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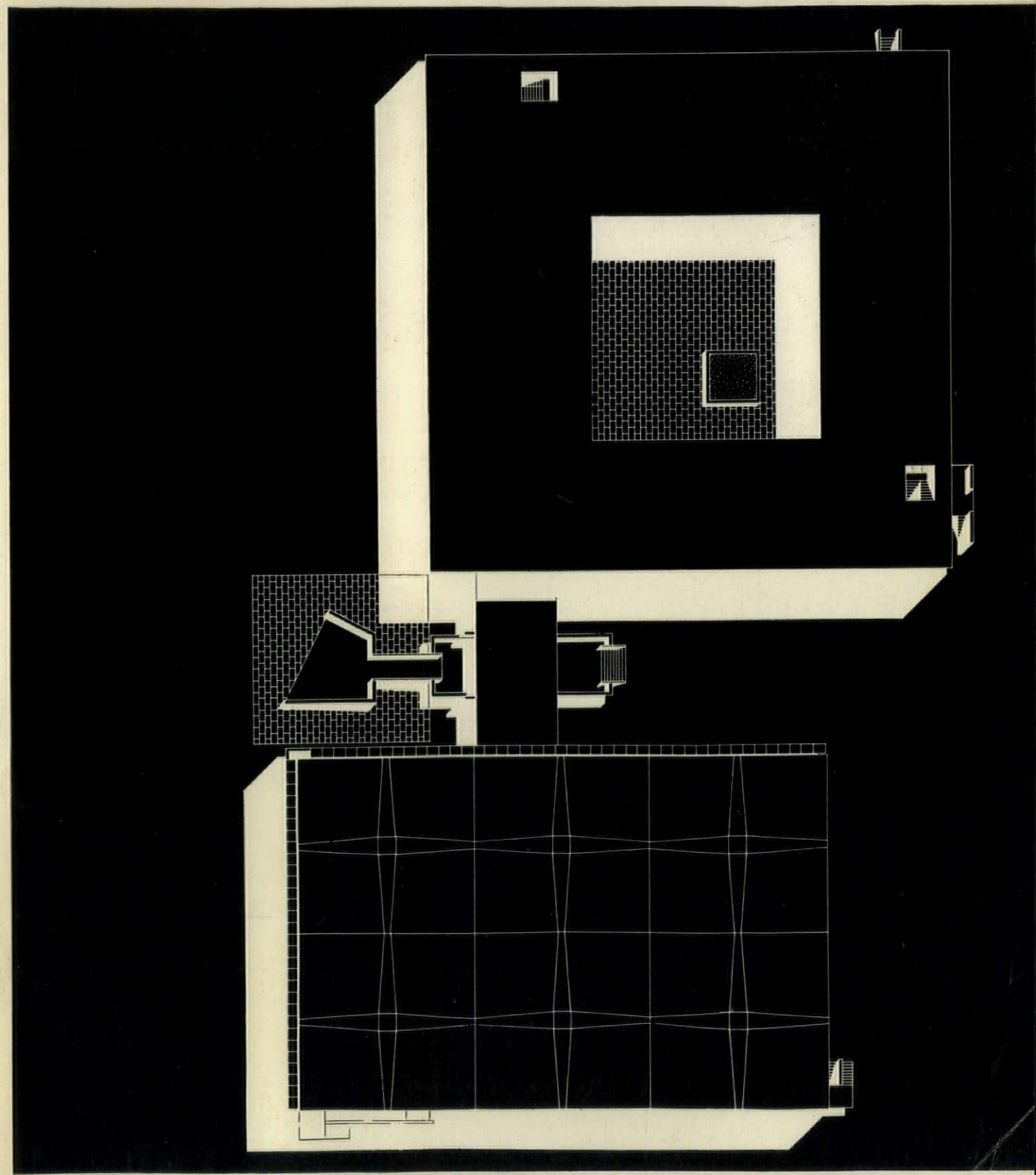

PROGRESSIVE ARCHITECTURE

May 1957

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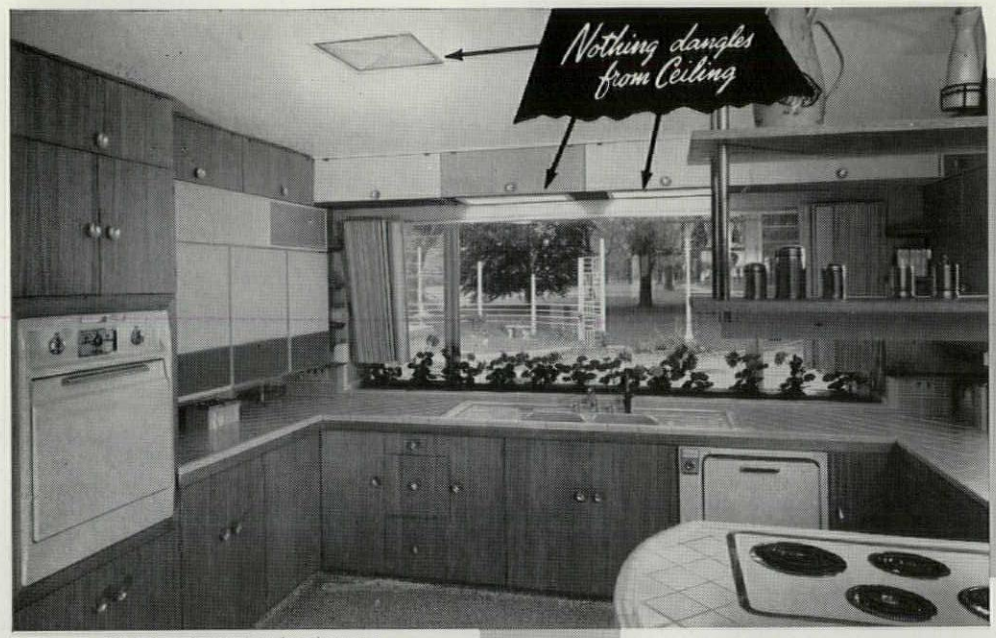

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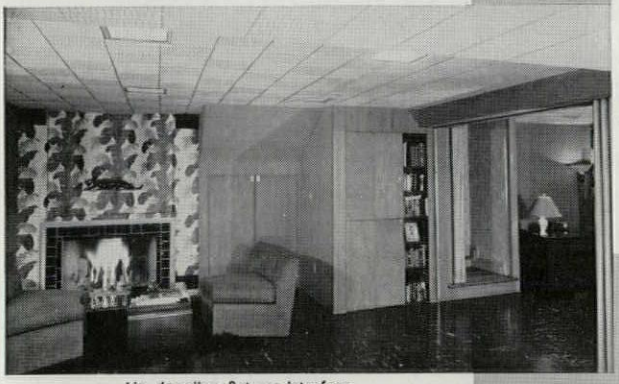

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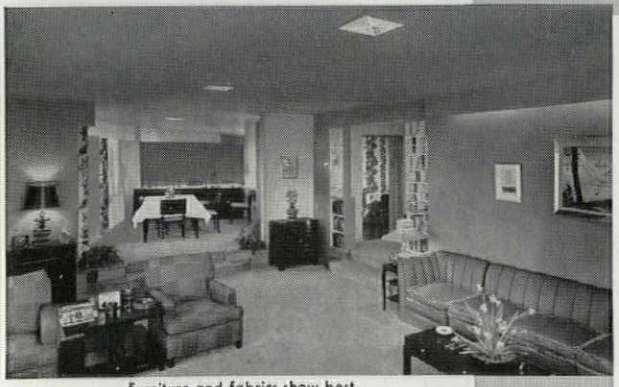

Furniture and fabrics show best under overhead lighting.

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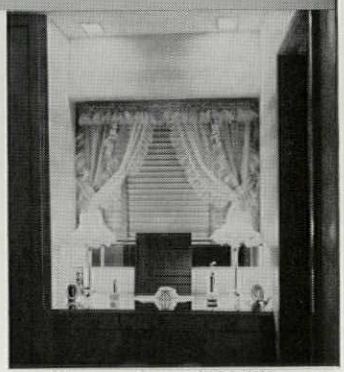

Women prefer overhead light—well diffused—for vanities.

It's the Law by Bernard Tomson

P/A Office Practice *article discussing litigation arising from Zoning Legislation by municipalities.*

The conflict between attempts by municipalities to zone and regulate use of property and the claims of property owners that their rights are being improperly invaded has been a continuing source of litigation. Recent decisions in New York have considered the following questions.

Can a property owner use an entire tract of his property for a use not permitted by a local zoning ordinance, where prior to the adoption of that ordinance only a portion of his tract was so used? Can a municipality regulate a use of property where a previous attempt by the municipality to prohibit such use by rezoning has been held to be an unconstitutional infringement of the rights of the property owner?

The New York Court of Appeals in the case of *Town of Somers* v. *Camarco*, considered the constitutionality of a zoning ordinance in its application to the defendants who were in the sand-and-gravel business. Their property consisted of approximately 55 acres divided into two parcels. The defendants acquired title in 1943, and in 1944 commenced to utilize a portion of said property for the removal of sand and gravel. In 1945 a zoning ordinance was adopted by the town placing the defendants' property in a residential zone. The ordinance, however, provided for the continuance of nonconforming uses as follows:

"Any building, structure, or actual bona fide use, involving a substantial monetary investment, which shall exist at the time of the enactment of this ordinance may be continued, even though such building, structure, or use shall not conform with the provisions of this ordinance for the district in which it is located, provided such existing building, structure, or use shall have been constructed, altered, or used in conformity with law and which shall be in conformity with other existing law."

In 1952 and in 1953, the zoning ordinance was amended to exclude any "natural products uses" from the protection afforded to other nonconforming uses. This change would have prohibited the use of the defendants' property as a sand-and-gravel pit. In determining the validity of these amendments as applied to the defendants, the Court of Appeals emphasized that they must be subject to the test of reasonableness "in order to afford stability to property owners who have existing nonconforming uses." In measuring the reasonableness, however, of a zoning ordinance, the Court pointed out that this test was based on variable factors, such as density of population. The Court said:

"In addition, the extent of the reasonable exercise of the police powers varies directly with the degree of the density of the population in the city, town, or village involved. An ordinance which might be considered as reasonable if enacted in New York City, would be considered as unreasonbale if enacted in a smaller political subdivision. . . . A definition of reasonableness cannot be made for all occasions, and must, of necessity, be considered anew in the light of each problem presented."

The Court concluded that the amendments to the zoning law prohibiting a nonconforming use for natural products unreasonably deprived the defendants of a "vested right" and were, therefore, unconstitutional.

In a dissenting opinion, a minority of the Court argued that the zoning ordinance was unenforceable only in respect to that portion of the defendants' property which actually had been used for excavation of sand and gravel prior to the enactment of the ordinances in question. The dissent emphasized that the existing gravel pit comprised only a small portion of the total tract and that "the mere intention to excavate the remainder of the land did not amount to an existing use so as to entitle defendants to a nonconforming use encompassing and protecting their entire tract of 55 acres."

The dissenting judges were of the opinion that the decision of the Court's majority was inconsistent with prior determinations. In an earlier case, *People* v. *Miller*, the Court of Appeals in a unanimous decision held that zoning ordinance prohibiting the use of premises for harboring pigeons was validly applied to the defendant who had been using his premises for that purpose as a hobby prior to the adoption of the zoning ordinance. The rationale of the Court in this case was that the property interest affected by the ordinance was too insubstantial to justify the continuation of a nonconforming use "in light of the objectives to be achieved by the enforcement of the provision." The Court said:

"That being the rationale of our decisions, it follows, and the cases so hold, that the enforcement of a zoning regulation against a prior nonconforming use will be sustained where the resulting loss to the owner is relatively slight and insubstantial. . . . In this state, then, existing nonconforming uses will be permitted to continue, despite the enactment of a prohibitory zoning ordinance, if, and only if, enforcement of the ordinance would, by rendering valueless substantial improvements or businesses built up over the years, cause serious financial harm to the property owner. This rule, with its emphasis upon pecuniary and economic loss, is clearly inapplicable to a purely incidental use of property for recreational or amusement purposes only. Such an inconsequential use as that here involved —the harboring of pigeons as a hobby— does not amount to a 'vested right,' and depriving [defendant] of this pastime does not affect substantially [his] property rights . . . in the use of the premises, which are otherwise undisturbed and unimpaired."

In both of the cases disucssed, a subsidiary question was raised as to whether the ordinances in question could be justified as a prior exercise of the town's police power in preventing the creation or maintenance of a nuisance. In the *Camarco* case, the majority opinion stated that it was unnecessary to determine the question of what may be a proper exercise of the town's police power so as to prevent the creation of a nuisance. The minority, however, in its opinion, concluded that it is a reasonable exercise of the town's police powers to limit the area which could be excavated by the sand and gravel company. In the *Miller* case, the Court asserted that the ordinance in question might be justified as an exercise of the "police power" to prevent the maintenance of a nuisance.

The distinctions and relationships between zoning and regulatory ordinances will be discussed in next month's column.

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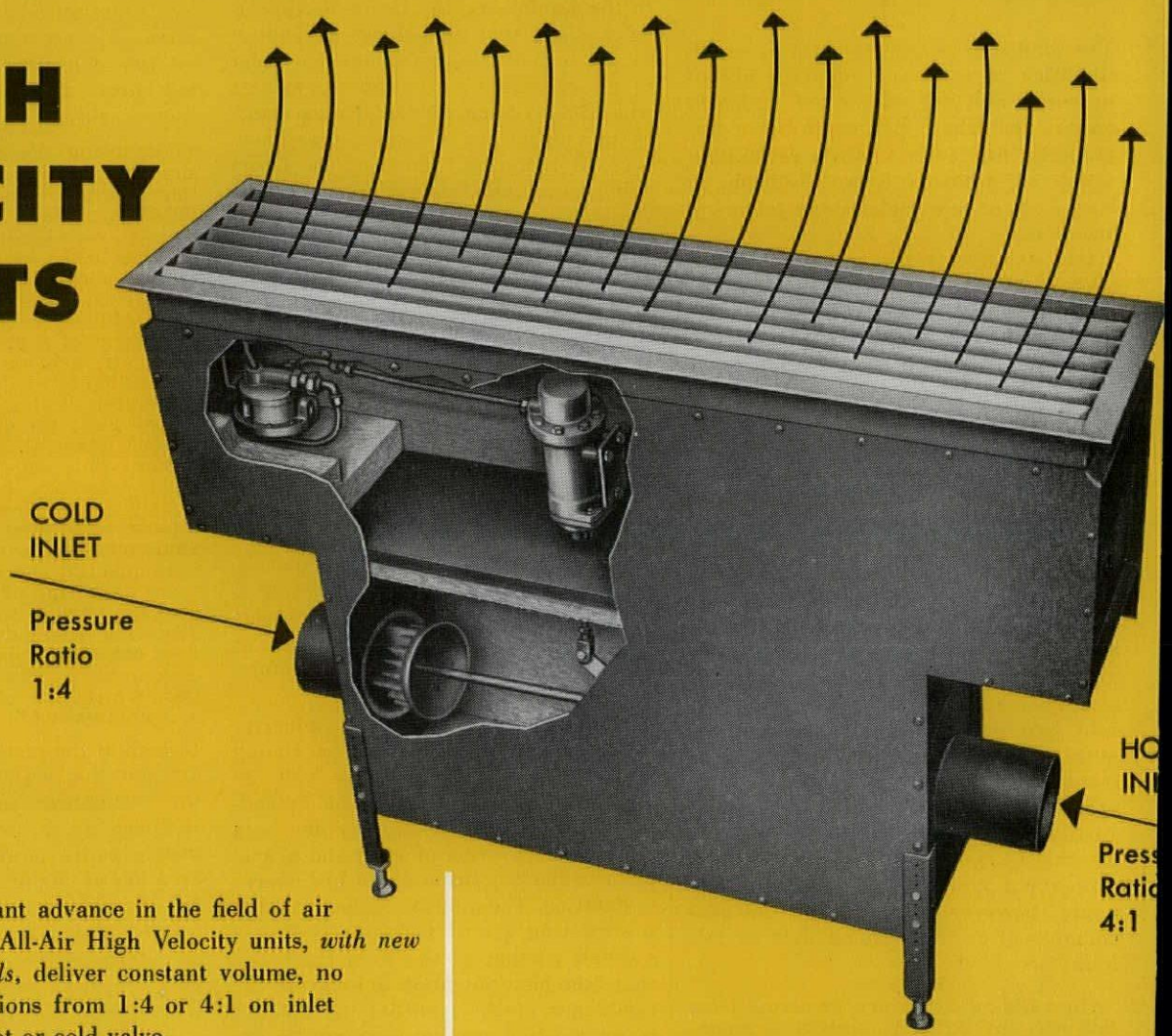

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Mechanical Engineering Critique

by William J. McGuinness

P/A Office Practice *column on mechanical and electrical design in architecture is devoted this month to the Effects of Good Insulation on Air-conditioning Costs.*

It has long been customary to compute the number of years necessary for fuel savings to pay for adequate insulation. For heating in cold climates, Minneapolis-Honeywell has recently determined that this period is about three years. Another concept has been expressed by Charles F. Neergaard, Hospital Consultant, who says that wall insulation and double glazing in hospitals can usually be paid for out of savings in the cost of the original plant. His statement has proved true in a number of installations. Attention now focuses on the possible savings in air conditioning installation and operating costs in warm climates. Using Texas as a critical location, Prof. John R. Watt of the University of Texas has conducted a research project for the National Mineral Wool Association to investigate this situation. Results in the tests on two of the eight houses tested are given in the accompanying table. Comparison was made of minimum, in relation to adequate, insulation in walls and ceilings of residences of about 1200-sq-ft area, costing between $12,000 and $16,000. Minimum Property Requirements of FHA in this region set maximum U-factors of .35 Btu/hr for walls and .15 for ceilings. This establishes a practice in the area of using no insulation in walls and 1½ in. in ceilings. House "A" actually used 2 and 4 in. for these locations and House "B" used 3 and 6 in. The results of using these thicknesses were compared with conditions which would have obtained in houses of identical type using the poorer standards. In each house, one ton of air conditioning was saved. In House "A," less was spent for insulation than in House "B," so the saving of one ton yielded a net saving to the builder of $93. A yearly saving of $64 in operation will also accrue. In House "B" the investment in 3 and 6 in. insulation was exactly paid for out of tonnage saving. Thereafter, because of the thicker insulation, an annual saving of $105 in operating cost can be expected. It may be noted that in either house the extra cost of insulation could be paid for out of power savings in two years if this kind of accounting is favored. The fact that the cooling load is a greater basis for savings in Texas than the heating load is borne out by consideration of the heating and cooling-degree days in two widely different locations. New York has about 5000 heating-degree days and 400 dry-bulb-cooling-degree days. Austin, Texas, site of the tests, has about 1400 heating-degree days and 3300 dry-bulb-cooling-degree days. Comparison of humidity is not easy to come by, but it is thought that the effect of a difference in this item would not be very great. It is evident that savings in air conditioning due to good insulation are three times as great in Texas as in New York, though the reverse is true for heating. The Texas savings, therefore, are ascribed directly to economies effected in air conditioning by better insulation which may now be considered as essential. The test houses were part of the "Air Conditioned Village Project," Austin, Texas.

Economies in Air Conditioning Installation and Operating Costs Effected by Improved Insulation

		HOUSE A				HOUSE B			
ITEM	UNIT	If built within current FHA requirements		As built for air conditioning		If built within current FHA requirements		As built for air conditioning	
Mineral wool insulation	Thickness, inches	Walls Ceilings	None 1½	Walls Ceilings	2 4	Walls Ceilings	None 1½	Walls Ceilings	3 6
Heat transfer coefficient (U)	Btu/hr	Walls Ceilings	.27 .15	Walls Ceilings	.09 .08	Walls Ceilings	.23 .15	Walls Ceilings	.06 .04
Heat gain, summer design	Btu/hr		22,600		14,700		29,800		15,630
Heat loss, winter design	Btu/hr		53,033		37,488		50,204		32,601
Added cost of insulation	$				102				223
Cooling equipment Needed	Tons		2		1		3		2
Savings in cooling equipment	$				195				224
Net **savings** to builder	$				**$93**				**$1**
Annual heating-and-cooling cost	$		190		126		230		125
Annual **savings** in heating-and-cooling cost to homeowner	$				**$64**				**$105**

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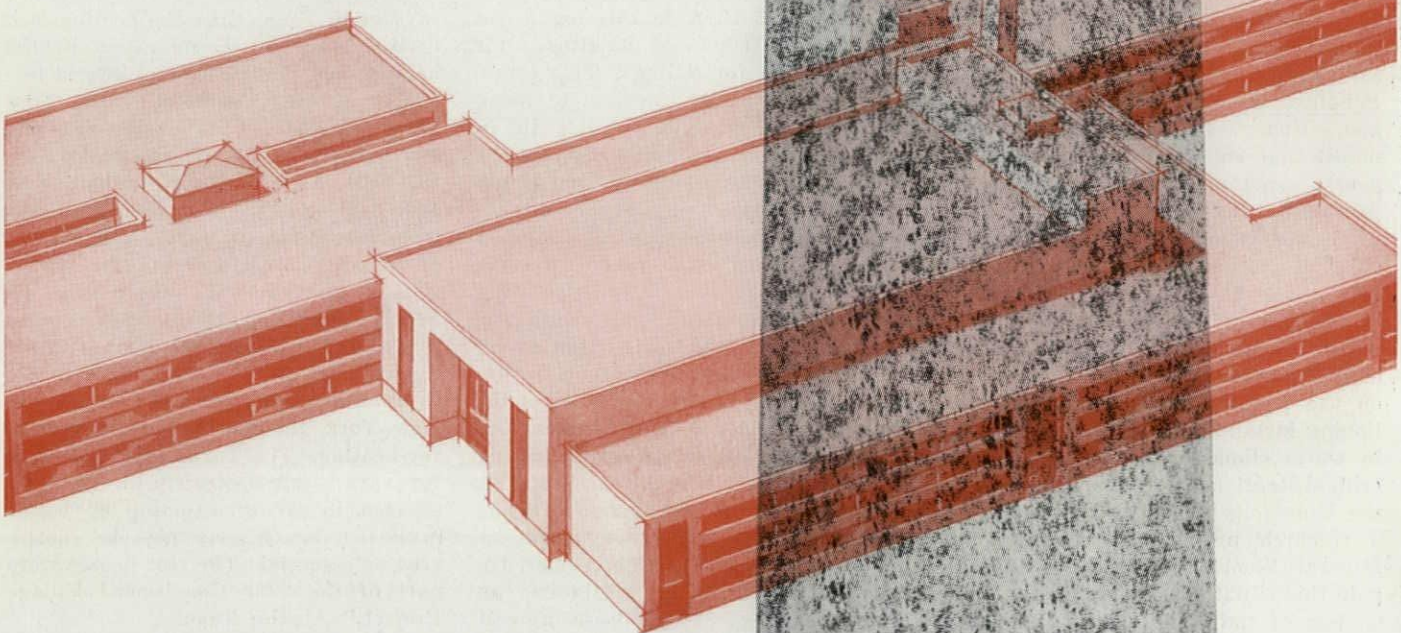

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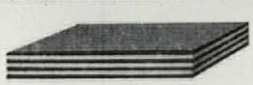

Ordinary roofing felts *separate* bitumen layers—voids between layers may result in premature failure.

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State Board Examinations Are Rough

*by Joe E. Smay**

P/A Office Practice ***article discussing the purpose and the nature of State Board examinations. Data regarding failures are based on a chart submitted by the author to the 1954 NCARB Convention, following a study of examination results in individual States. A similar report for 1956 and 1957 will be submitted this year.***

There is no doubt that State Board examinations to qualify for the practice of architecture are rough! Is there justification for this fact? Should they be made easier? Who set up these difficult standards? Or, are the applicants who take them poorly qualified? In order to answer a few of these questions, an investigation of the results of State Board Examinations was made under auspices of National Council of Architectural Registration Boards with the co-operation of the various State Boards of Examiners of Architects in the forty-eight States, Alaska, Hawaii, Puerto Rico, District of Columbia, and only recently, Panama Canal Zone. In addition to this study of the results, other studies are being conducted of the types of examinations given and the relative difficulties regarding types of questions. Another study has been made to determine what minimum experience should be required from the applicants and which experience should be counted. When the AIA's report of the Commission for the Survey of Education and Registration was released to the public in 1955, it recommended that such studies be made. The Architectural Registration Boards had anticipated this recommendation by at least two years.

Because of States' rights, there is no national architectural examination. But this does not mean that every State Architectural Registration Board, although a separate and distinct entity, goes on its merry way ignoring all the other State Boards. The practice of architecture is regulated in all forty-eight States, four Territories, and District of Columbia by such Boards, which have banded together as National Council of Architectural Registration Boards. The primary reason for this combined action is to effectuate reasonably uniform registration requirements, without interfering with States' rights. This organization has its yearly meeting just preceding the AIA annual Convention and in the same city and in the same hotel, if possible. Several interim meetings of that organization's board of directors are held between Conventions to consider the problems of inter-State registration.

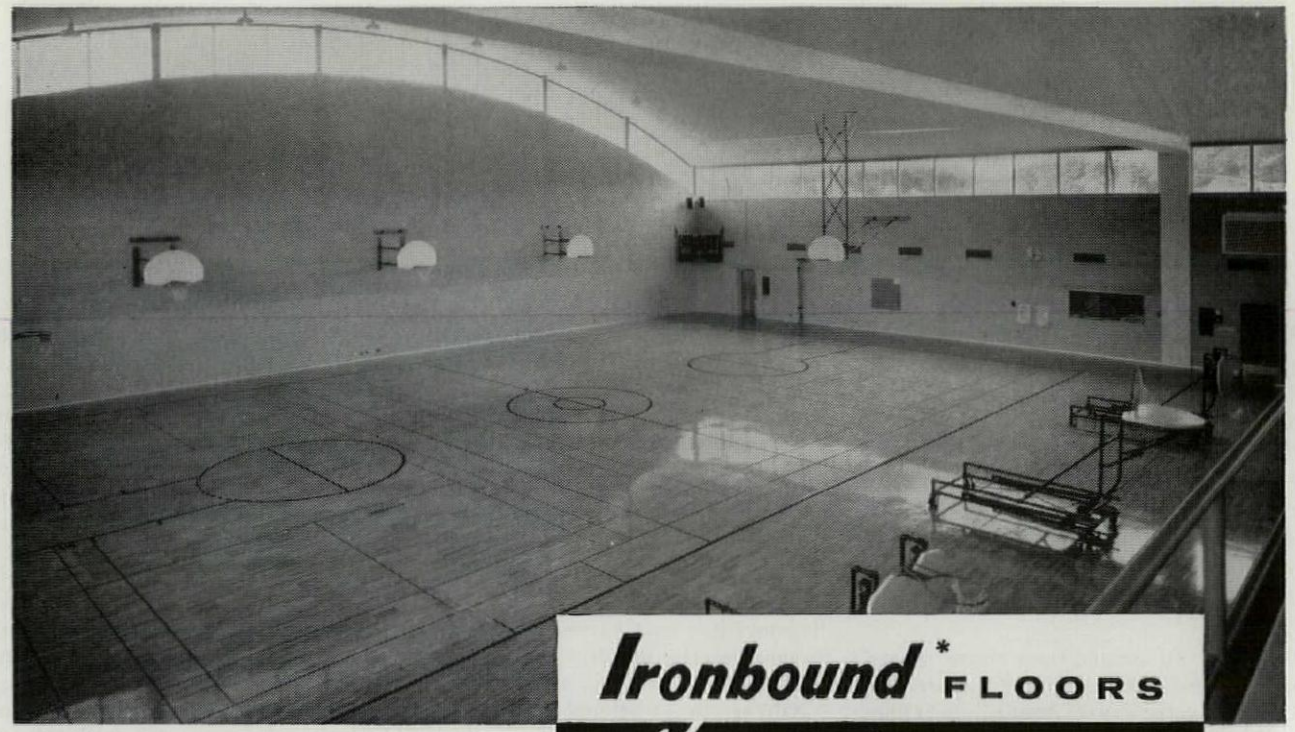
All of these efforts are expended primarily as a service to the licensed architect, so that he can practice in numerous other States as the opportunity presents itself. Architectural registration laws have been promoted and revised by the professional architects themselves. While the basis of their passage by State legislatures is that of "protection to the public," this is no unique claim. The Executive Director of AIA has pointed out that there are some thirty thousand laws on the statute books which claim as reason for their existence "protection of the public." Professional architects well recognize their responsibilities. They are constantly striving to improve the caliber of individuals who become licensed to practice. When a State Board of Examiners of Architects fails to meet the needs of the profession it represents, the profession itself will soon take steps to rectify such deficiency; or if it does not, it should! Such boards have power generally restricted to those who are licensed or who are attempting to practice without a licence.

A qualified practitioner usually does not resent losing a commission to a capable competitor. What really annoys him is when he loses it to one who is incompetent. For the good of the profession and also as a protection to the public, it behooves the profession to see that unqualified men are not licensed to practice. Policing within the ranks is imperative and is practiced not only by State organizations but also, nationally, by the AIA. Standards of practice must be maintained; one rotten apple may spoil the barrelful.

The study of examinations, as made by the National Council, reveals that of those who take examinations in the various States, over-all failures for all subjects up to the year 1955 were 32.8 percent. The highest percentage of failures is made in the examinations given in Architectural Design, in which 47.2 percent fail. In the field of Structural Engineering, at which any registrant must show a reasonable proficiency, 38.8 percent of the applicants fail. Architectural Composition shows 34.5 percent failures. Failures in other subjects range lower, to a minimum of 18 percent on Building Sanitation; Specifications coming a close second low, with 18.1 percent failures. These figures are based upon the total number of examinations given, with no attempt to segregate those who have taken the subject for the first time from those who have made several efforts. In one State, 68 percent of those taking the examination failed in Architectural Design. This State also separated retakes from first attempts and it is interesting to learn that of the retakes in this subject, 61 percent failed. As a general trend, the chart reveals that there were more failures in the early years than after the Board had been in operation for some time. For instance, 80 percent failed in one branch of structural examinations in an early year—1939—while the same State showed only 42 percent failures in the same subject in 1954. A probable explanation of this trend is that when the law was first introduced, a large number of applicants decided that they would attempt to qualify for practice although many, perhaps, were poorly prepared. A survey is now in progress which will tabulate results for 1955 and 1956.

One reason for so many failures is that, in spite of efforts to require a minimum number of years of work with a licensed architect before eligibility, some States failed to obtain passage of that portion of the registration law. A number of States allow an applicant to take the examination at any time, without any experience. In fact, a few State Boards give the examination to students in schools of architecture who submit themselves to the examination "for experience" and with no serious intention of passing the examination the first time. Worse still, one State licenses all graduates of its collegiate, accredited, schools of architecture upon graduation with *no* architectural experience required.

*Professor of Architecture, University of Oklahoma: member, Oklahoma Board of Governors of Architects; 1st Vice-President, National Council of Architectural Registration Boards.



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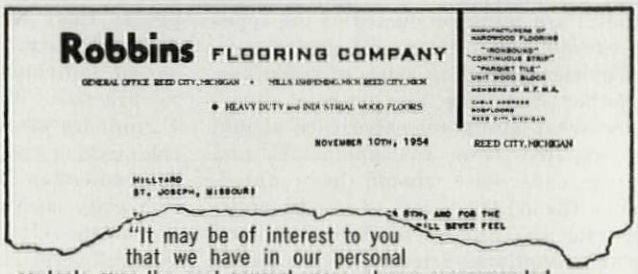

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State Board Examinations Are Rough

The National Council of Architectural Registration Boards realizes that serious consideration must be given to equalization of the types of examinations given by various States. A good many past examinations given to applicants of various States have been reviewed by appropriate committees. A few such examinations were basically too elementary for professional qualifications. Any professional Board which would presume to offer such an examination for the practice of architecture should be removed from office. On the other hand, some examinations reviewed are far too difficult. A certain State gave an examination in History of Architecture which I doubt could be passed by any architect in the State or, I will add, many competent professors who had taught the subject for several years. There is certainly some median toward which all State Boards should strive to reach. Reliable comparison by States is impossible when such great variations exist.

In an effort to eliminate such great discrepancies in comprehensiveness of examinations, NCARB has given serious consideration to "National Examinations." While it has been stated before that such examinations violate the concept of States' rights, it could be that the same examination might be given by each State Board. If such an attempt were made, the examination should be given on the same day by all Boards. This would eliminate the possibility that some applicants had knowledge derived from the same examination given at a different time by another State Board. No conclusions have been reached regarding this problem, and if it can be solved it will take greater co-ordinated effort than has thus far been attained, through various Boards working in unison.

At least two appeals have been made to various Boards and to the NCARB by the architectural educators. One has to do with two-stage examinations, the other with distribution to the schools of sample State Board examination questions.

Few colleges feel that the licensing of graduates without experience and without examinations is a good and proper step. Most college faculties will admit that there are men graduated who pass bare minimum requirements in all subjects while in college. They "wear the professors out," so to speak. Such students quite probably will not be practitioners who would reflect credit upon the profession or upon the college that "educated" them.

Two-stage examinations have been proposed because it is contended that any person can retain only a small portion of the knowledge or facts which he can grasp; he then forgets a large portion of it and must "bone up" or fail that portion of the examination. Generally, the mind will retain those facts which the individual knows it must retain; all the rest soon slips away. If examinations are equitable, they should contain only that material which an applicant must know to practice architecture. And if material is of that caliber, he should know it when he starts to practice and not only when he graduates from college.

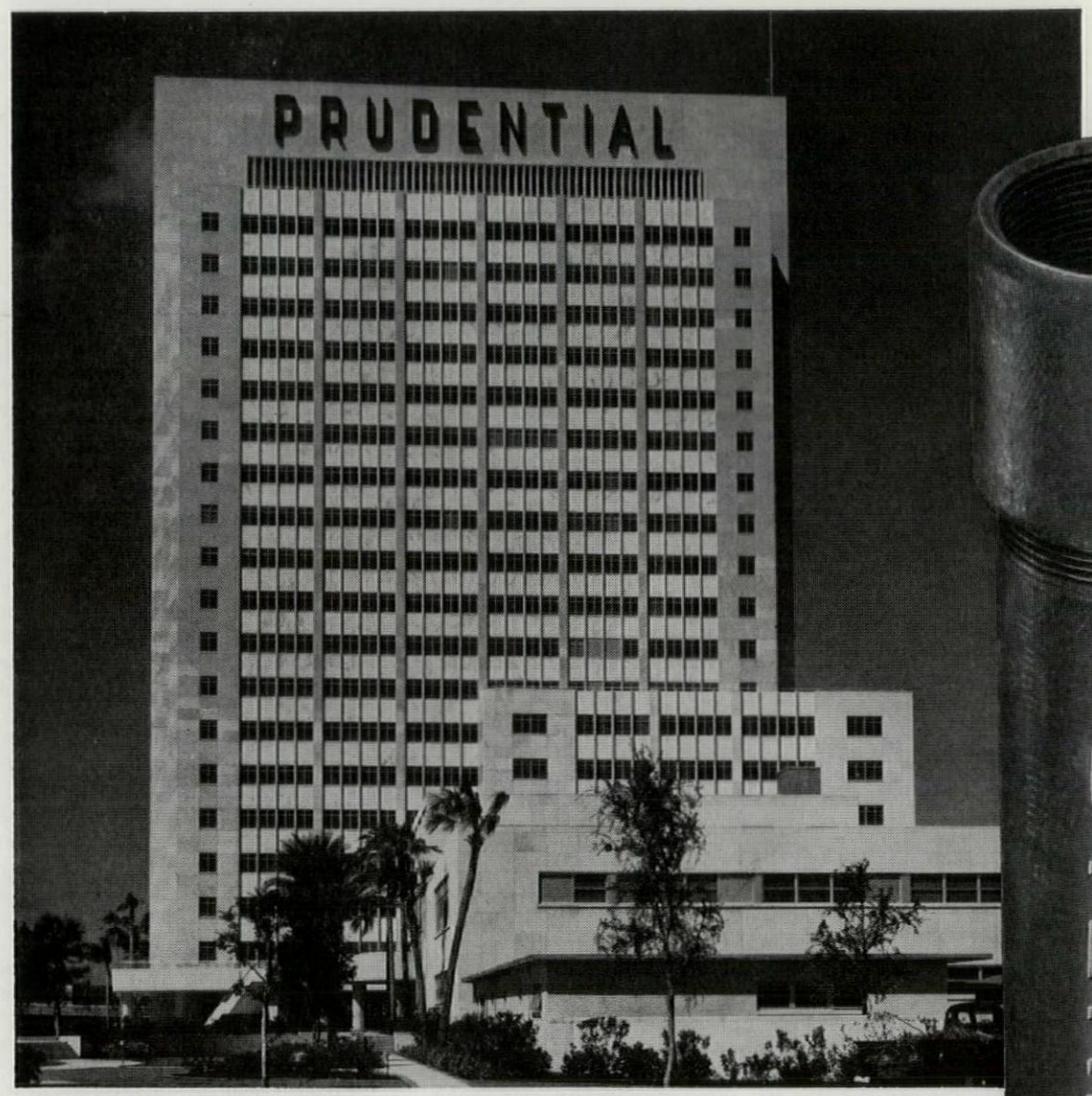
The NCARB is giving serious consideration to the request that sample examinations be made available to colleges and, for that matter, to prospective applicants. There can be little harm in allowing an applicant to have some idea of the comprehensiveness and general nature of such examinations. It is hoped that no examination board gives the same examination more than once. In any event, all one needs to do at the present time to see such examinations is to submit himself to the ordeal, even though he has no thought in mind to pass it the first time. To restrict information on examinations to such men becomes an unfair practice and is a waste of time and effort, not only of the applicant but also of the Board which must supervise the examination and grade the unsuccessful attempt.

Up to now, in this discussion, the passage of a comprehensive State Board examination has been treated as the maximum attainment that an architect can reach. In reality it should be considered not as the maximum but as the very minimum he must have in education and experience to be allowed to call himself an architect. He is not proficient in his profession until he has added many years of experience to this minimum objective.

One important factor which has not been given consideration as to the limitations of the applicant is the *value* of the experience gained, which cannot be measured by the mere spending of a specified number of years in the employment of a licensed architect. The important factors to consider are the receptiveness of the individual, the breadth and variety of the experience offered by the employer, and the amount of continued study on the part of the employe. A college education is not an end to his professional education, it is only the beginning. After graduation he has, it is hoped, grasped the fundamentals of how to think clearly and logically. Educators are aware of the fact that some students, who make honor societies and gain top grades, seem to accomplish less after graduation than fellow classmates with lower scholastic records. Could it be that too much emphasis has been given in college to the retentive mind and not enough to logic and "think power"?

Every architect owes to his employes the opportunity to learn about all phases of architectural practice. Any draftsman who finds himself restricted by his employer to only one phase of practice should seek a position elsewhere. The AIA has long worked toward this objective of well-rounded practice. It has sponsored the "Mentorship" system. It now has passed the experimental stages of the draftsman's "Log Book." This is a record which the draftsman must keep, so that he can survey it at intervals to check whether or not his experience has been as broad as it should be. The draftsman may not always be best off with employment which pays him the greatest salary; his primary objective should be to learn to be an architect. Some employers who may pay nominal salaries more than compensate the monetary difference by allowing a full, well rounded, diversified experience in the practice.

Yes, State Board examinations for the practice of architecture are rough, but they are not insurmountable. They are designed to measure the competence of the applicant to practice architecture. Architecture is not becoming simpler, it is becoming more complex. Today's maximum becomes tomorrow's minimum. State Boards of Architectural Examiners are not striving to keep out competition by failing as many applicants as they can. They are generally composed of men seriously dedicated to the purpose of raising the standards of the profession so that all who attain this objective can be proud to say: "I am an architect."



Wrought Iron Pipe adds long-term life insurance to 11 piping services here

Designers of Prudential Insurance Company of America's South Central Home Office, Jacksonville, Florida, selected wrought iron pipe for "maximum coverage" against future maintenance of piping systems.

Proof of their high regard for wrought iron pipe is the extensive use of this material in the following corrosive services: water lines, water softener and soft water piping, underground recirculating lines, underground gas piping, feed water piping system, boiler blowdown system, interior storm drainage and carbon dioxide lines for fire protection; underground fuel oil lines and steam heating return piping.

Architects for this job were Kemp, Bunch and Jackson of Jacksonville. Consulting Engineers, Van Wagenen, Taylor and Van Wagenen; Mechanical Contractors, Henley and Beckwith, Inc., also located in Jacksonville.

We have hundreds of case-history reports that tell why this material gets specified . . . as a long-life additive and a maintenance-reducer in modern buildings everywhere. Write for our booklet, "Piping for Permanence."

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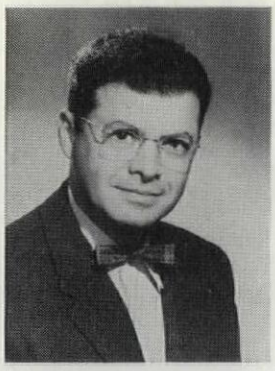

Ben John Small

Jan. 29, 1908-April 13, 1957

Ben John Small was a partner in the firm of La Pierre, Litchfield & Associates; he was author of a number of books; he conducted this magazine's SPEC SMALL TALK column; he taught or lectured in numerous schools; he was active in AIA and a founder and past president of CSI. But most important of all, he was a person to whom anyone with a serious technical problem could turn for mature advice. Throughout the building industry, his warm, good-humored, very personal, and human contribution to the technology of building design will be sadly missed.

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Indexed in Art Index, Architectural Index.

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REINHOLD

viewpoint questioned

Dear Editor: Having recently subscribed to PROGRESSIVE ARCHITECTURE, I read the first article in the February issue and was surprised to find such an unfair viewpoint expressed in Bernard Tomson's IT'S THE LAW.

I see no reason for architects to be so concerned over their pocketbooks that they should, as Tomson suggests, exempt themselves from any responsibility whatsoever as to correctness of preliminary cost estimates. In the case discussed, if Tomson's methods had been used, an owner would have been forced to pay architectural fees on a $39,000 house, when he was only interested in a $25,000 house.

The integrity of the profession would be vastly increased if all architects would take more responsibility in cost estimates, set up a reasonable limit within the owner's requirements and then design within those requirements instead of avoiding all responsibility completely.

ROBERT G. McBRIDE, Engineer
Yorktown Heights, N. Y.

•

Dear Mr. McBride: I am inclined to agree with you that Tomson's suggested revision of the Standard Contract Form simply puts off the day when the profession of architecture must face up to this business of designing within a budget. It is a tricky question, however, and I don't think that the answers are going to be easy ones. On the one hand, the client has a perfect right to feel that his stated budget is not going to be exceeded; and on the other hand, the architect has no real way of "guaranteeing" bid prices on the open market, over which he has no control. This anomalous situation is really the basic reason for the growth of the so-called "package dealers" who *do* guarantee estimates. This whole matter is being studied by a competent AIA Committee at the moment and perhaps it will come up with some reasonable suggestions.

T.H.C.

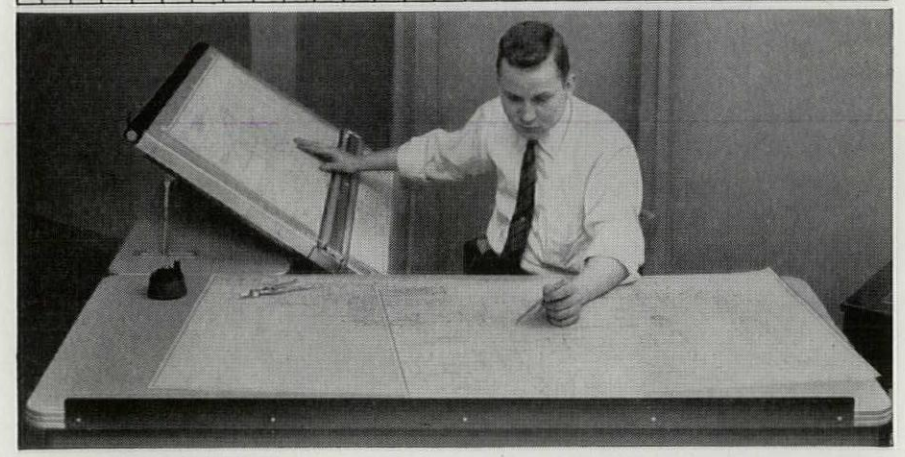
just plain English

Dear Editor: Second only to your pictures in January 1957 P/A of the top-honor winner (George Washington Carver Junior-Senior High School in New Orleans, by Curtis & Davis) in the Design Awards Program, I find the reasons for this selection next in point of interest. Twice in your description of this design you used the word "logical." Is not that the exact manner in which you would describe the Folger Library and the bridges of Freyssinet?

When architecture is written of so often in clichés such as "exciting," "playful," and "sensitivity of form," it is refreshing to find a design that

(Continued on page 14)

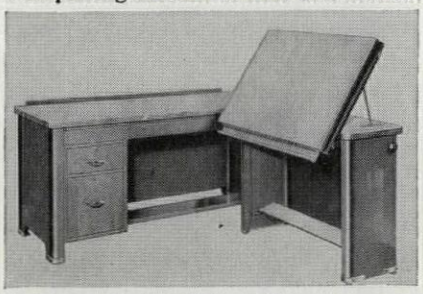
DRAFTING TRENDS



"L" angle table cuts fatigue, speeds drafting

The year 1956 saw the introduction of a drafting table destined to change the working habits of many draftsmen. Made by the Hamilton Manufacturing Company and distributed by POST, it is the result of years of experimentation into methods of decreasing drafting fatigue and increasing productivity.

Designed as an "L" this new unit has a complete reference area at a right angle to the drawing board (see photo). Unlike many table arrangements in which the draftsman must turn around completely, or leave his board altogether, the new table *consolidates* the entire working area—the reference desk is never more than a slight turn from the board. This arrangement conserves a surprising amount of time and motion.



Reference desk is 28" x 60" and contains 3 drawers. Board is available in sizes 26" x 40" and 36" x 48".

Like Hamilton's *Auto-Shift* table, the new "L" table adjusts easily and quickly. A hand trip permits slope adjustments to any angle from vertical to horizontal. Another release frees the board for height adjustment through a range of 8". These convenient adjustments are easy to operate and step up efficiency. Where semi-privacy and other unique advantages are needed, the "L" angle table's versatility is especially desirable.

Another motion-saver: "Boardmaster" drafting machine

While very helpful on the board, many drafting machines have characteristics which almost nullify their value—blind spots, awkwardly placed controls, slippage in control settings, etc.

The Universal "Boardmaster" drafting machine solves many of these problems. Its overarm construction allows complete visibility of the protractor at all times. The controls are all *centrally located*—conveniently placed for manipulation by two fingers.

The indexing control has a push-button action that provides automatic indexing every 15°. The vernier clamp has an ingenious double wing lever for locking intermediate angle settings.

Aside from operating ease, the "Boardmaster" meets the highest standards for accuracy. No other drafting machine can match its precision and easy operation.

Further information on these items is available from the Reader Service Division of Frederick Post Company, 3642 N. Avondale Avenue, Chicago 18.

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p/a views

(Continued from page 13)

is good enough to be described in just plain English as, "It is architecture." Although the reproductions show originality, imagination, and creative ability to a high degree, nevertheless, to be that good, the basic concept must have incorporated a simple, straightforward approach and clear thinking. This process might well be compared to straight football: well thought out, well planned, and well executed—no trick plays, no razzle-dazzle.

JOHN W. WELLS
Auburn, Ala.

filing vital data

Dear Editor: As an architect who was "nursed" on the old *Pencil Points* magazine, I am presenting the discussion (*below*) of a subject that has concerned me for many years, and which was a real irritation until I adopted the system described therein for filing purposes and specification-writing, particularly. I am sure that the current filing methods are distressing to most offices, to the point that what could be a helpful asset—a workable filing method—is rarely maintained. I could hope that something could be started to make the "fountainhead" of building construction, the Architect's Office, a reasonably orderly and consistent pattern. Everyone else seems to be classifying operations in standards that are readily discerned and followed, why not the architectural offices?

I believe a uniform classification of the materials and trades in a numerical system would be a blessing to all concerned.

JOHN W. FOSTER
Portland, Ore.

A Method

What is more exasperating in the operation of an office than the inability to lay one's hands on vital data for a specific need? Efficiency in selection, reference, and confir-

(Continued on page 16)

Proof!

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Schools all over America are installing a Syncretizer unit ventilator in every classroom—with Wind-o-line radiation all along the sill. They not only get the heating or cooling and ventilating needed . . . they also overcome cold window downdraft and stop excessive radiation of body heat to cold surfaces. Every pupil—even those near the window wall—enjoys a protected learning environment . . . comfort and health plus more learning per school dollar. And by employing the Nesbitt series hot water method—in which the Wind-o-line tubing serves as supply and return for a group of classrooms—they get Nesbitt protection at a considerable saving.

WIND·O·LINE RADIATION MAKES THE DIFFERENCE!

Creve Coeur, Illinois
Heating cost: $1.41 sq. ft.

The two-story Creve Coeur Elementary School was designed and engineered by George Poppo Wearda, Pekin, Ill. With capacity for 256 pupils and gross area of 11,800 square feet, the entire eight-classroom building cost $156,124. Total cost for heating and ventilating with Nesbitt series hot water system (Syncretizer unit ventilators with Wind-o-line radiation concealed by Nesbitt storage cabinets) was $11,400.

Framingham, Massachusetts
Heating cost: $1.74 sq. ft.

The Framingham Senior High School, Samuel Glaser Associates, Architects and Engineers, has a 1300-pupil capacity, a gross area of 187,328 square feet for a total cost of $2,509,000. The classroom learning environment is protected by Nesbitt Syncretizer unit ventilators and Wind-o-line radiation integrated as a series hot water system. The total heating and ventilating system costs were $327,000.

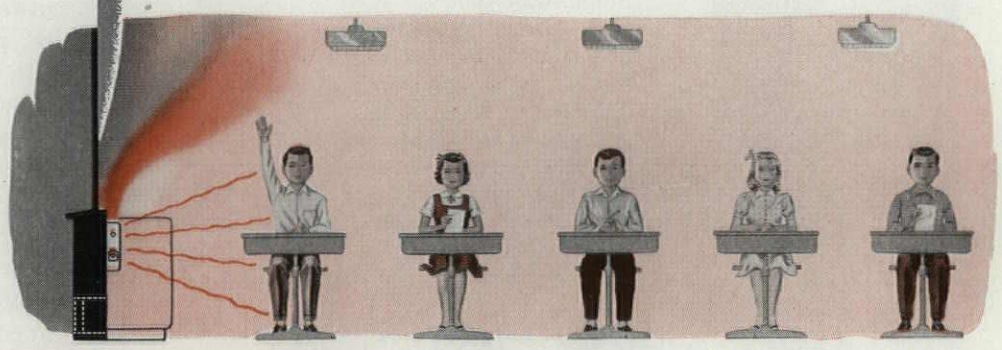
Papillion, Nebraska
Heating cost: $1.83 sq. ft.

