floor: reception, drafting areas/ "Lifetime Vinyl Tile"/ Robbins Floor Products, Inc., Tuscumbia, Ala.

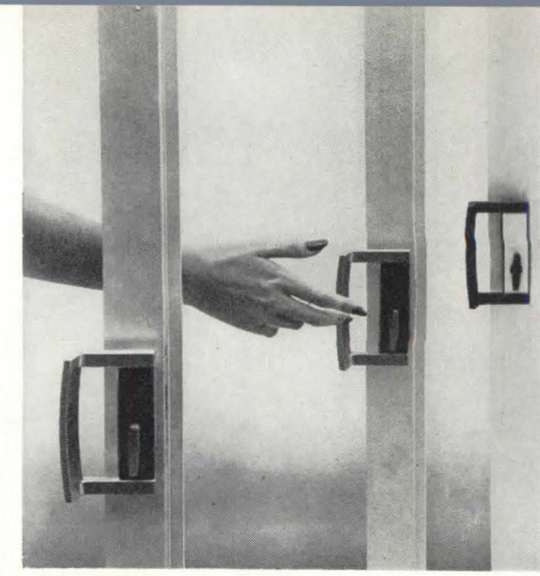
Carpet: offices and conference room, "Algiers"/ Firth Carpet Co., 295 Fifth Ave., New York, N.Y.; "Tri-Twist"/ The Magee Carpet Co., 295 Fifth Ave., New York, N.Y.; "Braeburn"/ A. & M. Karagheusian Inc., 295 Fifth Ave., New York, N.Y.

accessories

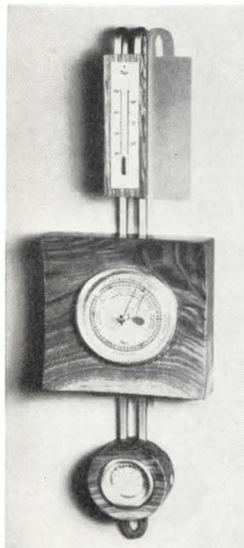
Lamps, Vases, Ashtrays: Design Technics, 4 E. 52 St., New York, N.Y.

Planters: Architectural Pottery, Los Angeles, Calif.

p/a interior design products

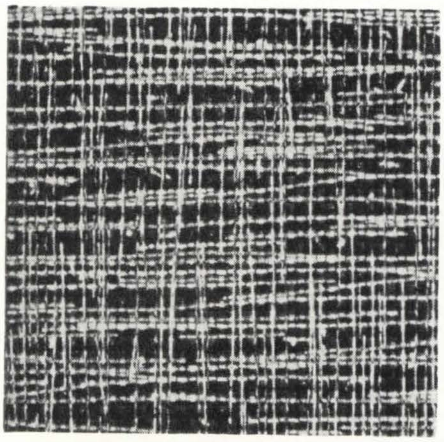


Pendant Barometer: "Wilshire"/ includes barometer, thermometer, humidity indicator/ hand-rubbed walnut cases, brass-finished metal loop mounting/ "Stormoguide" dial forecasts weather/ instrument accuracy assured with altitude adjustments up to 3500 ft/ **retail:** $27.50/ **Taylor Instrument Companies, 95 Ames St., Rochester 1, N.Y.**

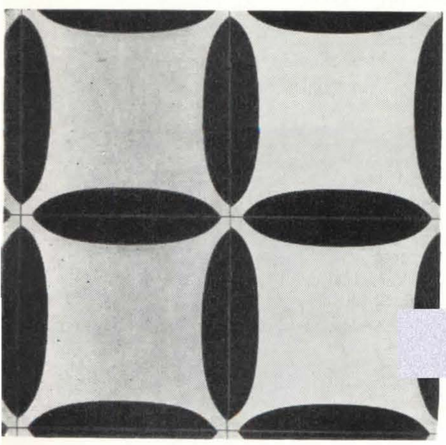


Sliding-Door Hardware: new design based on survey preferences/ in three finishes most frequently requested for architectural correlation: dull chrome, dull bronze, dull black/ made of "Zamak #5" zinc alloy/ patented latch mechanism, all parts cadmium-plated, tamper-protected/ jam-proof spring-lock latch/ designed by Merendino-Greene, exclusively for **Arcadia Metal Products, 801 S. Acacia Ave., Fullerton, Calif.**

Three-Dimensional Fabrics: "Niagara"/ two-color print with deep embossing/ available in pink, yellow, coral, charcoal, aqua, turquoise, red, green, willow, gold, black, silver black, off-white, natural/ **Textileather Division, The General Tire & Rubber Co., Toledo 3, Ohio.**



Pre-Cut Vinyl Tile: "Amtico Customotifs"/ 9"x9" tile pre-cut into five separate pieces of tile for easy design variations from same basic tile/ black or white, special colors on special order/ 1/8" or .080" gage/ **American Biltrite Rubber Co., Trenton, N. J.**



Institutional Wall Covering: "Shadowlines Kalistron"/ new patterned treatment on durable vinyl wall covering material/ random tracing of fine lines in black on Cloud White, Sea Green, Champagne, Dutch Blue, Desert Mauve, Lime/ scratch- scuff- waterstain-resistant for use where exceptional resistance to wear and abrasion are required/ **United States Plywood Corp., Flexible Materials Division, 55 W. 44 St., New York, N.Y.**