Papillion High School was designed by Unthank & Unthank and engineered by James P. Anderson. With a 200-pupil capacity and 15,296 sq. ft. gross area, the building costs totaled $191,592. Nesbitt Syncretizer unit ventilators combined with Wind-o-line radiation for cold wall and downdraft protection were employed as a series hot water heating and ventilating system. The total heating contract was $28,900.

Bridgeton, New Jersey
Heating cost: $1.60 sq. ft.

The new Bridgeton High School, a project of Edwards & Green, Architects and Engineers, Camden, N. J., will accommodate 2,200 pupils, have a gross area of 201,000 square feet, and cost $2,880,865. Heating and ventilating will be furnished by Nesbitt Syncretizer unit ventilators piped in series hot water fashion with cabinet-type or wall-hung Wind-o-line radiation. Total heating contract: $321,704.

This Nesbitt-equipped classroom has the protected learning environment. For the full story, send for Publication 101.



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(Continued from page 14)

mation of needed information aids immeasurably in relieving nervous tension during the hectic process of completing rush work.

Practically every craft, through an association or institute, is classifying more and more in a refined manner the data for its materials. There has been active for several years a streamlining of procedures designed to eliminate waste and ineffectiveness to cut costs. Why should architects, in their own offices, still struggle along with their old-fashioned methods of reference which infect the building sphere?

To be specific, the immediate item concerns the manufacturers' materials catalogs. These are primarily labelled with either AIA or Sweet's Catalog Numbers, which numbers do not coincide. Is there an office in the nation that is not distracted by this disarrangement? Basically, it seems, the AIA system is adequate, and a solution might be its exclusive use throughout the industries. However, that is but a part of the case; and if a change is effected it should include other considerations.

In every office there is much data that could be filed under one particular number, yet under several classifications, for example, hardware. There would be needs to file data under (1) catalogs; (2) specifications material; (3) technical data—tests, etc., (4) names, addresses, telephone numbers of dealers and subcontractors, (5) material samples, (6) installation details, (7) check lists, (8) estimates and cost information. Now, if the information pertaining to hardware was invariably filed under the same number, the cross-references in the eight classifications would be simplified. Further, if in the preparation of all specifications the hardware number was always the same, say #20, acquaintance would not take long and the rapid reference would be a pleasure.

Now, if this seems too academic, I can only state that it works very well in this small office. Two file drawers hold all of the manufacturers' pamphlets; a wall shelf holds their binders; manila folders hold manufacturers' specifications sheets and other clippings; technical data and reports are presently filed in the same folders; another set of manila folders contains business cards, telephone numbers, etc., for the related products; material samples are contained in boxes that have the numerical reference visible; more manila folders contain installation details classified by materials; a check list with the various numbers provides space for insertion of items forgotten on the last job; and finally, cost data

(Continued on page 22

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in gardens, because of its resistance to decay and its handsome weathering qualities."

LAWRENCE HALPRIN
Landscape Architect

Mr. Halprin, working out of his San Francisco office, enjoys a varied practice throughout this country and abroad. Under construction now are a medical center and community in Israel, a large shopping center in Chicago, a water power company development in Spokane, as well as an interesting group of schools, libraries, industrial plants and private homes. He also finds time to lecture, teach and write.

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p/a views

(Continued from page 20)

for particular products is filed under the constant number. Twenty three (23) numbers will cover the various crafts and specification divisions.

One point suggested above bears an important possibility for uniformity. It would be, to have all specifications from all offices bear the same number for the same material and craft. The advantages to the contractors, subcontractors, craftsmen, manufacturers, material dealers, etc., should be apparent. When a given material is omitted from a particular job, a sheet bearing its number is placed in the proper place stating, for instance, "no marble work required."

It is recognized that such a major revamping of procedures would involve considerable review, but it is respectfully suggested that this 100th Anniversary of the American Institute of Architects would be an ideal time to discard this clumsy condition and prepare for a new basis to be effective January 1, 1960.

notices

resumes position

ALFRED J. NELSON, recently returned to the State of Minnesota as Assistant State Architect, Department of Administration, 120 State Capitol, St. Paul, Minn.

appointments

JOHN RETTALIATA, President of ILLINOIS INSTITUTE OF TECHNOLOGY, has appointed the following faculty members Associate Professors: DR. GERALD BERMAN, Mathematics; DANIEL BRENNER, Architecture; KENNETH P. MILBRADT, Civil Engineering; DR. BERNET S. SWANSON, Chemical Engineering.

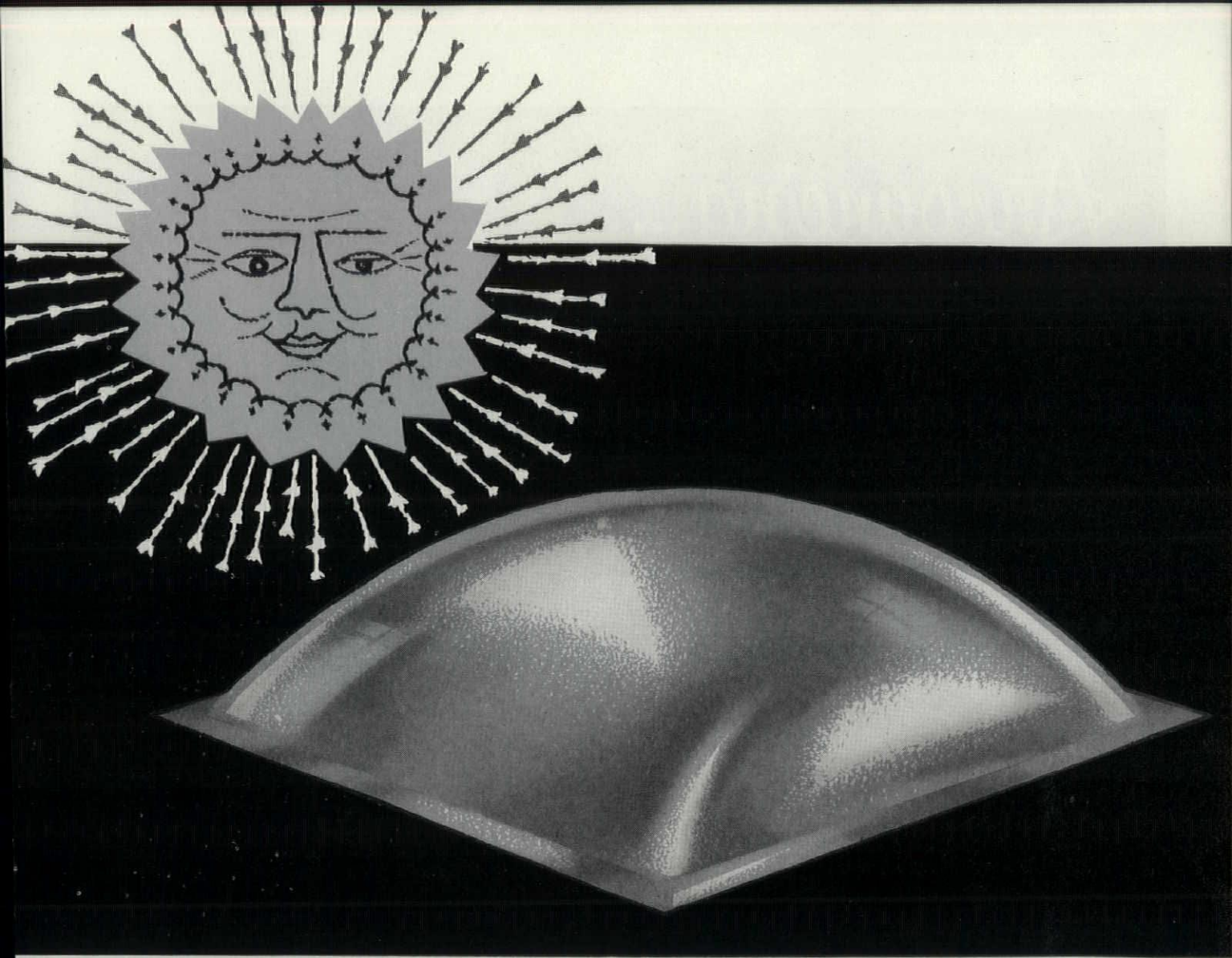
new offices

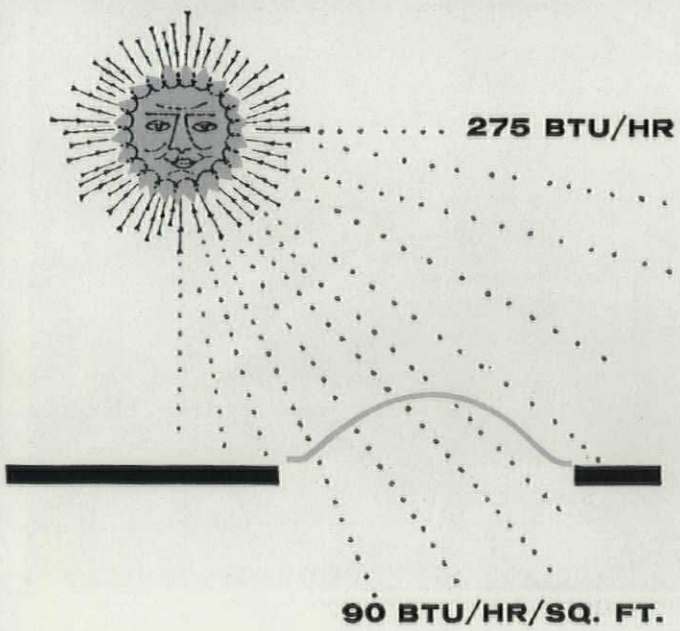
VAN NESS, Architects - Engineers, Ave. Presidente Wilson 164, Rio de Janeiro, Brazil, formed by Frederick H. Van Ness, Dr. Sylvio Bunéa, and André Lucas.

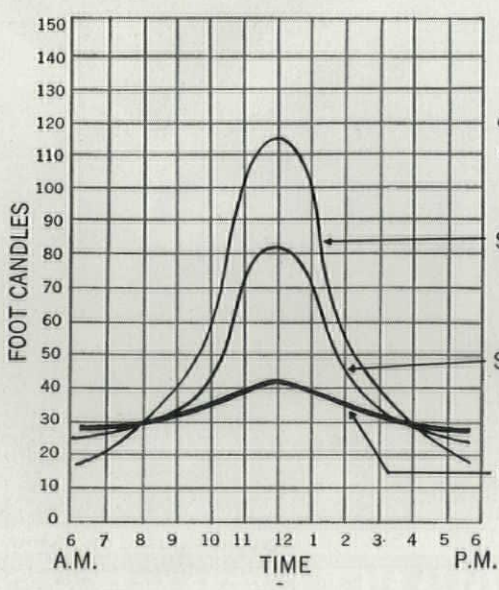
KENTUCKY ENGINEERING CORPORATION, Architects - Engineers, 3804 Lexington Rd., Louisville, Ky.

R. NEWELL WATERS and CLARK & TOMLINSON, Architects, announce the merging of their firms into a partnership with offices at First National Bank, Weslaco, Tex., and 468 Palmero St., Corpus Christi, Tex.

CHARLES HAINES, Architect, recently became a Senior Partner, and VICTOR J. DE MASI, Architect, a Junior Partner, of VOORHEES, WALKER, SMITH & SMITH, 101 Park Ave., New York, N. Y.







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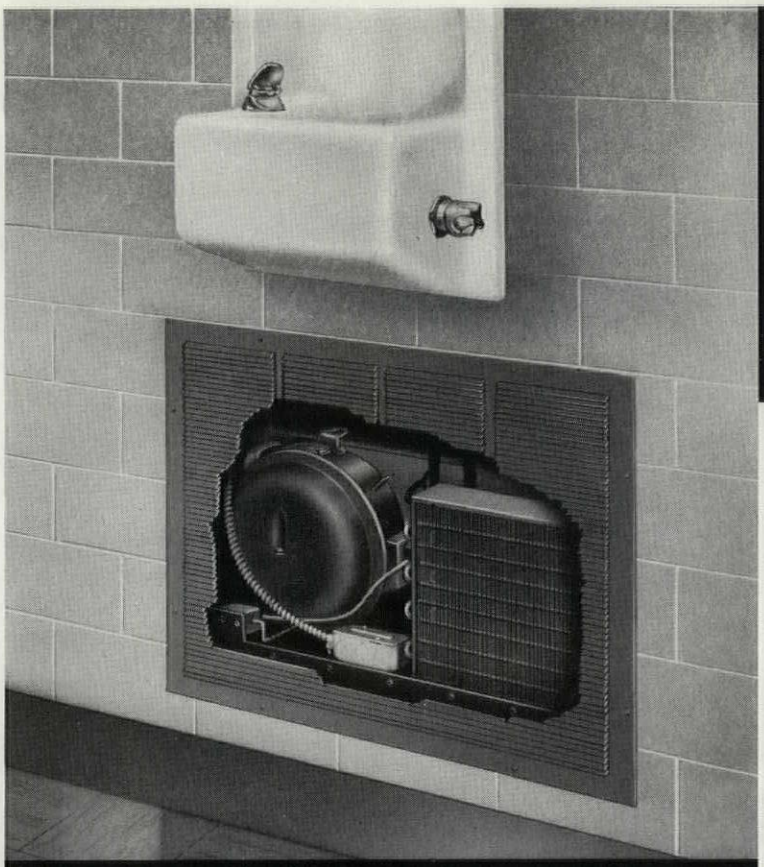

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practical low cost unit for industrial, commercial, institutional, residential and restaurant installations

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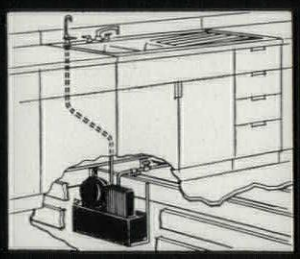
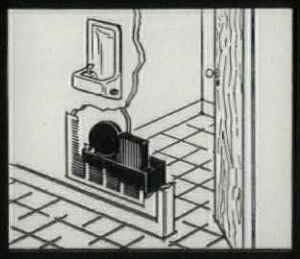


ON A JOIST

ON A WALL



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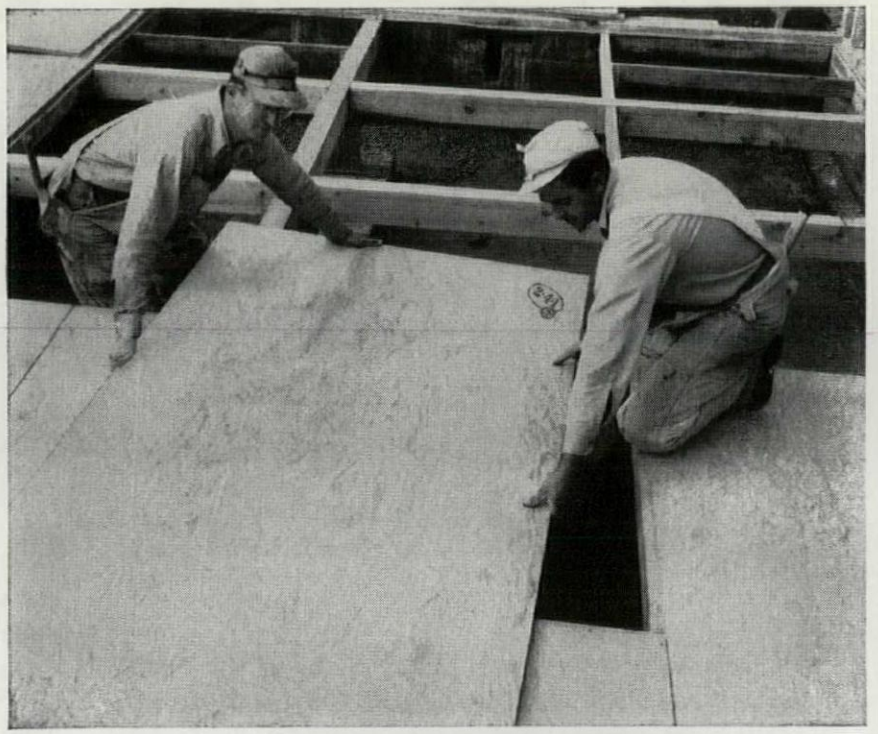
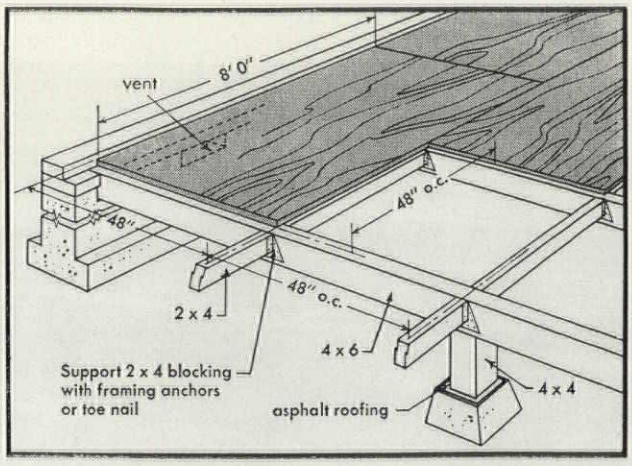


2. Texture One-Eleven® siding-sheathing

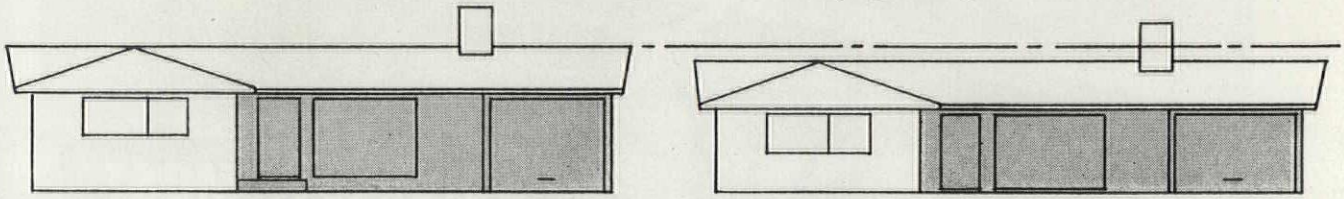
Here's another way to sharply cut costs by doing two jobs with one material. With Texture One-Eleven siding, you can eliminate sheathing. This new vertical shadow-line Exterior plywood adds crisp good looks to any style home. Panel is ⅝″ thick, with ¼″ deep grooves, leaving a full ⅜″ thickness under grooves, meets FHA MPRs for combined siding-sheathing.

For complete information about 2·4·1, Texture One-Eleven and Overlaid plywood write for free "Plywood Light Construction Portfolio." (Offer Good USA Only). Douglas Fir Plywood Association, Tacoma 2, Wash.



New **2•4•1** serves as both subfloor and underlay, spans 4′ girder spacing. Inset 2x4 blocking supports panel edges. Finish floor may be hardwood, tile, carpet.

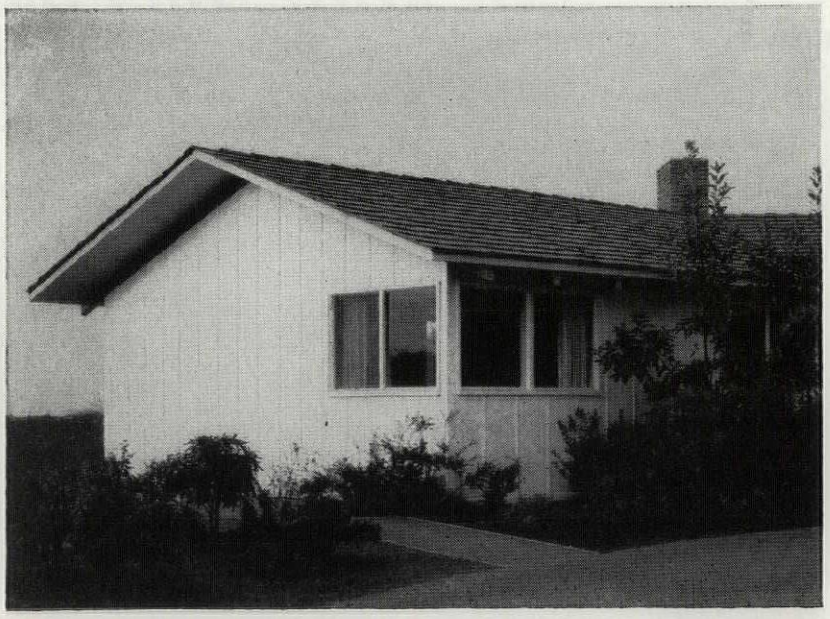
Girders set flush with footings lower house about 12″. Result: important savings in labor and materials plus a visual bonus achieved by giving house attractive "low-lying" feeling.



with fir plywood

3. Overlaid Plywood siding-sheathing

Overlaid fir plywood also has the "plus" structural strength to serve as *both* siding and sheathing. The smooth, durable resin-fiber overlay is permanently fused to Exterior fir plywood to provide the perfect base for smooth, long-lasting paint finishes. Overlay eliminates checking, grain raise. Available in standard sizes, thicknesses. May be used as flat panel, board and batten or lapped siding.



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Fir Plywood

means quality construction

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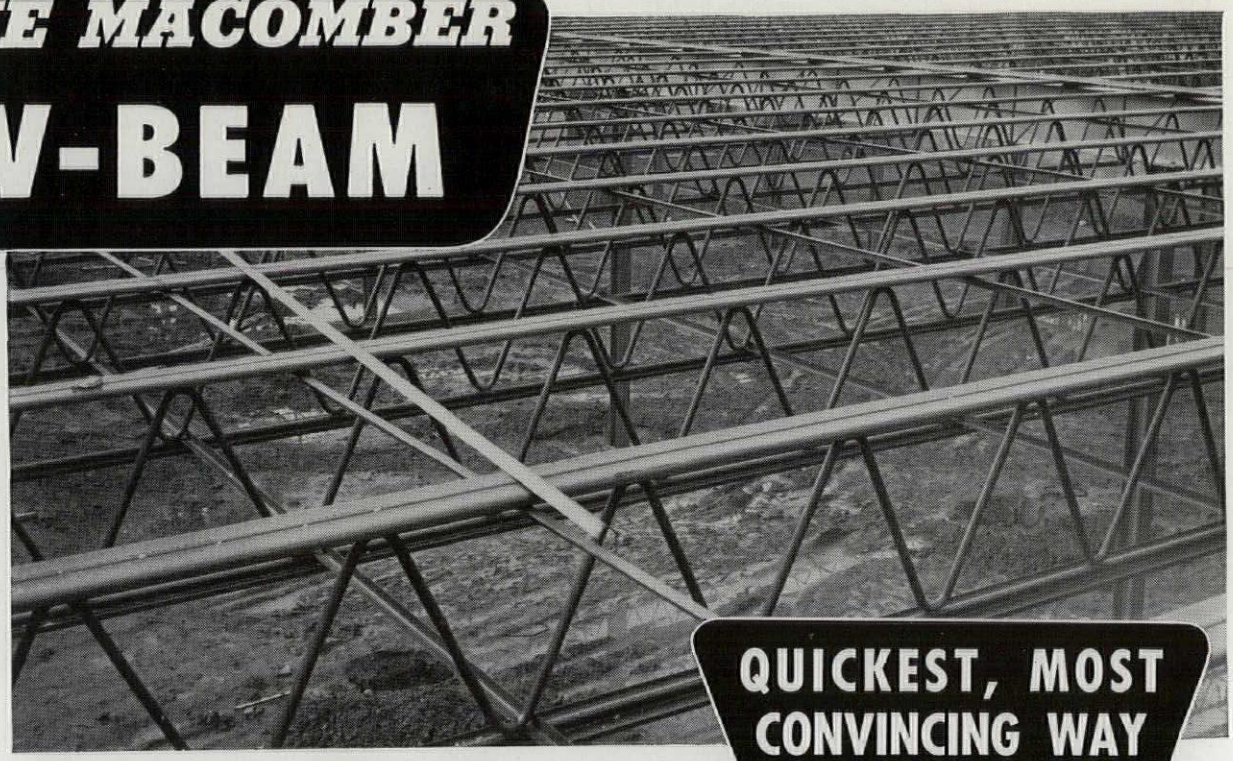

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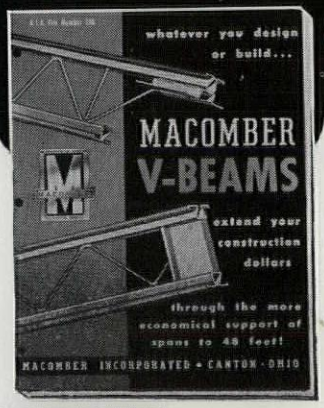

And after you have that V-BEAM Catalog you will discover the greater reserve strength provided by these lighter, stronger framing members — so popular — coast to coast.

Cold formed chords and webs provide this greater strength, build a stronger floor or roof at savings — per member — your General Contractor will be very happy about.

Look at that floor system in the photo above. Then look in your V-BEAM Catalog and contact your nearest Macomber Representative for quotation on your loads and spans.

In one job — you will prove to yourself that V-BEAMS are the most outstanding structural framing buy on the market.

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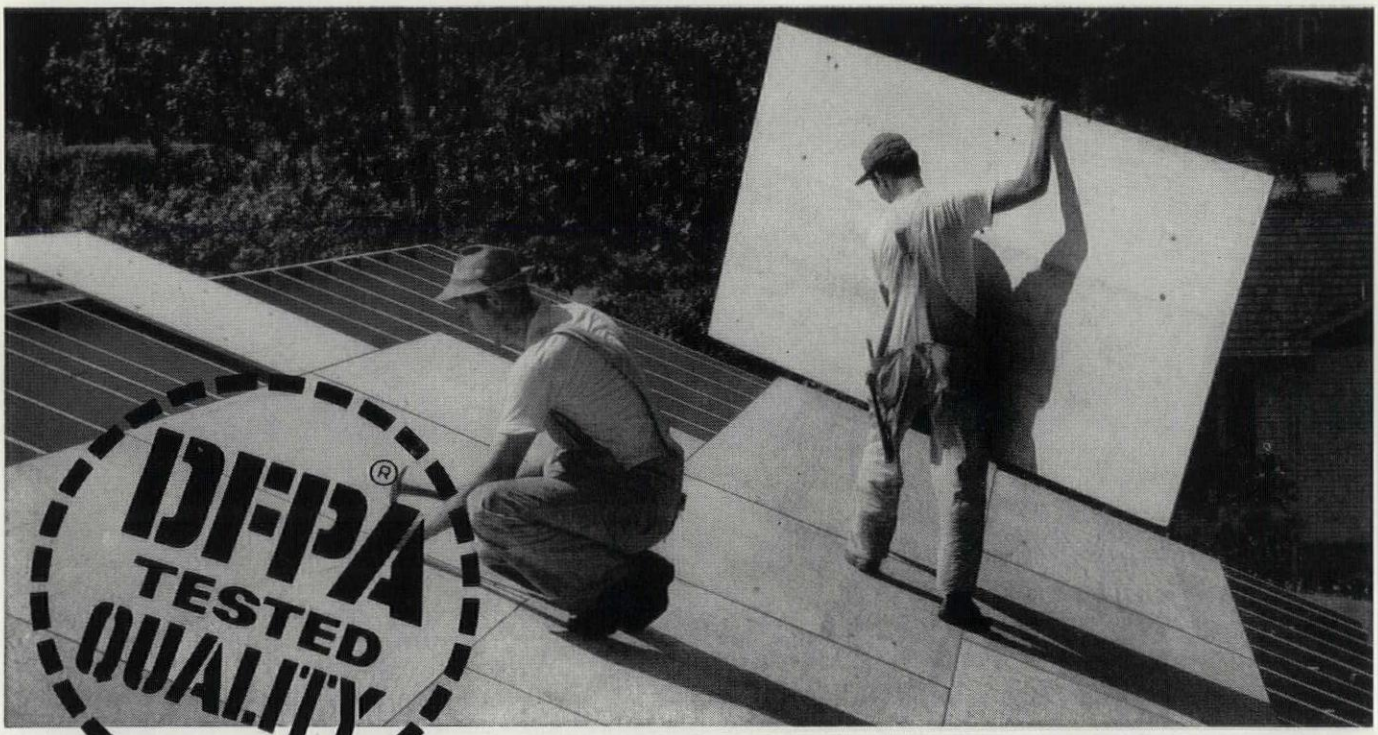
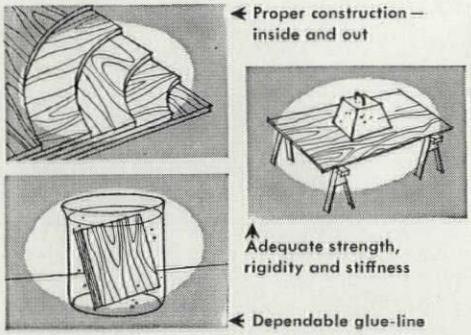


you know you're right when you specify by DFPA* grade-trademarks

factory-inspected, laboratory-tested

To qualify for DFPA grade-trademarks, manufacturers must pass rigid and *continuous* inspection of current plywood production. In addition to these on-the-spot mill checks by DFPA quality supervisors, thousands of samples undergo scientific testing in DFPA laboratories. *Use of grade-trademarks may be withdrawn if quality is not satisfactory.*

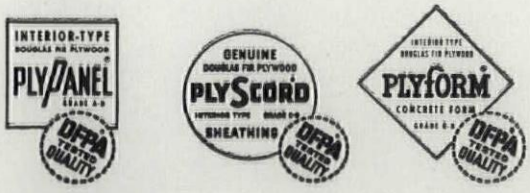


right grade, right quality for every job

DFPA grade-trademarks are specification guides to the *right* grade for a specific job. Only genuine DFPA quality-tested panels bear DFPA registered grade-trademarks. *There are imitations. Don't be misled!*

Be sure you can tell the difference.

Send for the *DFPA Quality Story*—a portfolio of grade-use data and a step-by-step description of the DFPA quality control program. Write Douglas Fir Plywood Association, Tacoma 2, Washington. (Offer good USA only)



*DFPA stands for Douglas Fir Plywood Association, Tacoma 2, Washington—a non-profit industry organization devoted to product research, promotion and quality maintenance.

DFPA grade-trademarks mean quality FIR PLYWOOD

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hufcor

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are designed to provide maximum sound insulation characteristics without relying on costly and bulky inner liners. The heavy (55 ounce per square yard) cover construction forms a natural sound barrier between room areas. Tests prove that Hufcor, with inexpensive sweep strips, outperforms special acoustically treated folding doors selling at much higher prices. You can specify Hufcor with complete confidence that you will receive quality, beauty, operation and economy.

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offers you superior sound resistance... plus:

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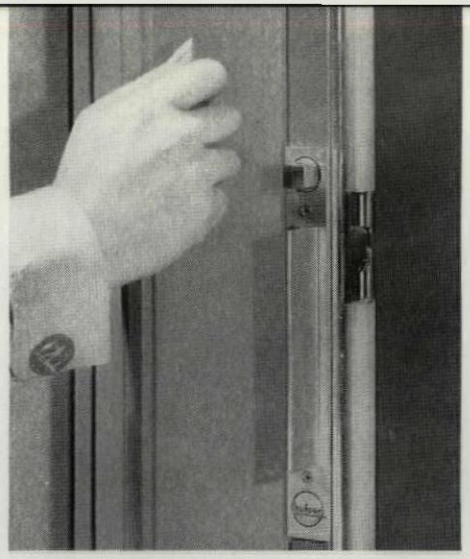
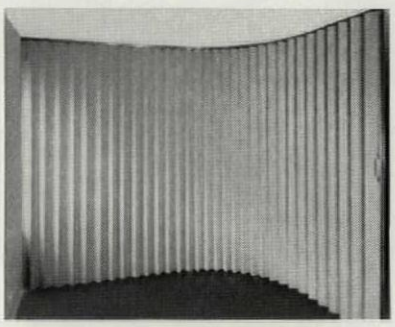
- smooth action
- wrinkle-free
- semi-rigid covers
- symmetrical beauty
- resistance to impact
- interchangeable covers
- quick installation
- flame resistance
- designer-approved colors
- complete line of accessories

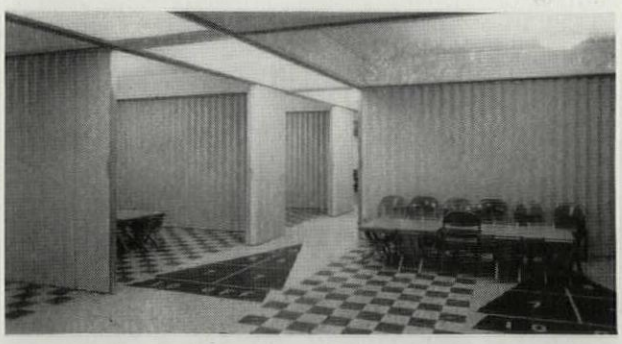


"Knockable" Hufcor covers are made of 5-ply laminated vinyl and tough, high strength fiber board. Distinctive handle latch of anodized aluminum is unique both in appearance and function—a Hufcor exclusive.

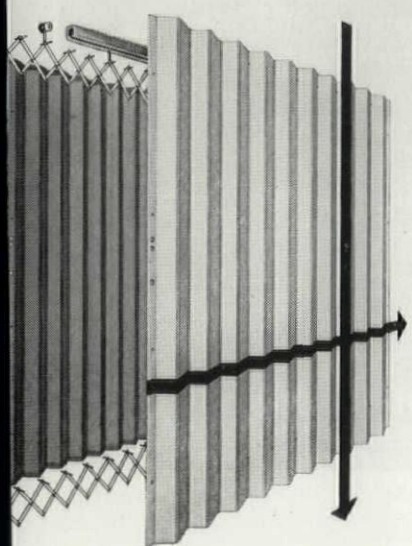


Hufcor accordion doors on curved track operate easily and uniformly without alteration. There is no binding.

Complete areas can be closed off with the trim, rigid Hufcor. No need to fear damage from large crowds or active children. Hufcors move easily by hand.
Valley Ho Hotel, Scottsdale Arizona.
Architect: E. L. Varney & Associates.



New areas can be made from old with Hufcor. Pivot switches, glide switches, multiple meeting posts, rolling posts, recessed channel, and other accessories all provide complete flexibility for room division. Mt. Calvary Lutheran Church. Janesville, Wis.
Architect: R. H. Bierman, Milwaukee.



This exploded view of Hufcor shows the simplified, trouble-free, pantograph system. The straight, rigid lines of the covers make Hufcor the "architecturally correct" door.

HOUGH

Manufacturing Corporation, Janesville, Wisconsin

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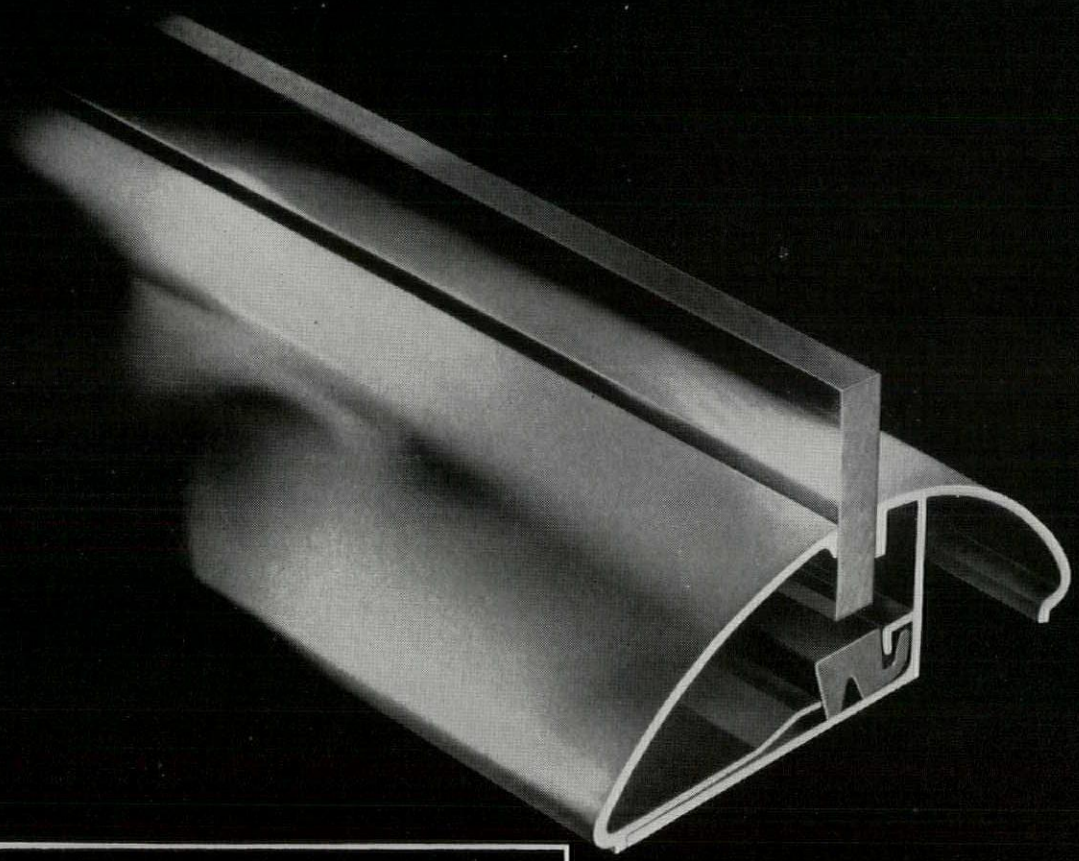
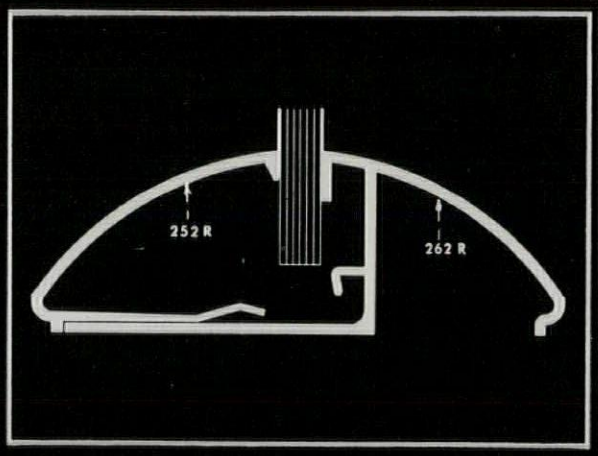
_____ *Architect*_____ *Builder*_____ *(Other)*_____

PITTCO® SASH NO. 15





With its pleasing simplicity of line, rugged construction, and fine finish, this sash is typical of the quality metal members to be found in the complete line of Pittco Metal Products. For full information, see your Pittco Store Front Metal Representative.

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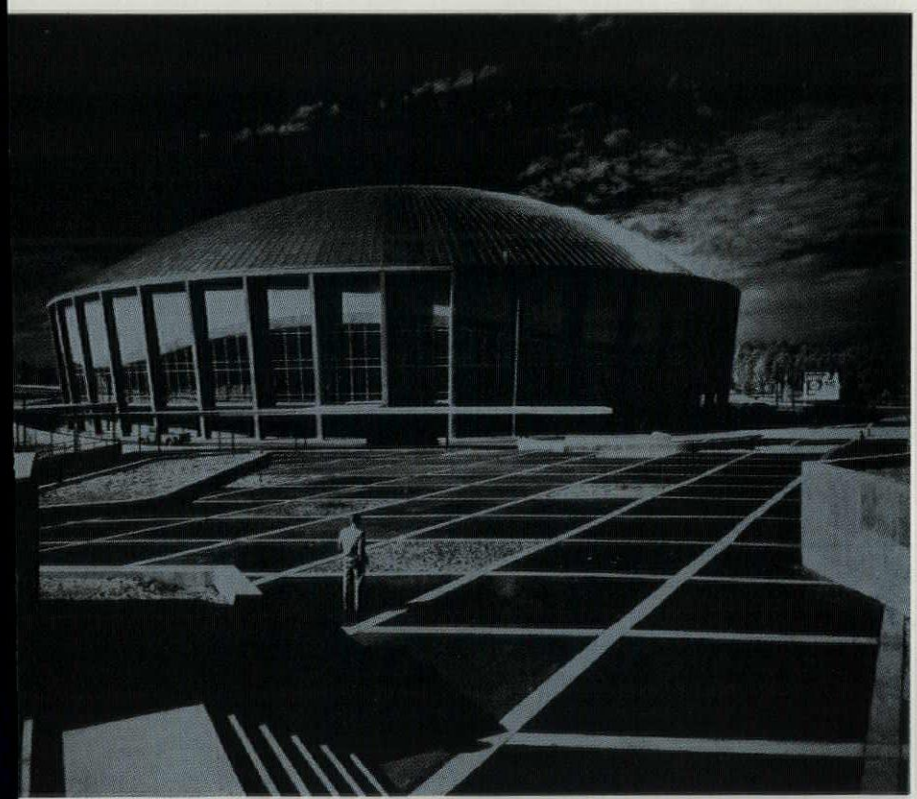
A SALUTE

from Alcoa

commemorating the AIA's 100th anniversary



Typical of what modern architects are doing with aluminum is this handsome Civic Center in Charlotte, N. C. The lightweight dome of Alcoa Aluminum permits pillar-free construction of the arena for unobstructed viewing.

Civic Center
Charlotte, N. C.
J. G. Odell, Jr., and Associates, Architects

From its founding in 1857, up to the present, the American Institute of Architects has been a powerful factor in giving strength and body and character to American architecture. Its efforts to advance the aesthetic, scientific and practical aspects of planning and building have added new stature to the architect.

As the Institute has grown to its present strength of more than 10,000 members, architecture has increased the scope of its service to society. By improving the environment in which our nation lives and works, architects have advanced living standards. They have made our world a better place in which to live. As the only society nationally representative of the profession of architecture in the United States, the AIA deserves a liberal share of the credit for this accomplishment.

Alcoa is proud of its close association with architects. The fact that the building industry is now the largest single user of aluminum is due to architects' acceptance of the strong, light metal that endures.

Aluminum as a commercially available metal is itself not yet 100 years old. Yet in the years it has been available, it has taken its place as one of the most beautiful and practical building materials. Shown on the next two pages are some of the milestones in the history of the use of Alcoa® Aluminum in architecture. And, while much has been done that is deserving of the highest praise, we are just on the threshold of the wonderful new world of aluminum in building. Architects are the men of imagination who will transform this world from a dream to a reality.

100 Years of Progress

Best wishes to the members of The American Institute of Architects, Inc. on the occasion of the AIA CENTENNIAL CELEBRATION CONVENTION, Washington, D. C., May 14-17, 1957

CONSULT AN ARCHITECT • USE QUALITY PRODUCTS

1926

Smithfield Evangelical Protestant Church
Pittsburgh, Pa.
Henry Hornbostel, Architect

This 80-foot-high spire, rising 259 feet above the street, is darkened from 31 years of weather exposure. The aluminum is as sound as the day it was installed. Note 30-story Alcoa Building with its aluminum curtain wall in background.

1929

Koppers Building
Pittsburgh, Pa.
Graham, Anderson, Probst and White, Architects

The first large use of aluminum spandrels was here. A total of 967 cast units was installed. The spandrels are confirming the judgment of the architects that they would be good for the life of the building.

1929

Chrysler Building
New York, N. Y.
William Van Allen, Architect

This famo
mark feat
truded al
window s
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well as al
spandrels
Periodic
painting i
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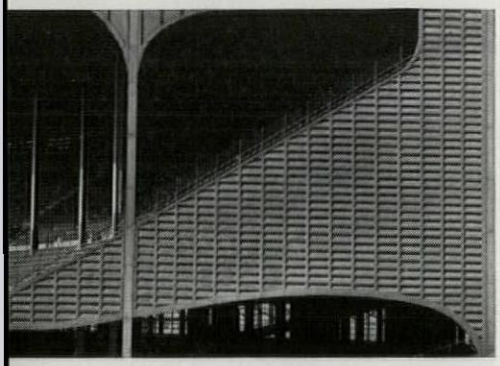
1931

Municipal Stadium
Cleveland, Ohio
Walker and Weeks, Architects



his huge stadium is home field for the
eveland Indians Baseball Team and
e Cleveland Browns Football Team.
luminum is used for louvers, flashing,
rnice light troughs, ceilings of marquee
ofs at entrance gates and on the scoreboard.
ne architects are very pleased with the
rformance of the aluminum.

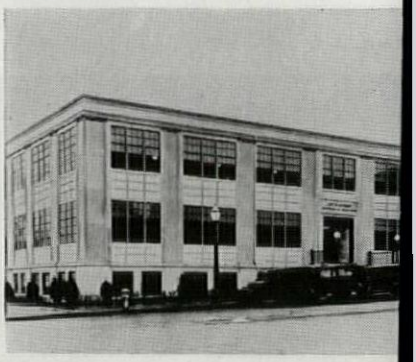
1931

Cathedral of Learning
Pittsburgh, Pa.
Charles Z. Klauder, Architect

Spandrels and skylight in this University of Pittsburgh building are aluminum. Despite the industrial atmosphere, no corrosion problem of any kind has existed. The aluminum is weathered but sound and good looking.

1931

Department of Public Works Bui
Richmond, Va.
W. A. Childrey, Architect



Really extensive use of aluminum has bee
made in this structure. The metal is used
curtain walls, inner walls, pilasters and
entablature, doors, wall sections above
windows, copings, inner partitions and tri
It comes close to being an all-aluminum
building. Originally planned as a
temporary structure, it is still in use.

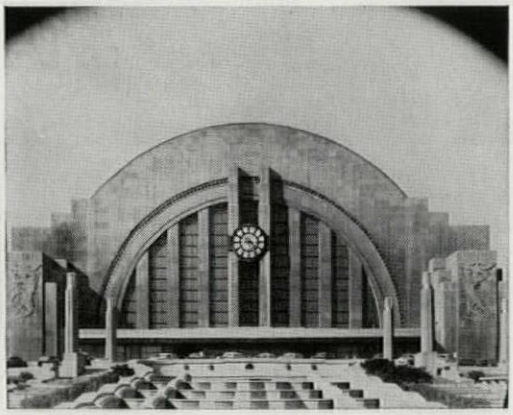
1932

Philadelphia Saving Fund Society Bldg.
Philadelphia, Pa.
Howe and Lescaze, Architects

This attractive building was chosen by the Museum of Modern Art as one of the best erected in the country between 1932 and 1944. It was one of the first really big uses of aluminum windows. Now, after years of weathering, the award-winning appearance is still evident.

1932

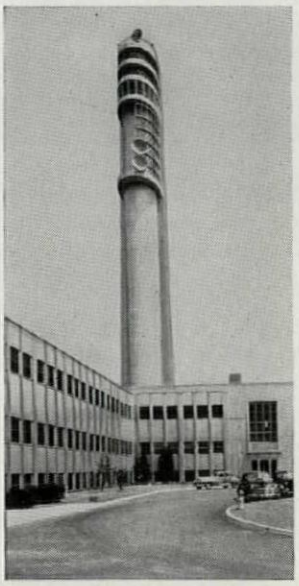
Cincinnati Union Terminal
Cincinnati, Ohio
Felheimer and Wagner, Architects



This landmark, familiar to visitors by train to the Ohio River city of Cincinnati, makes use of aluminum for windows and roof. The terminal operators state that aluminum has met all expectations as to permanency, ease of operation and low-maintenance cost.

1947

Federal Communications Labora
Nutley, N. J.
Giffels & Vallet, Inc., L. Rosset



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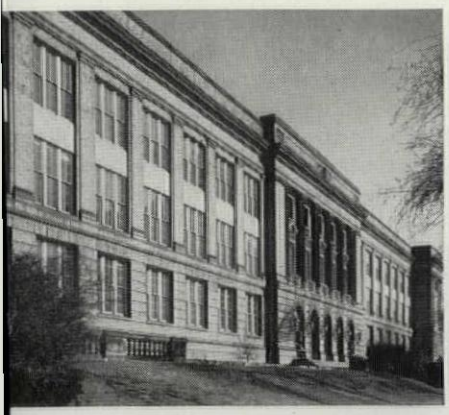
29 John Hay High School
Cleveland, Ohio
George M. Hopkinson, Architect



This very early use of aluminum spandrels helped insure taxpayers' investment in this school. Educational institutions are now one of the biggest users of aluminum building materials.

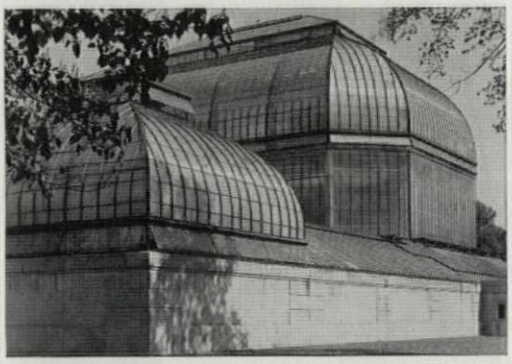
1930 A. O. Smith Building
Milwaukee, Wis.
Holabird and Root, Architects

Still modern looking and attractive after more than twenty-five years, this structure makes fine use of large aluminum window frames and pilasters. The interior applications of aluminum in main lobby are outstanding.

32 RCA Buildings, New York, N. Y.
Reinhard & Hofmeister, Corbett, Harrison & MacMurray, and Hood & Fouilhoux, Architects

More than 8,000 Alcoa Aluminum Spandrels are installed on the magnificent Radio City buildings in New York. The ball-burnished finish gave a slate-gray effect at the start, and has since toned down to a darker gray, blending harmoniously with the stonework.

1932 Conservatory, U. S. Botanical Gardens
Washington, D. C.
David Lynn and Bennett,
Parsons and Frost, Architects



Despite the warm, moist air in the gardens, the all-aluminum superstructure is in excellent condition. Here is one of the earliest structural applications of aluminum. No effort has been made to maintain the surface appearance, yet even in an atmosphere trying to most metals, no corrosion problem has been experienced.

8 Equitable Savings & Loan Association
Portland, Oregon
Pietro Belluschi, Architect

This building is considered to be the first true application of aluminum in curtain wall construction. There's no masonry surface at all above the first floor. All of the glass and metal panels are held in aluminum frames.

1957 Pennsylvania State Office Building
Pittsburgh, Pa.
Altenhof & Bown, Architects

This majestic 16-story government building of Alcoa Architectural Blue-Finish Aluminum is highlighted with satin-finish natural aluminum windows and mullions. It is typical of the "new look" for architecture which is made possible through the use of aluminum in curtain wall construction.

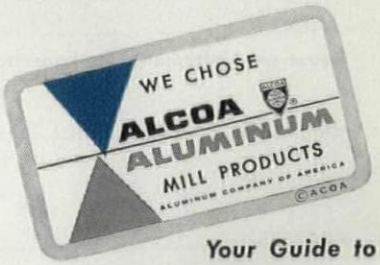
A salute from Alcoa commemorating the AIA's 100th Anniversary

Architecture's aluminum MILESTONES ...all of Alcoa Aluminum

No account of architecture's aluminum milestones would be complete without mentioning three additional buildings not shown here. The first is the Monadnock Building, erected in Chicago in 1891. Architects Burnham and Root were among the pioneers in using aluminum for stair railings, sliding doors and enclosures around elevators. The second building is the Bessemer Building in Pittsburgh. Designed by Architect Grosner Aterbury, it made important use of aluminum. The last building, important because of its use of aluminum column caps, is the Frick Building in Pittsburgh. Architect: Daniel H. Burnham. These buildings with aluminum applications are still in use.

Within the last decade, the use of aluminum in building has spurted forward at a rate that staggers the imagination. It has influenced design in all forms of architecture. This has happened because aluminum offers so many compelling advantages.

Aside from its aesthetic possibilities, which is a subject in itself, practical economics favor aluminum tremendously. It is easy to erect, light in weight and practically maintenance-free. Architects who, as a group, are better able than anyone else to judge a product on its true merits, are behind the movement to more widespread use of aluminum. Every day, more architects capitalize on the inherent advantages of this wonder metal — truly the building material of tomorrow, available today.
ALUMINUM COMPANY OF AMERICA,
1890-E Alcoa Building, Pittsburgh 19, Pa.



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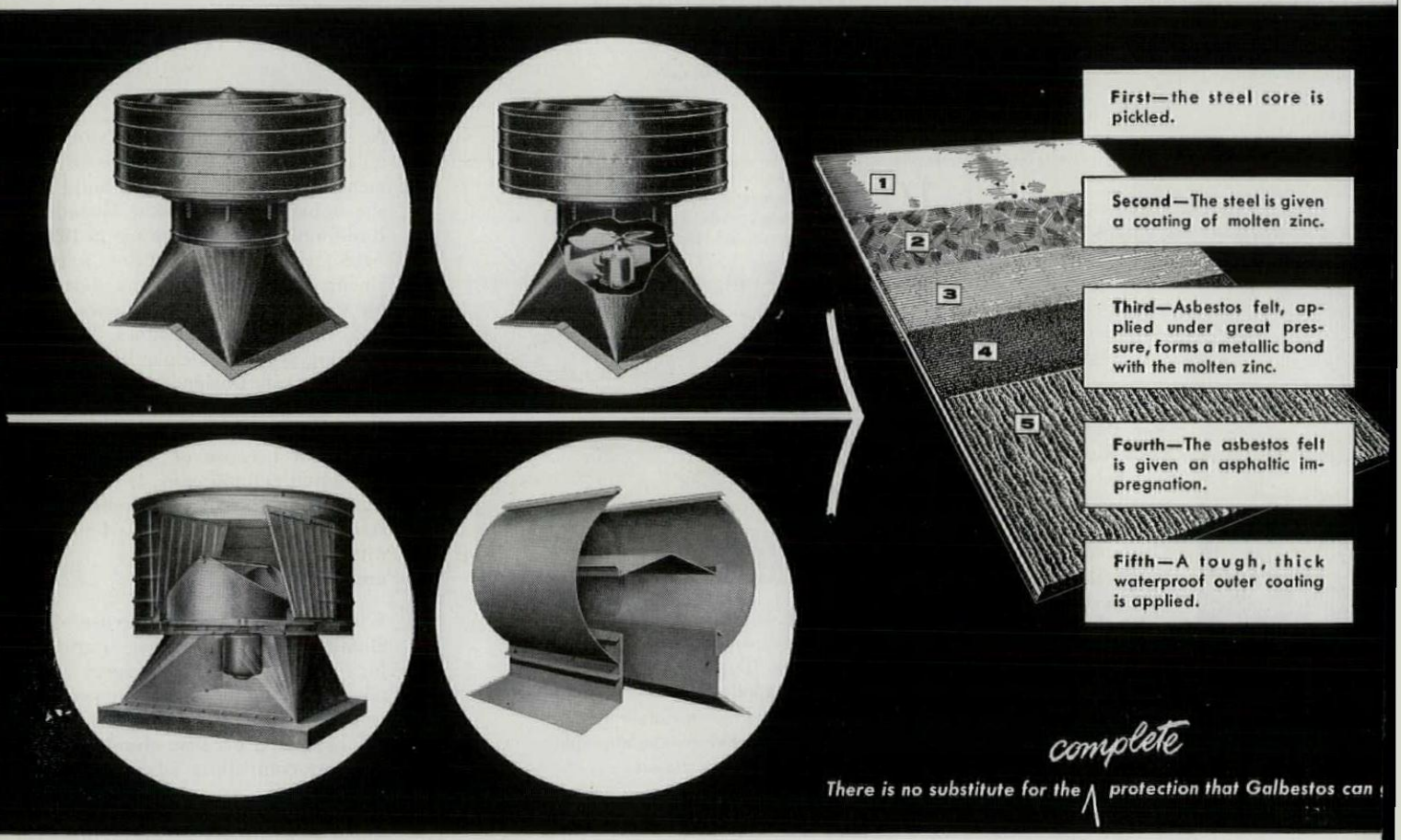
from outside and from within and the difficulty
keeping them painted. Robertson Galbestos Ven
lators require no painting, and will last as long as t
roof and walls—*where Robertson has long been t
world's standard*. The use of Galbestos in their man
facture enables Robertson Ventilators to withsta
extreme weather and highly corrosive industrial fum
over long periods without maintenance.



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H. H. ROBERTSON COMPANY

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The economical value of Robertson Ventilator
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design and construction features. When they ar
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resulting in lower cost. For complete details
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Please send information on Robertson Ventilators.

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COMPANY_____

ADDRESS_____

building design changes...

1928: John A. Nichols School, Syracuse, N. Y.
Albert L. Brockway, Architect

1957: George Washington Elementary School, Syracuse, N. Y.
Pederson & Hueber, Architects

but

KOPPERS COAL-TAR PITCH

is still the best roofing material

The John A. Nichols School in Syracuse, N. Y., was an expression of the latest thinking in school architecture when it was constructed in 1928. In marked contrast is Pederson & Hueber's recent design for the George Washington School, since it reflects the modern trend toward functional, single-story construction.

Building design certainly changes . . . but the Koppers Coal-Tar Pitch Roof is still acknowledged as the top-quality built-up roof by architects the country over. Just as the Koppers flat roof on the Nichols School has outlived its 20-year bond by 9 years, so can clients throughout the country testify to the long, trouble-free performance of coal-tar pitch roofing materials. It's the outstanding waterproofing and self-healing properties of coal tar that make this kind of service possible.

We'd like to give you all the reasons behind coal tar's success. The Koppers representative in your area will be glad to make an appointment; or write for full information to Koppers Company, Inc., Tar Products Division, Pittsburgh 19, Pa.

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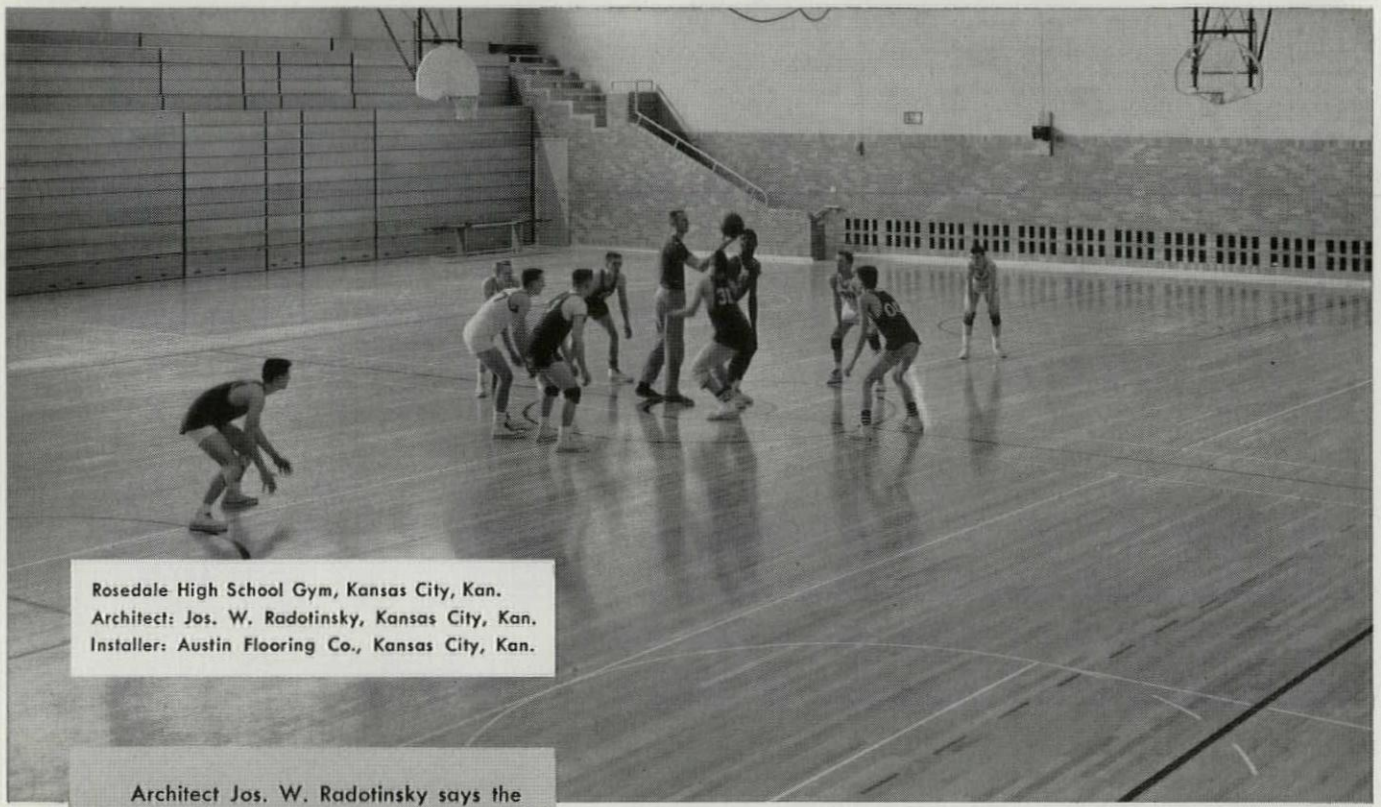
COAL-TAR PITCH ROOFING

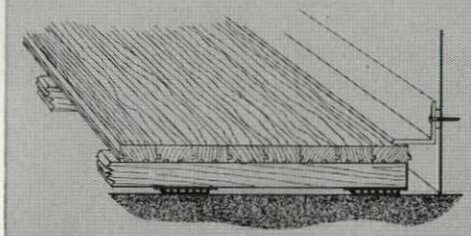
District Offices: Boston, Chicago, Los Angeles, New York, Pittsburgh and Woodward, Ala.

new permaCushion† rock maple gym floor



Rosedale High School Gym, Kansas City, Kan.
Architect: Jos. W. Radotinsky, Kansas City, Kan.
Installer: Austin Flooring Co., Kansas City, Kan.

Architect Jos. W. Radotinsky says the installation is "proving very satisfactory. Coaches and players as well as visiting coaches, players and officials have commented quite favorably on the resiliency of the floor . . . it is a first-class installation. As architects, we will be pleased to recommend this floor to clients." Similar comments on the nearly one-half million feet of PermaCushion floors now in use attest to its acceptance.



Air channeled GRS cushioned pads assure uniform, permanent resiliency, prevent sleepers from contacting slab and allow for cross ventilation under entire floor. With void between flooring and wall, plus the fact that no part of the floor is anchored to slab, floor system expands and contracts without "cupping" or "buckling." Power nailing method of installation assures perfectly nailed floor, eliminates hammer marks and broken tongues.

the only truly resilient free-floating floor with dimensional stability.

Here's the floor that has permanent resiliency and dimensional stability built right into it. It's the new PermaCushion* system, the floor that actually floats on GRS resilient pads and is entirely separated from slab and other structural members. The unique construction of the specially engineered and compounded pads *cushions* the floor to assure uniform, permanent resiliency. And since no part of the floor is anchored to slab, the entire system can expand and contract without warping, "buckling," or "cupping." This ability to relieve stress results in dimensional stability unmatched by virtually any other floor.

Besides its resiliency, stability and the natural beauty and warmth of wood, PermaCushion offers such benefits as elimination of moisture transmission from slab, a warm, dry subfloor assured by cross ventilation under the floor, unusual long-wearing qualities and great structural strength. And compared to substitute floors, it's remarkably economical in the long run.

For your next gymnasium or auditorium job, look into the advantages of PermaCushion. For full details, and the name of your nearest authorized contractor, write Robbins Flooring Company, Reed City, Michigan, Attn: Dept. PA 557

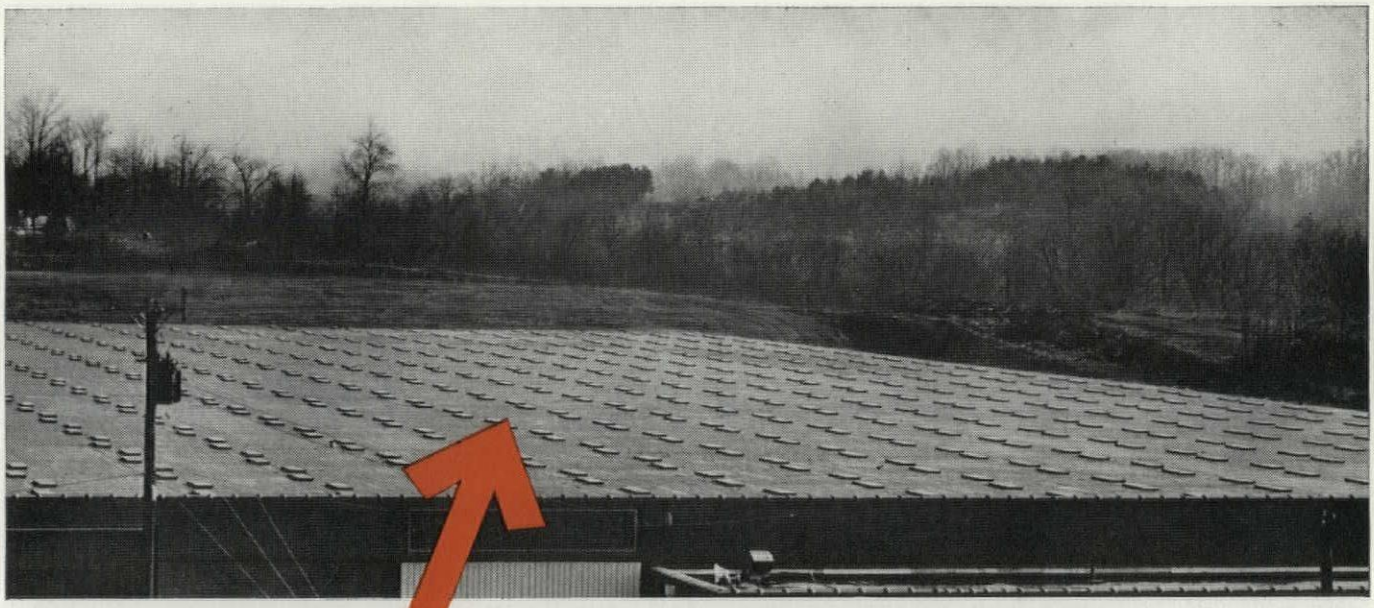
Developed especially for the PermaCushion floor system, Dri-Vac vacuum preservative treatment is available on all Robbins flooring for economical protection against moisture absorption, shrinking, swelling, grain raising and checking plus complete protection against termites and fungi attack.

ROBBINS FLOORING COMPANY

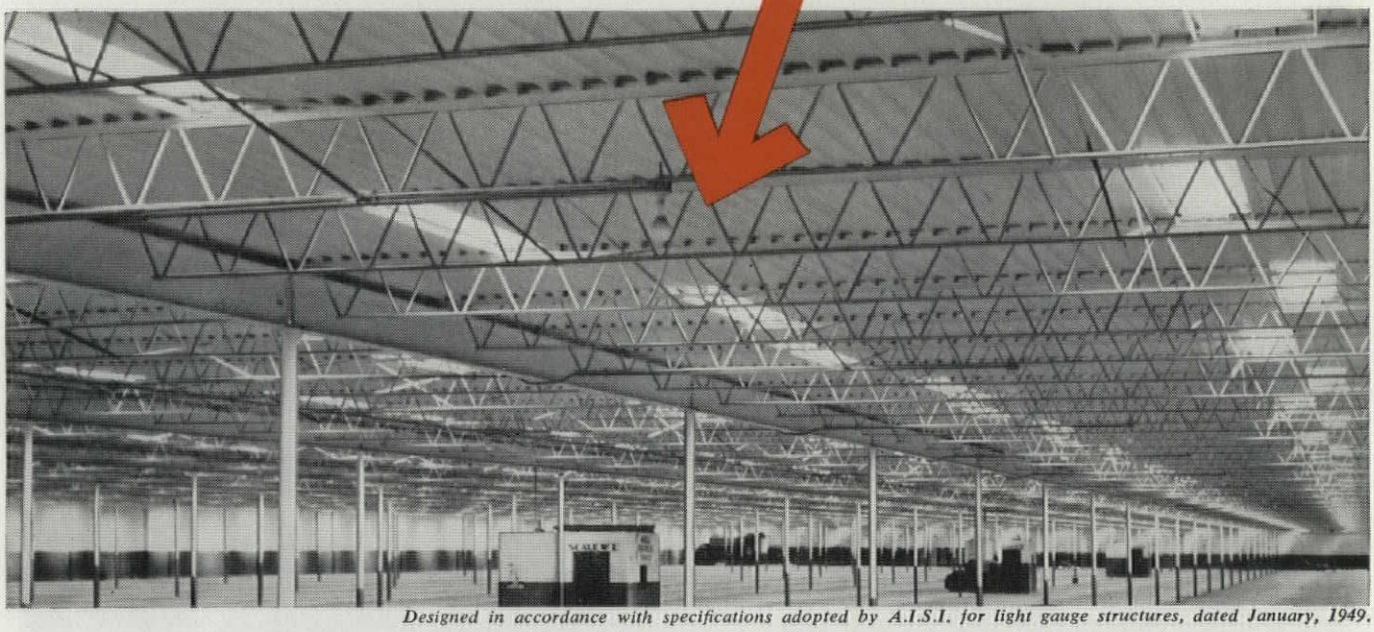
† Patent Pending
*T.M. Reg. U.S. Off.

Reed City and Ishpeming, Michigan

Manufacturers of the popular Ironbound*
Continuous Strip* Hard Maple Floor



It's a roof and a ceiling in one . . .



Designed in accordance with specifications adopted by A.I.S.I. for light gauge structures, dated January, 1949.

It's Wheeling Tri-Rib Steel Roof Deck!

Notice the broad, open interior. Provides more usable floor space, easier vehicular travel and more efficient materials handling. All this is possible because lighter, stronger Tri-Rib Roof Deck permits fewer supporting columns as well as shallower footings, no sub-purlins. Tri-Rib also made it easier to install and frame the skylights and ventilators . . . and improved visibility throughout the entire warehouse without artificial light.

By painting the underside of Wheeling Tri-Rib white the owners were also afforded a functional, efficient ceiling at the same time. A considerable savings in itself.

Wheeling Tri-Rib is made of Cop-R-Loy steel for longer, dependable life.

For full details see our catalog in Sweet's or contact a Wheeling warehouse or sales office.

WHEELING CORRUGATING COMPANY • WHEELING, WEST VIRGINIA

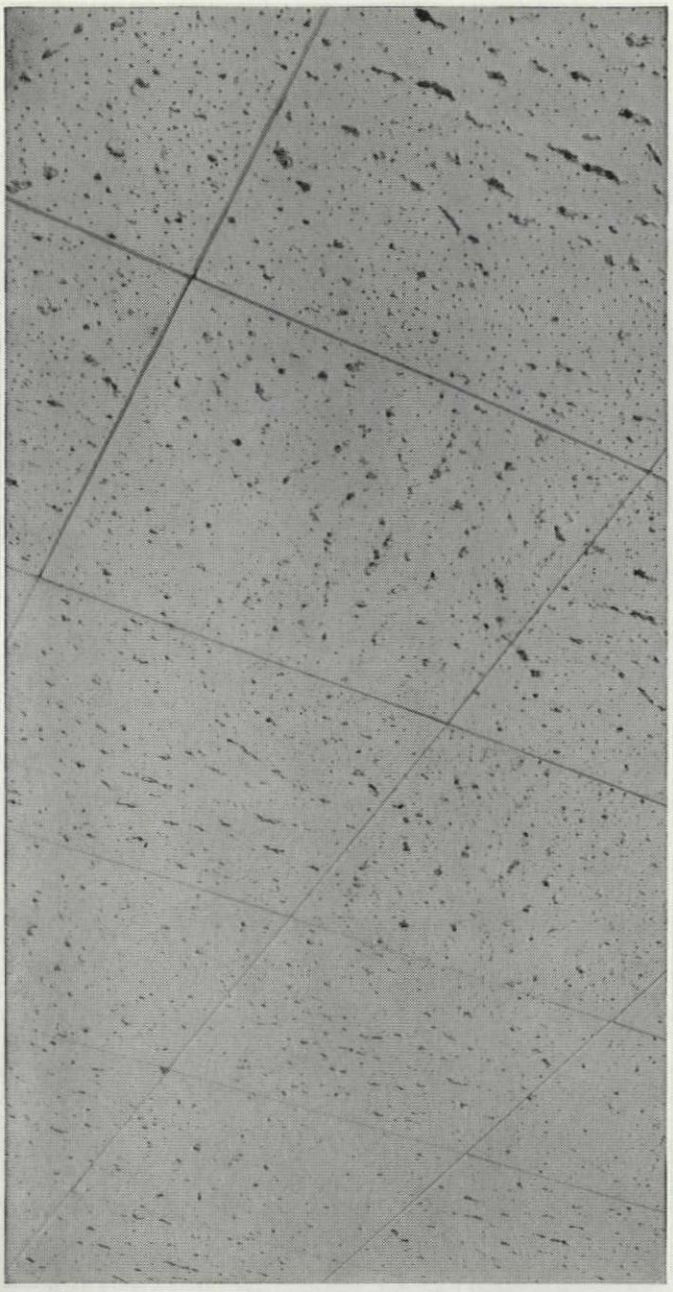
IT'S WHEELING STEEL

Wheeling CORRUGATING COMPANY

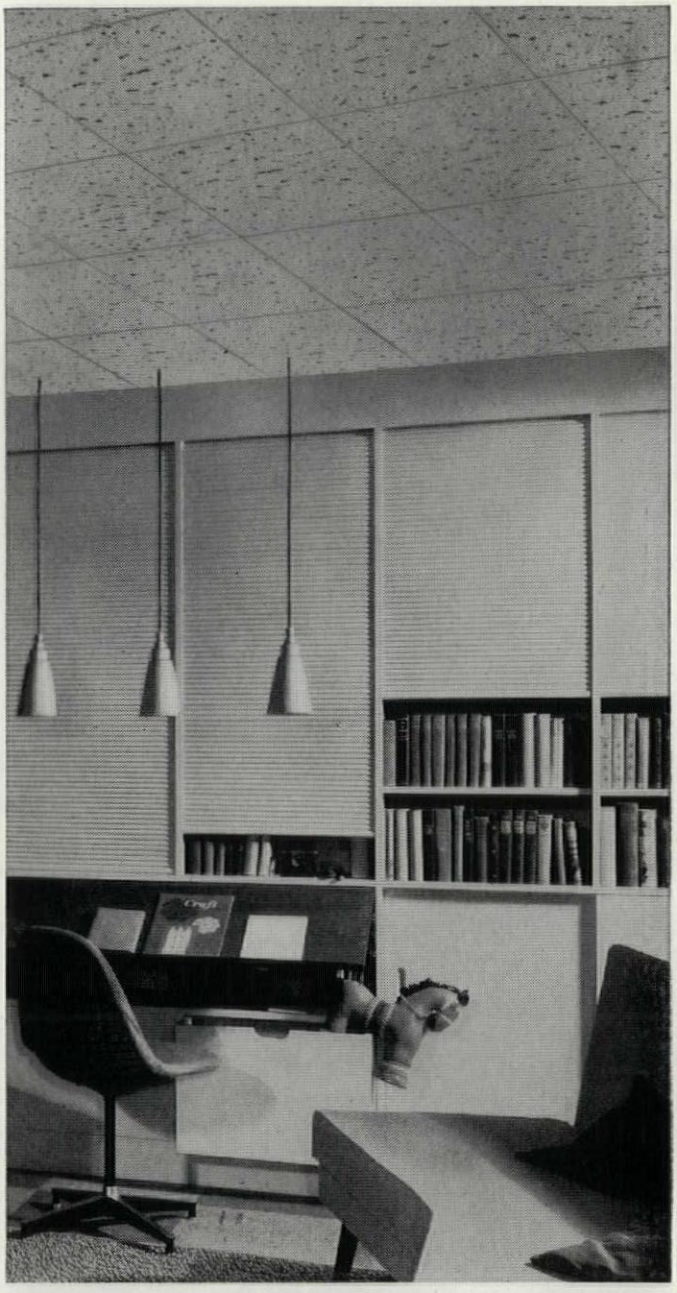
Atlanta Boston Buffalo Chicago Columbus Detroit Houston Kansas City Louisville Minneapolis New Orleans New York Philadelphia Richmond St. Louis

New acoustical ceiling features distinctive textured design in wood fiber tile

Exclusive textured styling in Armstrong Cushiontone brings luxurious look to low-price field



The exclusive new surface styling of Armstrong Cushiontone features natural fissuring and over-all texturing. These noise-trapping features soak up as much as 75% of the sound that strikes them.



The luxurious effect of this new Cushiontone ceiling compliments any type of room décor. It brings fresh new beauty as well as comfortable quiet to both commercial and residential interiors.

Here's a brand-new concept in acoustical ceiling design . . . rich, distinctive fissuring on a random, textured background. It's an economical wood fiber tile styled to match the luxurious beauty of costlier materials.

The exclusive textured design now available in Cushiontone offers architects and interior designers an opportunity to specify up-to-date, high-styled ceilings in homes, offices, and commercial areas at moderate cost.

This new material is made in both tongue-and-groove and butt edge joint. It's available in 12″ x 12″ and 12″ x 24″ size and 9/16″ and ¾″ thicknesses. Like the popular full random styling, Cushiontone in the textured design can be installed by cementing, stapling, or mechanical suspension.

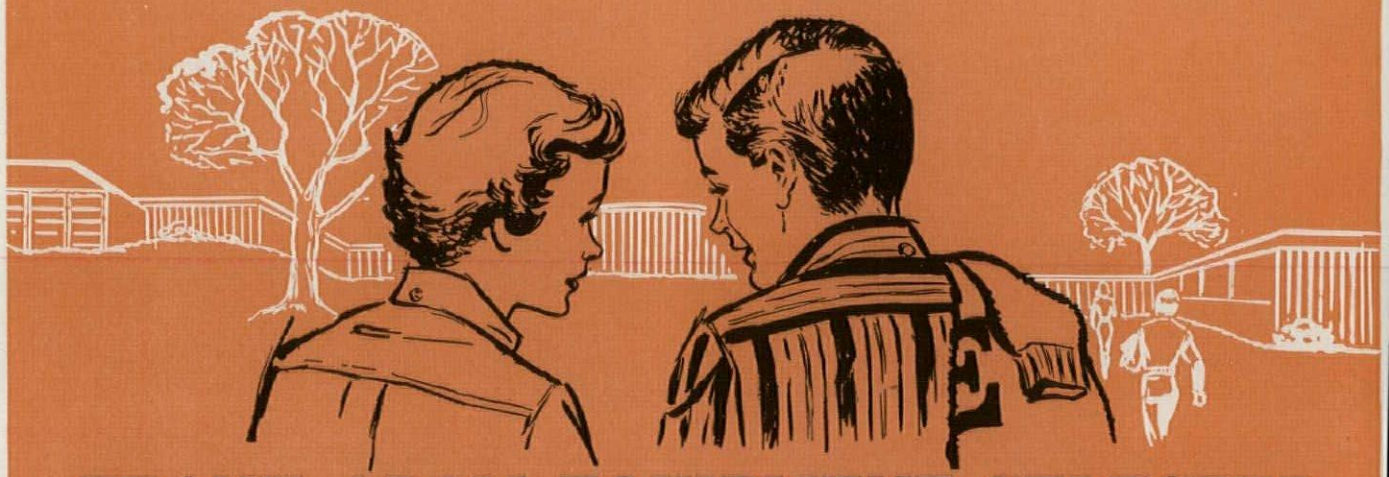
The new Cushiontone's flame-resistant finish classifies it as a "Class C" (slow burning) tile. This finish meets the requirements of Federal Specification SS-A-118b. Repainting, when necessary, can be done by either brush or spray gun without affecting the acoustical efficiency of the material.

For more information on this decorative new ceiling material, send for the free booklet, "Armstrong Cushiontone." Write Armstrong Cork Company, 4205 Watson St., Lancaster, Pennsylvania.

Armstrong ACOUSTICAL CEILINGS

Cushiontone® • Travertone • Arrestone® • Crestone® • Minatone® • Corkoustic® • Perforated Asbestos Board*

*TRADE-MARK



FRANK ADAM EQUIPMENT SELECTED for Great Neck Junior-Senior High Schools

Circuit protection of the highest type. That is what officials of the Great Neck, N. Y. new Junior-Senior High Schools, built to accomodate 2600 pupils, at a cost of $8,950,000 wanted.

And that is exactly what they got when they choose equipment bearing the trade-mark Ⓕ for the control and distribution of power and light in the new schools — equipment that is the finest in safety and dependability and will give long-lasting and trouble-free service.

Schools and colleges—and all other buildings for that matter—are entitled to the finest in circuit protection. You can provide it simply by including Ⓕ products in all your future plans and specifications.

FA

FRANK ADAM

For complete information on all Frank Adam products contact your nearest Ⓕ representative, listed in Sweets, or write to home office.

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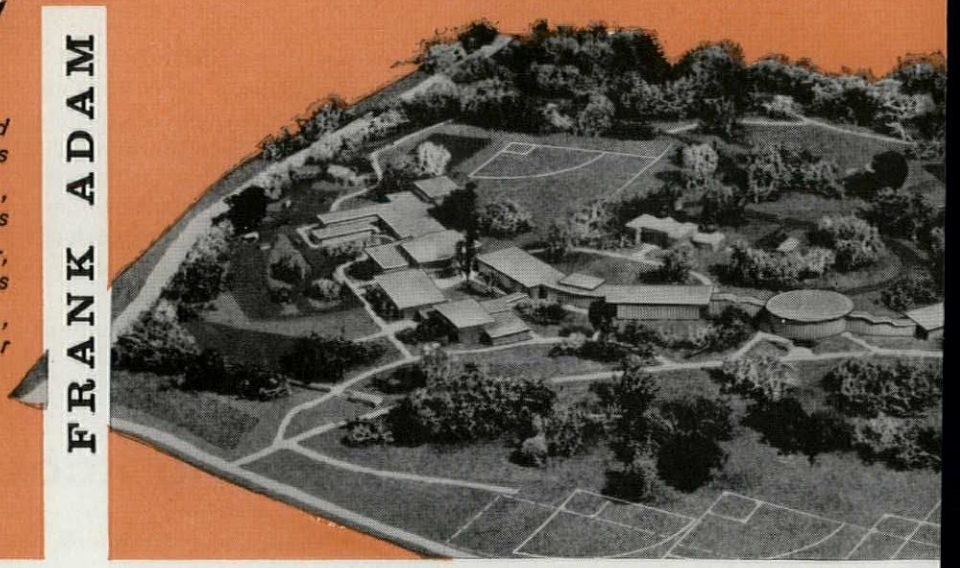
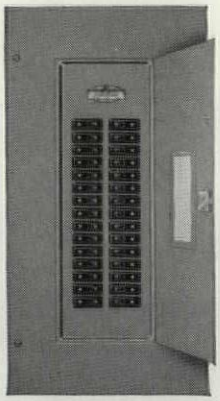
Albert Fentzlaff, Inc., Mechanical Engineers

Gustave B. Weiser, Electrical Engineers

Heckler Electric Co., Electrical Contractor

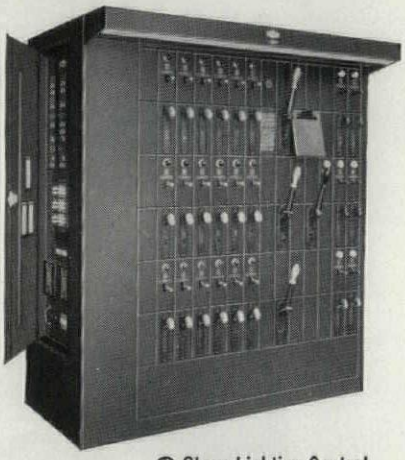


Frank Adam products installed in Great Neck High Schools



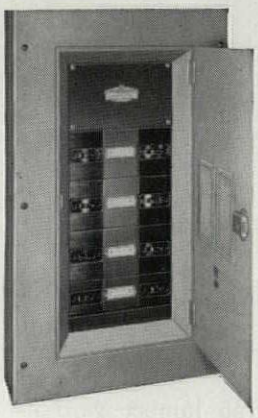
Ⓕ Circuit Breaker Feeder Panelboards—with automatic circuit protection provide extra safety (no overloading) and extra convenience (nothing to replace). Ideal for all school installations.

Ⓕ Circuit Breaker Switchboard which includes the latest features in automatic circuit protection for main and feeder circuits.

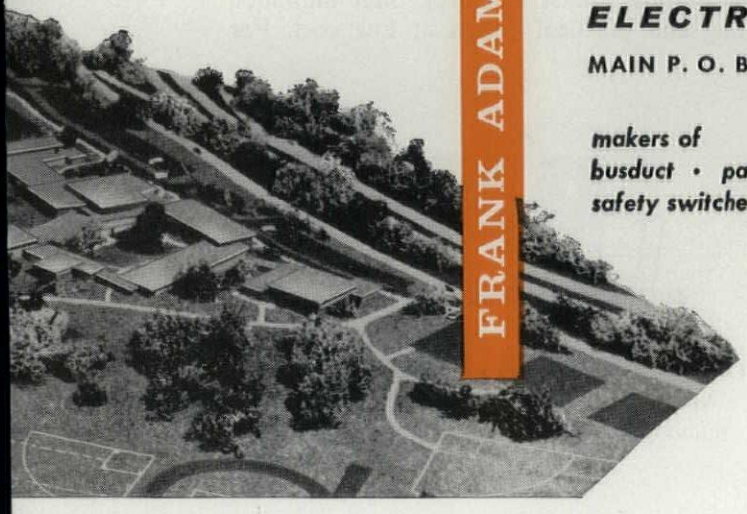


Ⓕ Stage Lighting Control Boards—for manual switching and dimmer control. Available for both large or small auditoriums.

Ⓕ Feeder Busduct which is particularly ideal for conducting current from Service Entrance to distribution center.



Ⓕ Circuit Breaker Lighting Panelboards featuring QS Quicklag S and QP Quicklag P Circuit Breakers provide safe dependable automatic circuit protection against short circuits and overloads.



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PROSAIC SUBJECT + ARCHITECT = NATIONAL ACCLAIM

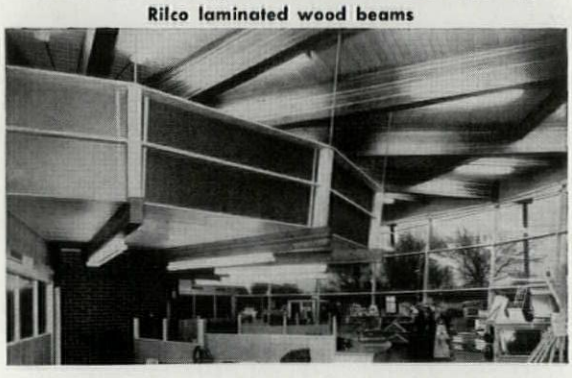
Architect: W. F. Bernbrock, Moline, Illinois

Even the drab lumber yard — given the imaginative design and functional beauty of an architect's touch — can win local sales and national acclaim. Such is the experience of Builders Lumber Company, Moline, Illinois, where Rilco laminated-wood beams and deck help express the dramatic "open feeling" that seems to say "welcome" to customers.

While only a small portion of the complete structure, this store area has become the focal point which lifts this building out of the ordinary. Interest and sales have increased to a "happy" degree.

Rilco laminated-wood arches, beams, purlins, trusses and deck offer unlimited variations that stimulate new, interesting and practical design at low cost. For complete information just write

Note mezzanine supported from above and below by Rilco laminated wood beams



RILCO works wonders with wood

RILCO LAMINATED PRODUCTS, INC.

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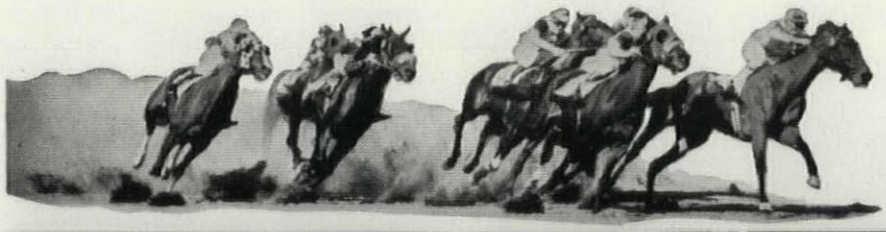
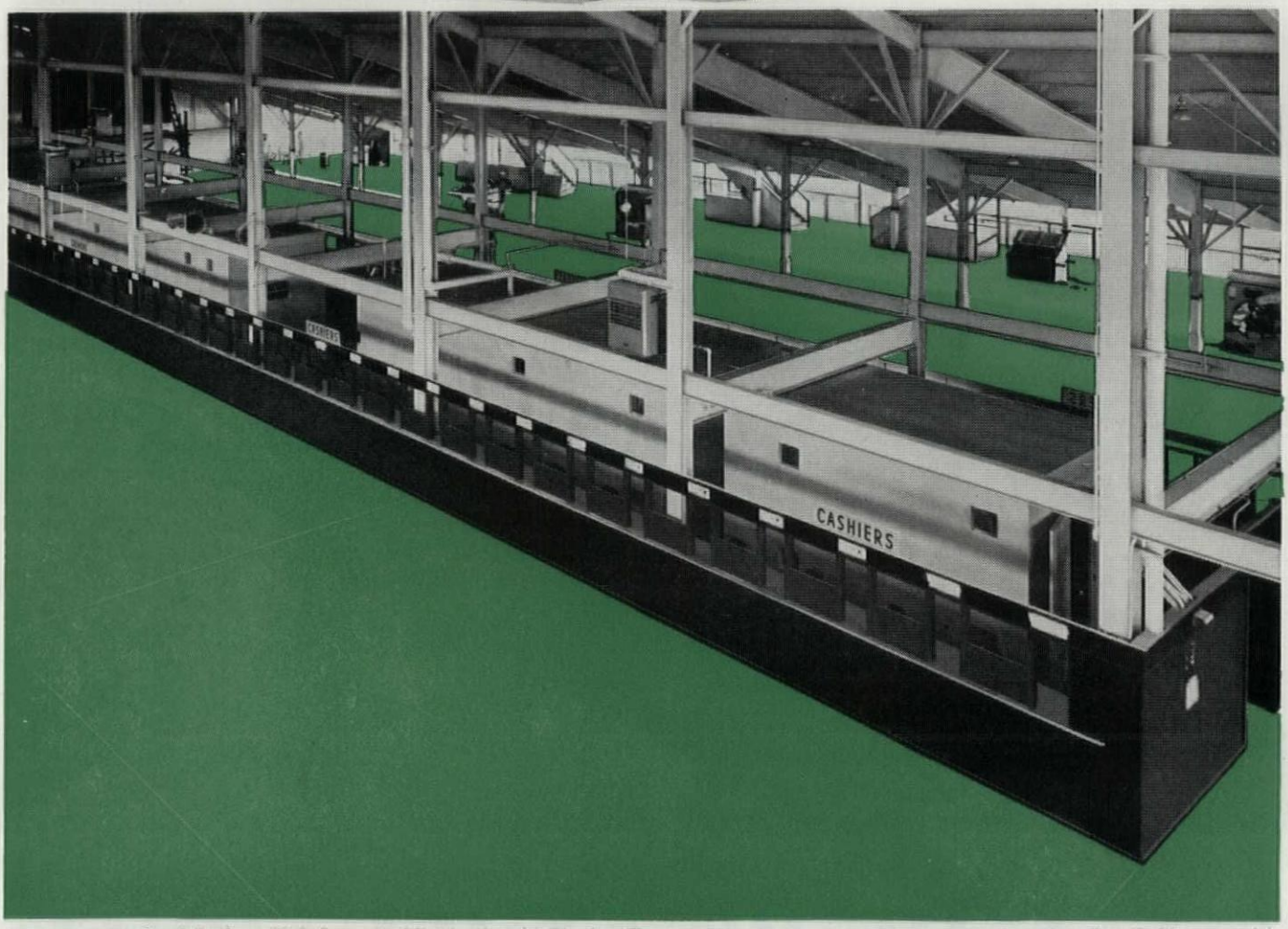
District Offices: Newark, N. J., Fort Wayne, Ind., Tacoma, Wash.



BEST BET. As many as 40,000 people a day have thronged famous Pimlico Race Track . . . and thousands of shuffling feet have crossed the betting area below, subjecting it to abrasive wear. . . .



Owner: *Maryland Jockey Club Inc.* **Architect:** *Arnold Cigahn, Tampa, Fla.* **Contractor:** *Housing Engineering Co., Baltimore, Md.*

HARCOL hardened and colored these concrete floors in one operation

The owners and builders of Pimlico chose Sonneborn's HARCOL to give a traffic-resistant, colorful surface to concrete floor areas of their Grandstand and Club House Building.

HARCOL REDI-MIXED meets the specifications for a non-metallic surface hardener. HARCOL minimizes dusting and is highly resistant to traffic. Color retention is maximum. A special manufacturing process gives uniform color distribution.

HARCOL REDI-MIXED is "ready-to-use" as the floor topping is laid . . . and may be used in interior and exterior areas. Select your color from our chart of attractive alkali, lime-resistant fast colors. Remember: a beautifully-colored HARCOL surface is easily maintained.

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Building Products Division—Dept. P-5
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Gentlemen:

☐ We are interested in information on HARCOL REDI-MIXED Non-Metallic Colored Hardener.

☐ Also include *free* copy of your 128 page Building Construction and Maintenance Handbook.

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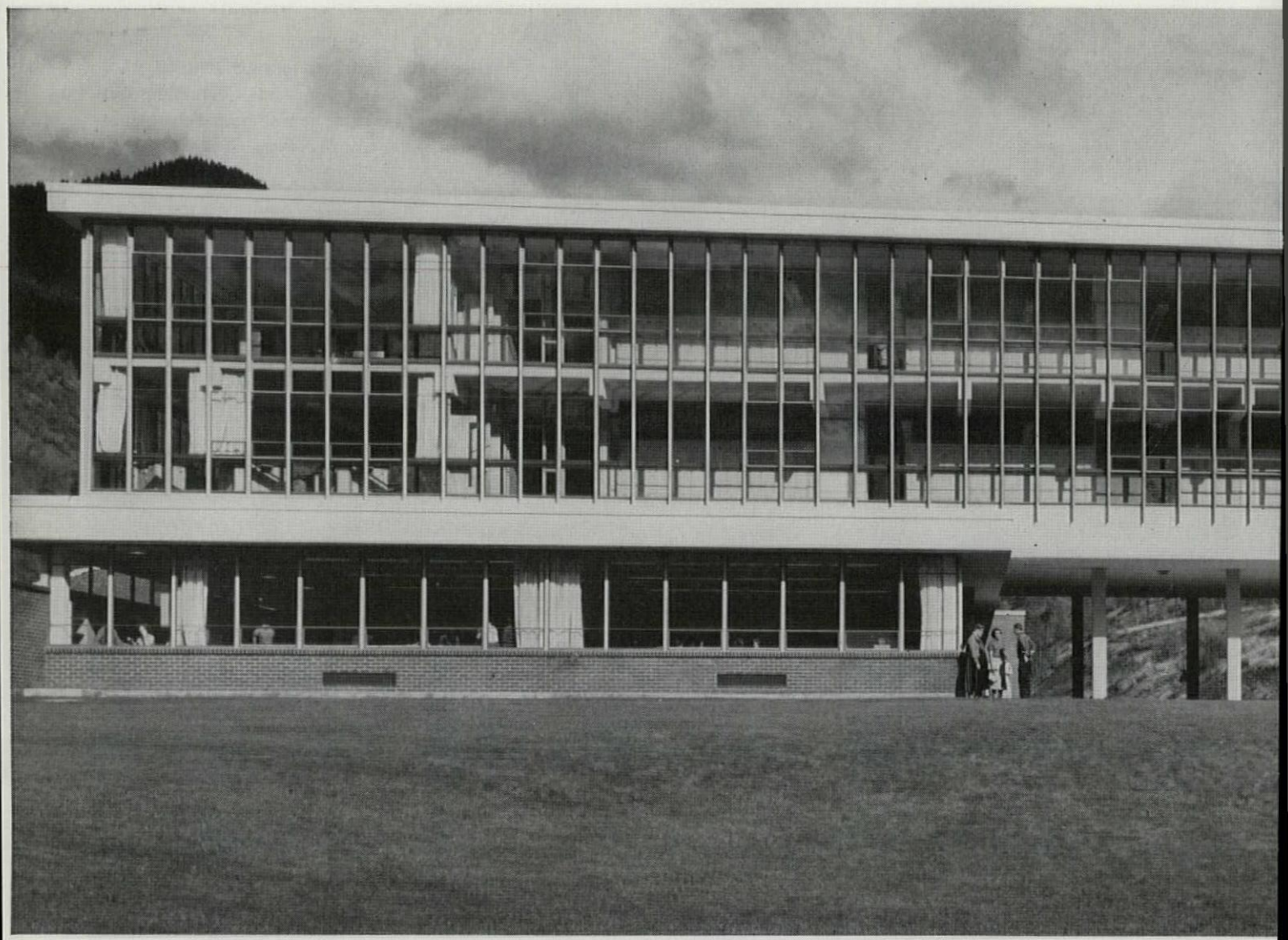
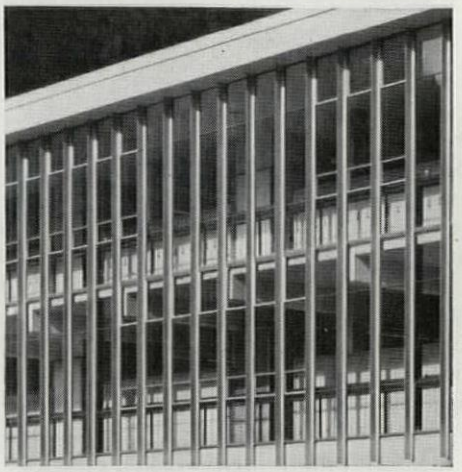


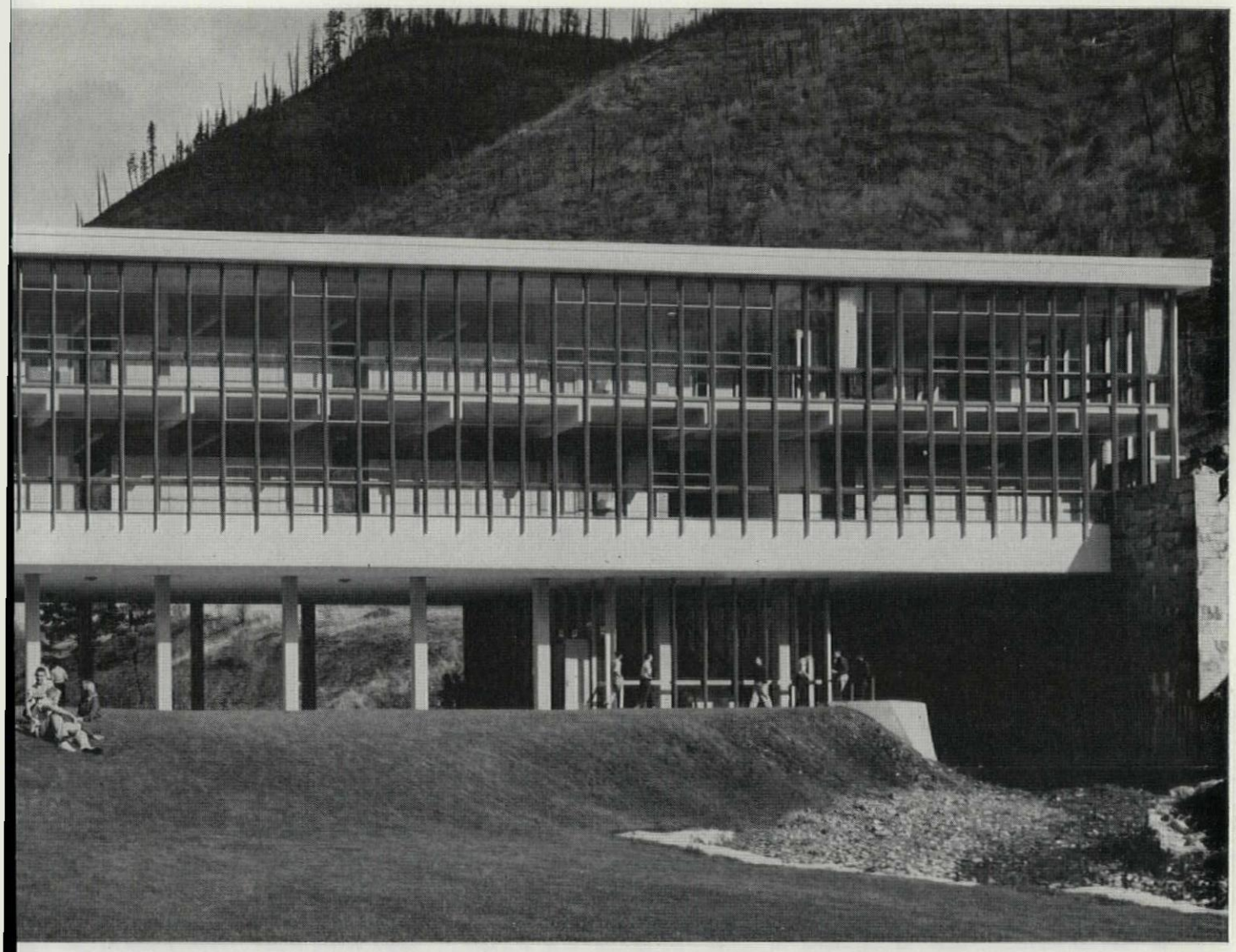
WALLS OF WEATHERTIGHT

Ready for the Lupton Windows. Completed installation of outer mullions before erection of Lupton Windows. Notice outstanding simplicity—the windows themselves become the walls in this all-Lupton installation.

Fast, clean installation. Lupton Metal Windows are delivered ready for immediate placement. With mullions in place, workmen put up Lupton window sections from within building—fast, inexpensively.



Adjustable ventilation. Projected in at bottom or out at top, these Lupton Windows provide immediate controlled ventilation with maximum light, are tight-fitting and rattle-free.



KELLOGG HIGH SCHOOL, Kellogg, Idaho. Architects: Culler, Gale, Martell & Norrie, Spokane, Wash.; Perkins & Will, Chicago, Ill. Contractor: Johnson-Busboom-Rauh, Spokane, Wash. Photograph by Hedrick-Blessing.

LUPTON METAL WINDOWS

bring maximum light and air to Kellogg High School

With this ultra-modern consolidation school the community of Kellogg, Idaho, voices its pride and civic-mindedness. Thanks to these walls of LUPTON engineered metal windows, bountiful ventilation and light are made available throughout the building.

Working together with school authorities to typify community solidarity, the architects conceived this building design which embodies a continuous wall of windows. Bright yellow-painted steel mullions and red muntins provide a joyful frame to the impressive view through the 513 LUPTON Steel Architectural Projected Windows.

Certain extreme climatic conditions (wind and dust storms; smoke from nearby Bunker Hill smelter; a wide variance in atmospheric temperatures) made the selection of materials unusually important. Ruggedness and simplicity characterize the construction, and are epitomized in the modern, precisely-engineered walls of tight-fitting LUPTON Windows.

The Kellogg High School project reflects a growing movement towards the use of entire walls comprised of LUPTON Windows in schools, hospitals, and other modern buildings. LUPTON's 75 years' experience in metal-window and curtain-wall manufacture merits your complete investigation—look first in the *Architectural File* (Sweet's) for the Michael Flynn Catalog, and then consult the Yellow Pages under "Windows—Metal." Or write for specific additional information on LUPTON Metal Windows and Aluminum Curtain-Wall Systems.

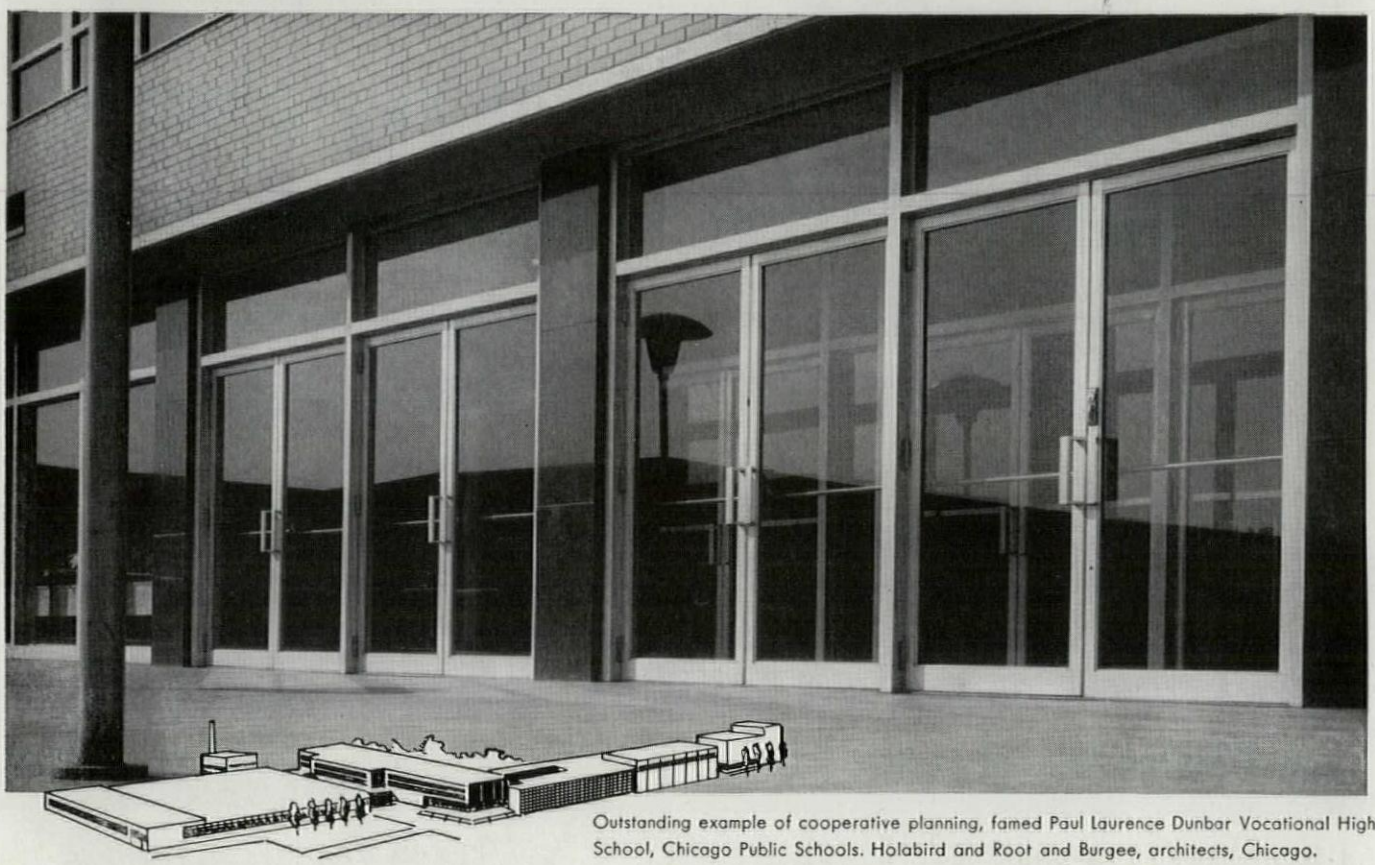
LUPTON

METAL WINDOWS AND CURTAIN WALLS

MICHAEL FLYNN MANUFACTURING COMPANY
Main Office and Plant: 700 E. Godfrey Ave., Phila. 24, Pa.

CONGRATULATIONS, AIA! Michael Flynn Manufacturing Company joins the other members of the Producers' Council in extending best wishes on the occasion of your 100th anniversary celebration May 14-17.

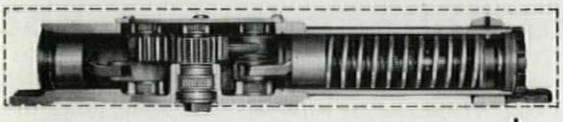
RIXSON overhead concealed door closers



Outstanding example of cooperative planning, famed Paul Laurence Dunbar Vocational High School, Chicago Public Schools. Holabird and Root and Burgee, architects, Chicago.

THE ONLY *FITTING* CLOSER

for shallow head jambs like these!



the most compact—only 2⅞"x2⅞"x17" long

with complete control of opening and closing action BUILT-IN

two independent closing speed adjustments—one controlling the closing speed from open to 15°, the other from 15° to closed position.

built-in door holder—where specified, holds door at any **one** choice of four positions.

hydraulic shock absorber (back-check)—absorbs the force of violent openings.

spring cushion door stop—door is "cushion stopped" at choice of any **one** of four positions.

These RIXSON no. 225 closers not only meet the requirements of narrow style head jambs but have ample power to dependably control heavy entrance doors under all conditions. Being completely concealed, no mechanisms or protruding arms are exposed to be tampered with or mar the appearance of the modern entrance. Available in three sizes for both center hung and butt hung installations.

Write for complete details and template information.

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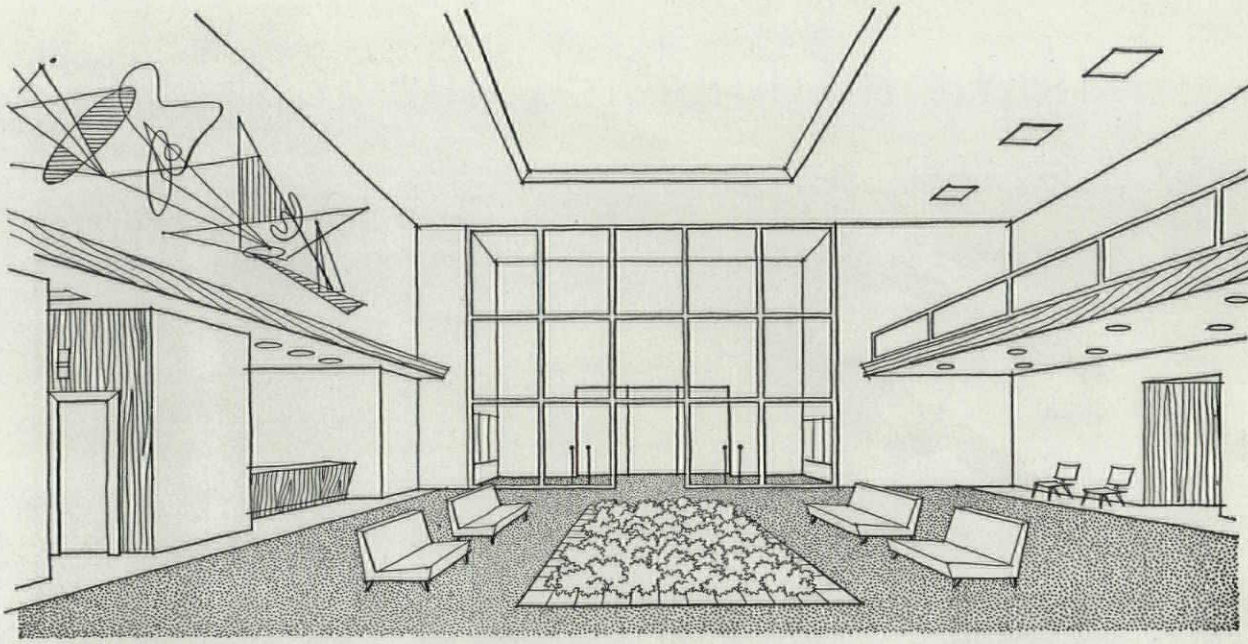
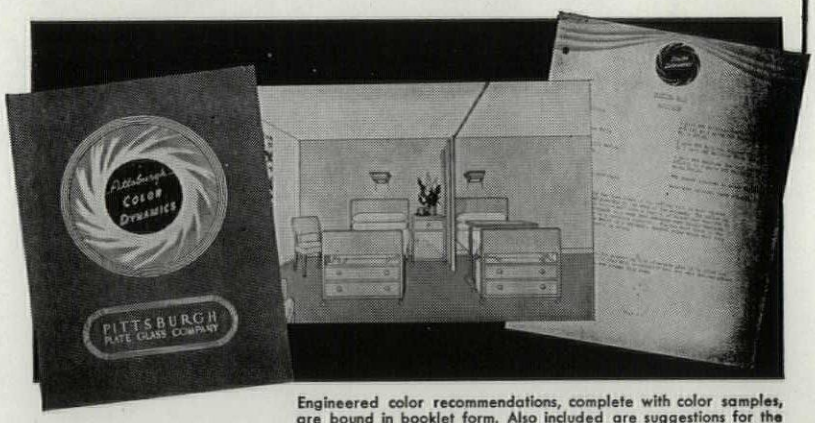
CANADIAN PLANT:
The Oscar C. Rixson Co. (Canada) Ltd.
43 Racine Rd. • Rexdale, Ontario



Why not add a comprehensive

Engineered Color Study to your plans?



Engineered color recommendations, complete with color samples, are bound in booklet form. Also included are suggestions for the correct types of coatings for every kind of material and construction.

TODAY, nearly everyone who owns or operates an industrial, commercial or service enterprise recognizes the importance of the effect of color environment on people.

● **You can often make** your plans more acceptable to clients by including a detailed color program. Why not let us submit *engineered* color recommendations to go with your plans? These recommendations are based upon the principles of COLOR DYNAMICS, Pittsburgh's modern painting system which has demonstrated its ability to improve productive efficiency, morale and well-being in many fields.

● **We'll be glad** to make such a detailed study without cost or obligation to you. Simply call your nearest Pittsburgh Plate Glass Company branch and arrange to have one of our color experts see you at your convenience. Or mail this coupon.

Additional information on COLOR DYNAMICS in Sweet's Architectural File, Section 14/Pi.

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☐ Please have your representative provide us with further information about Pittsburgh's Free COLOR DYNAMICS engineering service for architects.

☐ Please send free copy of your booklet on COLOR DYNAMICS for ____industry; ____hospitals; ____schools; ____commercial buildings.

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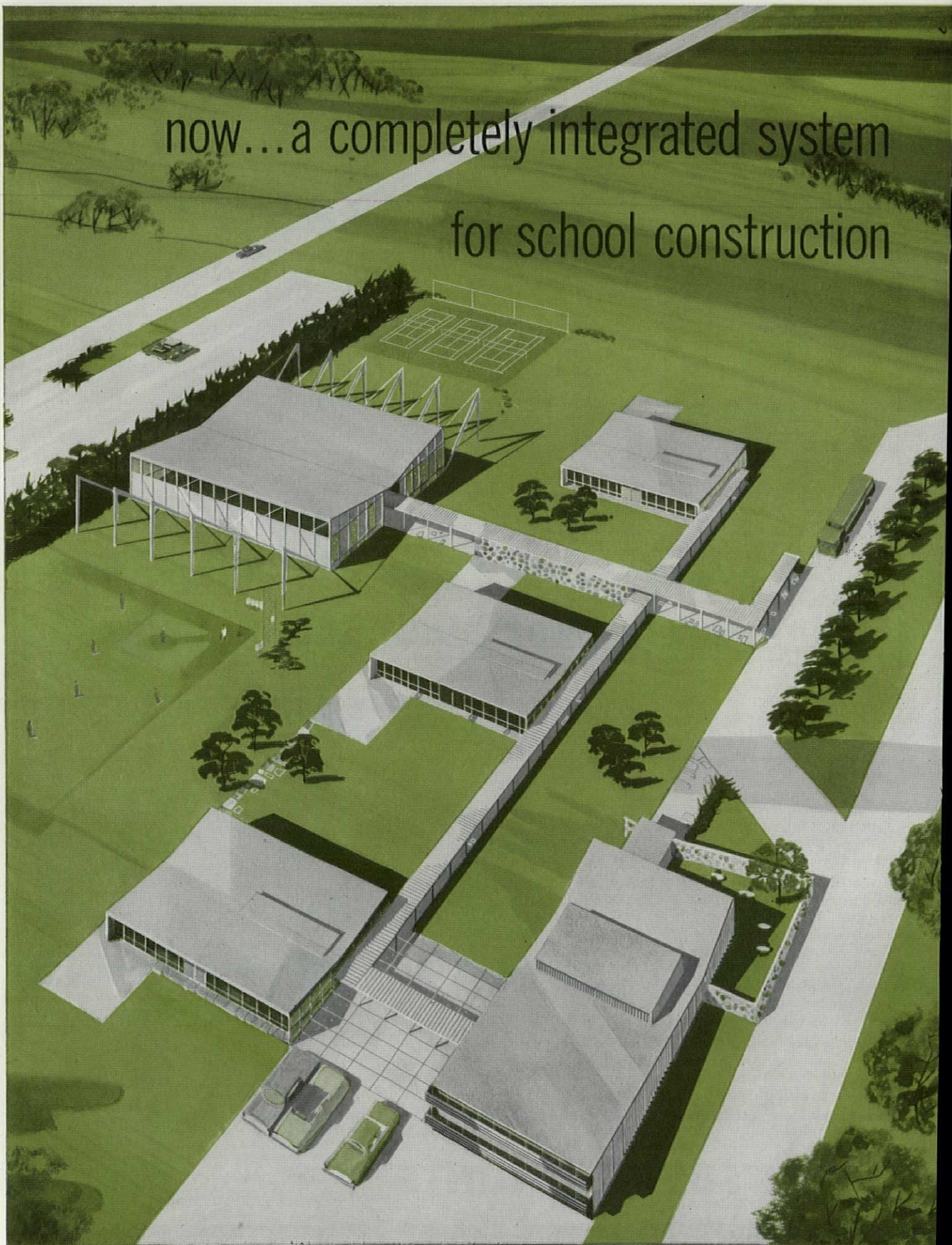
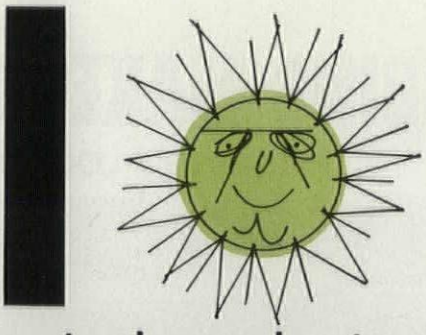
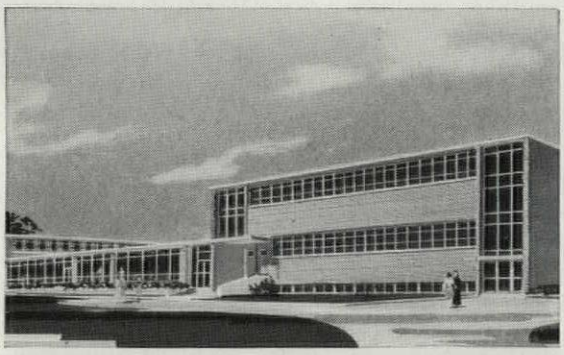

now...a completely integrated system
for school construction



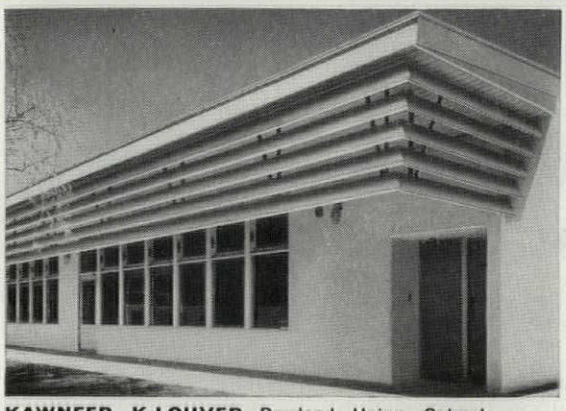
Kawneer unit wall and sun control products



KAWNEER UNIT WALL—Madonna High School, Chicago, Illinois. C. I. Krajewski, Architect-Engineer.

KAWNEER UNIT WALL

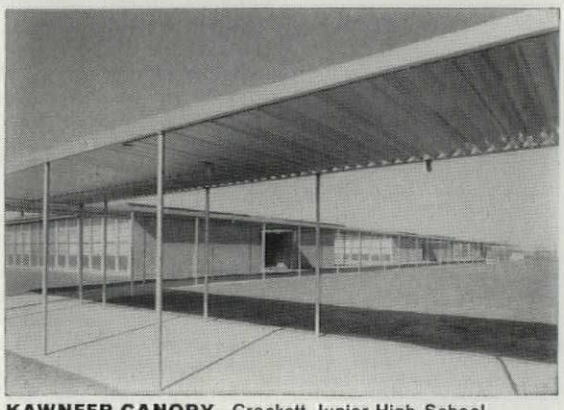
This *standardized* exterior wall system offers the built-in versatility so necessary in school construction. Wall modules are available in a range of heights and widths . . . fixed or operating sash can be provided . . . insulated panels can be finished in a choice of colored porcelain enamel or alumilited aluminum . . . flush or glazed doors are available. This flexible system is engineered to provide unusual weathering features to resist water and air infiltration. Investigate—you'll find the clean, contemporary design of Kawneer Unit Wall an economical answer to school building problems.



KAWNEER K-LOUVER—Rowland Union School, Puente, California. Lee B. Kline, A.I.A., Foster Simpson, Illuminating Engineer.

KAWNEER K-LOUVER

Direct sun light, reflected glare and intense sun heat sap student and teacher interest and initiative. Effective control of all these elements is easily achieved through Kawneer K-Louver applications regardless of climate characteristics, building orientation or building size or design. Open louver design allows natural air circulation . . . eliminates heat pockets. Concave-convex louver shape diffuses harsh sun rays . . . provides soft, uniform light throughout the room. Available in fixed or operating form for vertical or horizontal applications that meet any sun control requirement.



KAWNEER CANOPY—Crockett Junior High School, Irving, Texas. Wyatt-Hedrick, Architects.

KAWNEER CANOPY

Year 'round light and weather control is a simple exercise for Kawneer Canopy. Bus loading points, entranceways and walkways between school buildings can be effectively sheltered regardless of climate demands. Open overlap of Kawneer's distinctive "W" shaped sections allows diffused light to filter through, but provides positive protection against wind, rain and snow. Range of widths offers enough flexibility to meet most sheltering requirements.

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Tuscumbia, Alabama

fabulous floors by Robbins fabulous floors by Robbins fabulous floors by Robbins

ROBBINS METALTONE VINYL TILE, in bronze, was used in this section of Standard-Vacuum's executive dining room to achieve contrast in the over-all decor.

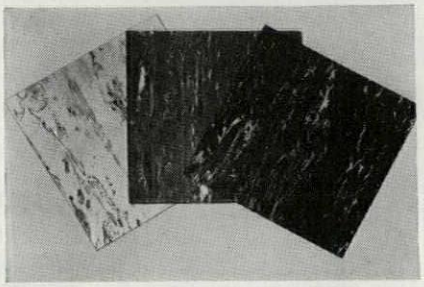
DESIGNER ACHIEVES VARIETY AND UNITY IN SPITE OF VAST FLOOR SPACE

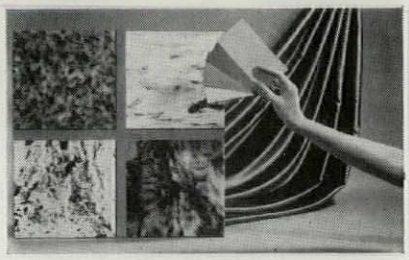
Achieving both variety and unity in a floor area covering 250,000 square feet is not an easy job for even the most versatile designer. Yet this was the problem Mrs. Helen O'Connell, interior designer for Eggers and Higgins, Architects, faced and solved in decorating Standard-Vacuum Oil Company's new international headquarters at White Plains, New York.

Mrs. O'Connell utilized celadon green and terra cotta as key colors on the corridor walls to achieve color harmony throughout the building. This decor was enhanced by a special beige tone vinyl floor tile specified by Mrs. O'Connell and made to her directions by Robbins Floor Products.

PROOF OF PERFORMANCE

Between 20- and 30-million people have tramped across these tiles since they were installed 5½ years ago in Langley's Cafeteria, New York City. Located at the entrance to the upstairs dining area, they have been scuffed and scraped hundreds of times daily. Yet they are still bright and beautiful—removed only because the cafeteria is being replaced by a new building.





PEOPLE PRAISE POMPEIIAN

A number of architects and designers are already creating new designs utilizing our Pompeiian floor tile, the first vinyl tile ever to capture the surface appearance and texture of true marble. Pompeiian's natural lustre and easy maintenance enhance all kinds of areas in institutions, residences and commercial buildings at very low cost.

GOT PLANS ON THE BOARD?

Then you'll find this Robbins' Architects Samples Kit invaluable. It contains all the styles and colors in our vinyl, rubber and cork floor tiles. It's worth $50 yet we're offering it *free* to every architect. Write today, on your letterhead, please.

Or if your kit needs replenishing, send it to us. We'll refill—add samples—return it to you. No obligation, of course.

LIKE A FIRST-HAND LOOK?

Do you know "What's New?" in floor styling, installation and maintenance? Or would you like to see how we make those *fabulous floors?* Robbins regularly invites architects to fly down to our Tuscumbia plant. Now we've expanded our fleet—acquired a Lockheed Lodestar to speed up these trips. This year, 108 trips are scheduled from all over the country. Just call your Robbins distributor (he's listed in the classified section of your phone book)—he'll gladly make arrangements for you to enjoy some of our special Tuscumbia-brand Southern hospitality.

ARCHITECTS: Like to know more about Robbins fabulous tiles? See Sweet's or write us for complete details.

Aluminum Awning Curtain Wall by—

Ualco®
U-AL-CO

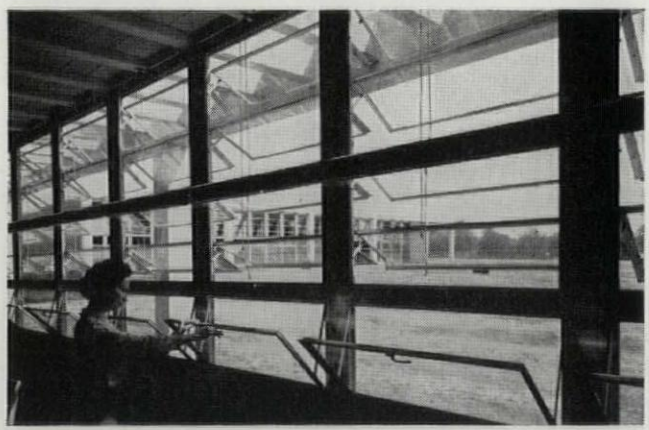
McClintock Junior High School, Charlotte, North Carolina. Ualco Aluminum Curtain Wall, Ualco Series 200 Awning Windows.

Nature provides a comfortable, healthful atmosphere in this Charlotte school, and Ualco Aluminum Awning Curtain Wall gives Nature a hand. Natural light from ceiling-high Ualco Awning Windows relieves the tedium of learning. Natural supply of fresh air is easily controlled.

Operation is torque bar with strip-proof, center-located, offset roto-operator. All-round, bulb-vinyl weatherstripping. Positive, leak-proof closure.* Endless freedom of design.

Standard parts and assembly simplify erection of Ualco Curtain Wall. Ualco Aluminum Intermediate Projected (weatherstripping optional) Curtain Wall also available.

**Pittsburgh Testing Laboratory*



Ualco Lifetime Aluminum Awning Windows provide a natural supply of fresh air, easily controlled, draft-free.

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506 North Court Street, Montgomery, Alabama
Southern Sash of New Jersey, Inc.
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Ualco®
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Read the Ualco Curtain Wall story in Sweet's— 5A Sou 3A Sou 17A Sou

Southern Sash
Sales & Supply Co., Inc.
SHEFFIELD, ALABAMA
World's Largest Manufacturer of Aluminum Windows

Tampa Electric Company building, Tampa, Fla. Architect: Eliot C. Fletcher, Tampa; Engineer and General Contractor: Stone & Webster Engineering Corporation of Boston; Air Conditioning Contractor: Tampa Armature Works, Inc., Tampa.

The right atmosphere calls for quality air conditioning "custom" controlled

THE "RIGHT ATMOSPHERE" provided by quality air conditioning offers so many desirable benefits that no client really wants to build or remodel without it. For who would deny the benefits of year-round comfort, better health and efficiency of employees, improved customer good-will?

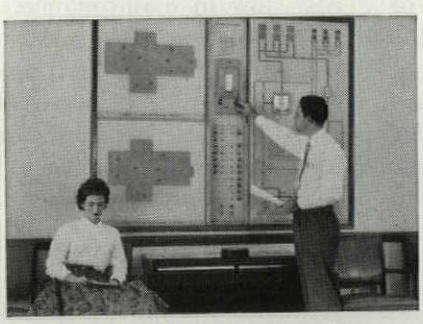
And modern Honeywell customized control tailors quality air conditioning systems to the individual needs and spaces of any building so that precisely the right atmosphere is assured for every room and area—every day of the year.

The new Tampa Electric Company building is an excellent example of this. A 200-ton centrifugal refrigerating machine operating on the heat-pump principle furnishes both heating and cooling to the building. Temperatures in 17 large public zones are read and adjusted quickly at a central panel. Individual room thermostats in private offices give each occupant personal temperature selection.

So when you plan air conditioning for your clients, do it right. Specify Honeywell customized control—for in many important ways the quality of the control system determines the caliber of the comfort system.

To learn more about Honeywell customized control, call your local Honeywell office. Or, write Minneapolis-Honeywell, Dept. PA-5-164, Minneapolis 8, Minn.

Master Control Panel "Displays" Building Comfort, Cuts Operating Costs



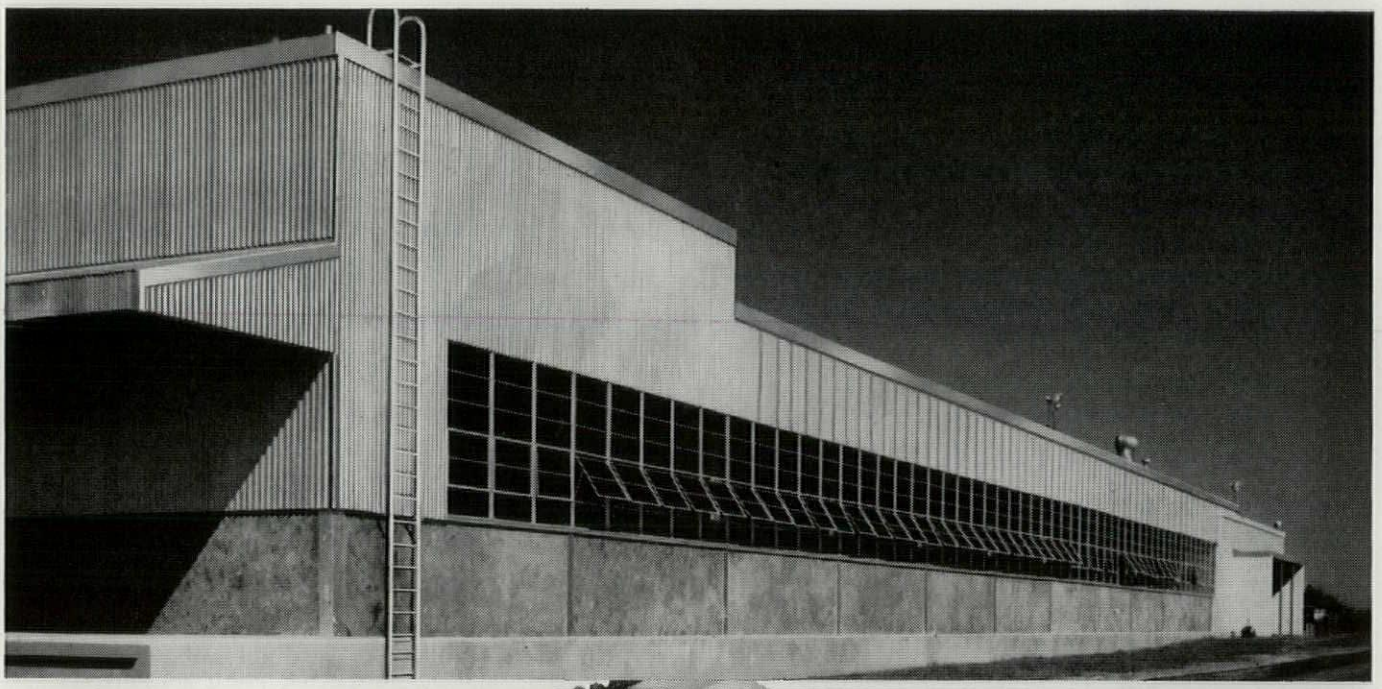
Tampa Electric Company dramatically demonstrates a new use for electric power—a heat pump for both heating and cooling—by prominent display of the Supervisory DataCenter control panel in the lobby of the building. In addition, by centralizing all controls, one man at one location can supervise comfort throughout the building by monitoring and controlling operating equipment in the air conditioning system. This adds efficiency, prevents expensive equipment breakdowns and reduces demands on maintenance personnel's time. Only Honeywell has the experience and the complete control line to provide an installation that so effectively ties in all types of control, so well adapts to any building.

The Honeywell Round . . . World's Most Popular Thermostat

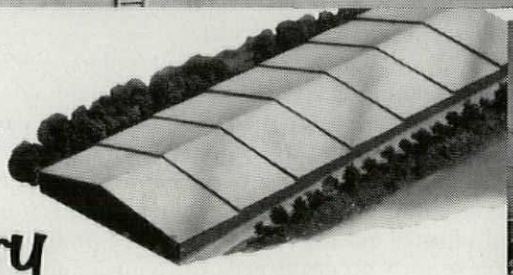
Honeywell

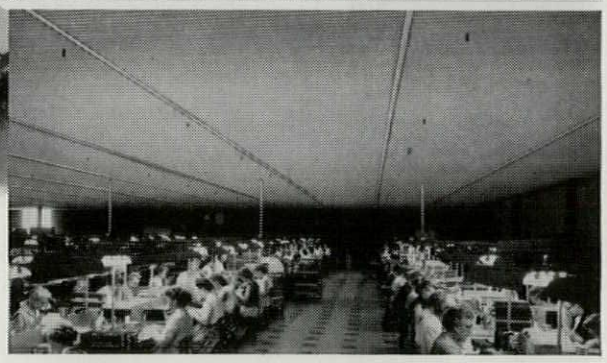
First in Controls

Right atmosphere of entire building is well-illustrated by appearance and comfort of secretarial area. Employees work more efficiently, enjoy comfort provided by quality air conditioning, custom controlled. Comfort level here, as in other open areas throughout the building, is monitored and adjusted at central control panel.



Siding,
Roofing
and Ceiling...





Industry builds better with

REYNOLDS *Lifetime* ALUMINUM

The building at the top, Century Mfg. Co. of Jackson, Miss., illustrates *Reynoside*...Reynolds *Lifetime* Aluminum ribbed-embossed siding. Shown in small silhouette is the 140,000 square foot roof of the Mack Trucks storage building, Allentown, Pa., covered with Reynolds *Lifetime* Aluminum Industrial Corrugated. And the photo at bottom right shows the *ReynoCoustic* ceiling of the Marion Electrical Instrument Company, Manchester, New Hampshire.

Together these installations demonstrate the many advantages of aluminum in industrial construction. As an exterior, it is rustproof, corrosion-resistant and heat-reflective...low in applied cost, low in maintenance. And in the form of *ReynoCoustic*, it is not only a highly efficient noise absorber...it can also provide a *superior* air-conditioning plenum. The Marion Company is enthusiastic about its draft-free distribution of clean, conditioned air to all points.

A complete installation service is available. For name of nearest franchised Jobber-Erector or Acoustical Applicator, call the Reynolds office listed under "Building Materials" in classified phone books of principal cities. Or write to Reynolds Metals Company, Building Products Division, 2046 S. Ninth Street, Louisville 1, Ky.

See "Circus Boy", Reynolds dramatic adventure series, Sundays, NBC-TV Network.

REYNOLDS ALUMINUM

BUILDING PRODUCTS

The gym floor that passes every test!

That's a mighty strong claim and a proven fact.

You want resiliency . . . Kreolite Flexible Strip End Grain Wood Block Floors have excellent cushioning qualities . . . you can actually *feel* this resiliency. They are safer too, because they are splinter-proof.

Naturally, you want beauty that's long lasting, that requires a minimum of maintenance. Well, Kreolite has it.

Everyone has to stretch budgets these days, and Kreolite is easier on the budget, because it is most economical to install and maintain.

So, get all the facts on Kreolite, the floor for gyms, multi-purpose rooms or shops . . . it's the floor that passes every test.

Write today for complete specifications.

The Jennison-Wright Corp.
TOLEDO 9, OHIO

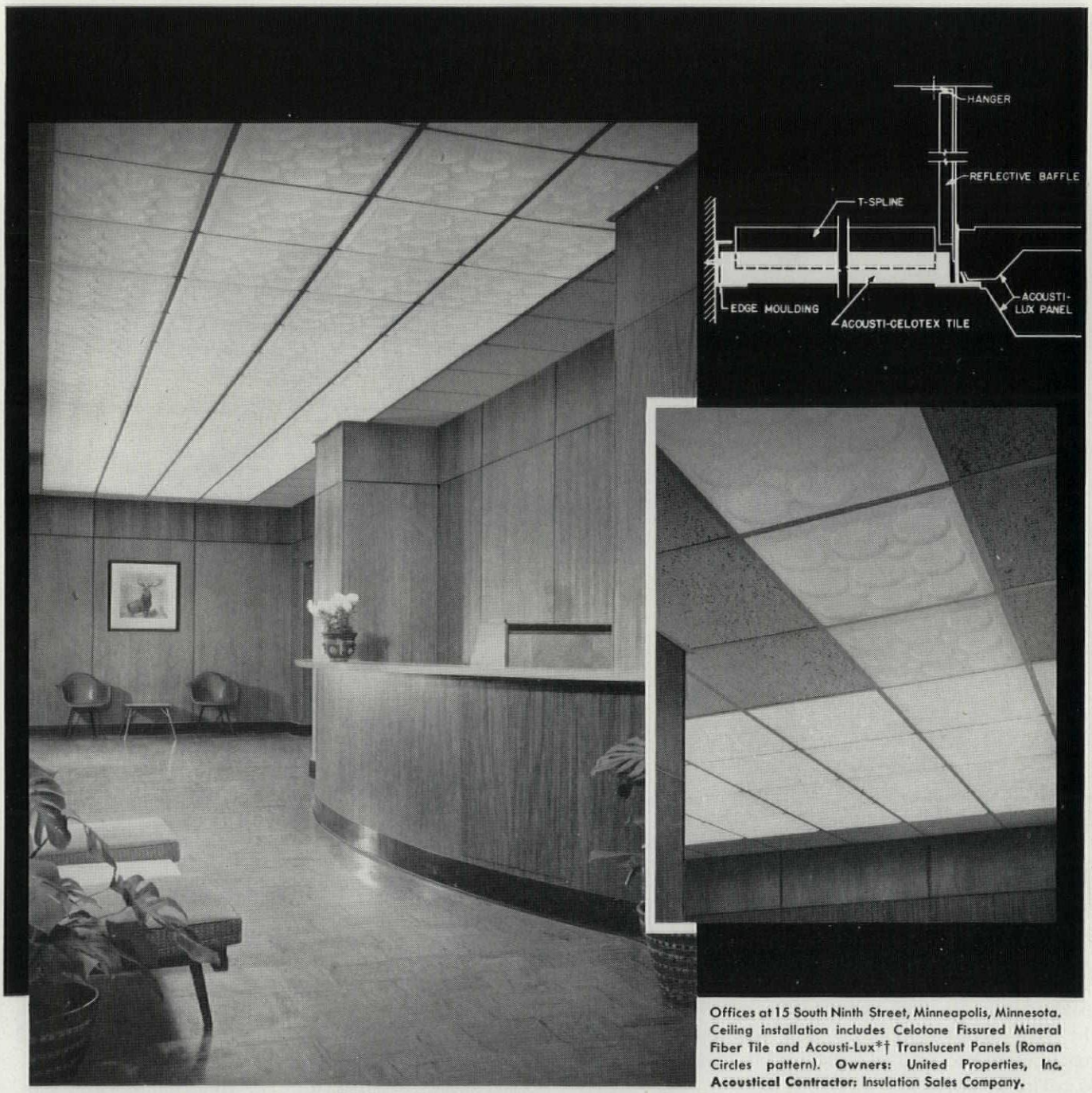
KREOLITE FLEXIBLE STRIP **END GRAIN**
WOOD BLOCK FLOORS

American Hardware Mutual Insurance Company, Minneapolis, Minnesota, showing Acousti-Celotex Celotone* Fissured Mineral Fiber Tile installed with lighting and air conditioning components. **Architects:** Thorshov & Cerny, Inc. **Acoustical Contractor:** Insulation Sales Company.

Planned to be Beautiful

—INTEGRATED LIGHT AND SOUND CONDITIONING!

Efficiency, Attractiveness Combined through Coordinated Talents of Architects, Owners, Contractors, and Manufacturers



Offices at 15 South Ninth Street, Minneapolis, Minnesota. Ceiling installation includes Celotone Fissured Mineral Fiber Tile and Acousti-Lux*† Translucent Panels (Roman Circles pattern). **Owners:** United Properties, Inc. **Acoustical Contractor:** Insulation Sales Company.

Shown here are outstanding examples of completely integrated ceiling systems in offices. Close coordination of architects with skilled contractors in related fields results in ceilings designed to be an active, working part of a modern building. Such ceilings, as those illustrated, provide balanced environments of light-, air-, and sound-conditioning . . . and are unusually attractive as well. Today, Acousti-Celotex Distributors are being consulted more and more in the *early planning stages* of buildings . . . because of their specialized knowledge of ceiling potentials. They stand ready to cooperate with you in all of *your* specific projects.

FOR COMPLETE DETAILS on Acousti-Celotex Sound Conditioning Tile, Acousti-Lux Translucent Panels, and their many installation system possibilities, write to The Celotex Corporation, Dept. C-57, 120 S. La Salle St., Chicago 3, Illinois.

*REG. U. S. PAT. OFF. †U. S. PAT. NOS. 2,218,992 & 2,710,338

TRADE MARK

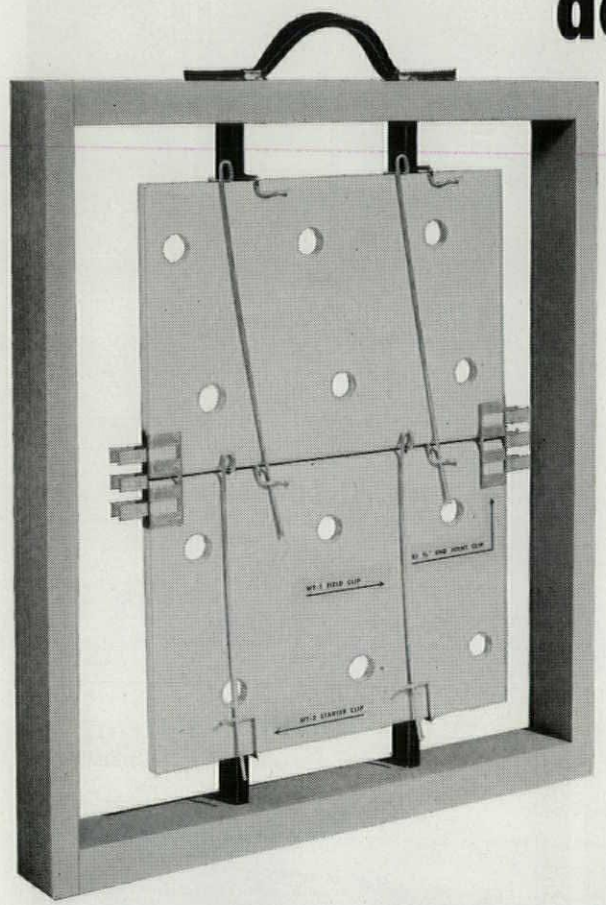
ACOUSTI-CELOTEX

REGISTERED U. S. PAT. OFF.

Sound Conditioning

Products to Meet Every Sound Conditioning Problem . . . Every Building Code
The Celotex Corporation, 120 S. La Salle St., Chicago 3, Illinois
In Canada: Dominion Sound Equipments, Ltd., Montreal, Quebec

Bring this new WIRETITE Ceiling System down to your desk level



2⅓ minutes with this display and you'll know all about Gold Bond WireTite

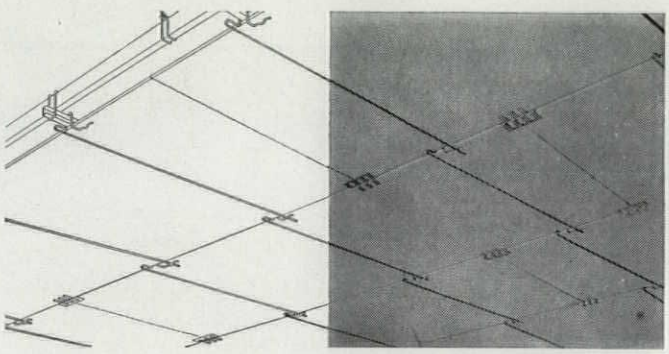
MINUTES SPENT with this "in-use" desk-top demonstration can save you *hours* of planning time—and give you low-cost fire-protected ceilings that last for *years!*

More and more architects are relying on suspended and furred ceilings of gypsum lath and plaster. Gold Bond makes this construction easier, and more economical, with the NEW WireTite Ceiling System. Ask your Gold Bond representative to stop in with this kit—you'll see these WireTite features:

Quickly Installed. Only three types of clips used—all readily installed by the lather.

Field clips interlock... with fast, positive, secure action. Just snap them over the channel, draw taut across face of lath and lock ends firmly into arms of preceding clips.

Fire-Resistant. Low-cost fire-protection for metal decks, steel joists and utility routings. System can be varied for protection from *one to four hours.*



Added Strength, Adaptable. WireTite clips, imbedded in base-coat plaster, give additional reinforcement. Easily installed around recessed ceiling areas for flush lightning fixtures, air diffusers.

Specify Gold Bond Gypsum Lath, Plaster and Finish Lime with this system—you'll benefit from Gold Bond's "Undivided Responsibility" policy.

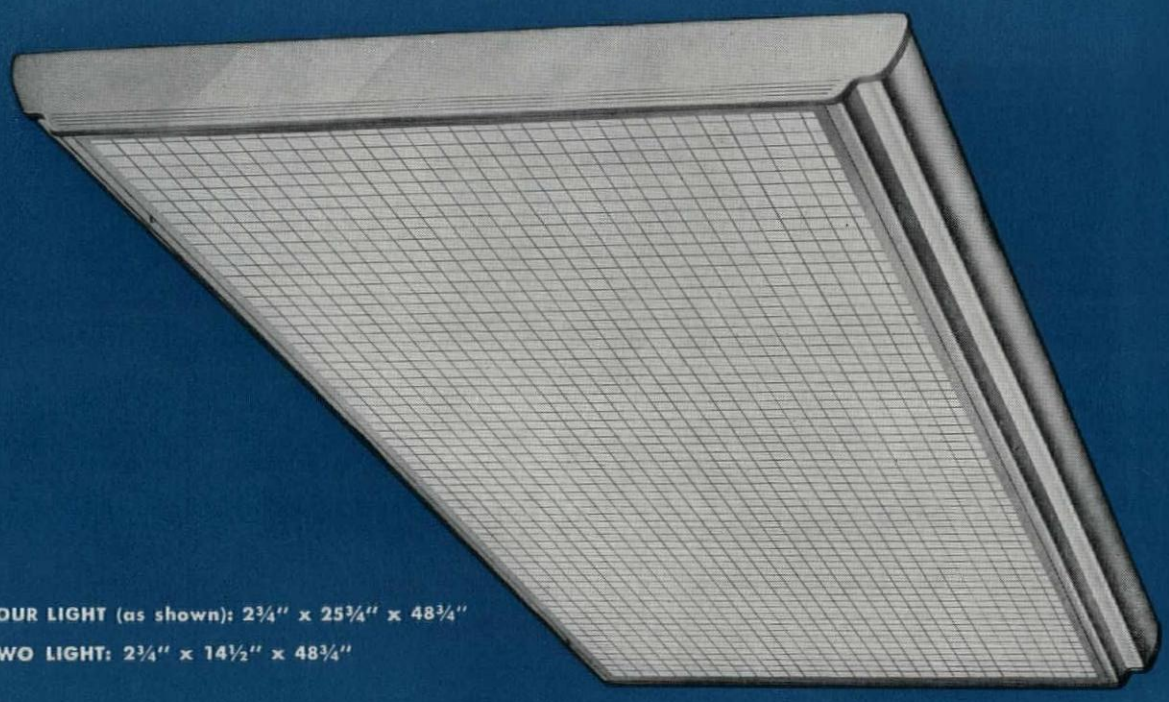
For data on Gold Bond® WireTite Ceiling System, write National Gypsum Company, Dept. PA-57, Buffalo 2, N. Y.

LATH AND PLASTER

NATIONAL GYPSUM COMPANY

Gold Bond
BUILDING PRODUCTS

The thinnest fixture ever designed with no dark areas



FOUR LIGHT (as shown): 2¾" x 25¾" x 48¾"
TWO LIGHT: 2¾" x 14½" x 48¾"

the new Gibson Ceilo•35

This beautiful surface-mount fixture is only 2¾" deep, the thinnest ever designed without panels or strips to conceal the ballasts. In the Ceilo-35, the ballasts are mounted in the sides, an exclusive Gibson development which provides a smooth, unbroken panel of light.

Not only is this new fixture the best-looking you ever saw, it has many new and practical design features to make installation faster and maintenance easier.

WRITE TODAY FOR COMPLETE INFORMATION

Makers of the world's most versatile fixtures

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Gibson LIGHTING

GIBSON Manufacturing Co.

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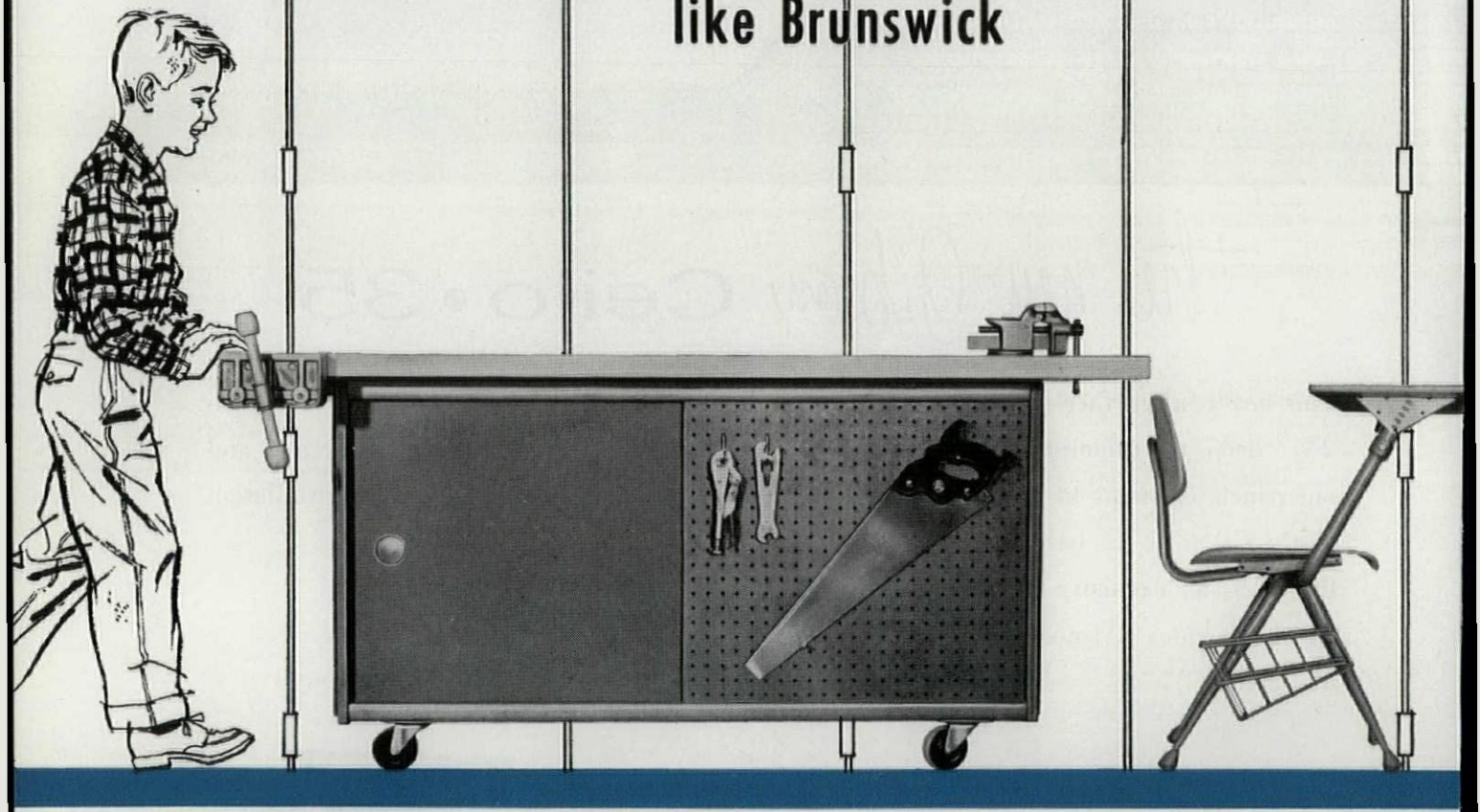
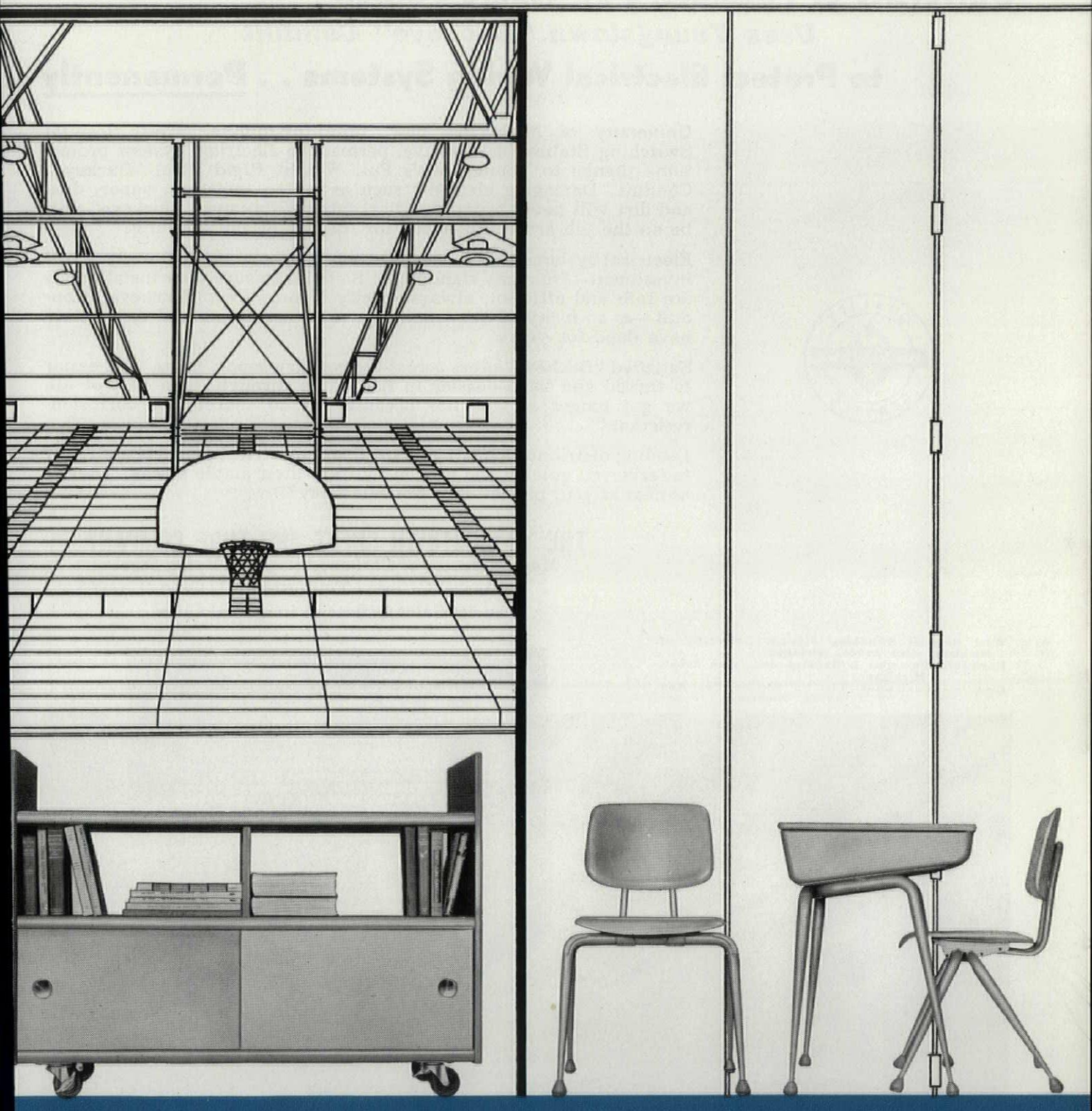
Education and Recreation...

Nobody knows school equipment like Brunswick



If your school problem involves seating or storage, your Brunswick representative can help you find the answer. He brings you the broadest line of equipment in the educational and recreational field. He brings you the advantages of working through a single source. And he brings experience that proves nobody knows school equipment like Brunswick. All *you* need do is write: The Brunswick-Balke-Collender Company, 623 South Wabash Avenue, Chicago 5, Illinois.



SSROOM FURNITURE • MOVABLE CLASSROOM CABINETS • FOLDING GYM SEATING

KETBALL BACKSTOPS • FOLDING PARTITIONS • FOLDING STAGES • CLOSET WALLS

DING WARDROBES

T ONE LINE CONTINUES TO SET THE PACE . . . IT'S

Brunswick

University of Michigan's Switching Station

Uses Youngstown "Buckeye" Conduit

to Protect Electrical Wiring Systems . . Permanently

University of Michigan's new, up-to-the-minute, West Hospital Switching Station has positive, permanent electrical system protection—thanks to Youngstown's Full Weight Rigid Steel "Buckeye" Conduit. Damaging elements such as water, moisture, vapor, dust and dirt will never cause electrical faliure—because "Buckeye" will be on the job around-the-clock for the life of the building.

Electrical systems that fail to function properly are definitely a bad investment—from any standpoint. So to make sure your installations are safe and efficient, always specify Youngstown "Buckeye" Conduit—as so many of our leading owners, architects and contractors have done for years.

Satisfied "Buckeye" users across-the-country report to us, "It's easier to thread and bend—easier to fish wires through—and best of all, we get longer service life because it's so thoroughly corrosion-resistant."

Leading distributors in all industrial and electrical markets are ready to serve you quickly and efficiently from their ample stocks. They're as near as your phone—why not call today?

THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel

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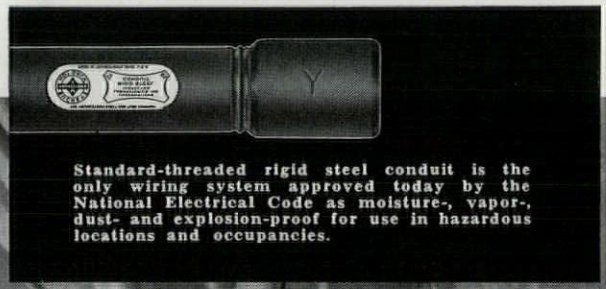
West Hospital Switching Station, University of Michigan, Ann Arbor, Michigan
Engineers: Cummins & Barnard, Inc., Ann Arbor, Michigan
Electrical Contractor: Electric Service Co., Ann Arbor, Michigan



Standard-threaded rigid steel conduit is the only wiring system approved today by the National Electrical Code as moisture-, vapor-, dust- and explosion-proof for use in hazardous locations and occupancies.

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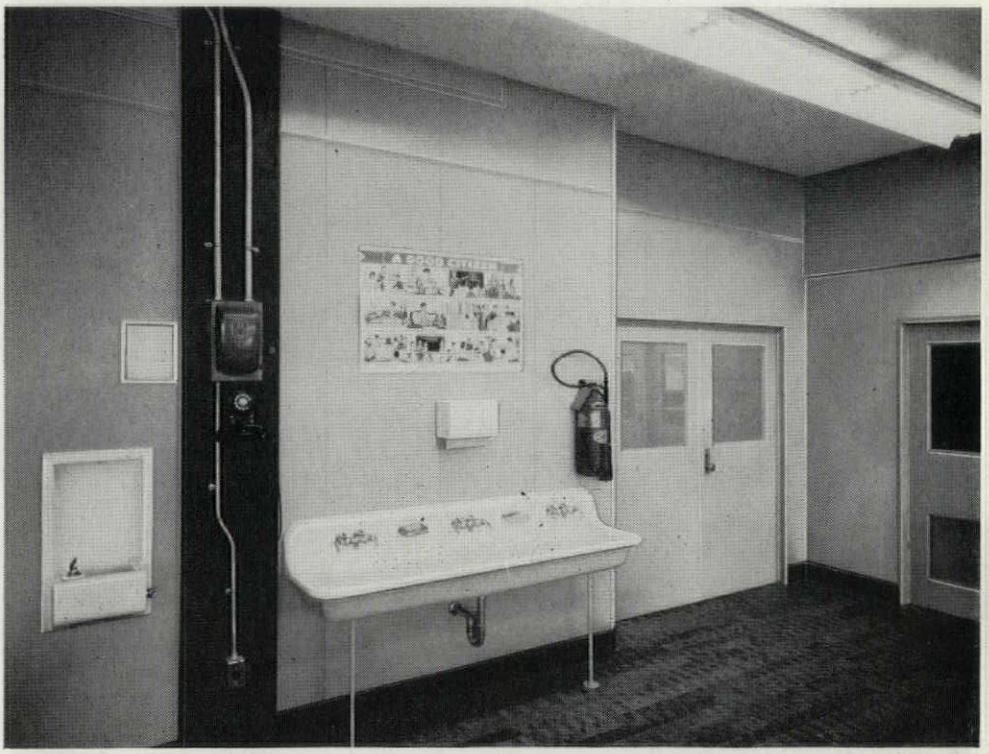
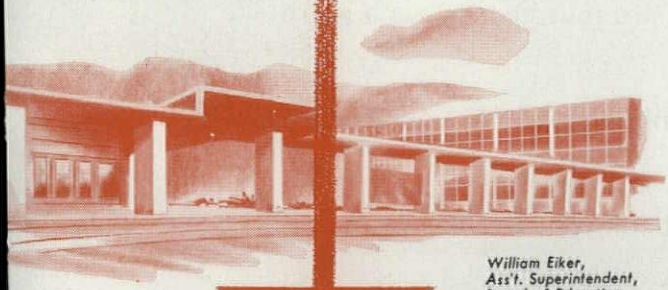
For Today's MODERN Schools

A New and Better Way to Divide Space . . .



"We have used Metlwal in our Woodrow Wilson Junior High School shops and are very satisfied with its construction and function," writes William Eiker, Assistant Superintendent of the Board of Education of Wyandotte, Michigan. "It was very flexible in installation, and we could cover our conduit and plumbing without difficulty."

e Woodrow Wilson Jr. gh School at Wyandotte, chigan, is an outstanding ample of the unique xibility of Metlwal.



William Eiker, Ass't. Superintendent, Board of Education
Swanson Associates, Inc., Architects
Dorin & Armstrong, Inc. General Contractors

INSURES QUIETNESS

Metlwal has the highest sound reduction properties of any known substitute material, not excluding 4" plaster wall. In fact, Metlwal cuts sound transmission by 43.7 decibels at 125 cps., and even by 61 decibels up to 4,000 cps., louder than the scream of a high-pitched power saw.

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Metlwal is ideal for schools and other new construction . . . paneling, partitions, flush chalkboard, railings, counters and desk-door-or-floor-height enclosures . . . because of its flexibility, low first cost, low maintenance, modern design and modern beauty.

metlwal *by* **PROSPERITY**
DIVISION OF WARD INDUSTRIES CORPORATION

metlwal jr

QUALITY FREE-STANDING ARTITIONS AT LOW COST

uick installation — private, mi-private or railing height visions. Install with a screw-iver. Write for brochure.

GET THE FULL FACTS NOW

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125 Marcellus St., Syracuse, N. Y.

Yes, I'd like to know more about the advantages, economy and ease of installing:

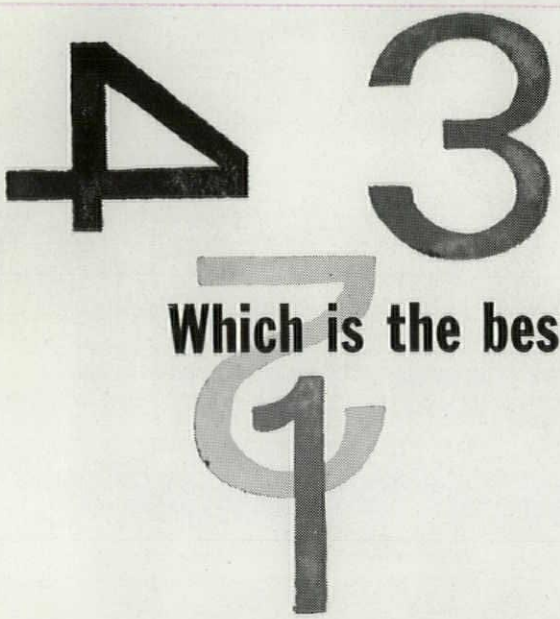
- ☐ Metlwal
- ☐ Metlwal, Jr.

Name_____

Company_____

Address_____

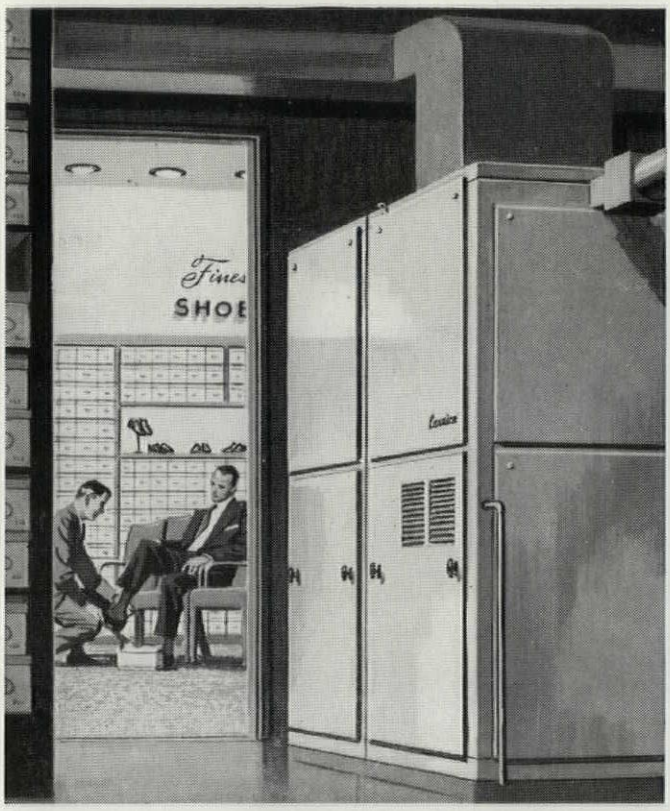
City_____ Zone____ State_____ 2-M



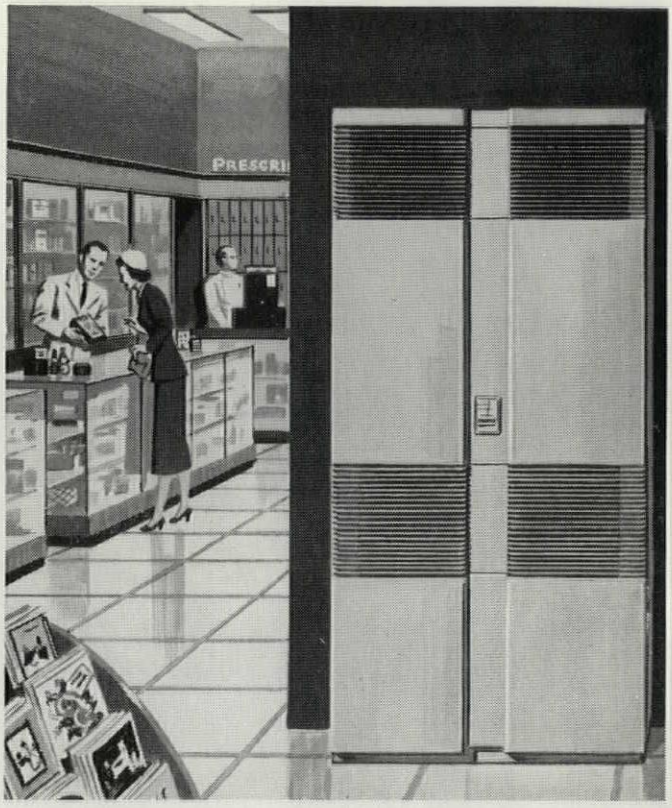
Which is the best way to air condition your store?

That depends on its size, what you sell, how much floor traffic you have. Here, for example, are four good ways a store can be air conditioned. But only a survey of your business will tell which of the four is best for you. So ask your Carrier dealer to analyze your needs and guide you in the right selection. Because he sells these four (and many more), his first interest is to recommend the type of air conditioning that serves you best. Call him today and be sure. **Carrier**

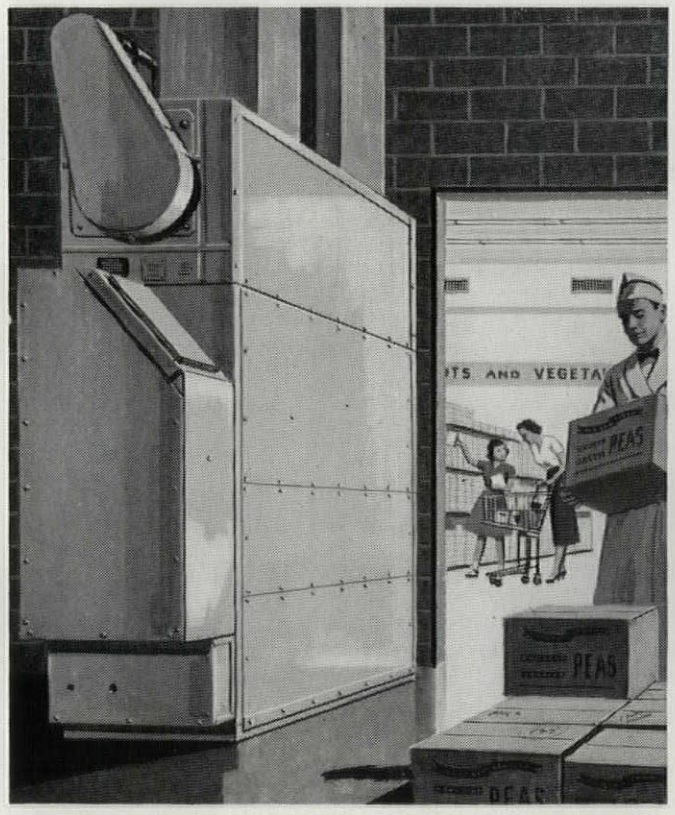
For more information, ask for free booklet, WE-5. Call your Carrier dealer, listed in the Classified Directory. Or write Carrier Corporation, Syracuse, New York.



1 **Are you building a small store?** Then plan to use a Carrier Year-round Weathermaker* and you'll do two jobs at once—cooling and heating from a single, compact unit. Thermostatically controlled.



2 **Do you run a large store?** One or more of these Carrier Weathermakers located throughout the area will give excellent results with or without ducts. Some models require no water. Quiet in operation.



3 **Is yours a supermarket?** A large Weathermaker like this can be installed behind the scenes to save valuable selling space. Inexpensive ducts across the ceiling distribute the conditioned air uniformly.

4 **Do you have a department store?** Carrier System Weathermakers supplied with refrigeration from a central source will give your customers custom-tailored comfort. Little maintenance needed.

*Reg. U.S. Pat. Off.

INSTALLATION: New executive office addition for The Coca-Cola Co., Atlanta, Georgia—typical of the institutional preference for B. F. Goodrich Rubber Tile.

For Executives of The Coca-Cola Co.:

B.F.Goodrich Rubber Floor Tile

(SUPER-DENSITY KEEPS IT AT ITS SPARKLING BEST!)

Super-Density is the result of an exclusive B. F. Goodrich process which compresses the rubber tile in such a way that dirt-catching surface pores are virtually eliminated. It produces a tile with cleaner, truer colors—more polished perfection. We urge you to see, feel and compare B. F. Goodrich Rubber tile with all others before writing specifications on important installations. We believe that, like the officials of The Coca-Cola Co., you will clearly detect the superiority of B. F. Goodrich—"first in rubber."

SPECIFICATIONS: 26 new, distinctive colors (⅛", 3/16" and .080 gage thickness), can be installed on or above grade.

FOR FURTHER INFORMATION: See Sweet's or write B. F. Goodrich Flooring Co., a division of The B. F. Goodrich Company, Dept. PA-5, Watertown 72, Mass.

B.F.Goodrich

New "Agatine" Tile • Koroseal Tile • Asphalt Tile • Rubber Cove Base • Stair Treads • Accessories

BOLD NEW STROKE FOR INTERIORS — WITH SIMPSON RUSTICWOOD

● MANY ARCHITECTS CONSIDER REDWOOD one of the most beautiful of natural building materials for both interior and exterior use.

And Rusticwood redwood, wire-brushed to bring out its exquisite grain, is one of the most attractive *plywood* panelings made. It has a way of offering the architect wonderful new opportunities for dramatic treatment of walls for the most talked-about rooms in homes and offices. And Rusticwood is equally effective in new construction or remodeling.

Rusticwood is now available in quantity for immediate delivery. It is EXCLUSIVE WITH SIMPSON, the largest producer of redwood in the world.

So to give your client the truly bold stroke—the daring treatment that excites real admiration in client and friends alike, specify exteriors or interiors with the *natural* beauty of Rusticwood by Simpson. Send for FREE SAMPLE together with Simpson's new 36-page booklet "MANUAL ON FINISHING PLYWOOD" . . . Simpson Logging Company, Sales Office, Plywood and Doors, Room 902, 2301 N. Columbia Blvd., Portland 17, Oregon.

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You can also rely on Simpson for Acoustical, Insulating Board and Hardboard Products, plus a complete line of specialty plywood and doors.

PLYWOOD & DOOR PRODUCTS

AN ORCHID FROM BETTY

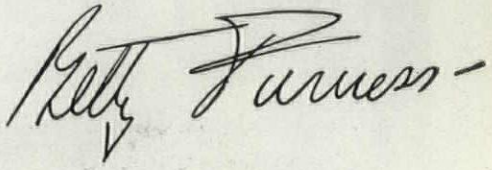
to The American Institute of Architects

To creative craftsmen everywhere, members of The American Institute of Architects, congratulations on your Centennial Celebration.

A review of your achievements in the long, successful drive to establish ethics and standards in the field of architecture reveals that the first hundred years may have been the hardest . . . but they have earned you the orchid of public recognition and respect.

We at Westinghouse are proud of a long and close collaboration in the electrical phases of modern construction. This is our birthday wish . . .

May the next hundred years of A. I. A. be perhaps easier, but equally fruitful of fine contributions in high standards of utility, safety and beauty for the homes, plants and institutions of America. J-94079



Betty Furness salutes the Centennial Celebration of The American Institute of Architects on television Studio One.

Westinghouse Electric Corporation, Box 868, Pittsburgh 30, Pa.

100 Years of Progress

THE AMERICAN INSTITUTE OF ARCHITECTS CENTENNIAL CELEBRATION 1857-1957

Best wishes to the members of The American Institute of Architects, Inc. on the occasion of the AIA CENTENNIAL CELEBRATION CONVENTION, Washington, D. C., May 14-17, 1957.

CONSULT AN ARCHITECT • USE QUALITY PRODUCTS

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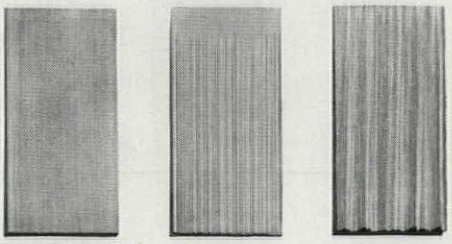
YOU CAN BE SURE... IF IT'S Westinghouse

CEDAR TURNS ON THE CHARM !

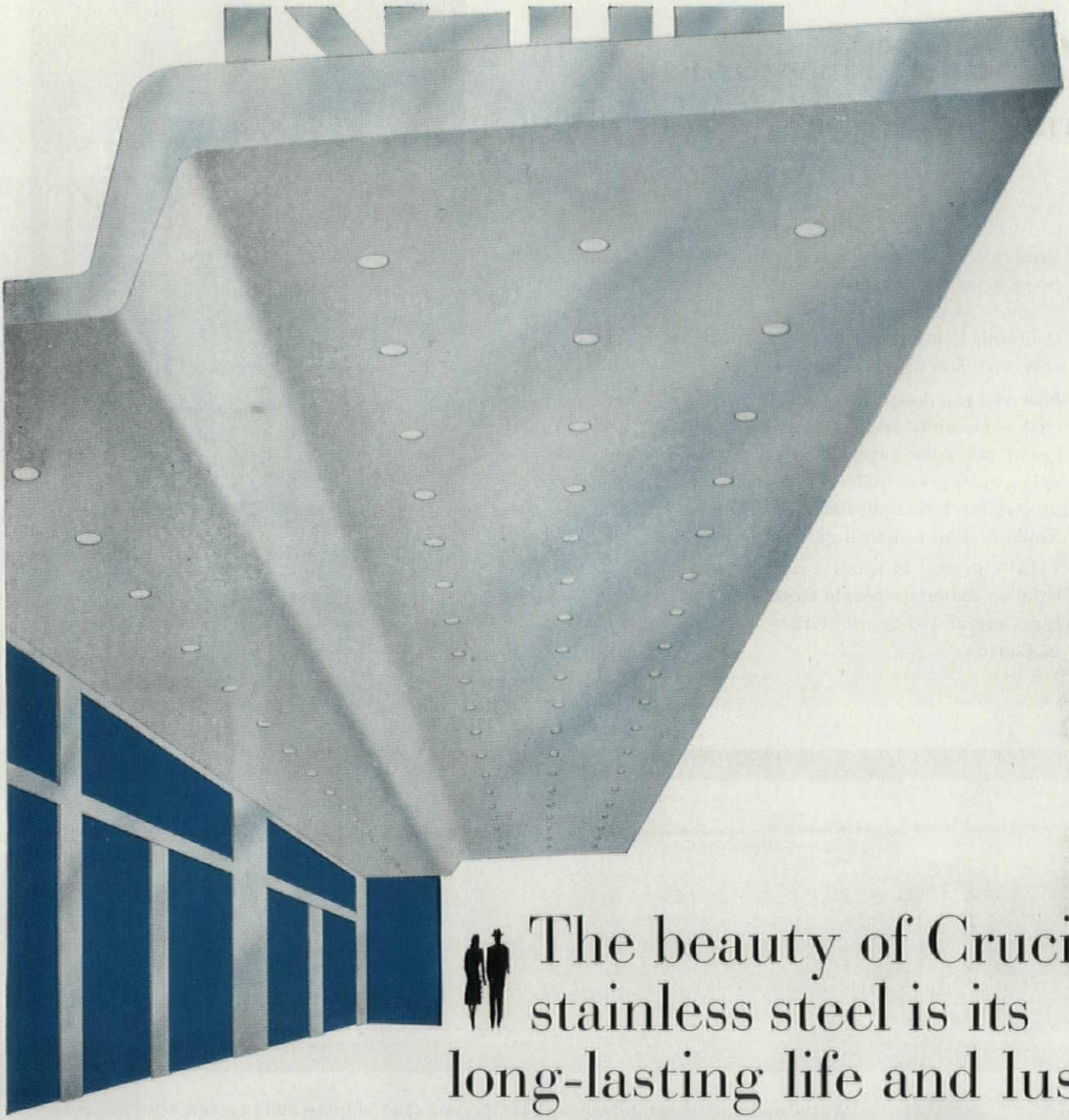
... and it's charm that makes the home

This is the kind of home that invites good living, appeals to good taste. The mellow warmth and dimensional texture of a cedar shingle roof ... blended with walls of colorful cedar shakes ... reflect obvious, ageless quality. Only cedar gives you such limitless expression ... such design latitude ... such unquestioned acceptance. But then, cedar is the genuine. And there's nothing like genuine charm!



RED CEDAR SHINGLE BUREAU

5510 White Building, Seattle 1, Washington
550 Burrard Street, Vancouver 1, B.C.



The beauty of Crucible stainless steel is its long-lasting life and lustre

"Long-range economy? Can you pin-point the benefits for me?" These are questions clients often ask when you specify stainless steel. Your answers come easily and convincingly because stainless steel pays for itself in long-term economies.

For example:

1. Stainless steel has high strength and durability, superior resistance to corrosion and weathering—qualities that assure maximum service for years to come. There'll be *no* replacement or refinishing costs.

2. The natural lustre of stainless steel means maintenance savings, right from the start. There's no need for finishing or coating; just occasional washing keeps this metal clean. Through the years, clients save considerable sums on cleaning time and the cost of cleaning materials.

Like more information on the economies of stainless steel? And on new design ideas? Crucible, one of the largest manufacturers of stainless steel sheet and strip, has prepared a special 20-page booklet "A Guide to Future Uses of Stainless Steel in Architecture and Building". For free copies, write: *Crucible Steel Company of America, The Oliver Building, Mellon Square, Pittsburgh 22, Pa.*

CRUCIBLE first name in special purpose steels

Crucible Steel Company of America

Canadian Distributor—Railway & Power Engineering Corp., Ltd.

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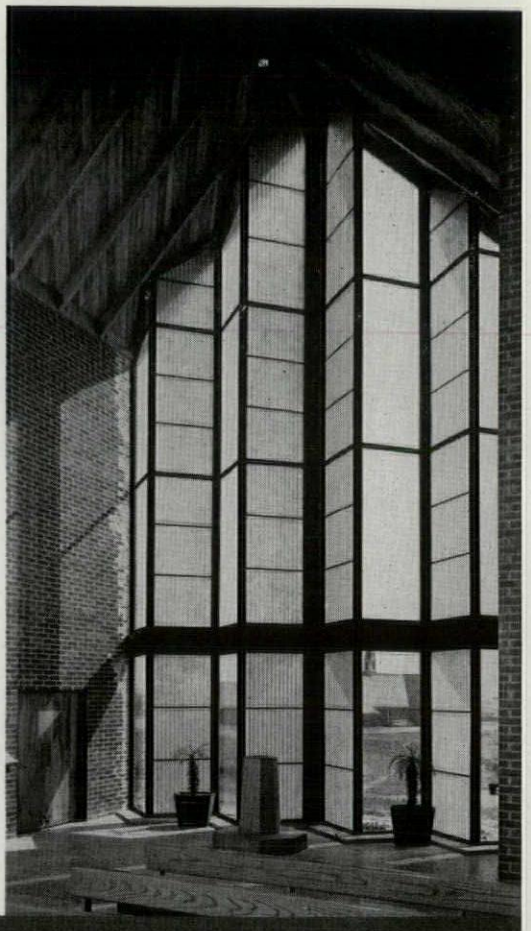
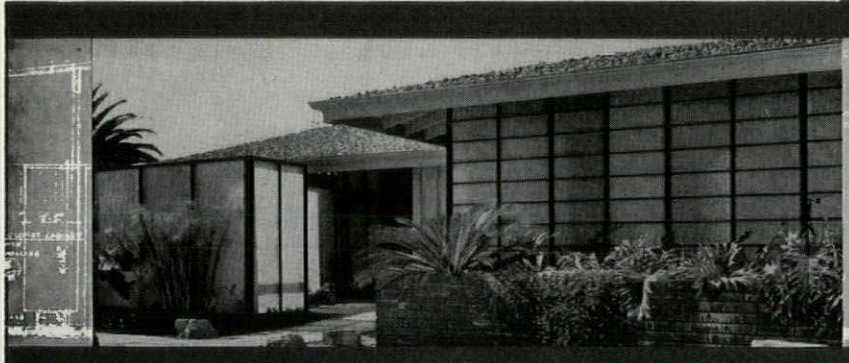
bring out the best in your design

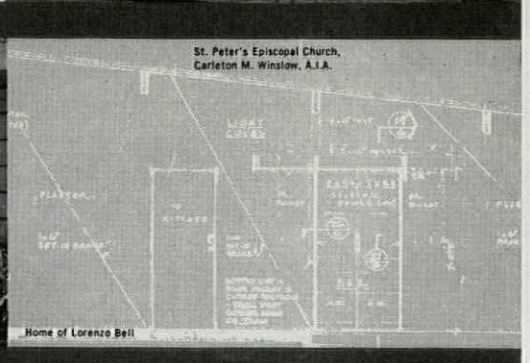


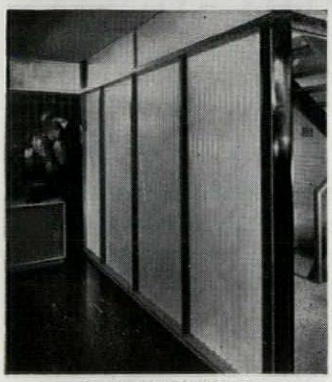
Fresh interplay of color and light patterns... eye-privacy between areas without darkening either area...soft, diffused light ...colors as dramatic or subtle as your problem calls for... California-living features the whole nation's hungry for...the easy, airy flow of indoor-outdoor living.

Now you can design these with complete confidence for industrial, community and residential use. FILON gives you translucent polyester panels, reinforced with both fiberglas and nylon, quality-controlled by patented, continuous electronic process for high uniformity of thickness, strength and color. You'll find all technical data in Sweet's File.

FILON is easy to specify, easy to install, easy to get. Your building materials people stock it or can get it immediately from any of 100 distributors' warehouses coast to coast and in Canada.







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Richard J. Neutra, F.A.I.A.

White, and in 19 decorator colors, FILON comes flat, shiplap and in several corrugations, many sizes. FILON is shatterproof, weatherproof, heat repellent, beautiful.

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And remember quality makes a big difference in fiberglas panels. For your protection, insist on the FILON label on every panel.

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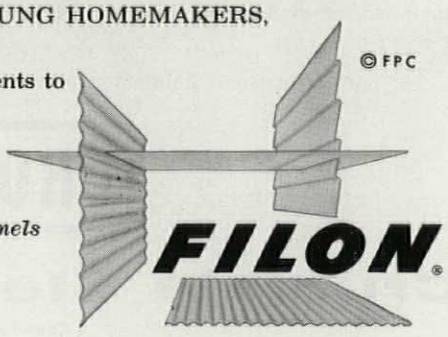

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When you build, specify NE Nepcoduct to be sure the building will never grow old electrically. Write for complete information today.

National Electric's new streamlined service fittings are specially designed for installation where modern desks and free standing equipment limit the heights of service fittings to less than 3 inches.

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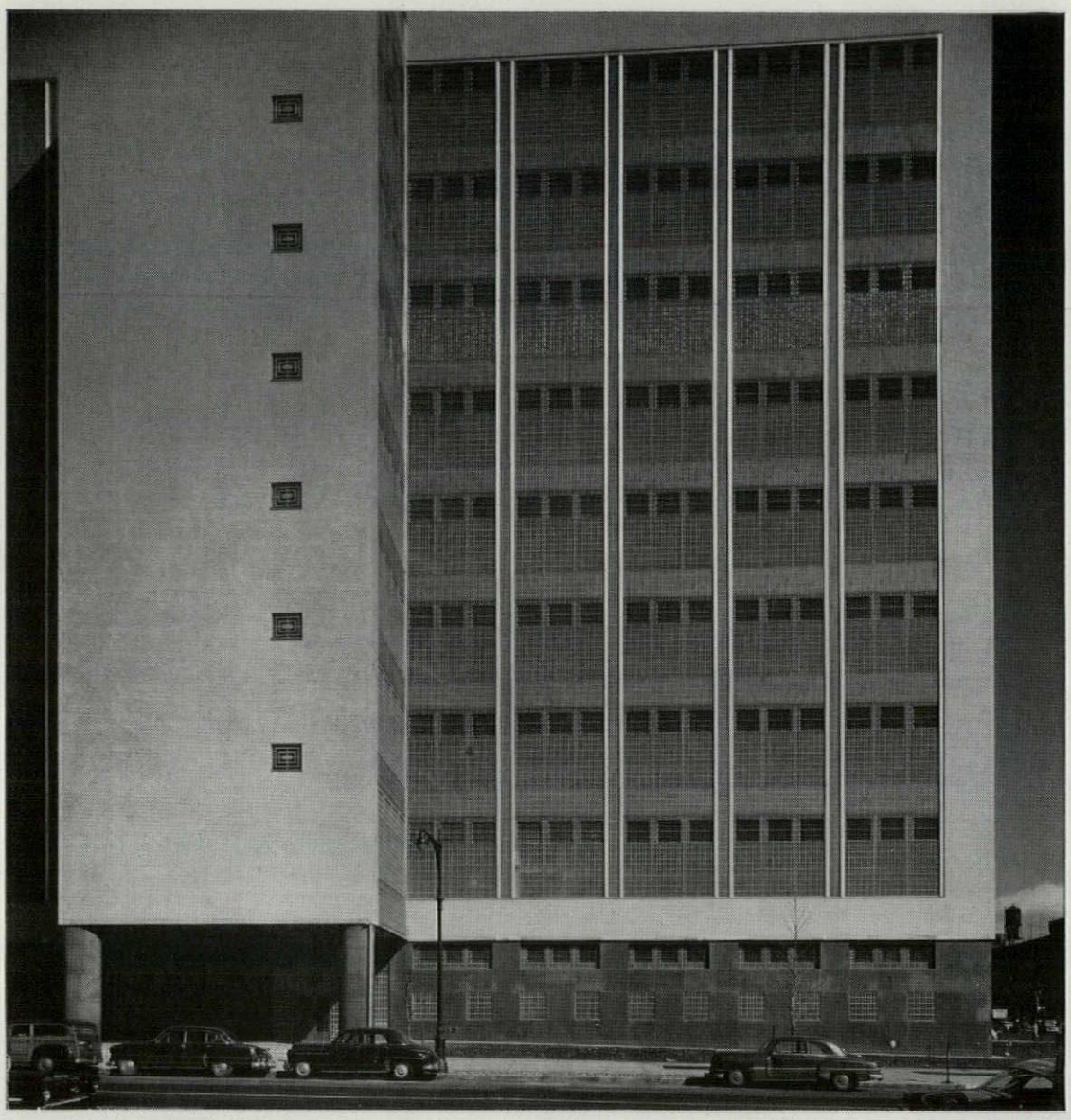
2 Plants • 12 Warehouses • 41 Sales Offices



New look in prisons

CITY PRISON & REMAND SHELTER
BROOKLYN, NEW YORK

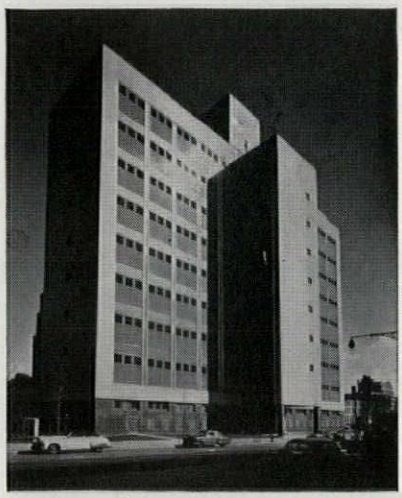
Architects—
Department of Public Works
LaPierre, Litchfield & Partners
(Alfred Hopkins & Associates)

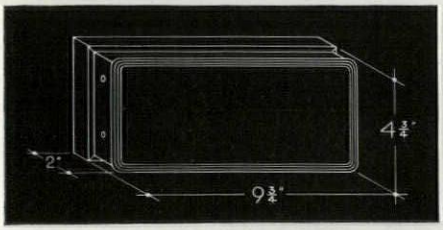
Builders—
Castagna & Son, Inc.

The smoked pearl gray extruded Ceramic Veneer patterned units help achieve the unusual effect.

...another example of creative use of Ceramic Veneer

So versatile is Ceramic Veneer you can design with full consideration for function, form and color—for exteriors or interiors. Uniform high quality and close tolerances are assured because Ceramic Veneer is custom-made by Federal Seaboard craftsmen. This explains today's popularity of this time-tested ceramic material which is used in so many ways in buildings of so many types. Without charge we will gladly furnish construction detail, data, color, samples, estimates and advice on preliminary sketches involving the use of Ceramic Veneer, the modern Architectural Terra Cotta.





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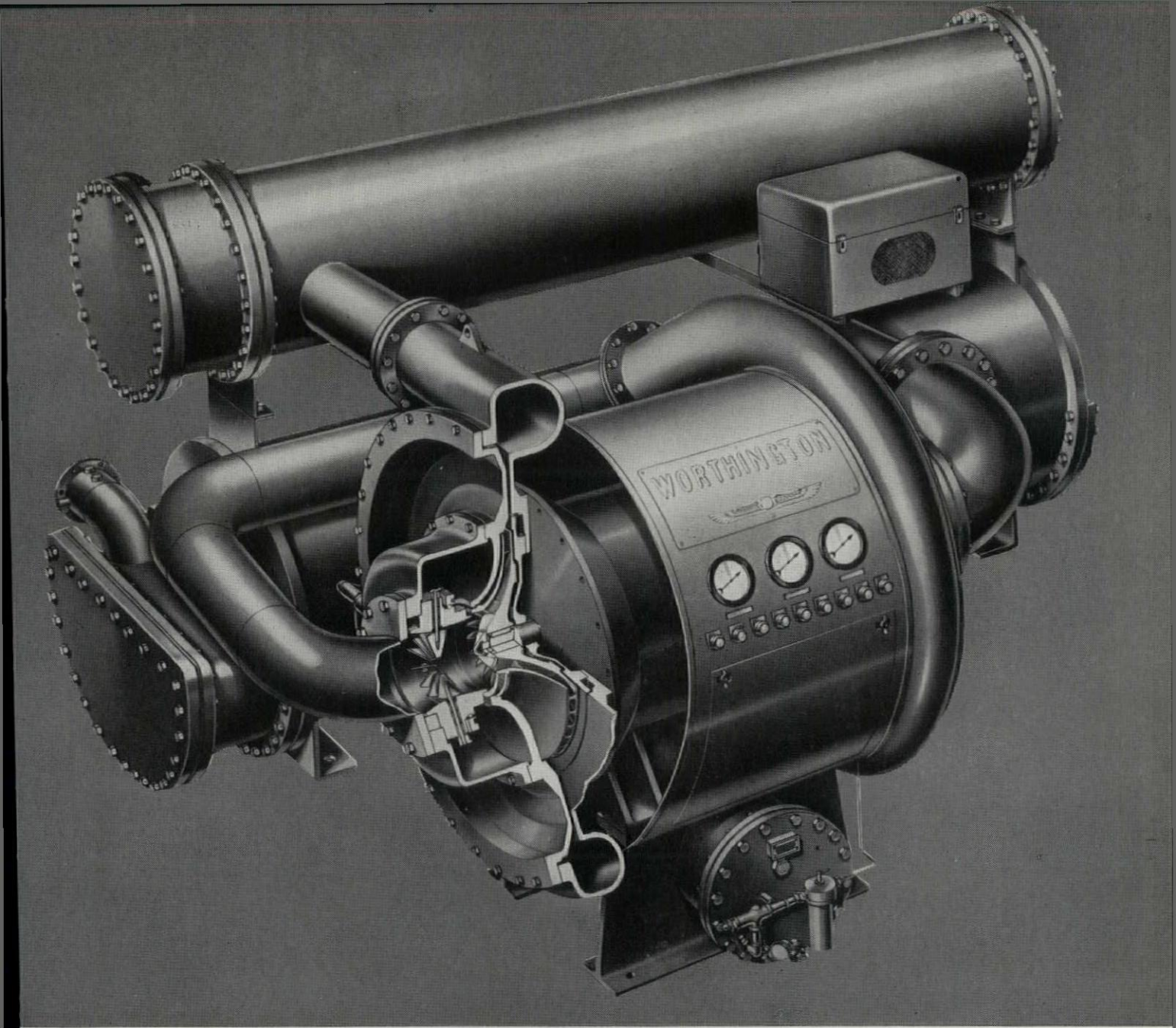

New hermetic centrifugal provides

ECONOMY AT ANY LOAD

Worthington unit offers ease of installation plus high operating efficiency

Here is a self-contained refrigeration unit that's ideal for air conditioning, and for chilling water in industrial processes. Worthington Centrifugal units are available in sizes from 100 to 500 tons—thus adapt easily to any type and size of building.

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It will pay you to learn about the many other advantages offered by Worthington Hermetic Centrifugals. Among them . . . Elimination of need for special foundation . . . Automatic stop and start controls . . . Automatic safety controls for protection of shaft and bearings . . . and many others.

For detailed specifications, phone your nearest Worthington District Office. Or write: Worthington Corporation, Sect. A7.57, Harrison, N. J.

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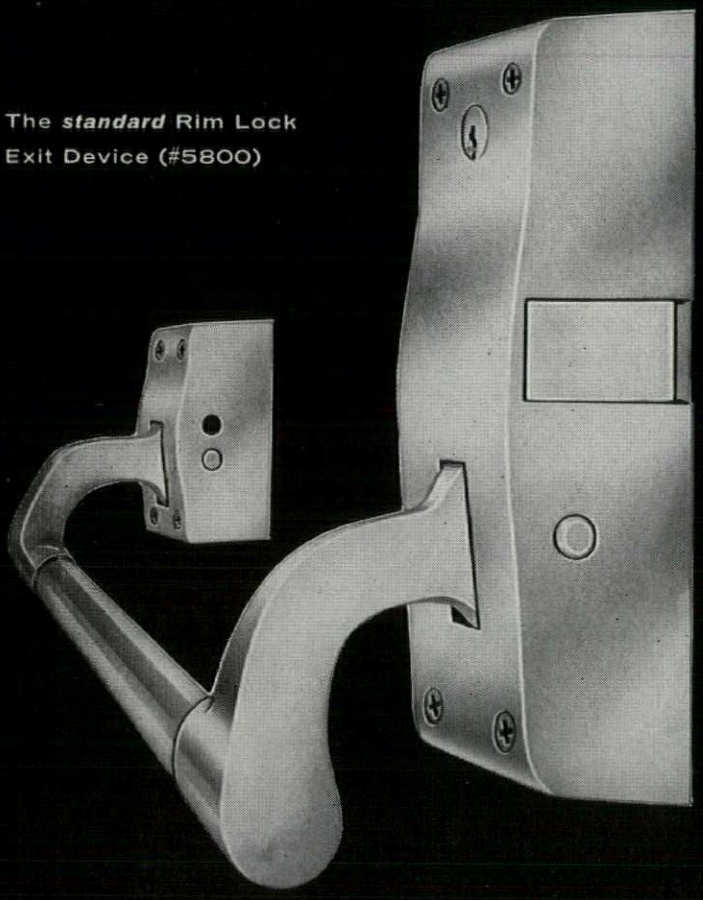
Sargent's new line of

The ***standard*** Rim Lock
Exit Device (#5800)



The ***brand-new*** Vertical Rod
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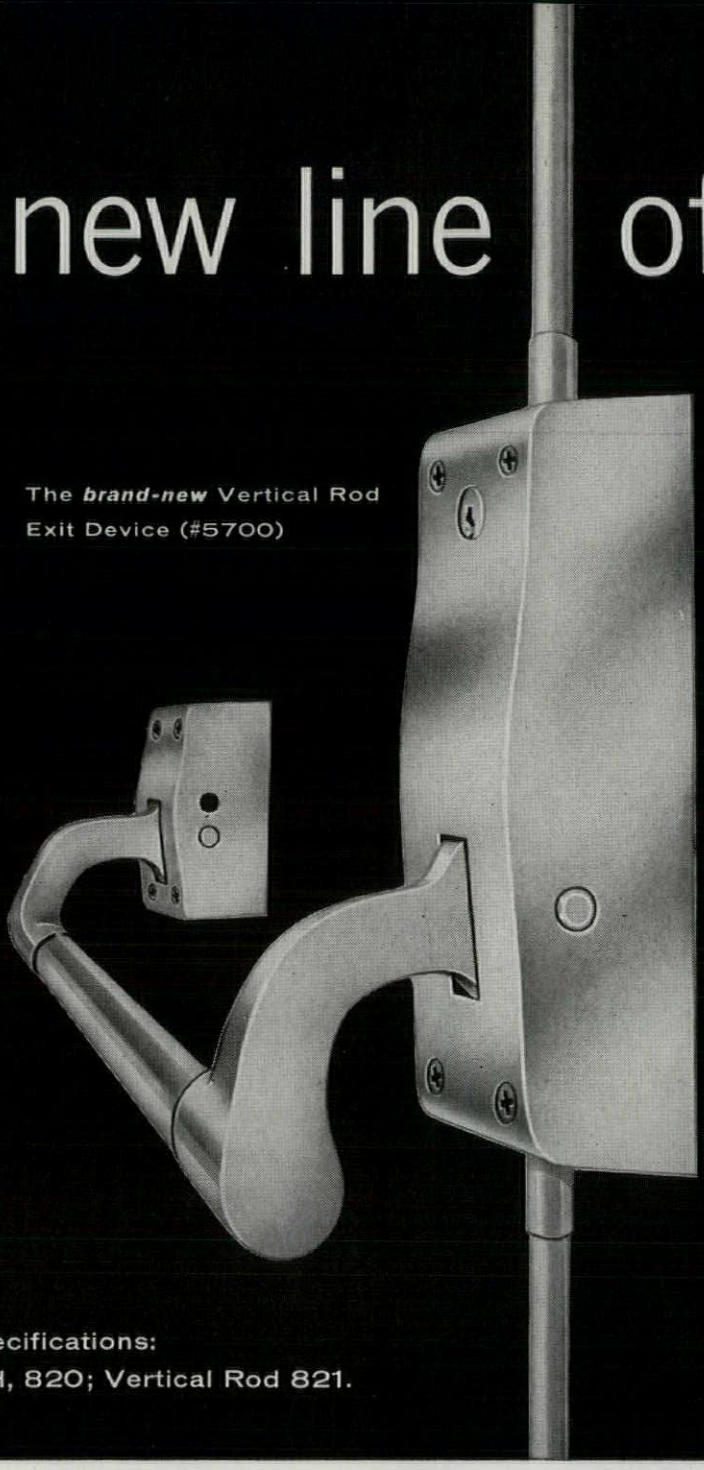
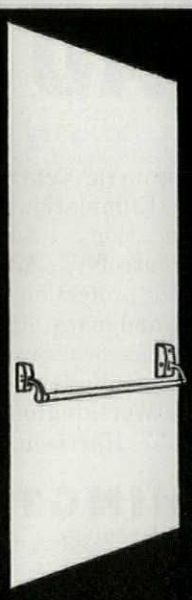
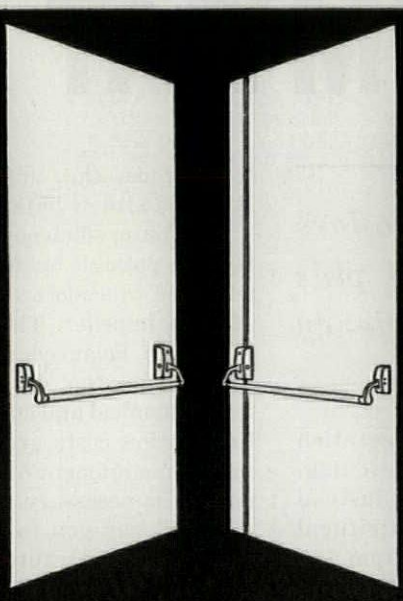


These designs conform to the following federal specifications:
Rim Bolts 810H, 810; Mortise Bolts 820H, 820; Vertical Rod 821.



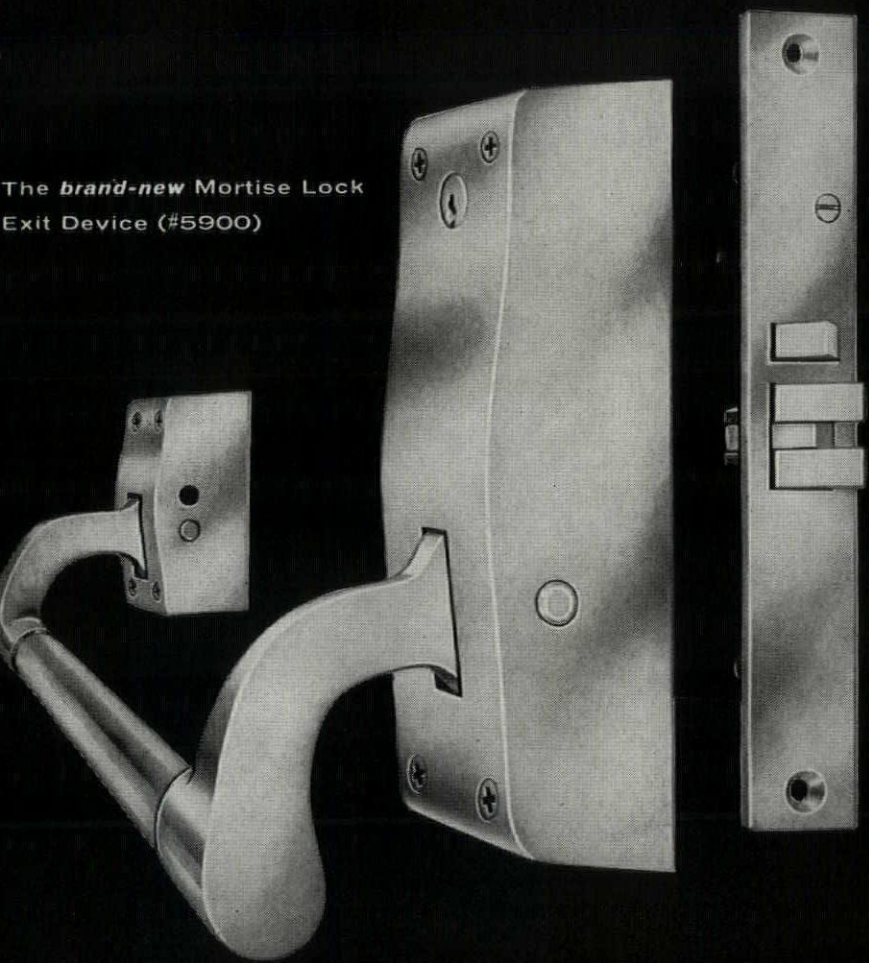
Single door with
Sargent's simple,
sturdy Rim Lock
Exit Device



Free-swinging Sargent
Vertical Rod and
Mortise combination
for double doors

EXIT DEVICES

The ***brand-new*** Mortise Lock Exit Device (#5900)



Now you can plan safer quick-exit doors for any building... with all these Sargent designs...

2 all-new designs . . . the *Vertical Rod Exit Device* with simpler, surer gravity action . . . the *Mortise Lock Exit Device* with fast, precise anti-friction design . . . both *new* for *you* from Sargent!

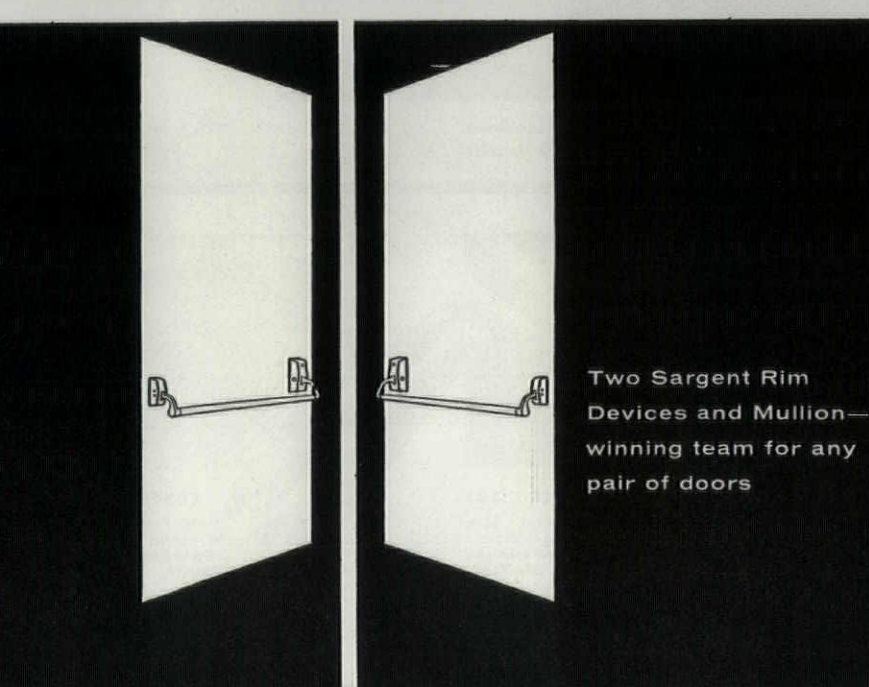
These . . . plus the popular *Rim Lock Exit Device* with only *two* moving parts . . . help make Sargent the most complete, up-to-the-minute line of exit devices anywhere!

Open and close at the lightest touch— no other exit device works easier... smoother... faster!

Rugged, long-lasting construction . . . with stainless steel springs and pivot pins. Flawlessly designed cases . . . never any finger pinching.

Whatever your requirements—specify these exit devices—alone or in combination—for unequalled efficiency and economy. They have 5 smart outside-handle styles. And they readily harmonize with other Sargent hardware.

Choose from bronze, brass, or chrome. Order through your supplier or write direct. The reasonable cost will please you. *Sargent & Company, New Haven 9, Conn., Dept. 15-E.*



Two Sargent Rim Devices and Mullion—winning team for any pair of doors

SARGENT Builders' Hardware

"...sign of long-lasting construction"

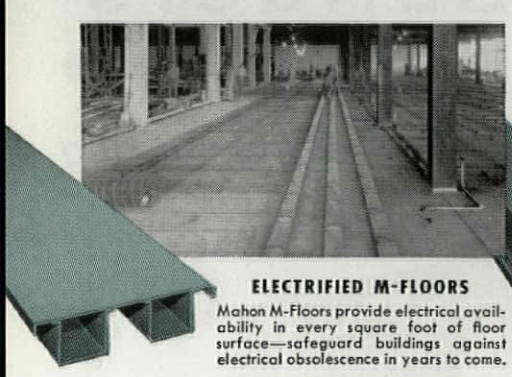
SARGENT of New Haven ®

THE PRODUCERS' COUNCIL

INSULATED METAL WALLS Broad

In the Office Building ill
here, the Architects hav
bined Brick, Limestone an
num in the exterior de
achieve the desired eff
Aluminum Curtain Wall
Spandrel and Window
Areas is made up of Ma
fabricated, Fluted Wall.
Surface of the Aluminum
Embossed in Leather-Gra

Modern Office Building for The Kansas City Southern Ry. Co., Shreveport, Louisiana.
Neild-Somdal Associates, Architects. Southern Builders, Inc., General Contractors.



ELECTRIFIED M-FLOORS

Mahon M-Floors provide electrical availability in every square foot of floor surface—safeguard buildings against electrical obsolescence in years to come.

ACOUSTICAL and TROFFER FORMS

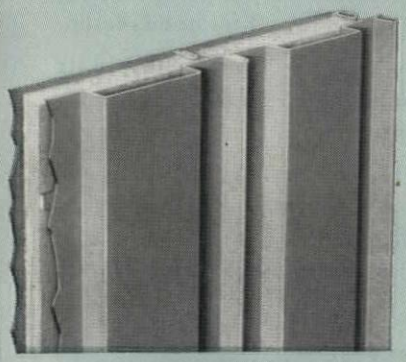
Provide an Effective Acoustical Ceiling with Recessed Troffer Lighting—Serve as Permanent Forms in Concrete Joist and Slab Construction of Floors and Roofs.

CONCRETE FLOOR FO

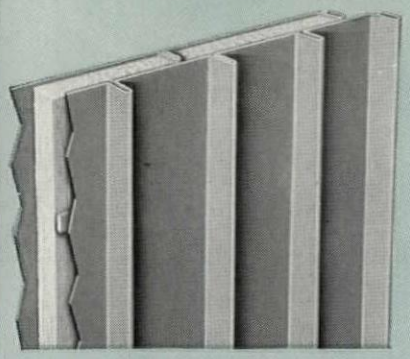
Mahon Permanent Concrete Fl
in various types meet virtu
requirement in concrete floor
struction over structural steel

Potential in Modern Architectural Treatment

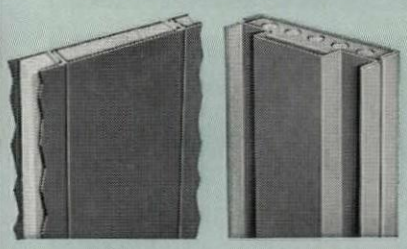
...provide Low-Cost Permanence and Lasting Beauty!



MAHON FLUTED WALL
FIELD CONSTRUCTED



MAHON RIBBED WALL
FIELD CONSTRUCTED



FLUSH FLUTED
MAHON PREFAB WALL PANELS

In the past sixteen years Mahon Insulated Metal Curtain Walls have been employed extensively by architects in virtually every type of industrial and commercial building . . . the number runs into thousands.

In recent years, progressive architects have employed this versatile product skillfully and to good advantage, costwise, in producing some outstanding exterior design effects in office buildings, schools, nightclubs, armories, sports arenas, technical and research centers, parking garages, and, in some important monumental buildings.

Bright metal—aluminum or stainless steel—in combination with brick, ornamental stone, glass block, or other materials, offers unlimited possibilities in architectural treatment of exterior design. The building at the left is an excellent example.

Mahon Insulated Metal Curtain Walls are light weight, permanent construction . . . thermal properties are superior to those of a conventional masonry wall with furred lath and plaster. Erection is fast under any temperature condition. They are economical, too . . . savings amount to as much as 50% of the cost of masonry walls in some types of buildings.

Mahon Field Constructed Walls and Prefabricated Wall Panels are available in Aluminum, Stainless Steel, or Enamel Coated Cold Rolled Steel in patterns shown at left. In the "Fluted Wall" and the "Ribbed Wall", vertical joints are invisible—symmetry of pattern is uninterrupted across the wall surface . . . and, both of these walls can be erected up to sixty feet in height without a horizontal joint. These two design features, which are vitally important from an appearance standpoint, were engineered into Mahon Insulated Metal Curtain Walls to give you a finer appearing job free from unsightly joints.

You'll want to investigate these Mahon "better look" features before you select a Metal Curtain Wall for your next building.

See Sweet's Files for information, or write for Catalogue W-57.

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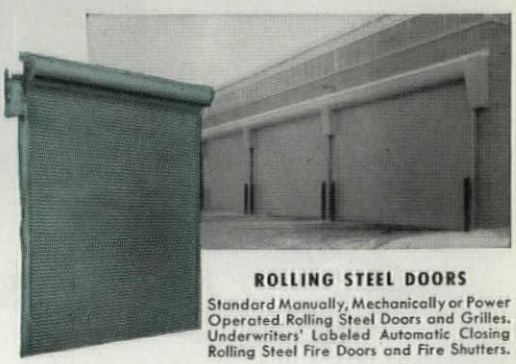
M A H O N

STEEL ROOF DECKS
Standard Double Rib, Wide-Flange Double Rib, and Long Span M-Decks, which can be furnished with perforated surface and fitted to provide an efficient acoustical ceiling.

UNDERWRITERS' RATED FIRE WALLS
Mahon Metalclad Fire Walls carry two Hour Rating by Underwriters' Laboratories, Inc., for Use as Either an Interior Dividing Fire Wall or an Exterior Curtain-Type Fire Wall.



ROLLING STEEL DOORS
Standard Manually, Mechanically or Power Operated Rolling Steel Doors and Grilles. Underwriters' Labeled Automatic Closing Rolling Steel Fire Doors and Fire Shutters.

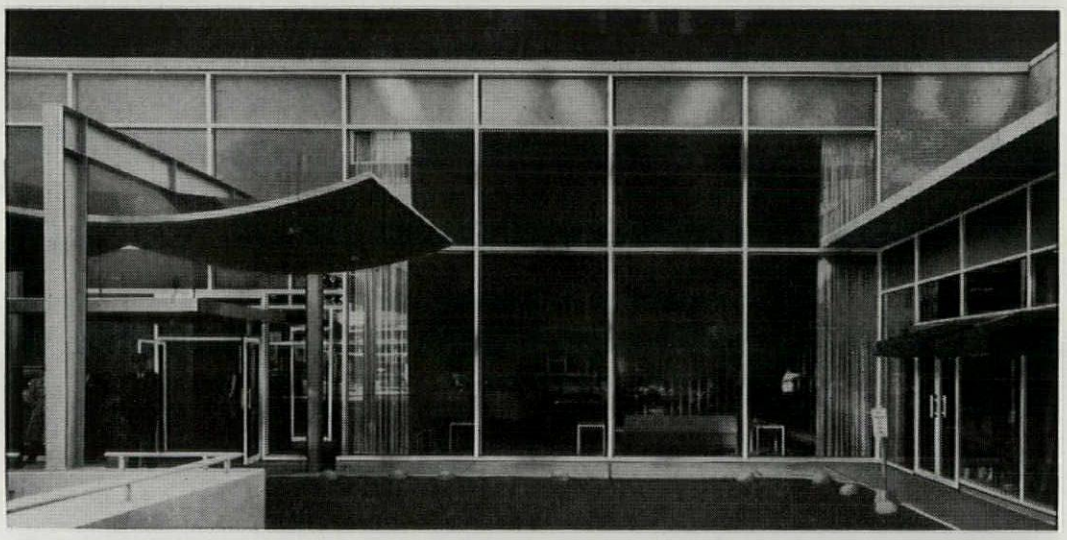
100% BRASCO STORE FRONTS AND ENTRANCES

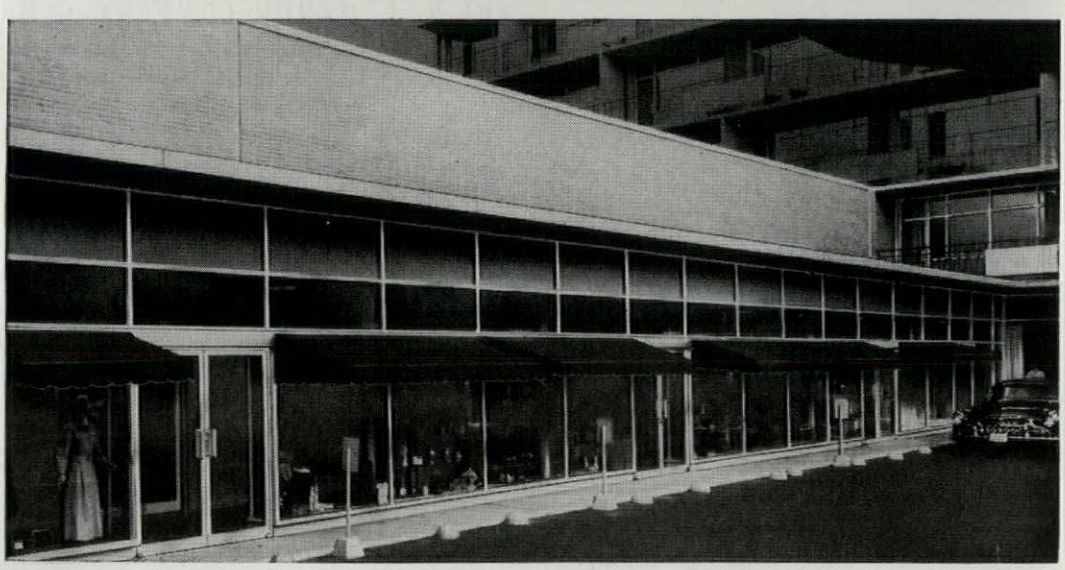
Score High for Smart Styling

THE DISTINCTIVE shopping area of the Park Plaza Hotel in Toronto is additional evidence of the attraction value of Brasco Construction for store fronts and entrances. You see Brasco used wherever smart operators operate . . . . . the Main Streets, the fashionable avenues, popular shopping centers . . . . . and for good reason.

The reason is superior value, basic in the sturdy construction itself—value in its glass safety principle—value in its smart, modern contours and fine lasting finish. Yet this superior construction is priced competitively and installed and glazed economically by expert Brasco dealers from coast to coast.

If you too are planning new or remodeled stores it will pay you well to investigate the merits of Brasco Construction for store fronts, aluminum entrances and metal facing materials. We'll gladly mail detail packet and the name of your nearest Brasco dealer specialist on request.





Entrance and Shopping Area Park Plaza Hotel, Toronto.

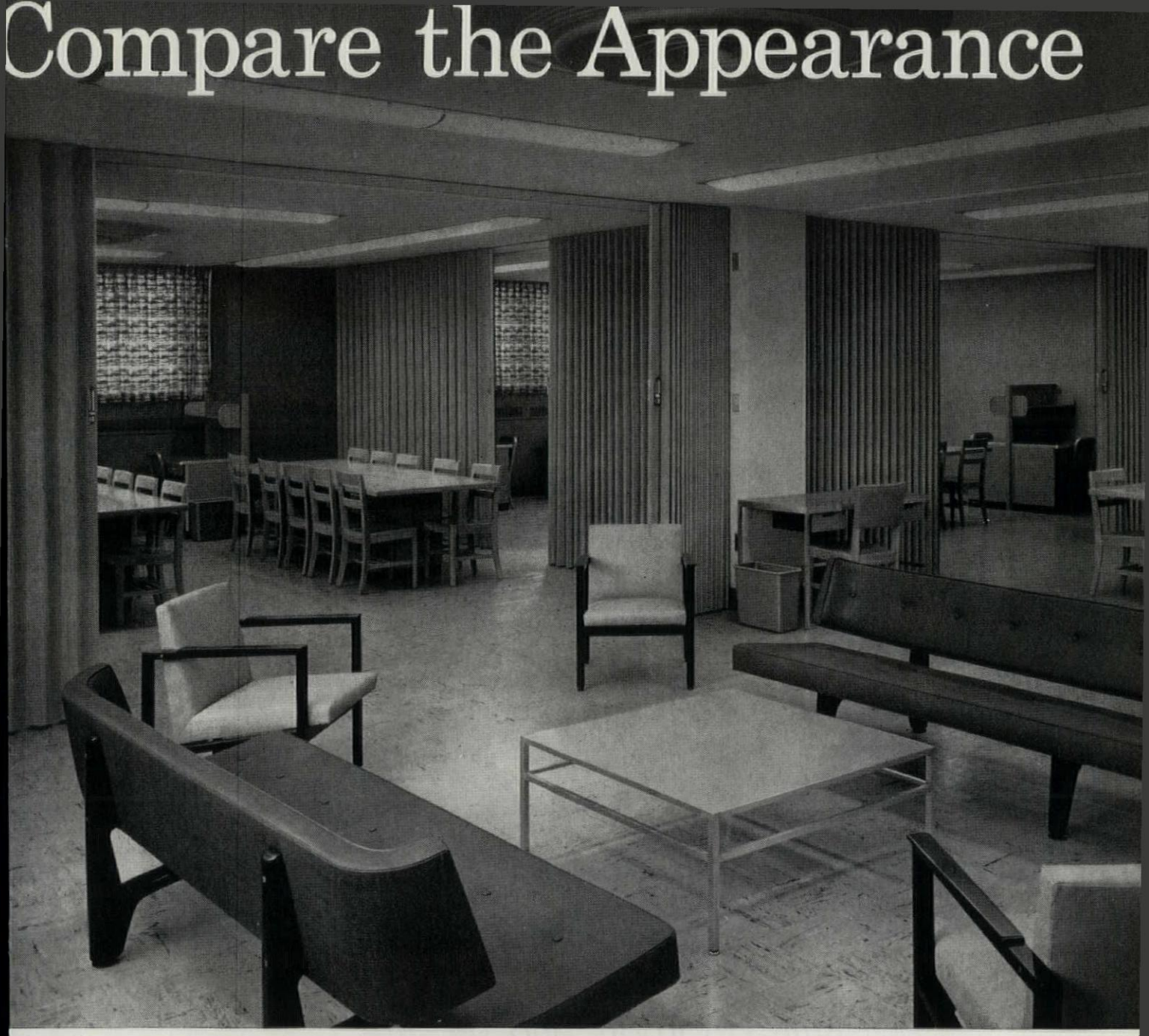
Architects, Page & Steele.

For Complete Information Please Write Dept. P705

Brasco MANUFACTURING CO. HARVEY, ILLINOIS

STORE FRONTS—ENTRANCES—BRASCO WALL

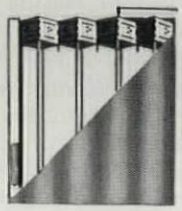
Compare the Appearance



Handsome Modernfold doors save space, keep their good looks for years

saving space in homes, businesses and institutions, MODERNFOLD rs are the overwhelming choice of architects.
's not just that they have a *double-strength*, all-steel inner framework. hat they can take year-in-year-out punishment. It's because they are *y beautiful!* MODERNFOLD is the *only* folding door manufacturer main- ing a complete, quality-controlled fabric coating plant. The durable l coverings of MODERNFOLD doors come in a rainbow of colors— ens to choose from—and in such favored finishes as wood grains and her grains. These doors *retain* their fresh, original appearance for years years, with only soap and water washing.
nly MODERNFOLD, among all folding doors, can serve your needs so . You'll find out why, in detail, when you refer to Sweet's Catalogue. ose from four complete lines. In new construction or remodeling, check r MODERNFOLD distributor; he's listed under "Doors" in classified hone directories.

Vinyl covered, many colors. Easily washed while in place. Inconspicuous overhead track needs no unsightly cornice. Double strength, all-steel framework. Available in standard or custom sizes.

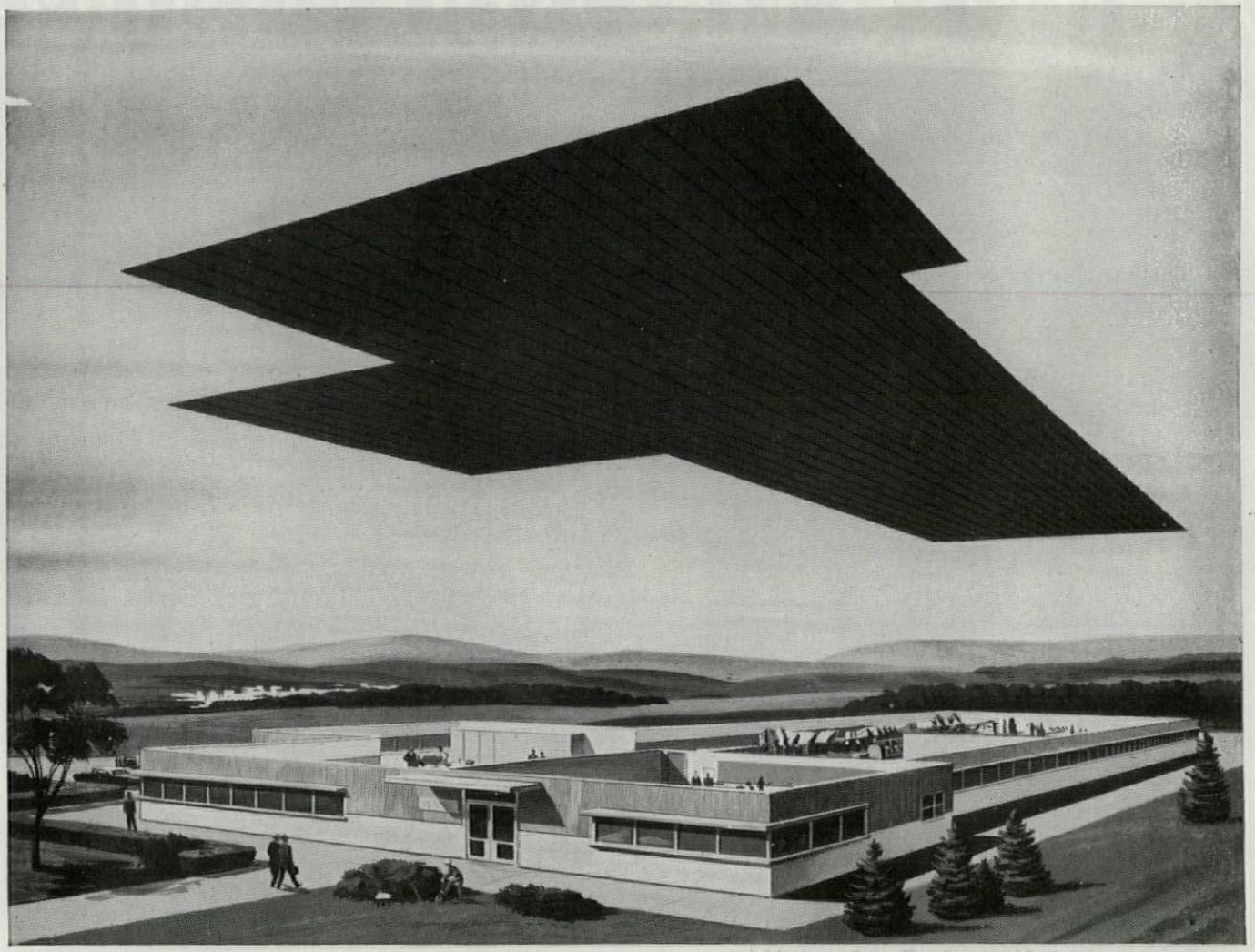


MODERNFOLD DOORS HAVE BEEN USED BY 97% OF ALL ARCHITECTS

modernfold
DOORS

THE FIRST AND FINEST IN FOLDING DOORS

CASTLE PRODUCTS, INC., Dept. E31 New Castle, Indiana. *In Canada:* New Castle cts, Ltd., Montreal 23. *In Germany:* New Castle Products, GMBH, Stuttgart. Available in over ntries throughout the world.



J-M Aquadam Roofs provide lasting roof protection. They are specifically designed for low pitch and dead level roof decks.

Give your clients the best roof protection . . .

specify Johns-Manville Aquadam Built-Up Roofs and be sure

A good roof is in reality a valuable "over head" investment. The roof is subject to the hardest wear of any part of a building. J-M Aquadam Roofs provide long-lasting protection with a minimum of roofing repair and maintenance expense.

J-M Aquadam Roofs owe their superiority to Aquadam, the modern cementing agent used in the application of felts. Aquadam has exceptionally high adhesive and permanent bonding properties. It has approximately twice the ability of typical asphalts to retain its initial properties on exposure.

Aquadam Built-Up Roofs resist beating rains, winds, melting snow and ice. The result is thorough watertightness in low sloped and dead level roofs.

The high ductility of J-M Aquadam helps prevent roof cracking. Aquadam reseals and repairs itself after being subjected to the equivalent of summer roof temperatures.

Aquadam Built-Up Roofs are available in both smooth surfaced and slag or gravel specifications.

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Presenting STARKOTE

. . . a bright new tile on the building horizon

Here is a color and texture that blends with any color scheme and any architectural style.

Starkote is a warm blue-gray speckle ceramic glaze that offers permanence, easy maintenance and an easily constructed wall and finish in one unit. "A" quality Starkote is priced as a production unit which means a 10% to 15% lower product cost. Best of all—deliveries can be accurately scheduled to meet your job requirements.

For full information and specifications contact your local Stark Ceramics distributor or write for Starkote bulletin 157.

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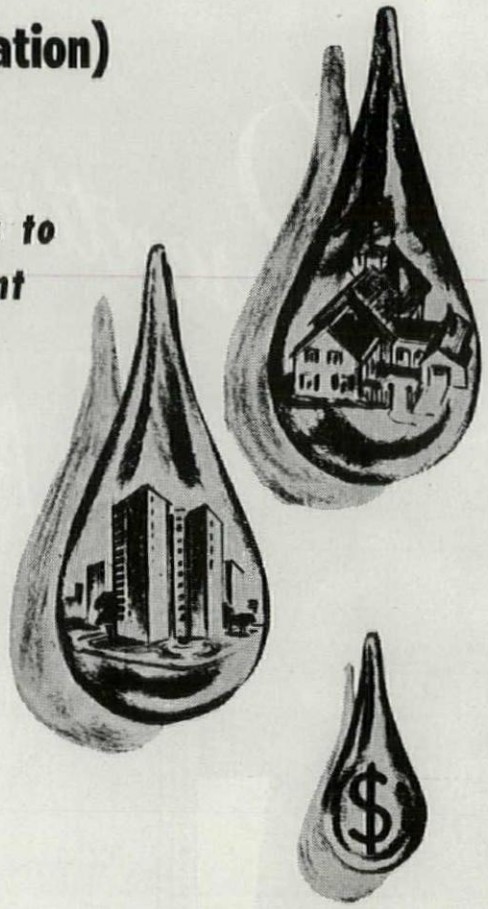
Little Drops of Water (Condensation)

Ruined a Fine Home
Cost over a Million Dollars to an Apartment Development



The owners of a path-breaking apartment development had to pay a repair bill of over a MILLION DOLLARS for ripping out condensation-soaked insulation and replacing damaged plaster walls.

It was necessary to move a fine country home to a new site—the state highway was coming through. It could not be done. The sills of the house had rotted on account of condensation in the walls.

Today's tightly built, high-humidity houses create vapor problems. Vapor, which is a gas, has 1/205,000 the density of water at 32°F; about one millionth the density at 0°F. Sometimes there is excessive flow of vapor THROUGH walls and ceilings into cold building spaces. This enhances the formation of destructive condensation, especially where an adequate vapor barrier is lacking, or where there is one with too many breaks, or which while waterproof is not sufficiently vapor-proof.

METALS ARE THE BEST VAPOR BARRIERS

There is now a new , multiple aluminum, which forms a *continuous*, edge-to-edge barrier of uniform depth between studs or joists, giving the entire area maximum protection against vapor-flow and condensation formation as well as against heat loss or intrusion.

The aluminum layers, 375 ft. to 750 ft. long are almost impervious to water vapor. Infiltration under the flat stapled flanges is slight. Condensation formation, on or within this type of insulation is minimized because of the scientific construction of multiple layers of aluminum, fiber, and air spaces.

The surfaces of this aluminum have high heat ray reflectivity (97%); low absorptivity (3%); and low emissivity (3%). Conduction is slight because of preponderant air spaces of low density. Aluminum and fiber layers retard convection, outer and inner. It is available, prefabricated, as Infra Insulation, Type 6 or Type 4.

The U. S. NATIONAL BUREAU OF STANDARDS has published an informative booklet describing the destruction that condensation can cause and means of prevention. It is entitled "Moisture Condensation in Building Walls." Send us coupon for a FREE copy.

THERMAL VALUES
Infra Type 4 Parallel Insulation

Up-Heat C .105*=3⅛" non-metallic insulation†
Wall-Heat C .068*=4¾" non-metallic insulation†
Down-Heat C .042*=7⅞" non-metallic insulation†

Cost installed between wood joists, material and labor, about 8¢ sq. ft.

Type 6 also available

Can be purchased everywhere through your preferred local dealer.

*Determined by method of National Bureau of Standards in H.H.F.A. Research Paper 32.
†Calculated on basis of limiting thermal values cited in Fed. Specs. LLL-f-321b; HH-I-585; HH-I-521c; HH-I-551a.

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☐ Please send sample of Infra
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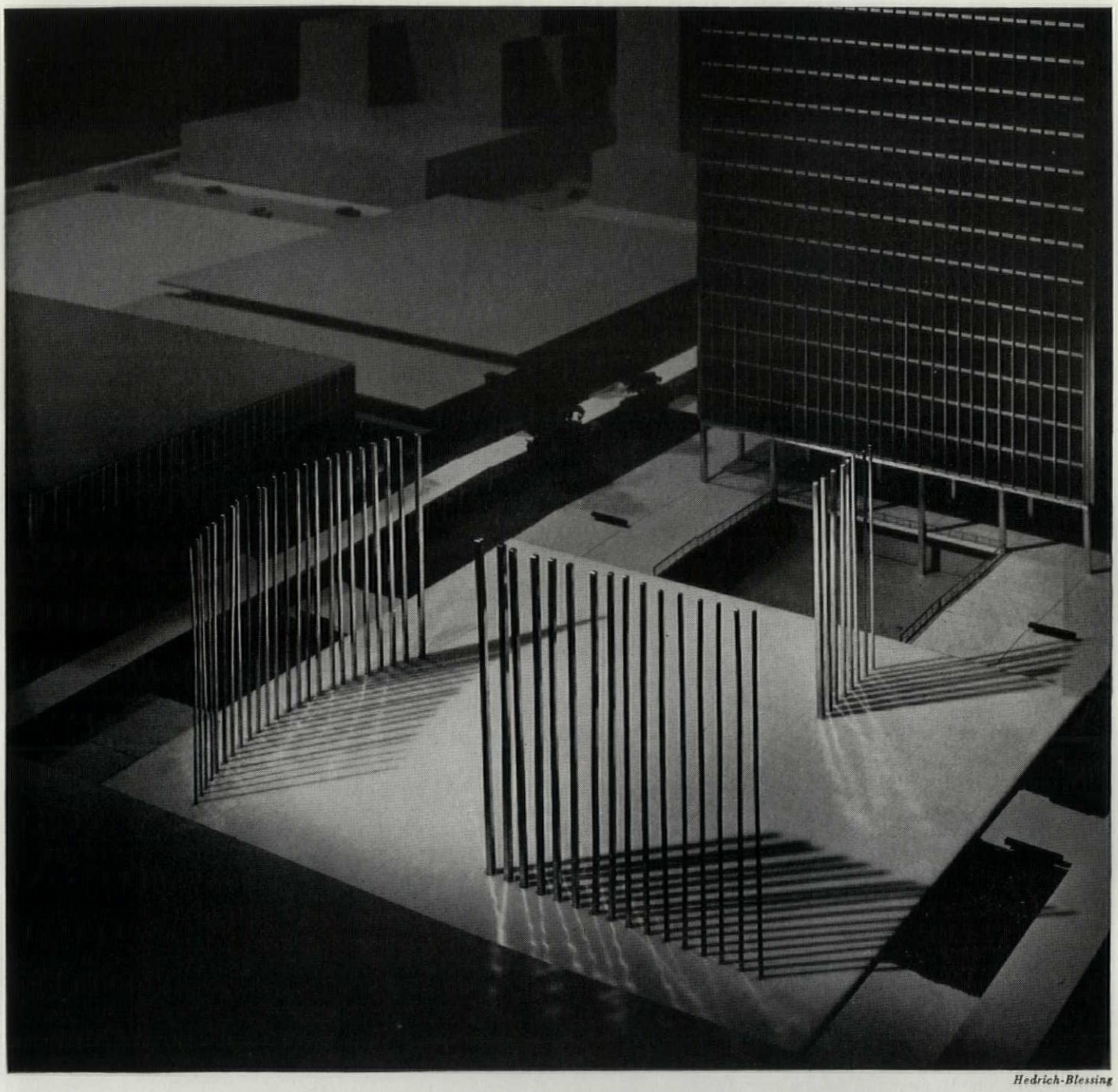


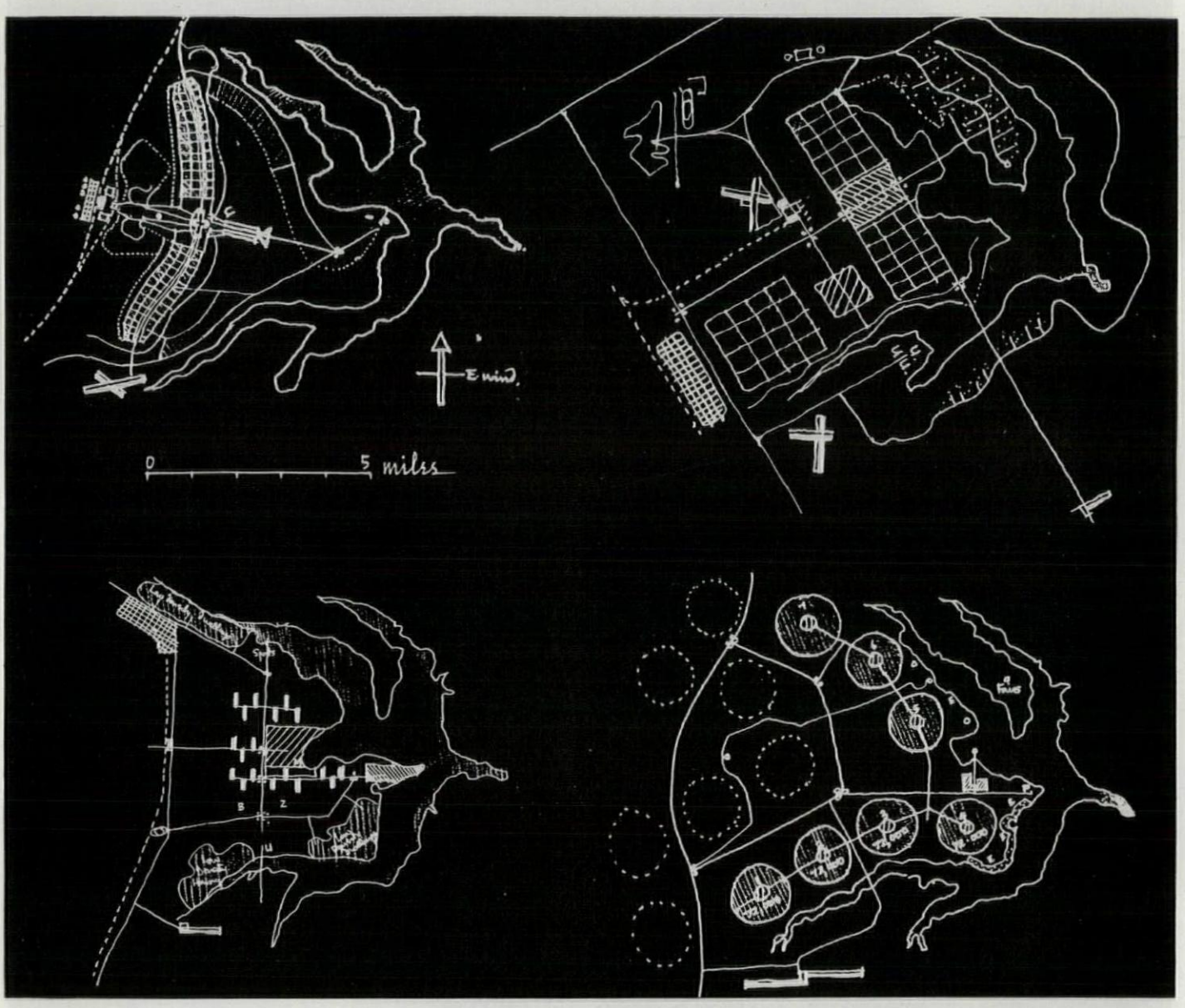
Hedrich-Blessing

FERMI MEMORIAL COMPETITION JUDGED

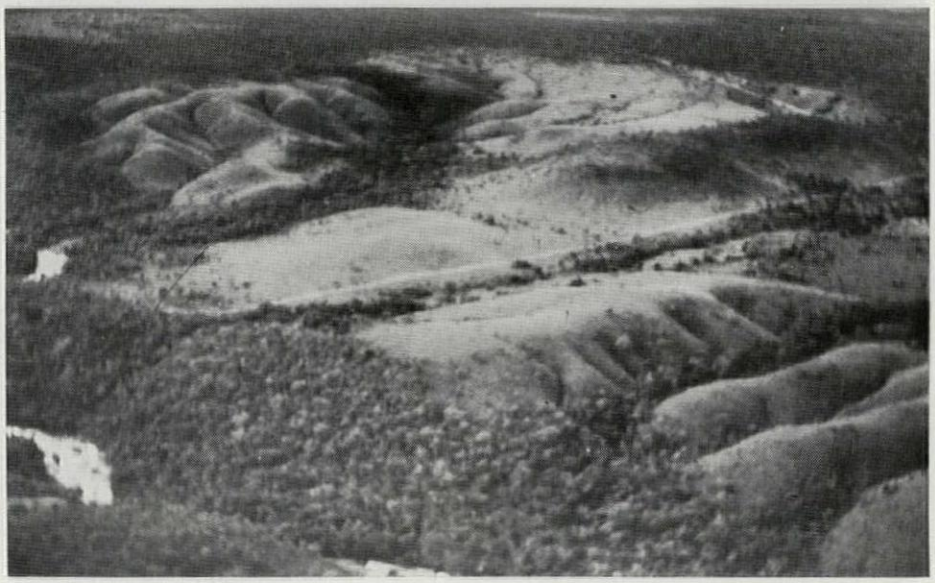
From the 355 entries in the Enrico Fermi Memorial Competition, first prize of $5000 as well as the commission went to Reginald Caywood Knight (*right*), Architect, Coral Gables, Florida, and member of the teaching staff at MIT, for an auditorium and exhibition hall which has a "musical" pedestrian plaza as its roof. The Jury was composed of Gordon Bunshaft; Pier Luigi Nervi, Italian Architect and Structural Engineer; Ludwig Mies van der Rohe; José Luis Sert; and Lancelot Law Whyte, British Physicist; John O. Merrill was Professional Advisor. Designed as feature of the Fort Dearborn project (Skidmore, Owings & Merrill, Architects), the scheme takes advantage of two proposed levels — traffic below, pedestrians above. Auditorium and exhibit hall are at traffic level, while the roof—or pedestrian plaza—is surfaced with translucent material that will glow at night. Unifying element is sound, deriving from three rows of tall tubular bells projecting above the plaza.

As a Memorial to Fermi, physicist and pioneer in atomic research, the Jury felt that the winning design was "particularly appropriate, since it achieves a unification of Art and Science."

BRAZIL HAS PLAN FOR NEW CAPITAL



Opened to the public recently in the spacious hall of the Ministry of Education in Rio de Janeiro was a display of 26 entries by Brazilian planners and architects in a competition for design of the pilot plan for Brazil's new capital, "Brazilia," to be built on a 3280-foot-high plateau (*right*) in the southwestern part of the State of Goyas, 620 miles from Rio as the crow flies. Winning designs, shown above in sketches by Sir William Holford, member of the Jury, summarize the first prize (*top left*) by Lucio Costa; second (*top right*) by Milman-Rocha-Concalves; and (*lower row*) schemes proposed by Rino Levi & Associates (*left*) and M. M. M. Roberto & Associates (*right*). Other members of the Jury were Horta Barbosa; Oscar Niemeyer; Stamo Papadaki; Paul Antunes Ribeiro; Andre Sive; and (Chairman, without vote) Israel Pinheiro, President of the sponsoring organization.

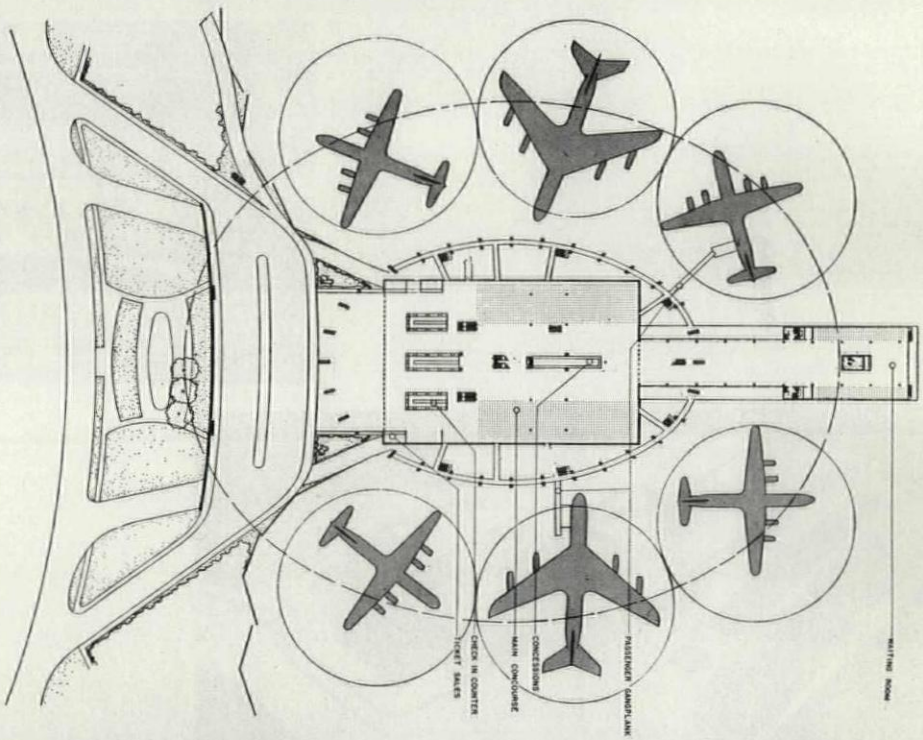


Skating

Gottscho-Schleisner

Pan-Am to Build Radial Air Terminal

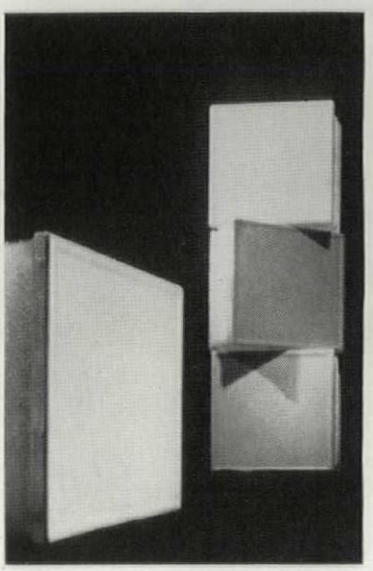
Plans for a new air terminal which will eliminate long "sheep runs" to planes, and yet provide weather protection for passengers, baggage, and services, have been announced by Pan American World Airways. The structure is scheduled for completion late in 1958 and is to be part of the emerging Terminal City at New York International Airport. Its design is the result of studies of hundreds of airports throughout the world. Passengers will enter the oval building on the second level, via eight traffic lanes capable of accommodating 1800 cars per hour. Forty-eight check-in positions (with room for expansion) are to be within 40 ft of the entrance. All aircraft will be visible from the terminal floor, thus eliminating potential confusion and rushing. Gate positions are to have adjoining lounge areas. Clippers will be boarded via elevated gang planks at aircraft level —all under the protection of the vast terminal roof which will extend 110 ft beyond the column line of the structure. Handling capacity of the new terminal is estimated at one fully loaded 160-passenger airliner at 15 minute intervals. Planners of this proposal are: Tippetts-Abbett-McCarthy-Stratton, Architects-Engineers; Ives, Turano & Gardner, Associated Architects.

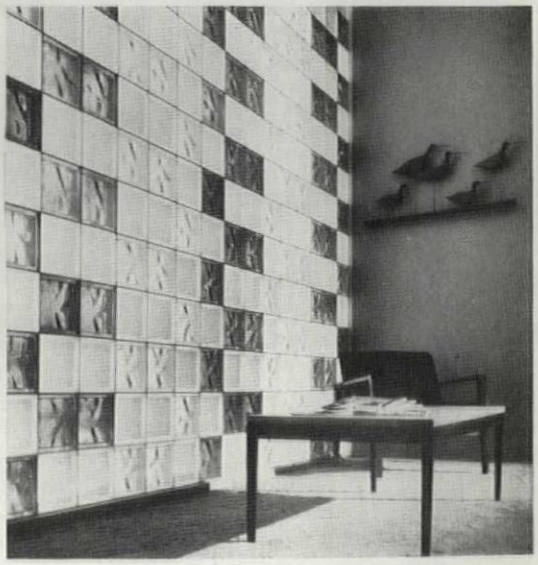


Colorful Glass Block

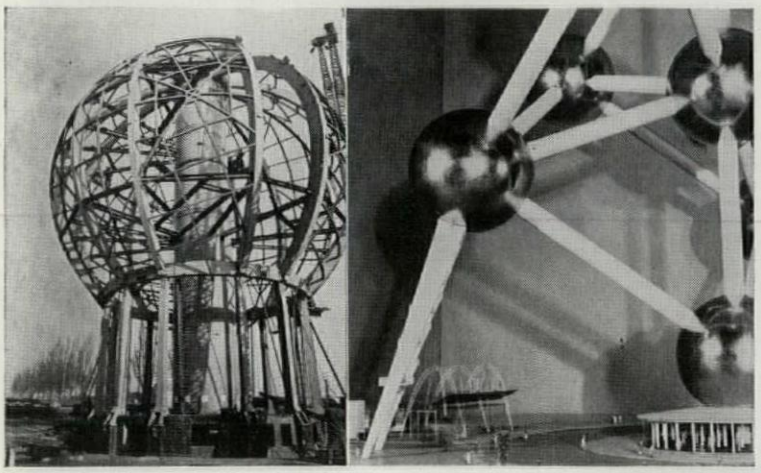
Something new has been added to glass block by Pittsburgh Corning Corporation. Now, for the first time, these are available, in the 8-in. square size, in colors—turquoise, mist green, canary yellow, and coral — which derive from a fired-on translucent-ceramic finish that provides a median light-transmission range of about 20 percent. Research-laboratory tests show that the finish is not only nonfading but also unaffected by acids, alkalis, and sulfides.

Pittsburgh Corning particularly encourages use of glass blocks as a total curtain-wall material that does not require any backup layer. They emphasize that a sizable economy results from the fact that such a wall is erected by just one trade; and when it is up, it's a finished wall, inside and out.





BRUSSELS WORLD'S FAIR TAKES SHAPE



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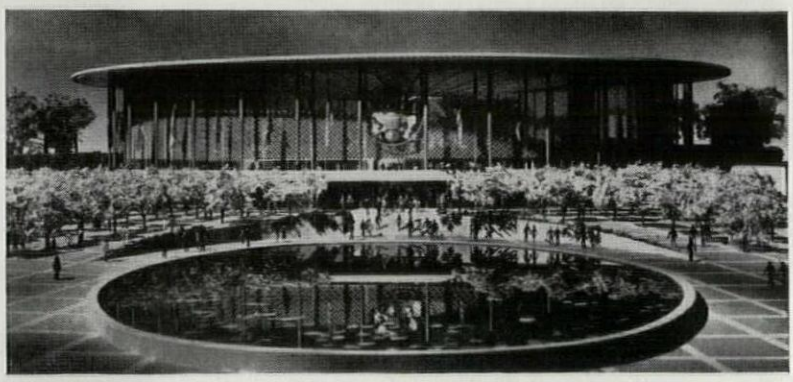
Construction of the Atomium, **1,** *as* Theme Structure *of the 1958 Fair, is presently under way. The 360-ft-high composition representing the atomic structure of an elemental metal crystal is to symbolize the faith in man's ability to mold the atomic age to the ultimate advantage of mankind. Steel spheres, 59 ft in diameter, will house exhibits and restaurants, and will be interconnected by tubular passages containing elevators and escalators.*

Two parallel, elevated roadways, 49 ft above ground level, will follow a serpentine route through the foreign pavilion section, to allow visitors a bird's-eye view of fair buildings and gardens.



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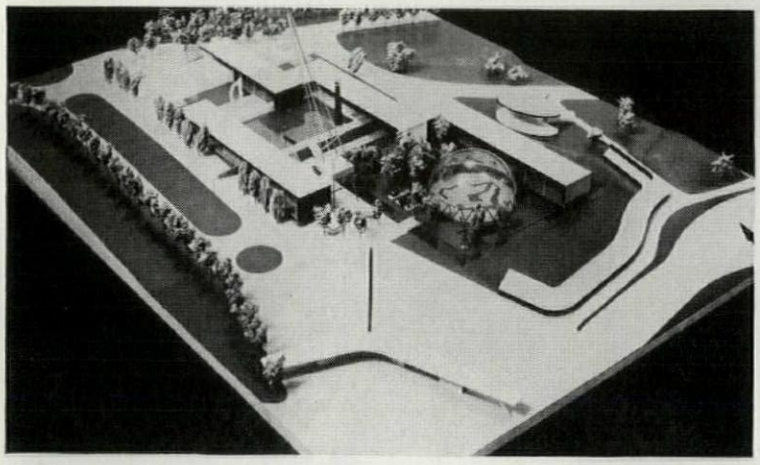

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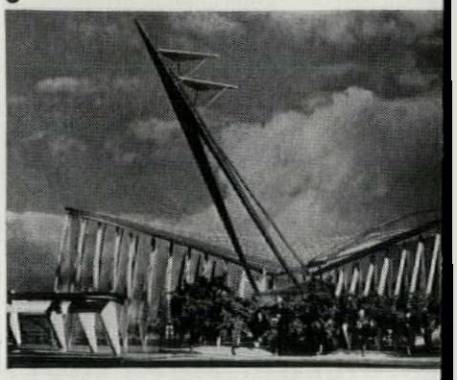

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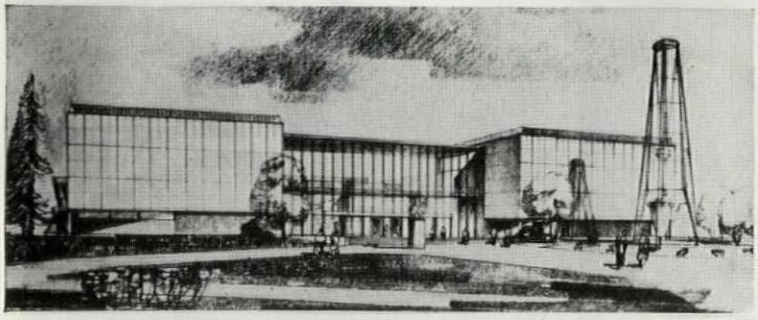

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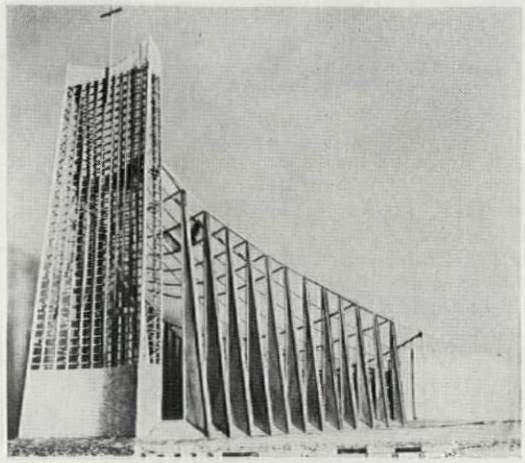

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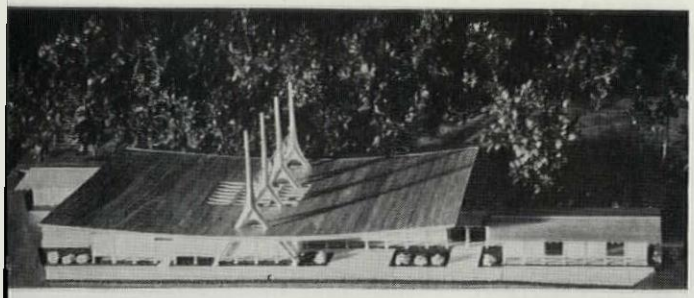

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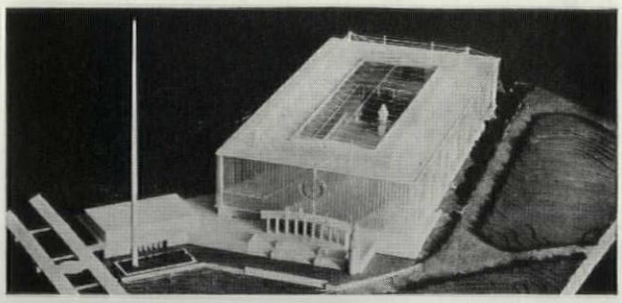

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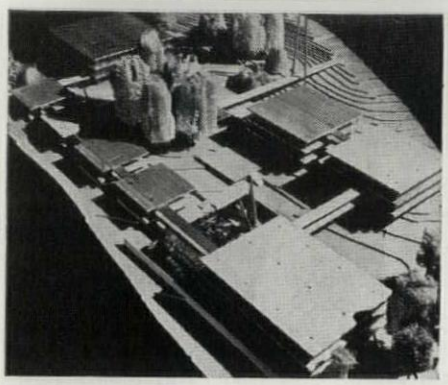

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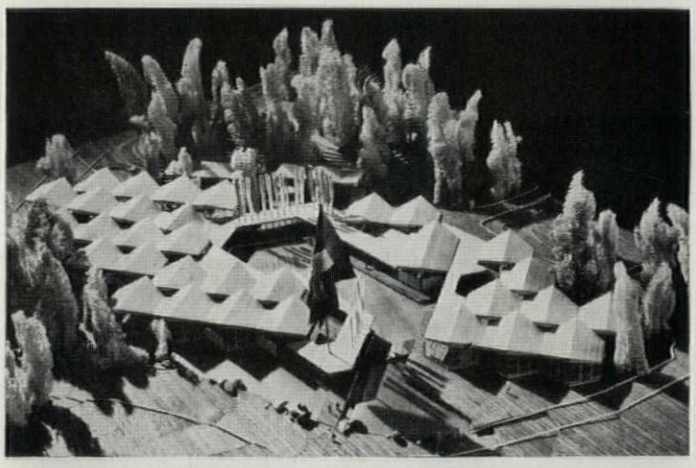

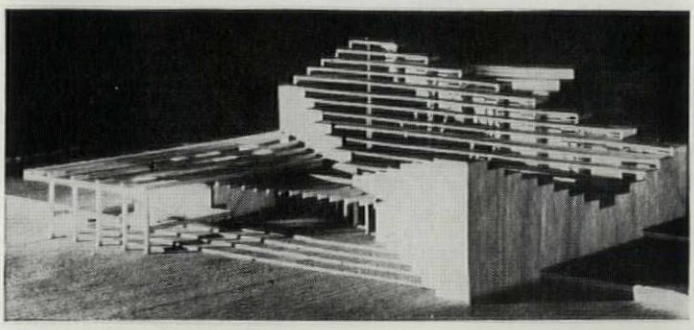

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Forty-eight countries will participate in this first World's Fair since 1939. Among nations which have completed plans for their exhibits are:

2 *U.S.A.:* Circular structure, equal in size to Roman Colosseum, of gold-finished steel and plastic. Will house exhibits of American Arts and Sciences. Adjoining is 1000-seat theater (*page 100, February 1957 P/A*). Architect: Edward D. Stone.

3 *NETHERLANDS:* "Water — Friend and Enemy" will be theme of Dutch exhibit. Structures on various levels will illustrate flood-prevention plan. Architects: J. B. Bakema, J. W. C. Boks, J. H. van den Broek.

4 *VATICAN:* Church *(shown here)* will be part of large building complex sheltered by high wall. Architects: P. Rome, Bastin, Boseret, Langaskens, Pepermans.

5 *CZECHOSLOVAKIA:* Three steel structures connected by porticos on a wooded site. Architects: F. Cubr, J. Hruby, Z. Pokorny.

6 *FRANCE:* Base of the building in form of crystal. Large arrow structure acts as counterbalance. Architects: G. Gillet, P. Sonrel.

7 *JAPAN:* Architect: K. Mayekawa.

8 *BRITAIN:* Three distinct exhibit sections: Government exhibit, open-air section (calling to mind English gardens), and vast industrial pavilion. Architects: H. Lobb & Partners, J. Ratcliff, J. Gardner, E. Mills, J. Lansdell.

9 *U.S.S.R.:* Large pavilion, high interior hall with circular gallery for exhibits: will also include 1500-seat cinema and restaurant. Architects A. Boretski, V. Abramov, V. Doubov, A. Polanski.

10 *FEDERAL REPUBLIC OF GERMANY:* Eight pavilions linked by galleries. Architects: E. Eiermann, S. Ruf, M. Schwippert.

11 *SWITZERLAND:* Small interconnected pavilions on a steep site. Architects: P. Calame-Rosset, W. Gantenbein.

12 *FINLAND:* All-wood pavilion. Architect: R. Pietila.

13 *CANADA:* Three-level steel-frame structure reached by ramp. Ground floor, partially open, contains 800-seat auditorium. Architect: C. Greenberg.

Washington Report

by Frederick Gutheim

It looks as if more local architecture worth preserving will be saved by the accidental circumstances of budget cuts than by any application of a rational policy. The extension of the East Front of the Capitol seems dead as the result of a Congressional economy gesture. This should at least allow the Architect of the Capitol and his panel of consultants time to develop a better scheme for expanding legislative facilities. The proposed new executive building which would have demolished Jackson Place and hopelessly compromised the residential scale of Lafayette Square and the White House seems on the shelf pending the report of the Fleming Committee in June. The replacement of the old State, War, and Navy building has found a strong opponent in Speaker of the House Sam Rayburn. The suspension of the lease-purchase program has also had some effects in the same direction—a breathing spell that might be used to effect fundamental reforms.

Washington has been fighting architectural preservation brush fires for the last several years. It has no plan for architectural preservation. Its important buildings have not been scheduled according to any criteria. There have been no efforts at area preservation. The National Fine Arts Commission and the National Capital Planning Commission have not considered the preservation of architectural values in their work. The National Trust for the Preservation of Historic Buildings, which advises other cities to proceed on the basis of a citywide plan, finds its advice unheeded here. The National Park Service, which is responsible for many of the city's older buildings as well as much of its open space, is also inactive, although there is hope that funds in its proposed budget to revive the Historic American Buildings Survey may be used in part to meet the need here. Rep. Frank Thompson, Jr., New Jersey Democrat, commented that the NPS was the logical agency to inventory the Jackson Place buildings and schedule them for preservation. Why not the whole job? In the present breathing spell, and before the coming rush of Federal construction and redevelopment, there is an opportunity.

Wrapped up in the question of the preservation of historic buildings is the larger question of the general character of our Federal city. In a thoughtful, if undramatic, talk to the Potomac Chapter of the AIA last month, Ralph Walker said about as many useful things on this subject as I have heard from a single speaker in an evening. His talk covered the wide range of topics that must be considered by anyone who hopes to offer an architectural program for the capital. What he stressed was continuity. What he liked about Washington was the open spaces, the greenery, the fountains, and the small urban scale of Judiciary Square. In the coming day of larger Federal buildings, huge redevelopment projects, superhighways, which will subdivide and reshape many parts of the city, the older buildings of architectural merit become rallying points around which future communities can be organized and designed. The past in the future can play a useful part. But not at the rate we are going; and not if we think of every worthwhile existing building as a museum; and certainly not if we pretend there are no existing architectural values.

In the development of its Jackson Place building, the General Service Administration raised the curtain on a procedural issue that should receive more attention from architects. They released a study of the proposed building made, it was explained, to assist the architects eventually chosen to design the building. The drawing showed in part a volumetric study, and in part an effort to resolve the problem of scale and elevation facing Lafayette Square. The building proposed shows a tired elevation that might have been drawn a quarter of a century ago. Its four stories stand on a low platform and are topped with a penthouse; behind rises the dim bulk of an eight-story building. The question raised here is whether design problems of this sort, which demand original solutions so desperately that one would think a national architectural competition should be proposed, ought not to be left alone until an architect is selected. By handing the job to a civil service drafting room to solve, the architect eventually chosen finds himself limited to finding a skin treatment for a basic solution already arrived at—and agreed upon by major parties concerned. If we are dealing with a design problem, as is certainly the case where a new office building must be fitted to be a complicated framework of existing architectural values, talent must be given the utmost freedom to conceive, not strait-jacketed. Undoubtedly what is at fault here is the Government's unwillingness to engage an architect for a specific job until the project has been duly authorized. But this means the project is formulated at a low design level, and additional difficulties are thus put in the way of a better solution.

The continued high volume of nonresidential building is still the main reason why the Administration is indisposed to stimulate house building or Government construction. The gains in public construction have been substantial, and the value of work put in place has now reached a monthly total more than ten percent higher than 1955. On the same scale private nonresidential building was running at about $750 millions per month early this year as against less than $600 millions at the beginning of 1955. By contrast, the reduction in house building has been negligible. The main question in all these calculations, of course, is not what we did two or five years ago, but what a rapidly expanding nation needs today and in the future.

News Bulletins

• Association for applied Solar Energy of Phoenix, Arizona, is offering $2500 and construction service contract to winner of international competition for design of solar-heated residence to be built in Phoenix. Jurors will be: Dean Pietro Belluschi, MIT; Architect Carlos Contreras, Mexico D.F.; P/A Editor Thomas Creighton; Architect James W. Elmore, Phoenix; Architect Nathaniel Owings, San Francisco. Entries due Aug. 15. For programs—available until June 1—write: James M. Hunter, 1126 Spruce St., Boulder, Colo. . . . To encourage design of economical highway bridges which incorporate esthetic feature, James F. Lincoln Arc Welding Foundation is sponsoring $50,000 award program for welded-bridge designs conforming to requirements of National System of Interstate and Defense Highways. Entries due May 19, 1958. For data write: Secretary, James F. Lincoln Arc Welding Foundation, P.O. Box 3035, Cleveland 17, Ohio. . . . International Competition for design of Monument to Heroes of Warsaw was announced by Association of Polish Architects and Union of Polish Plastic Artists. Prizes—payable only in Polish currency—total 425,000 zlotys; entries due Oct. 15. For details write: Polish Embassy, 2640 16 St., N.W., Washington 9, D. C.

• Jan Cybis, Polish painter and recent Guggenheim award winner, is new president of Union of Polish Plastic Artists. . . . Joseph R. Passonneau, acting dean of Washington University School of Architecture, will become Dean of School as of July 1, according to Chancellor Ethan A. H. Shepley. . . . Dr. Paul J. Misner has been elected President of School Facilities Council of Architecture, Education, and Industry.

• Aluminum in Modern Architecture—two volumes published by Reynolds Metals Co. and distributed by Reinhold Publishing Corp.—won Certificate of Exceptional Merit in Class I of Ninth Annual Building Products Literature Competition.

• First R. S. Reynolds Memorial Award of $25,000 will be presented by AIA to firm of Cesar Ortiz-Eschagüe, Manuel Barbero Rebolledo y Rafael de la Joya, Madrid, Spain, for design of Visitors and Factory Lounge Center of S.E.A.T. automobile plant in Barcelona—completed July 1956. According to architects, building (right) is first in Spain to be constructed with aluminum frame and roof. Austere design—using glass, brick, corrugated aluminum sheets, aluminum purlins, and electrically operated aluminum sunshades — relies upon esthetic value of basic materials as evinced in construction details (far right) rather than surface coatings.

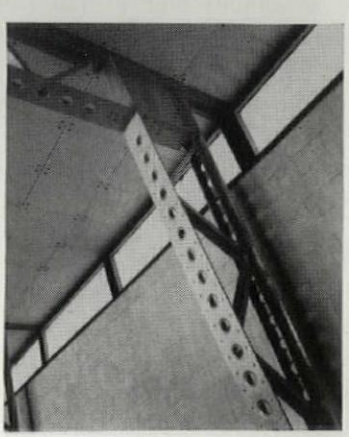
• Positano Art Workshop, in Italy, entering fifth season—May to Oct.—invites artists, craftsmen, and architects to enroll for three or more weeks of instruction under staff of international experts. Write: Irma S. Jonas, Positano Art Workshop, 238 E. 23 St., New York 10, N. Y.

• Announcement of $24,350,000 Building and Development Program for Carnegie Institute of Technology was made recently by Benjamin F. Fairless of United States Steel Corp., and Gwilym A. Price of Westinghouse Electric Corp. Objectives include new library, Engineering & Science Building, Dramatic Arts Center, Campus Activities Center.

• Winners of Rome Prize Fellowships for 1957-58 are: George F. Conley, Jr., Cambridge, Mass.; and James J. Padavic, New Haven, Conn., in architecture; Robert T. Buchanan, Cambridge, Mass., in landscape architecture.

• Major exhibitions in New York City: At Museum of City of New York, 350 Currier & Ives lithographs—most comprehensive showing ever assembled—will be on view through Sept. 2. Subject matter includes city scenes, pioneer homes, railroad prints—visual documentation of 19th Century America. . . . At Museum of Modern Art, May 22-Sept. 8, selection of paintings and seldom-seen sculpture by Picasso covers 60-year period. . . . At Carnegie Endowment for International Peace, United Nations Plaza, until May 4—International Exhibition of Work of Architectural Students—features 240 designs for housing, city planning, churches, schools, and recreation centers, representing 15 nations.

• Now under construction in Greenville, Ohio, new Corning Glass Plant (below) is steel-framed structure including administration building—featuring window-wall panel and speckled-brick facade with aluminum sunshades—and manufacturing area—which houses glass-melting plant and shops—sheathed in colored-metal siding and glare-reducing glass. Building, designed by Architects Day & Zimmermann, Inc., with Consultant Architects Carroll, Grisdale & Van Alen, Philadelphia, Pa., is set for completion by early summer.



Financial News

by William Hurd Hillyer

A long-established New England banking and real estate authority finds, as a result of a survey, that "a new bank building or a thorough modernization" of an older structure "in almost every case brings in a very substantial volume of new business," although "just where this may come from is often difficult to determine." By extension architects may assume that this information applies to non-bank buildings in addition to financial edifices.

• Business sentiment is "less buoyant" than in the recent past and "optimism has been tempered," reports First National City Bank of New York. Current weak spots are matters of concern to thoughtful observers. Basic commodities and industrial materials, as well as corporate shares, have been easing in price, even while cost of living as reflected in consumer prices has risen to new levels, but levels similarily high have been touched by machinery orders and nonresidential construction since the first of the year. The conspectus presages a downward readjustment that may facilitate new construction by arresting the up-spiral in cost of materials.

Among the hopeful current symptoms, as spring gets under way, is the large increase in personal income—prime source of construction funds. Aggregate personal income increased $19 billions in 1956 as compared with the previous year, this being one of the biggest gains on record. Over 20% of this sum went into savings. This performance, comments the Institute of Life Insurance, is in marked contrast with what happened in the two preceeding years, when spending was maintained at the expense of saving.

• Time deposits, available for mortgage investment, racked up an impressive gain at New York City banks for the first quarter of '57. Total deposits at that quarter's end were $25.6 billions, with a gain of $362 millions in accounts subject to time notice. In the mutual savings banks, nationwide, deposits increased $112 millions in February, thereby attaining an all-time high of $30 billions. Of this increase, $21 millions was in special purpose accounts.

• In the price area, housing construction costs continue to climb, the price index touching 125 as compared with 120 this time last year. Figures are furnished by the Federal Reserve Bank of Kansas City.

• Capital spending by business, which was a great stimulus to new building construction in 1956, is no longer imparting as much vigor to planning activities, asserts the Guaranty Trust Company of New York. That institution expects only moderate construction gains in the second quarter of this year, for which the annual rate is set at $38 billions, $1½ billion more than final '56 quarter. For 1957 as a whole, the Trust Company sees capital spending planned at $37½ billions, a 6½ percent increase for the year, whereas in 1956 the increase was 22 percent.

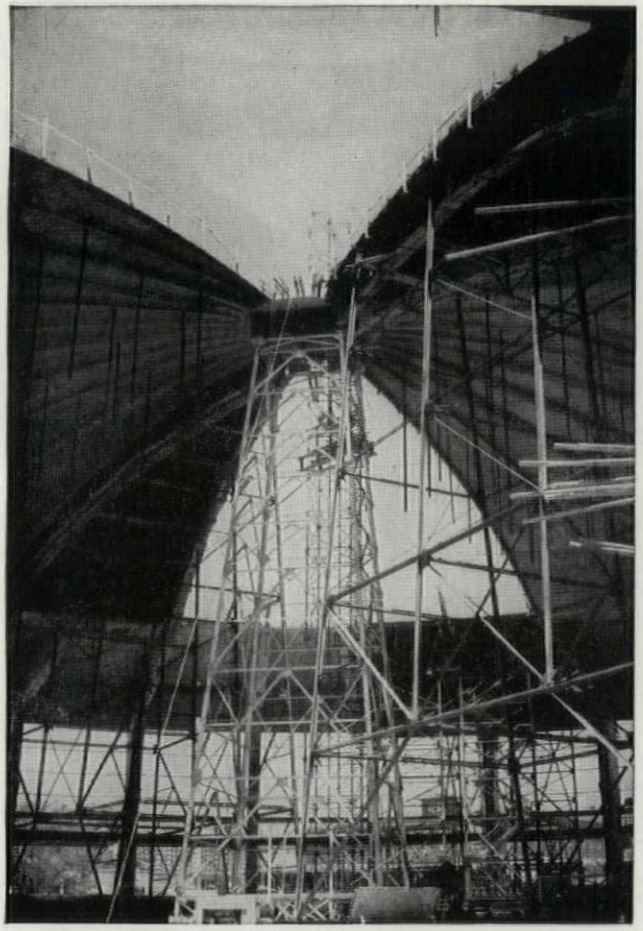
• "Motor banking" is a recently coined phrase that has architectural connotations extending into the entire field of planning, both civic and structural. There are now some 2500 banks with drive-in, parking, or car storage service. The new Texas (Dallas) Bank & Trust Company has a basement parking area that gives customers direct access to the safe deposit department in an adjoining building; this in addition to five drive-up windows on the street level floor. As another example, the First National Bank, Oklahoma City, Oklahoma, has just completed a 14-story structure which combines banking facilities, off-street drive-in, and inside parking for 460 cars. The parking stalls occupy more than half the building which, in addition to file and storage space, manages on a lot 125'x150' to shelter a cafeteria and auditorium. Corey, Hill & Sorey are the Architects.

• Wide variance in cost-per-room of new schools, as between one community and another, is revealed through recent comparison noted by the (Boston) Banker & Tradesman. The offered explanation is that school building committees allow their "esthetic sense"—differing in degree with each locality—to dominate the practical needs within dollar limits. The authority quoted suggests that architects may co-operate in obtaining larger taxpayer grants for badly needed school buildings by toning down the "glamorous" ideas of committee members in some communities.

• Cut in FHA down payment requirements is seen by Western and Southwestern builders as stimulating the production of low-priced homes. The executive vice-president of the Chicago Metropolitan Home Builders Association calls the change "at least half a step in the right direction" and avers that any program to reduce down payments will expand the market. In Detroit an active builder has moved up his starting schedule from 7 units to 15 units per week. A Dallas organization with 20 FHA-financed houses now under construction reports principal market in $10,000-$15,000 bracket, where $280 knockoff is frequently a deciding factor.

• A major source of nonresidential construction funds is being augmented by improved conditions in the municipal bond market. Dow Jones index reflecting price gains is bettered by a fraction; the general trend is now definitely upward. New issues totaling some $430 millions are currently coming to market, according to Daily Bond Buyer. These are expected to be well absorbed, largely due to tax exempt advantages, which are increasingly important under existing conditions.

50% Form Saving



DALLAS MEMORIAL AUDITORIUM
Owner: CITY OF DALLAS
Architects & Engineers: GEORGE L. DAHL, Dallas
Consulting Engineers: AMMANN & WHITNEY, New York
General Contractors: R. P. FARNSWORTH & CO., INC., New Orleans
Paving Contractor: TEXAS BITULITHIC CO., Dallas

WITH 'INCOR' IN DALLAS MEMORIAL AUDITORIUM

• Great, new Dallas Memorial Auditorium includes a 10,000-seat arena, an adjacent building with 2,000-seat auditorium and smaller meeting halls, and 100,000 sq. ft. of exhibition space under the two structures.

The main auditorium is a circular, reinforced-concrete structure, 300 ft. in diameter, with dome-shaped roof 90 ft. above 1st floor slab. Roof is carried by arch ribs, which in turn are supported by cantilever ribs extending out 45 ft. from the tops of 70-ft.-high columns.

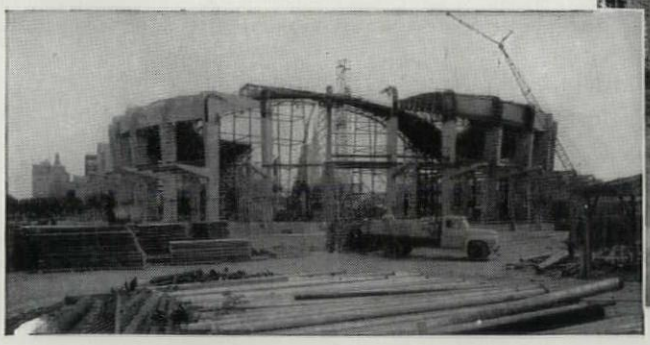
The roof was concreted in 16 pie-shaped sections, poured in opposing pairs. These sections connect with a concrete plate, 22 ft. in diameter, at dome's top.

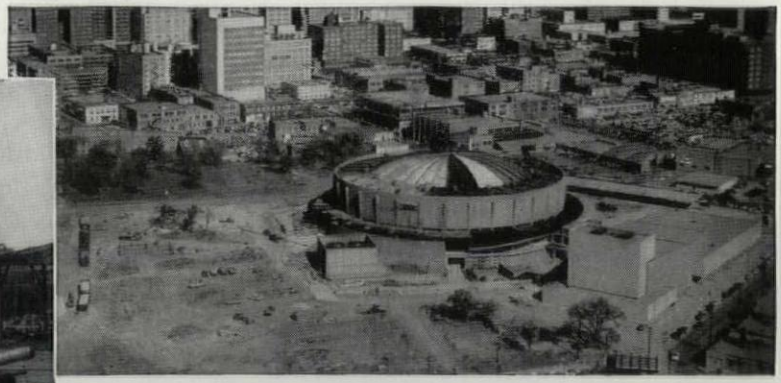
In cantilevers and dome, dependable 'Incor' high early strength saved 50% on forms, contributing to economies which resulted in total costs about half those estimated for alternative methods.

These economies were realized by planning with construction methods in mind . . . utilizing the principle of selective concreting—that is, using 'Incor'* 24-Hour Cement where it shows a net saving through time and form economies, elsewhere Lone Star Cement.

Keep selective concreting in mind—it's a well-proved way of getting more work in place at less cost.

*Reg. U. S. Pat. Off.





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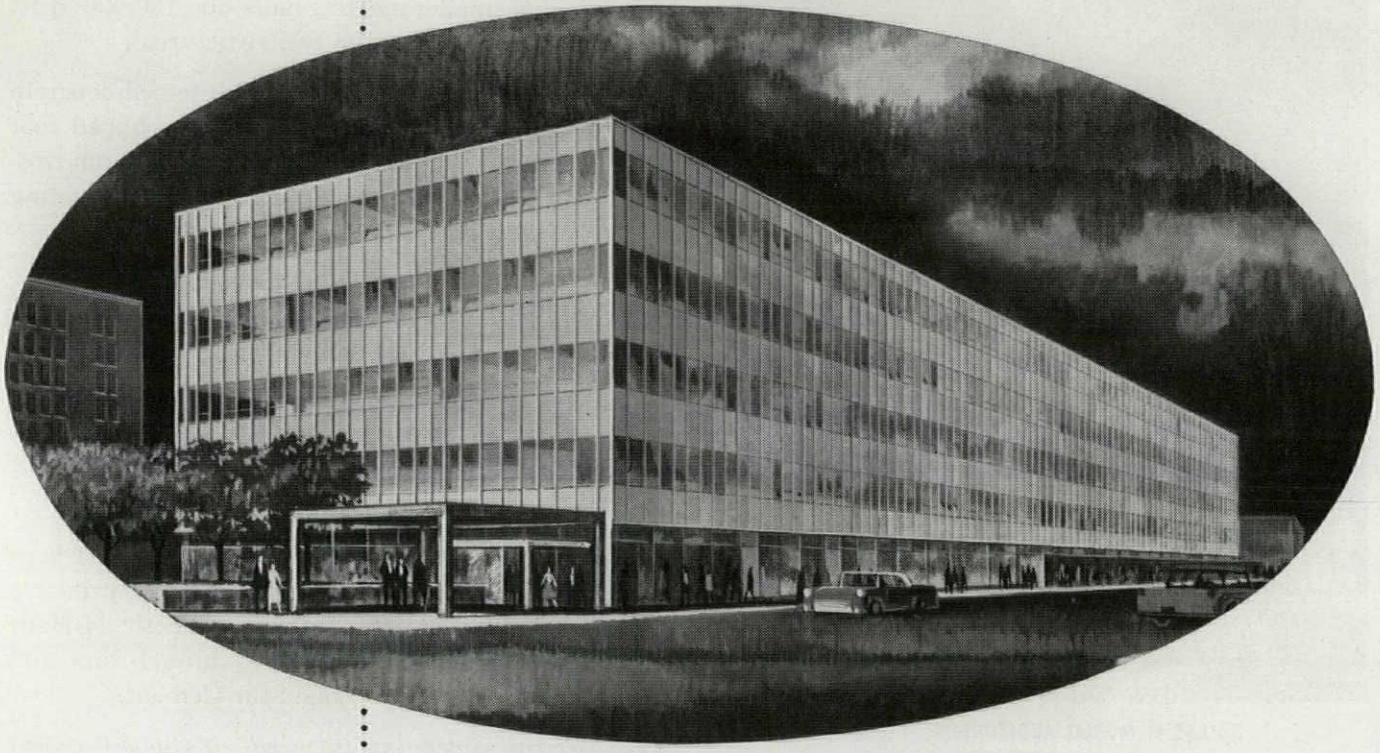

PUBLIC HEALTH CENTER,
Minneapolis, Minnesota

Thorshov & Cerny, Inc., Architects, Minneapolis

Viking Construction Company, Contractor, Minneapolis

The Public Health Center heralds an ambitious redevelopment program in Minneapolis. The upper floors of this functional building are enclosed in aluminum curtain walls—combining Cupples double-weatherstripped windows, aluminum louvers and tempered glass spandrels.

Vertical mullions are structural tubular aluminum extrusions. Their design meets the architects' requirements for narrow vertical sight lines. On the ground floor, all doors and frames are aluminum, also by Cupples.

Cupples' dominance in sound, economical curtain wall design, construction and erection keeps pace with its leadership in the fabrication of aluminum windows, doors, Alumi-Coustic grid systems and special ornamental products. See our catalogs in Sweet's file.

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AIA's First Banquet

As the speeches, seminars, and conferences span the five days of Centennial Celebration of American Institute of Architects in Washington this month, it is pleasant to read back in the early proceedings of the Institute, to find what were the original purposes and hopes and aims of the new-born organization. We are glad to note that they were then, as they are now, high-minded and public-spirited. From Walter to Walker, leaders of the organized group of architects have talked of "the development of true principles, artistic, scientific, practical." It is also interesting to note that action—the active program envisioned by the thirteen Charter Members—encompassed what we have come to call "research and education" and "public relations." It aimed to "attain to a high degree of knowledge in the several branches of our art," and "to guide the public to a clear and sound understanding of the principles which govern our practice." Though the sentiments may be the same, we feel sure that none of the orations to be heard shortly in Washington will better the phraseology of the after-dinner talk of Richard Upjohn, Esq., the President, at AIA's first annual dinner, February 22, 1858, at Delmonico's Restaurant in New York, from which excerpts follow:

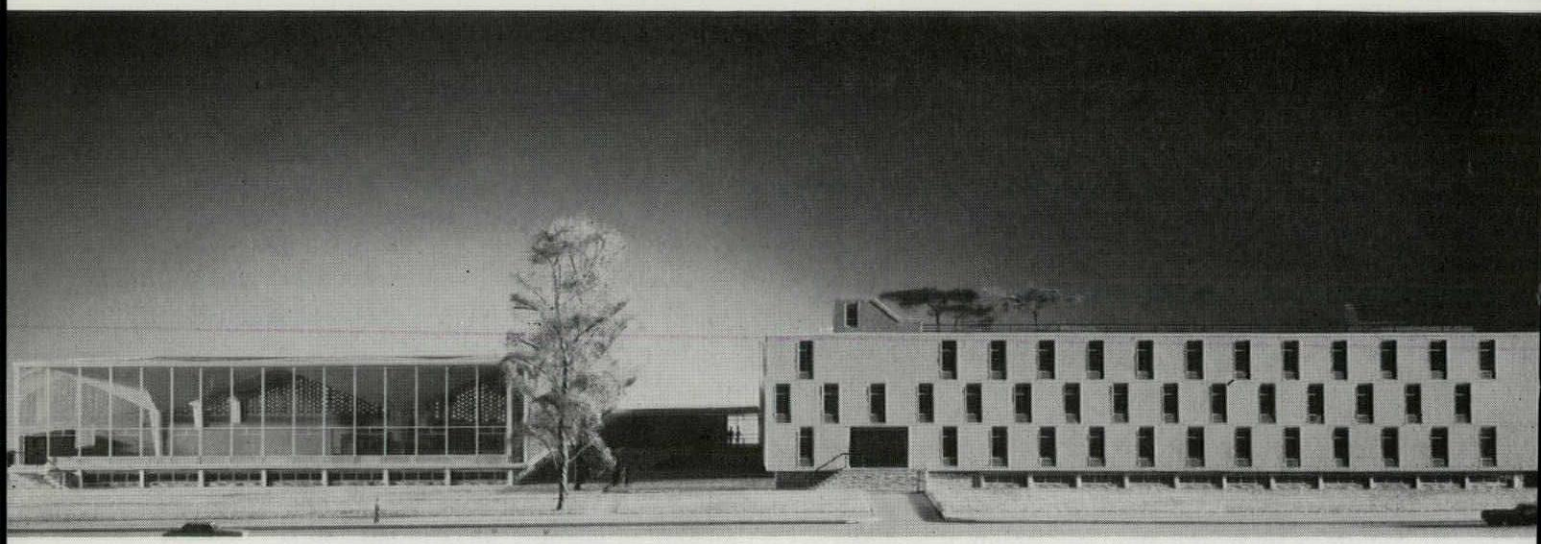
"Individual effort cannot satisfy the public demand in any line of Art or labor, so well as the united efforts of many devoted to the same calling. Progress in Art is the work of many minds, the result of the studies of many men striving to accomplish one purpose with their united strength, and that purpose is the development of the true principles, artistic, scientific, and practical, of their particular branch of art. . . . Organization is a wholesome check to the erratic wanderings of some men of genius, while it is a spur to the flagging energies of others. It gives to each member of the body the opportunity of presenting his thoughts and the results of his labor to those who are capable of appreciating them and who may be benefited by them, and although individuality may partially be lost by union, yet all are gainers. . . . If we adhere faithfully to our organization, we shall readily attain to a high degree of knowledge in the several branches of our art, and by the union, shall be better qualified to guide the public to a clear and sound understanding of the principles which govern our practice. . . . We often have to convince gentlemen . . . that there is a difference in a mere building and one that is constructed scientifically and ornamented artistically. . . .

"Isolation of talent is weak in answering the demands of even a limited community, and much more so of so vast and wealthy a country as ours. We have all felt this to some extent when working singly. . . . Our track is laid and in working order, and, having settled all preliminaries, we must 'go ahead'. . . . In concluding these remarks, I must beg you to consider that it is our duty to be self-sacrificing and laborious in pushing on the great object for which we have associated, and to devote ourselves unweariedly to the interests of the Institute and of our profession."

Nor, we feel, will any of the toasts and compliments over after-dinner drinks during this year's Convention equal the response of Leopold Eidlitz to the toast, "The Day We May Celebrate." He said, in part:

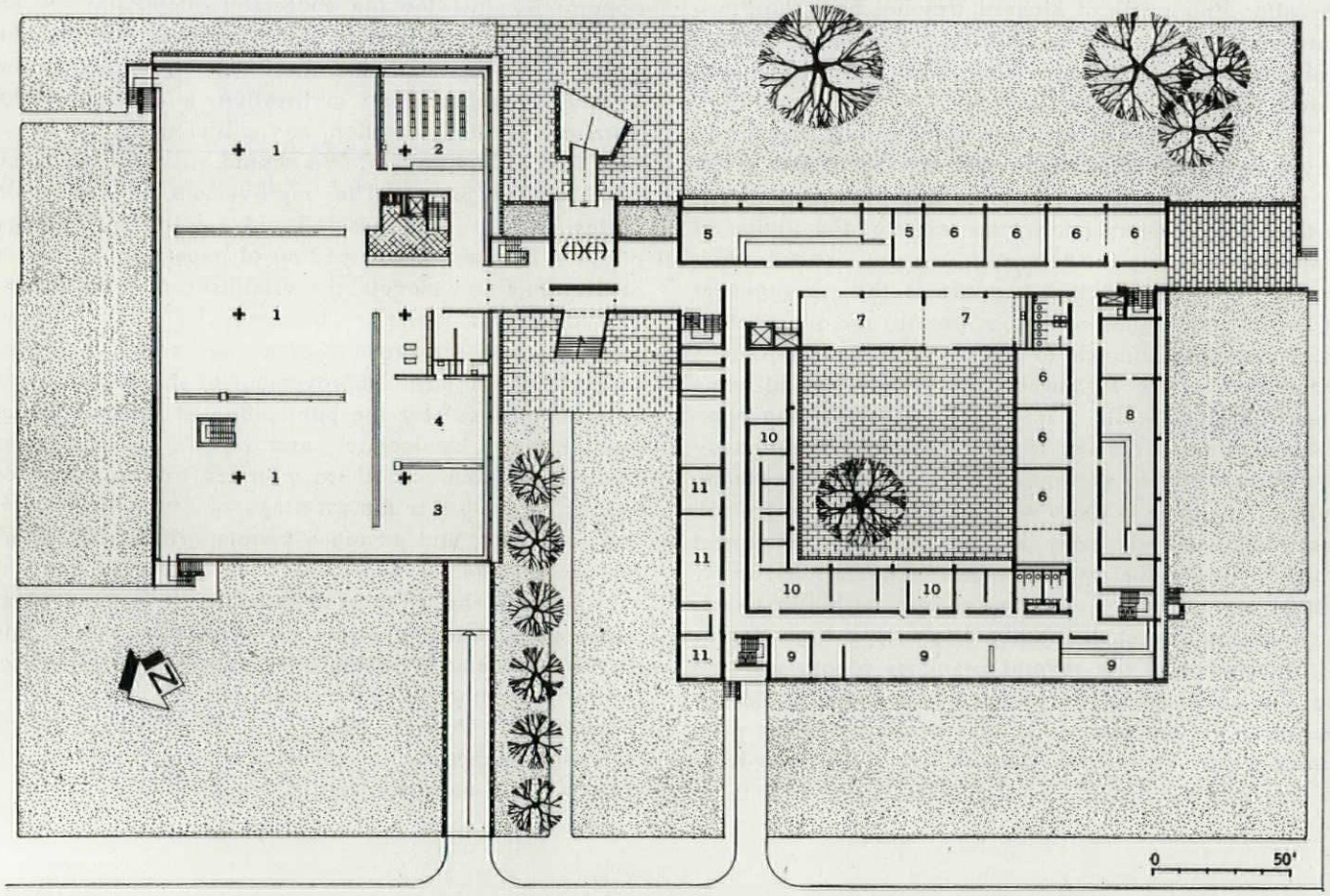
"He who devotes himself to the profession of architecture must be thoroughly impressed by the serious responsibility which it entails upon him. . . . Every opportunity lost for the successful production of an architectural monument is an opportunity lost for the advancement in morality and refinement, a blank in the history of progress and civilization, a discord in the Harmony of God's creation, and a blot upon the beautiful face of Nature. . . . We should strive to the most, the best, the purest. The improvement of the whole profession is to be accomplished by the interchange of ideas, by debate, the reading of papers . . . a library of drawings and models, the establishment of a School of Architecture, that the wheat may be separated from the chaff, and the creation of an academy for the instruction of students. Improvement of the public [is to be accomplished] by the publication of matter instructive to them, by lectures, and by the admission, as honorary members, of those who are true amateurs of the art. . . . Ours is the privilege of living in an age, and a country, and among a people, where the opportunities for the advancement of Architecture are unparalleled in the History of Art, and it is in a great measure dependent upon ourselves whether or not this shall be the commencement of an epoch in Architecture, greater than any which has preceded it."

Frederick A. Peterson offered a toast to Richard Morris Hunt, the Secretary: "It will be a source of pride for a man to say, 'I am a member of the AIA'."



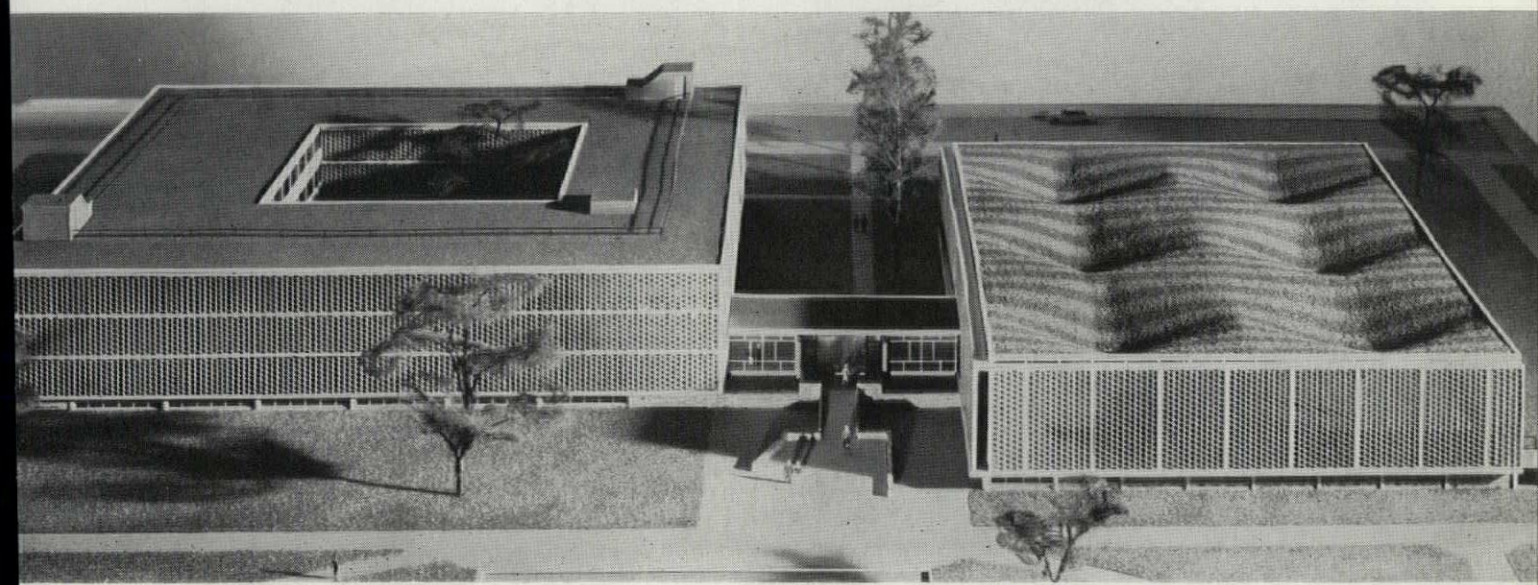
college library / classrooms / administration

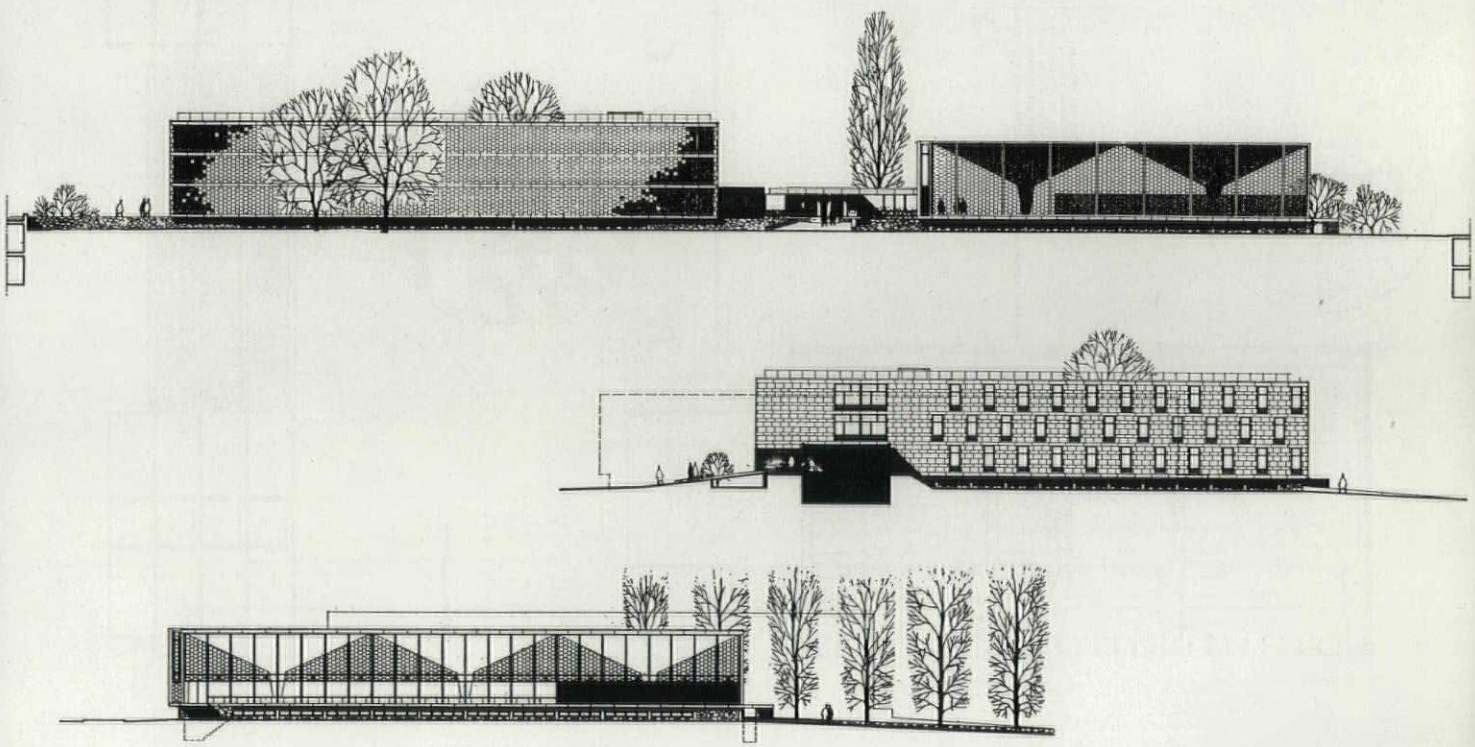
location	New York, New York
architect	Marcel Breuer
associate	Robert F. Gatje
consultant	Eduardo F. Catalano

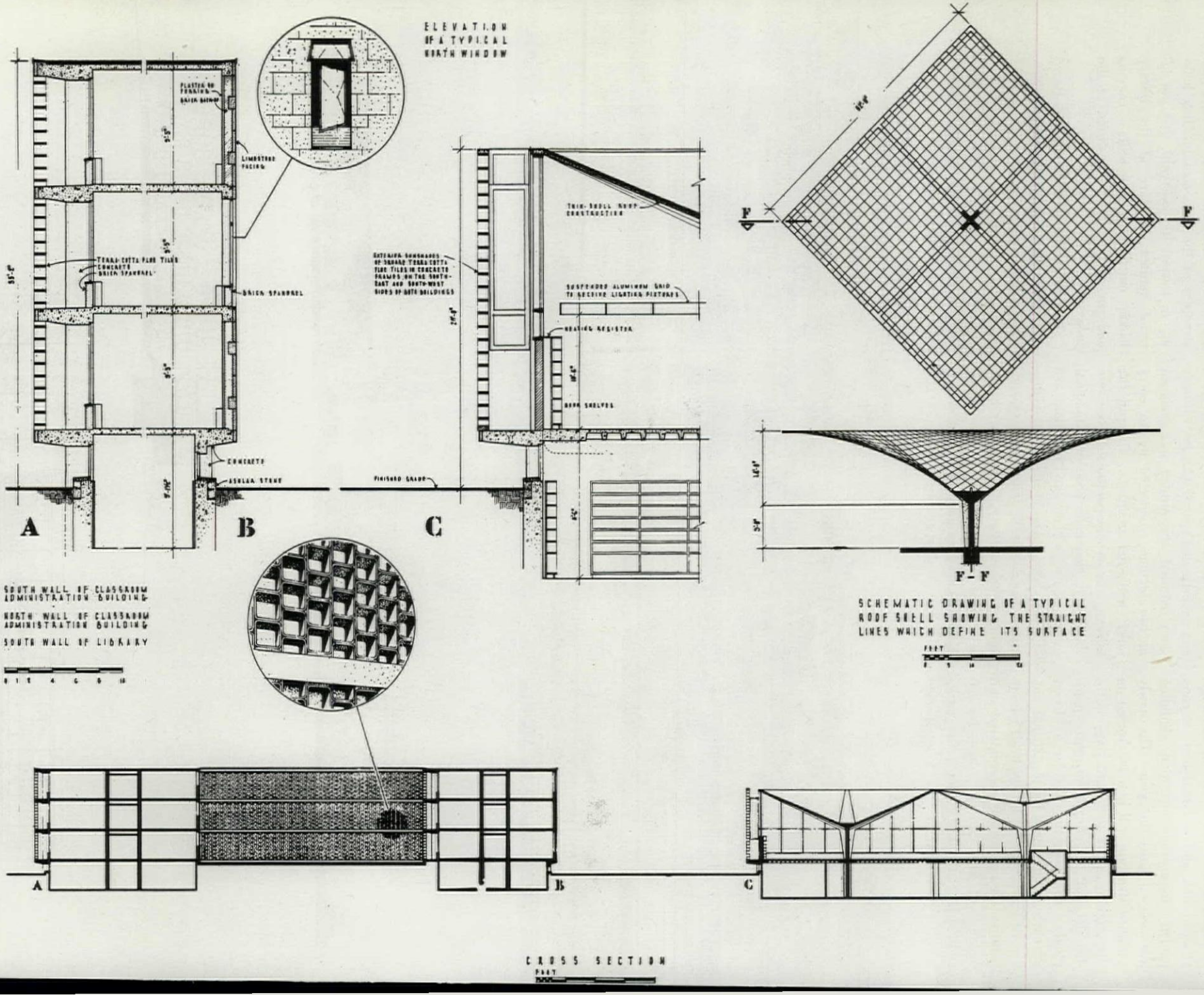


Although planned for construction in the 30's—along with two classroom buildings, a social hall and a gymnasium—a companion library/administration building was delayed until this year. The newly designed structure will now be erected on the original site, a plot bordering one of the sides of a Collegiate Gothic quadrangle. The program calls for a library which will ultimately house 230,000 volumes; and a building in which all administrative offices can be consolidated and which will also provide space for 30 additional classrooms. "Since the structural requirements of the many-roomed administration wing were so different from those of the library, where large, open, and unobstructed spaces with few columns were required, the project was designed in two sections, connected by an entry link," write the architects. To span the library, hyperbolic-paraboloid concrete shells were chosen for economy, minimum obstruction by columns, and resultant ease of supervision, plan flexibility, and dramatic visual effect. The classroom/administration structure, on the other hand, will be of loadbearing masonry construction, the most economical system where relatively small spans are involved. "The resulting contrast in spirit," continue the architects, "between the exterior-wall structure of the classroom building looking in toward its courtyard, and the interior vaulted structure of the library looking out through glass walls at campus and water is a definite intention of the program as it developed."

The project was designed for Board of Higher Education of the City of New York (Arthur A. Schiller, Director of Architectural and Engineering Unit). Structural Engineers are Farkas & Barron; Mechanical Engineers, V. L. Falotico & Associates.






ELEVATION OF A TYPICAL NORTH WINDOW
PLASTIC OR TERRAZZO
BRICK BATHER
LIMESTONE FACING
TERRA-COTTA FLUE TILES
CONCRETE
BRICK SPANDREL
BRICK SPANDREL
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ASHLAR STONE
A
B
C
EXTERIOR SUNSHADES OF SHADED TERRA-COTTA TILE TILES IN CONCRETE FRAMES ON THE SOUTH-EAST AND SOUTH-WEST SIDES OF SITE BUILDINGS
THIN SHELL ROOF CONSTRUCTION
SUSPENDED ALUMINUM GRID TO RECEIVE LIGHTING FIXTURES
HEATING REGISTER
BOOK SHELVES
FINISHED GRADE
A SOUTH WALL OF CLASSROOM ADMINISTRATION BUILDING
B NORTH WALL OF CLASSROOM ADMINISTRATION BUILDING
C SOUTH WALL OF LIBRARY
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F
F - F
SCHEMATIC DRAWING OF A TYPICAL ROOF SHELL SHOWING THE STRAIGHT LINES WHICH DEFINE ITS SURFACE
FEET
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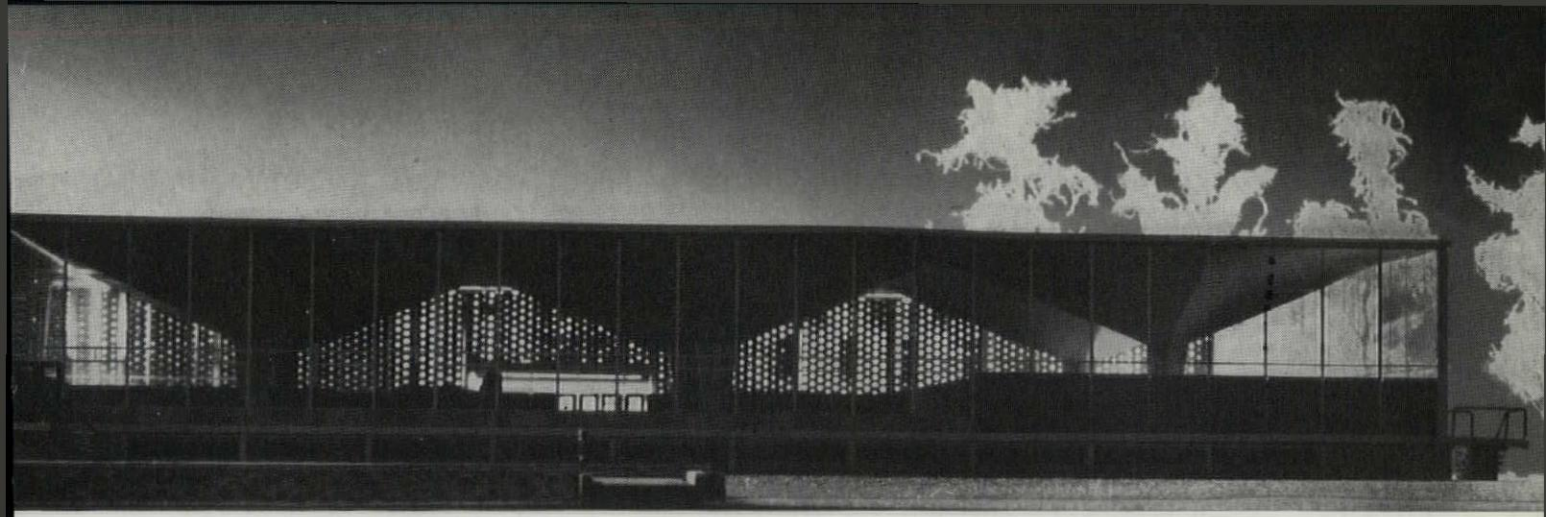
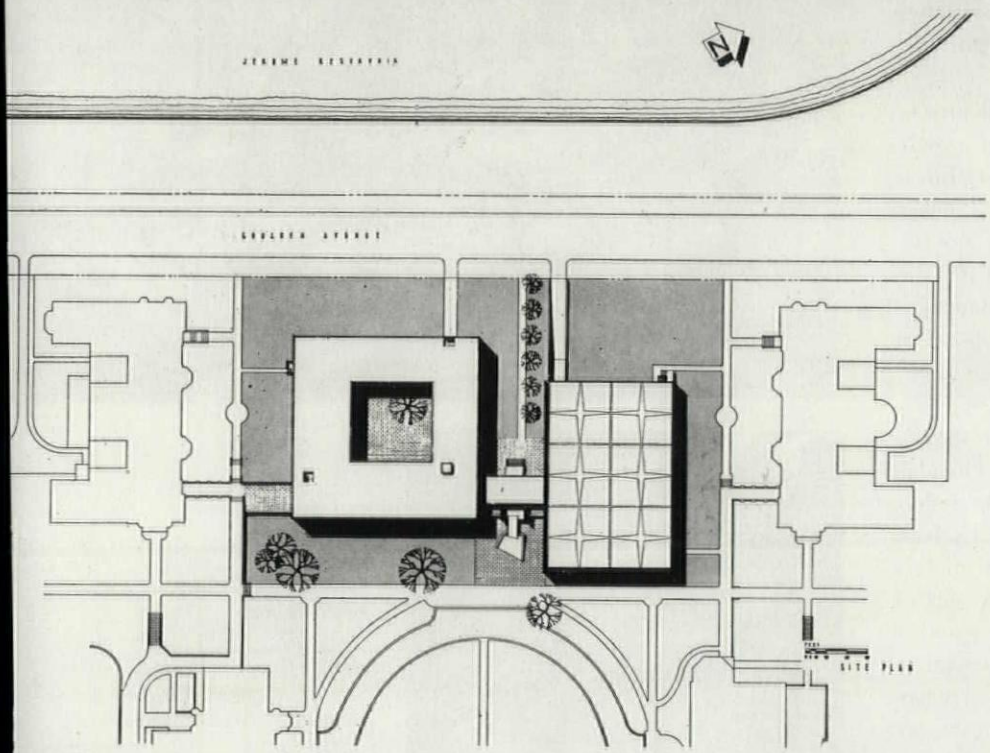
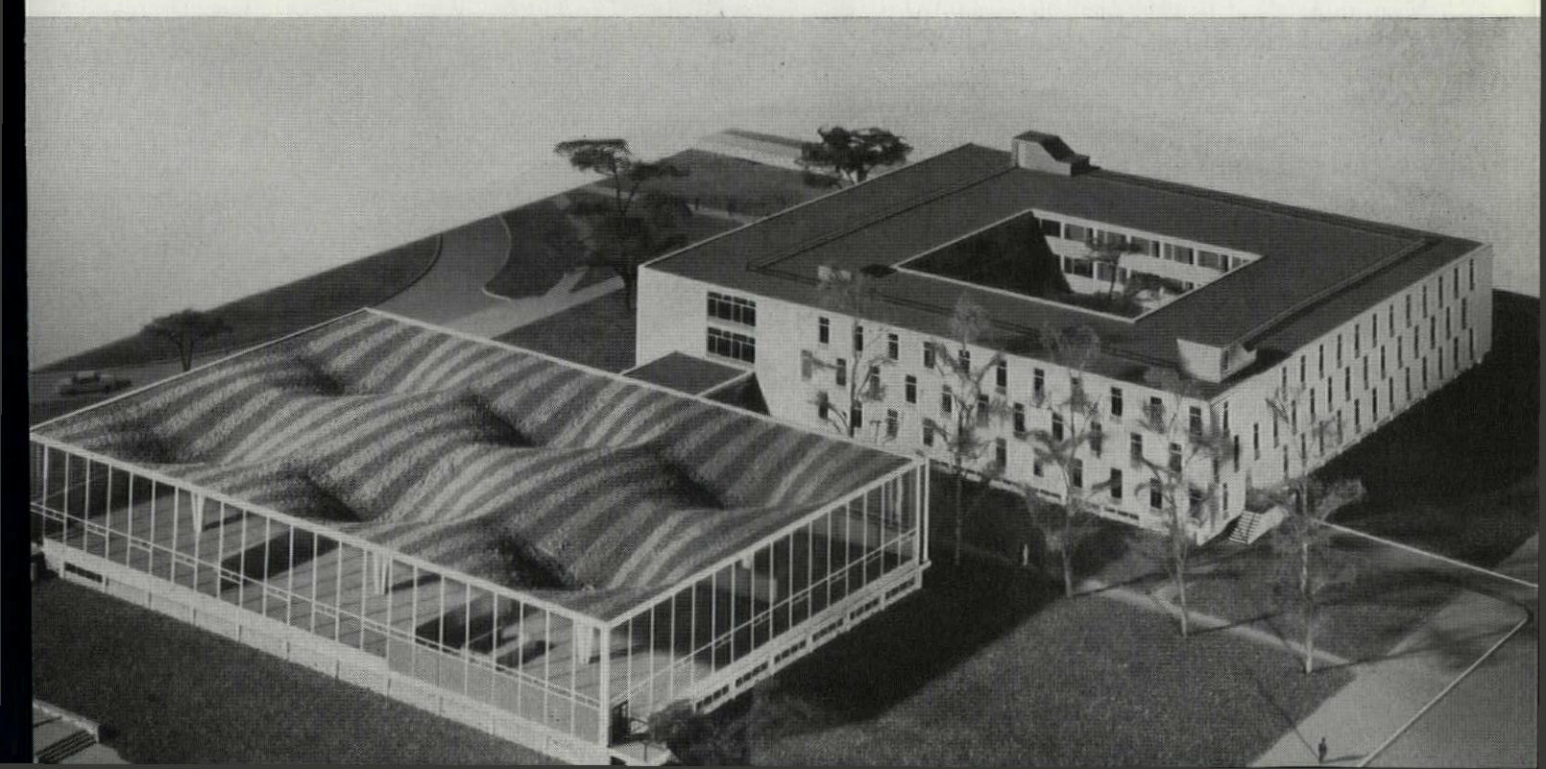




Curvature of hyperbolic-paraboloid thin-shell roof construction will be developed entirely by straight-line generators (diagram acrosspage). *This system, according to the architects, is expected to effect considerable savings in cost of construction over conventional structures with similar spans.*

Southeast and southwest sides of both buildings will be sun-screened by rails of terra-cotta flue tile. Other exterior wall materials, chosen in part to establish visual connection with the existing Collegiate Gothic buildings, are to be limestone, natural-rubble fieldstone, and mat-black brick. The classroom/administration building will be heated by hot water through convectors; the library by hot air—filtered and humidity controlled. Lighting will be for the most part fluorescent. In the library, fluorescent strips are to be mounted on an aluminum grid suspended from the concrete roof shells.

Model photos: Ben Schnall



Community-Wide Practice Offers "Businesslike" Service

the architect and his community

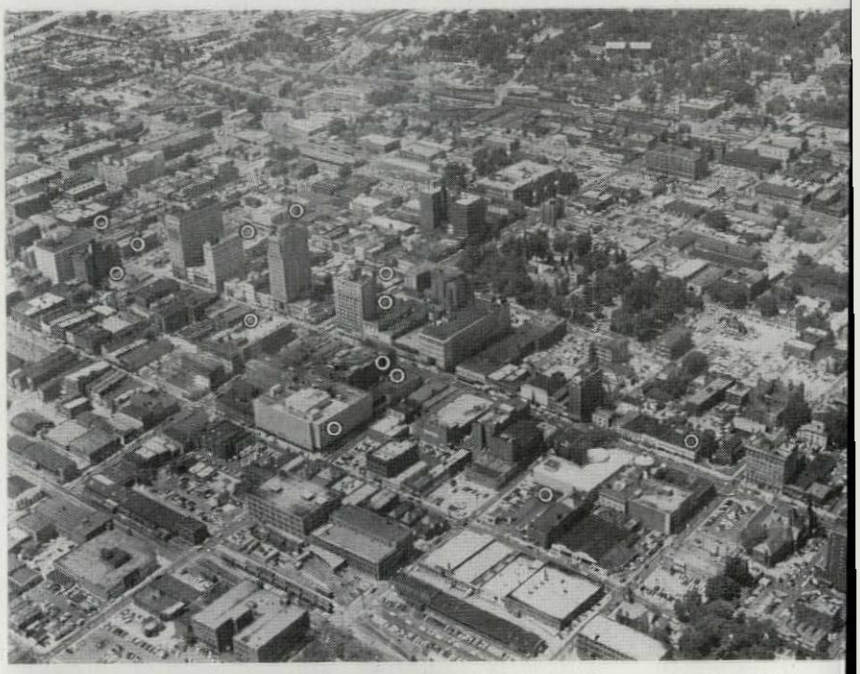
This month in documenting the work of A. G. Odell, Jr., & Associates, of Charlotte, North Carolina, we focus on a practice that is extraordinarily successful and must be typical in size —both of personnel and of population of its "community"—of a great many firms in this country. For Charlotte has a population of approximately 157,000, and the Odell office personnel currently varies from 9 to 12 men.

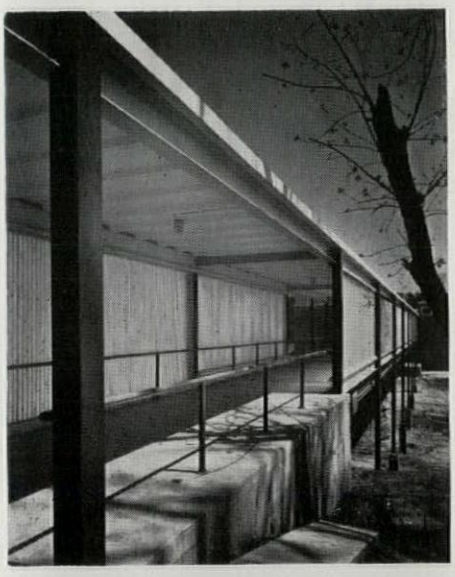
To say, however, that either the Odell firm or its home base is "typical" of anything is only superficially accurate. While familiar statistical characteristics do exist, a closer look at either "the architect" or "his community," in this instance, reveals that we are considering a remarkable firm and an unusual set of circumstances.

Some readers undoubtedly have never heard of the "Mecklenburg Declaration of Independence" signed in (then) Charlottetown, May 20, 1775, more than a year before the concerted separation from England was underwritten in Philadelphia. "Interesting, if true," was Thomas Jefferson's comment when told of it. Well, it's both interesting *and* true. Nor is it untypical of this forward-looking, precedent-breaking crossroads of the South—a community that rose in population from 80,000 in 1930 to nearly twice that total in 1955. Within a 75-mile radius, there is a population of 2 million—more (on the same basis) than that of any other city in the Southeast.

Consistently, ever since the Odell firm really began to go ahead in 1946 (actually established in 1940, it was soon slowed by Odell's five years with the U. S. Army), anyone who follows architectural progress has been increasingly aware of first-rate, nonconformist work coming out of the Charlotte area and bearing the Odell label.

The efficiency that is a hallmark of the firm's practice is unquestionably a reflection of the nature of Arthur Gould Odell, Jr., himself—urbane, keen-eyed, forthright. "We feel that it is of great importance to give our clients the most businesslike service possible," he tells you succinctly. "With few exceptions, all correspondence is answered the same day the office receives it." Fred Severud, of the New York engineering firm of Severud-Elstad-Krueger, which has consulted with countless firms both here and abroad, says of his association with the Odell office: "We found it to be one of the most efficient firms with which we have ever worked."





Bull's-eyes on aerial view of downtown Charlotte mark Odell commissions.

Double Oaks elementary school (left) *is built at either side of a ravine, the two parts connected by a covered walk.*

Auditorium and coliseum (below) *were presented in September 1956 P/A.*

Aerial photo: Charlotte Chamber of Commerce

A. G. Odell, Jr. & Associates, Charlotte, North Carolina

A. G. Odell, Jr., with Associates Albert B. Cameron and James C. Hemphill, Jr.
Photo: Tom Franklin, Jr.

Odell early decided on architecture as a career. After civil-engineering study at Duke University, he earned his B.Arch. degree at Cornell and studied for a year at *L'Ecole des Beaux Arts* in Paris. For two years he worked in New York offices but "after considerable investigation" decided to return to the South. "I was satisfied that Charlotte had the most rapidly expanding economy in the Southeast," he explains.

office setup and procedures

In recent years, the Odell staff has ranged from 9 to 12 men, about half of them registered architects. Their usual consulting engineers are located in the same building and connected by inter-com. But Odell prefers not to have consulting engineers as an integral part of the staff, since "we would naturally feel a compulsion to use these men instead of considering the field in the best interests of the job and the client."

After obtaining a commission, one designer accompanies Odell in all preliminary conferences and, under his direction, is in charge of developing preliminaries, though he may be assisted by other designers, depending on the scope of the problem. The designer may or may not be in charge of execution of working drawings or specifications, but he invariably is in close touch with the project throughout production. Field supervision is seldom conducted by the designer; usually by the architect or draftsman who was in charge of the working drawings.

"We spend a great deal of time and effort on preliminary drawings," Odell reports. "Consequently, this phase of our operation is seldom profitable. We use perspective sketches in color, models, or both, all of these prepared here in our office."

The $6- to $9-millions of work a year that the

The freestanding stair is in the 221 South Church Street Building.
Eckerd's Drug Store (right).
Photos (except as noted): Joseph Molitor

office turns out is just about the size practice that Odell prefers. "As a designer myself, I wish to maintain continuous personal control of all design and the resultant finished product." On the boards currently are a regional shopping center to be built in Charlotte; a large hospital; several schools; residences; and churches. Recently, Odell received a fabulous new commission to design a $6 millions Civic Center for the City of Baltimore, Maryland, which will include a 10,000-seat coliseum and 100,000 sq ft of exhibition space.

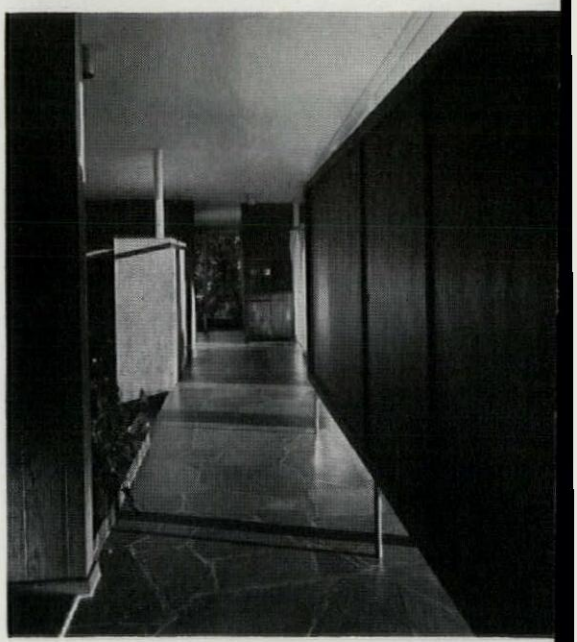
In working with associates, Odell makes every effort to give the men well rounded training and experience that will enable them to be better architects. "In the last five years, four new architectural firms have been organized in Charlotte by personnel trained by our office. This, in turn, leaves room for the employment of young men who proved themselves skilled designers in the architectural college from which they were graduated. I consider it a great advantage to have the continuing benefit of the enthusiasm and stimulation of young designers."

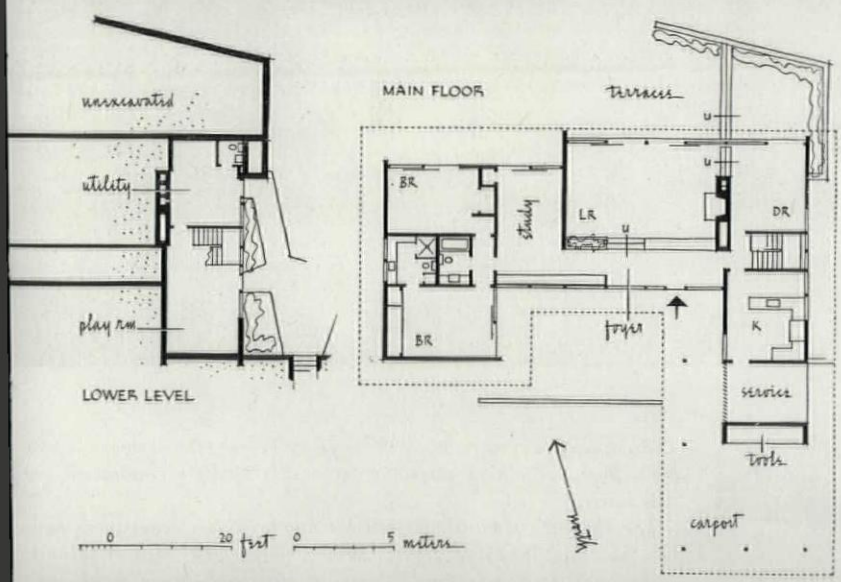
extra-curricular

Odell's professional activities extend well beyond the office's practice. In 1953, he was one of eight architects invited to be guests of the German Federal Republic for the month of August. In the winter of 1955-56, he was visiting critic at the College of Architecture, at Cornell. And, in general, he tells us: "I participate whenever possible in various community activities. I have been a member of the Planning Board of Charlotte and president of the Charlotte Community Concert Association, and I am a member of the Kiwanis Club and several country and city clubs. . . . I seldom turn down invitations to speak on architecture and have been on brief television and radio broadcasts. I have spoken before civic clubs, book clubs, women's auxiliaries, and high-school and college groups. Work of my office is always represented in local or state architectural exhibits. I have served two terms as president of the North Carolina State Chapter, AIA."

Odell believes that there is still much to be done in educating the public on the value and function of an architect: "I feel that it is of prime importance initially to impress every client with the realization that I, as architect, first, last, and always, represent his own interest," he says, "and that my reputation and future success as an architect depends upon his appreciation of and satisfaction with my services."

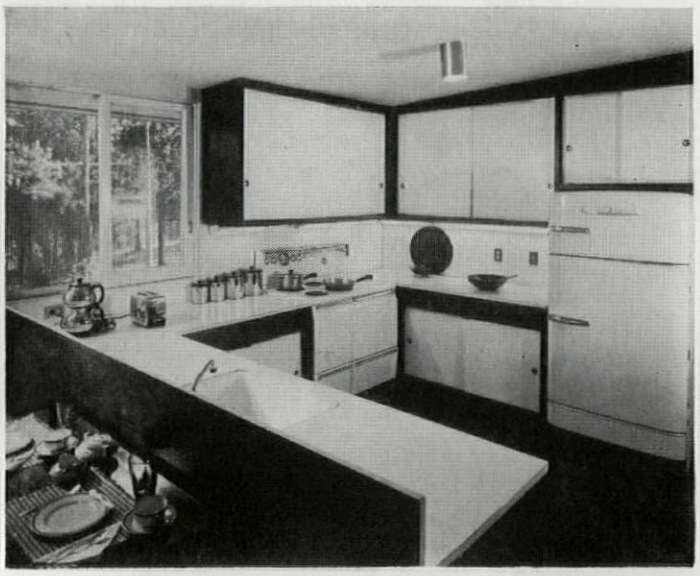
house





Owner requirements for this home on the outskirts of Charlotte were for separated hobby, sleeping, and entertaining zones, each to extend to outdoors and command a view of the wooded slopes of the five-acre site. Since there are no children, a relatively open plan scheme was feasible, using freestanding bookcases and storage elements (acrosspage) *as area dividers.*

East elevation spans a natural gulley, allowing access at grade to lower-level play and hobby room. The frame house has both wood-joist and concrete slab floors; roofing is built up with marble-chip surface. Sash are intermediate, steel projected, with bronze hardware; glass is ¼-in. plate.



The carpeted living room is three steps below other rooms on the main floor; adjoining flagstone terrace is similarly organized on two levels.

The compact, vinyl-tile-floored kitchen-breakfast room faces east for maximum morning light; service porch and carport adjoin.

An open-riser stair leads down to the hobby-room level (SELECTED DETAIL).

library

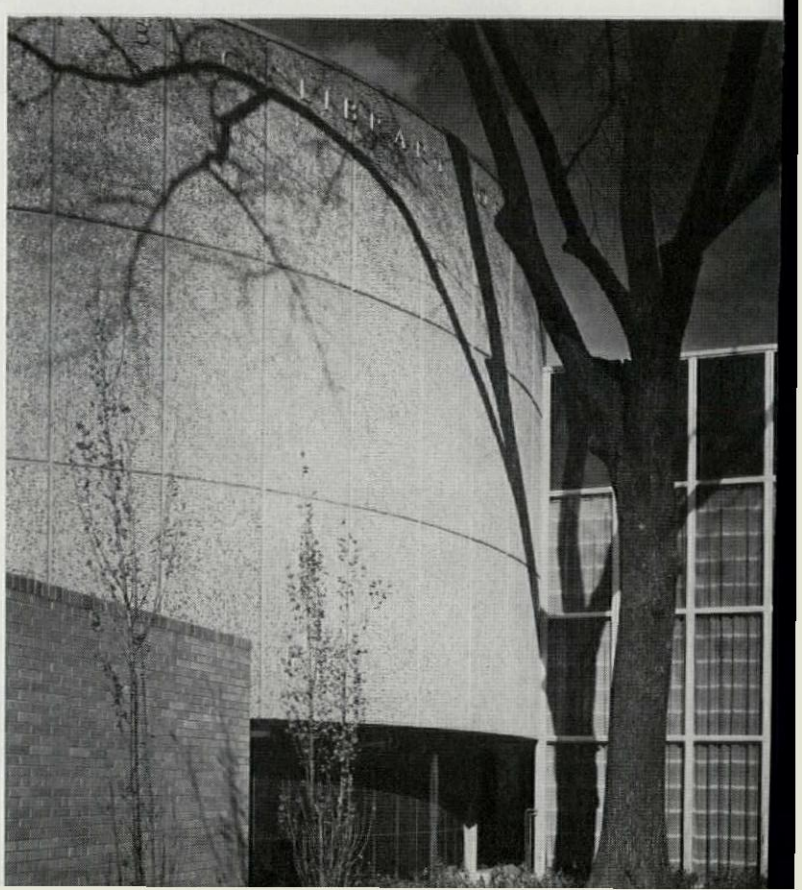
The L-shaped site for the Public Library of Charlotte and Mecklenberg County borders a downtown, corner property that the Library was unable to acquire. It is hoped that eventually the City will purchase it and convert it into a landscaped-park approach to this important public building. In addition to the customary facilities, this central library services and controls nine branch libraries and several bookmobiles.

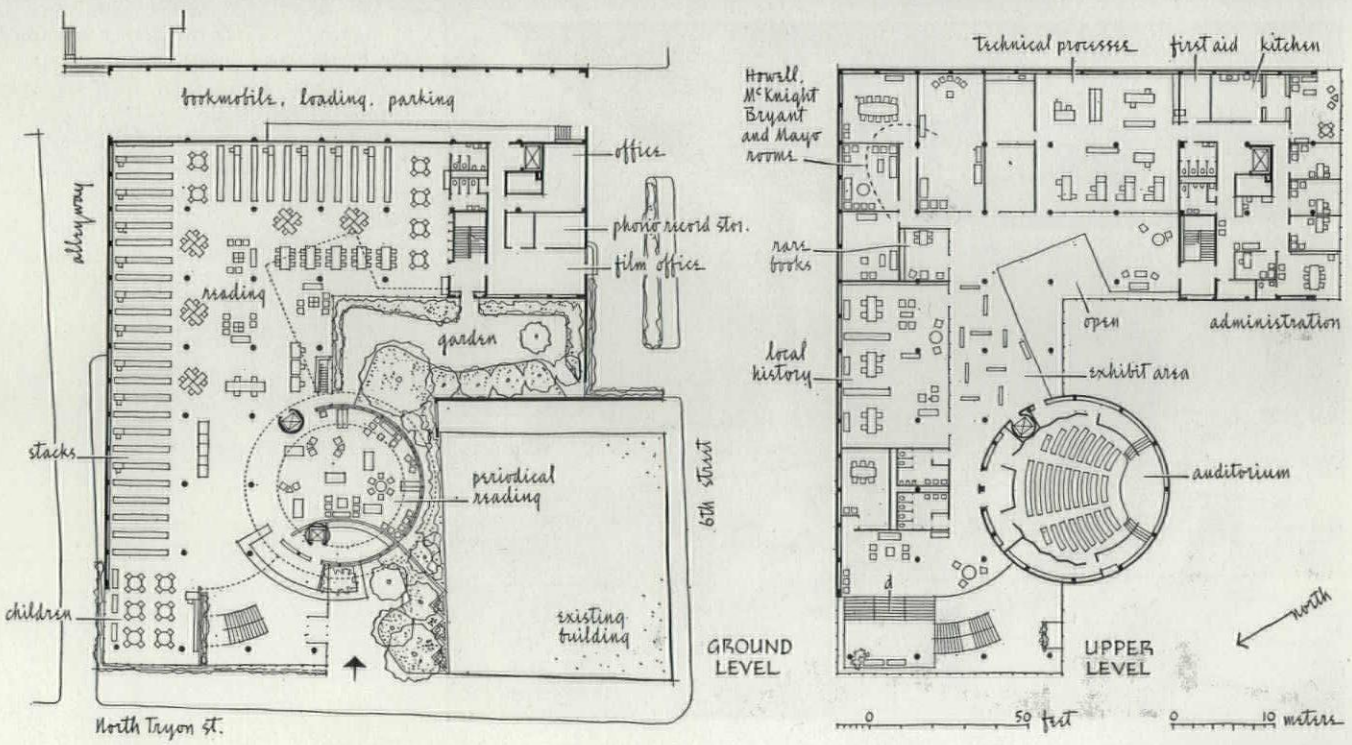
Much of the plan form derives not only from the site shape but also from the architect's wish to preserve two fine old trees on the property. To do this, a recessed, landscaped area is provided at the main entrance (*above* and *across-page*), and a peaceful interior court is introduced (*below*). The main entrance front, facing North Tryon Street (opened and glazed so that the entire main floor becomes a showcase), is bordered by an alleyway that leads back to connect with a covered and heated bookmobile-service dock, tunneling through the entire structure from the alley to the Sixth Street front of the building. This latter front also contains a secondary entrance to the air-conditioned building, with off-street vehicular drive, where issuance of projectors, record players, motion-picture screens, etc., is handled—"a type of drive-in window service," as Odell describes it. Both here and at the main entrance are slots for after-hours return of books.

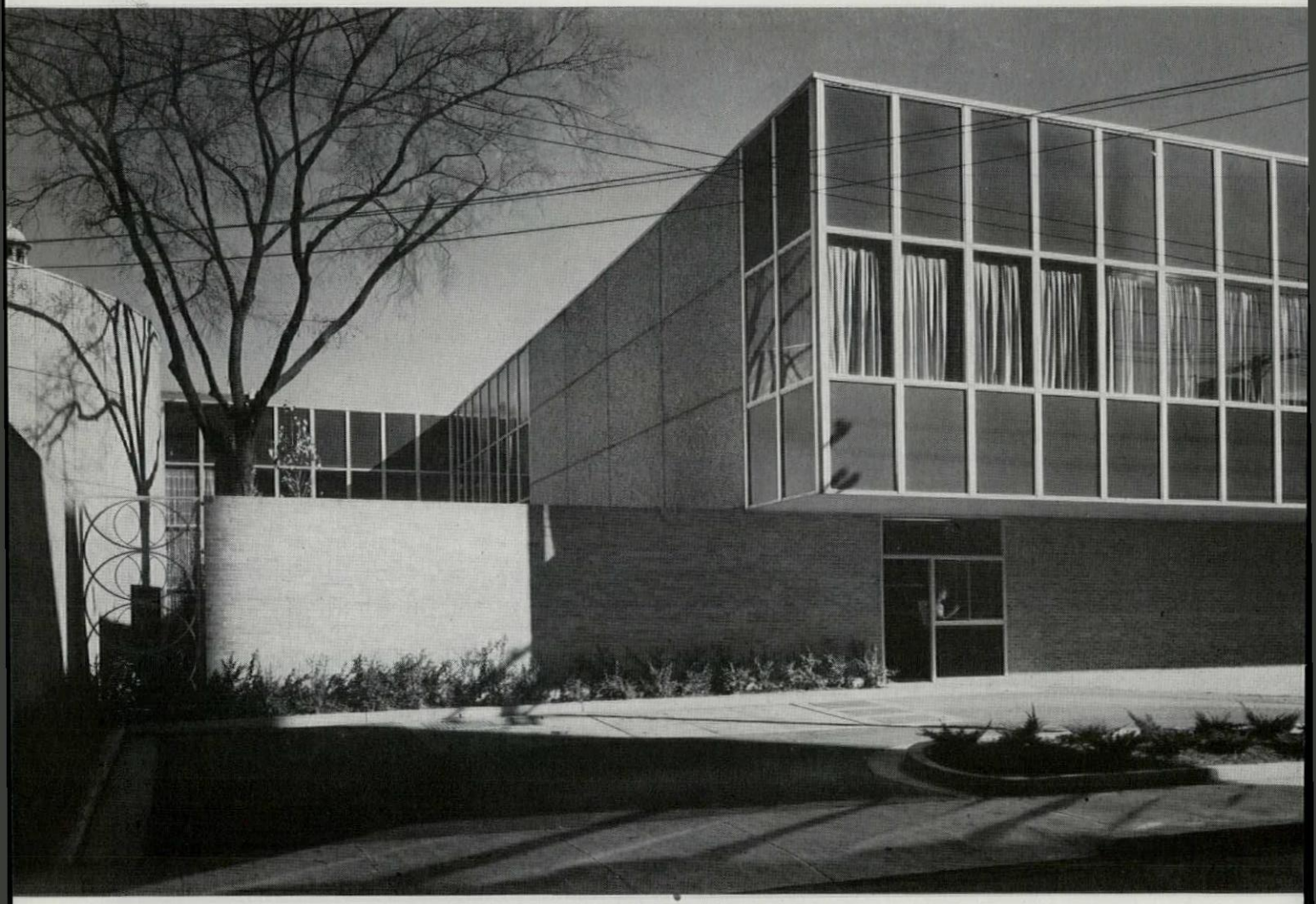
Requirements for the present were to house 500,000 volumes, with provision made for later construction to accommodate an additional 350,000 books. Solution consists of two levels of stacks below grade for storing 400,000 volumes, with approximately 75,000 volumes accommodated on the main floor and another 25,000 on the second floor. When further space is needed, a second, two-level stack unit will be added—on the rear two-thirds of the roof. Charging and control desk (SELECTED DETAIL) is placed near the main entrance and so related to the stair that the library operates efficiently, even with limited staff. An adjacent elevator is provided for the occasional use of the elderly or infirm to reach the second floor. The upstairs lobby is used for continuing exhibitions and is bordered by the small auditorium and various specialized book rooms, conference and storage rooms, technical-processing facilities, and library offices.

Gardner & Meir were Structural Engineers; W. P. Wells, Mechanical Engineer; John Bolen, Electrical Engineer; General Contractor: J. A. Jones Construction Co.

Photos: Joseph Molitor




bookmobile, loading, parking
office
phono record stor.
film office
reading
garden
periodical reading
existing building
6th Street
stacks
children
North Tryon St.
GROUND LEVEL
Technical processes
first aid
kitchen
Howell, McKnight Bryant and Mayo rooms
rare books
open
administration
local history
exhibit area
auditorium
north
UPPER LEVEL
0
50 feet
0
10 meters



A high wall shields the library courtyard on the Sixth Street front (above).

The small auditorium is in the upstairs portion of the "drum."

Both main entrance and stair adjoin the control and charging desk (acrosspage top); *children have a streetfront area of their own* (bottom). *For sun control on the street façade, wall areas above the glass panels are filled with translucent marble, which provides luminescence but excludes direct sunlight.*

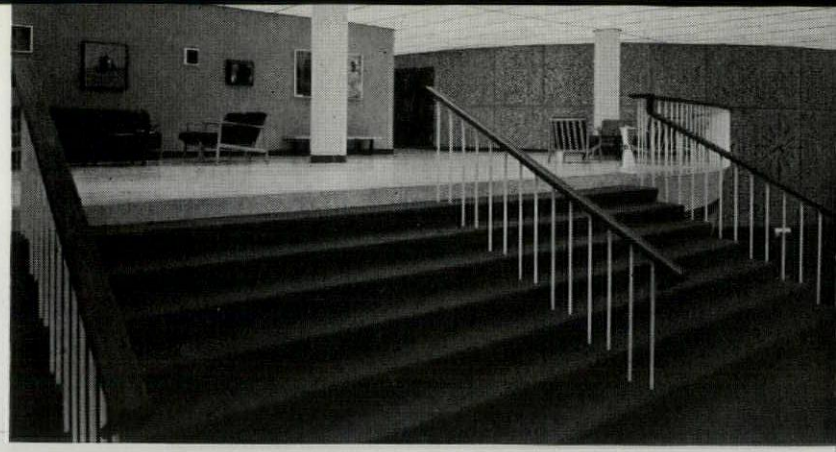
Materials & Methods

construction

Foundation: reinforced-concrete slab over concrete piling—Raymond Concrete Pile Company. **Structure:** frame, walls, floors, roof: reinforced concrete; frame for round drum: structural steel—Marko Engineering Company. **Wall Surfacing:** precast-concrete panels, colored-aggregate face—Concrete Materials, Inc.; translucent white marble panels—Georgia Marble Company; porcelain-enamel panels—Davidson Enamel Products, Inc.; plaster; rest rooms, toilets: ceramic tile—Mosaic Tile Company. **Floor Surfacing:** public areas: vinyl tile—American Biltrite Rubber Company; office areas: asphalt tile; main stair: terrazzo; main entrance: flagstone—Jacobs Creek Flagstone Company. **Ceiling Surfacing:** public areas: luminous plastic ceiling—Pittsburgh Reflector Company; office areas: acoustical tile—Johns-Manville Corporation; auditorium and reading rooms: plaster. **Roof Surfacing:** built-up roof—Barrett Division of Allied Chemical & Dye Corporation. **Waterproofing & dampproofing:** masonry waterproofing—Western Waterproofing Company. **Insulation:** acoustical: sprayed asbestos-bonding material—Keasbey & Mattison Company; thermal: rigid type for roof—F. E. Schundler & Company, Inc. **Roof Drainage:** interior drains—Josam Manufacturing Company. **Partitions:** interior: movable—Johns-Manville Corporation; toilet: ceiling hung—Milwaukee Stamping Company. **Windows:** heat-absorbing glass—Pittsburgh Plate Glass Company; window walls—Valley Metal Products Company. **Doors:** interior: wood, flush, solid core—U. S. Plywood Corporation; overhead: steel-slat rolling doors; entrance: aluminum—Pittsburgh Steel Company. **Hardware:** lock sets: cylindrical, heavy-duty—Schlage Lock Company; concealed door closers—Corbin Division of American Hardware Corporation; hinges: solid-bronze ball bearing—Lawrence Brothers; stainless-steel push and pulls—CIPCO Corporation. **Paint & Stain:** exterior: enamel; interior: flat—Benjamin Moore & Company.

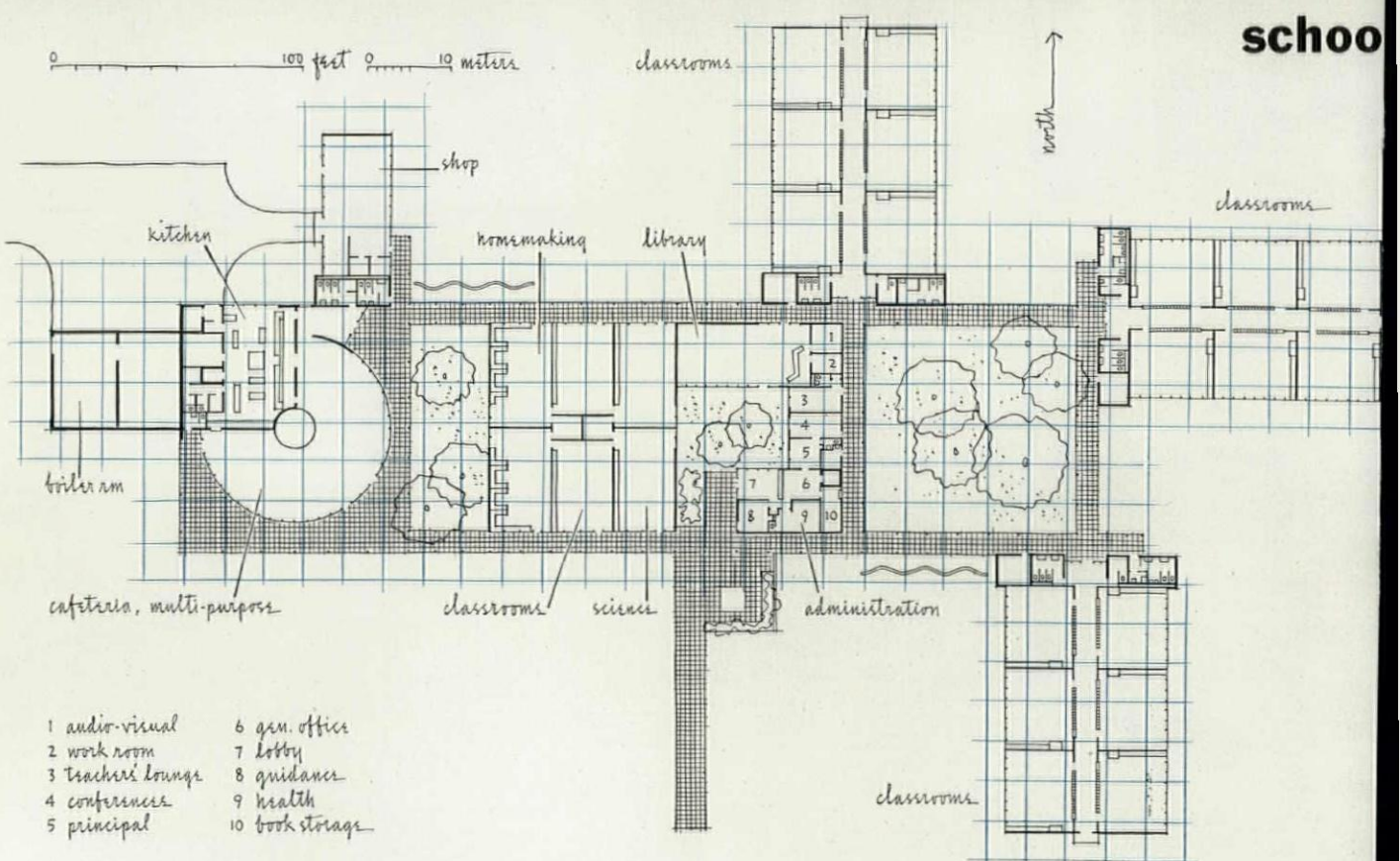
equipment

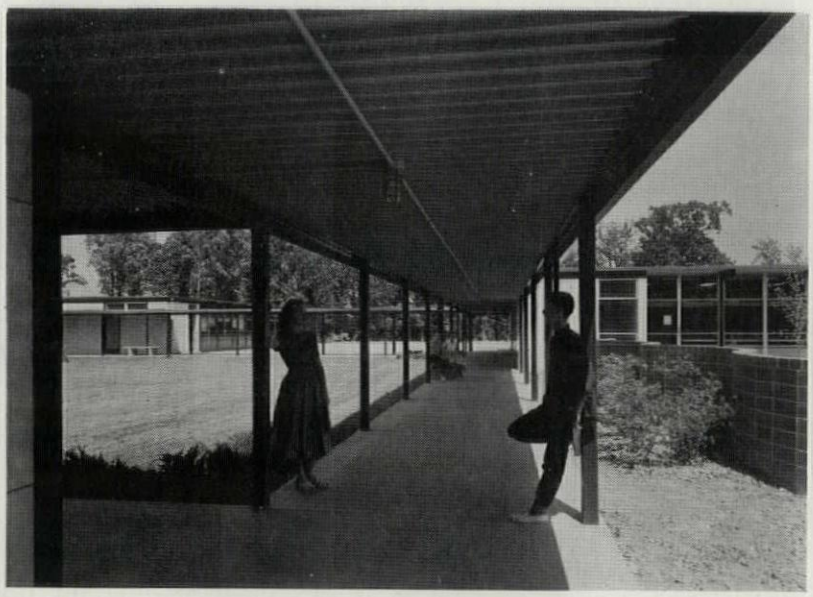
Specialized Equipment: private phone system; conventional console and outlying speaker system—Stromberg-Carlson Company. **Elevators:** hoisting equipment: hydraulic—Rotary Lift Company; cabs and doors: metal panel—Williamsburg Steel Products Company. **Lighting Fixtures:** office area: recessed fluorescent troffers; public areas: luminous ceiling—Pittsburgh Reflector Company; auditorium and stage—coves and recessed incandescent; bookstack: continuous fluorescent strip—Garden City Plating & Manufacturing Company. **Electric Distribution:** General Electric Company. **Plumbing & Sanitary:** wall-hung water closets & lavatories—Crane Company; plastic toilet seats—Sperzel Company; water heater: electric—A. O. Smith Corporation; flush valves: diaphram type—Coyne & Delany; pipe: galvanized wrought-iron and steel, cast iron—Charlotte Pipe & Foundry; shower controls—Crane Company; drinking fountain—Filtrine Manufacturing Company; fixture carriers—Zurn Industries, Inc.; sump pump—Weil Pump Company. **Heating:** type: low pressure steam; package steam generator—Cyclotherm Corporation; steam coils in ductwork; radiant panels on first floor—Taco Heater, Inc.; pneumatic controls—Minneapolis-Honeywell Regulator Company. **Air Conditioning:** reciprocating compressor, centrifugal blowers—The Trane Company; shell and tube-type condenser—Acme Industries, Inc.; cooling tower: induced draft—The Marley Company, Inc.; ceiling grills, diffusers, and slotted outlets above luminous ceiling—Barber-Coleman Company; filters: electronic—American Air Filter Company; cooling coils—Aerofin Corporation; controls: pneumatic—Minneapolis-Honeywell Regulator Company.



The upstairs gallery (acrosspage top) *overlooks the colorful main-floor reading rooms which, in turn, have a restful view of the courtyard. To lend spaciousness to otherwise minimum-ceiling-height rooms, portions of the second floor are cut away, and the main-level areas gain the full two-story height. Ceilings in these areas are continuous luminous plastic panels, which supplement the basic acoustical control provided by sprayed-on asbestos fiber on the structural floor slabs. Interior furnishings for the library, by Martin Van Buren, Inc.; Landscape Architect: John Lippard.*

schoo


0 100 feet 0 10 meters
classrooms
north
shop
classrooms
kitchen
homemaking
library
boiler rm
cafeteria, multi-purpose
classrooms
science
administration
classrooms
1 audio-visual
2 work room
3 teachers' lounge
4 conferences
5 principal
6 gen. office
7 lobby
8 guidance
9 health
10 book storage



A great sense of spaciousness is provided by both large and small landscaped courts, with the bordering walkways giving them definition and the bright porcelain-enamel spandrel panels further emphasizing their gardenlike character.

Collaborating were W. P. Wells, Mechanical Engineer; John Bolen, Electrical Engineer; and Southeastern Construction Co., General Contractor.

Photos: Joseph W. Molitor

It is difficult to know which of several factors is the most contributory to the design of Wilson Junior High School, Mecklenburg County—the siting; the cluster organization in separate wings for separate age groups; the basic disposition of elements; its colorful finished design; or the extraordinary fact that the building was almost totally shop-fabricated for speedy site assembly. The school received an Award of Merit in this year's AIA Honor Awards judgment.

Choice of the gracious 40-acre site was made largely because most students live to the east of the school. There is a senior high school to the west, and an elementary school is planned to the east. Thus, central placement of the Junior High allows rural-school buses to proceed first to the planned elementary school, then here, and on to be parked at the senior high, without doubling back over the same roads.

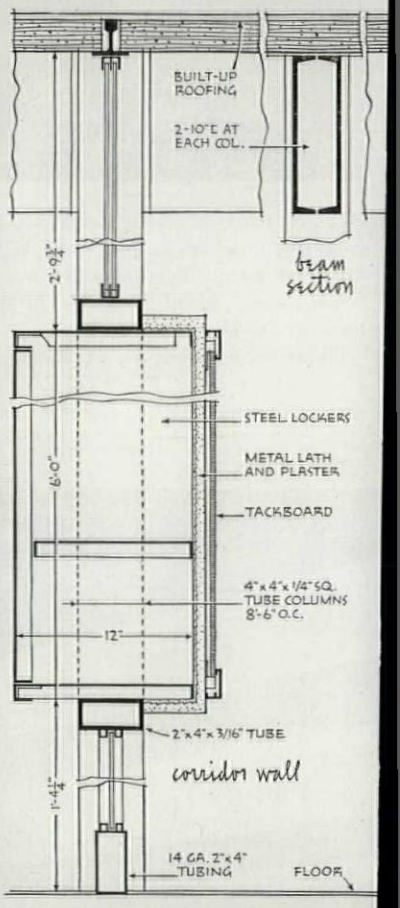
Need was for general classrooms for seventh, eighth, and ninth grades (6 rooms each), plus six special classrooms, including homemaking, and an administrative unit. In addition, a multipurpose room and a shop were needed. Since the senior high school has a large auditorium, none is contemplated for the Wilson School.

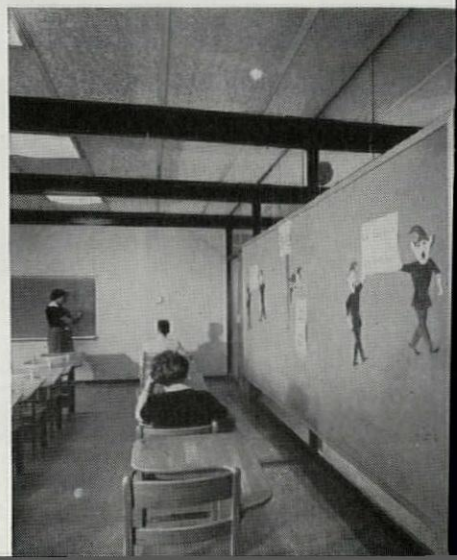
The three grades are accommodated in three separate wings (each extendable, as demand requires), and joined by covered walks around a large open court, on the fourth side of which is the administrative unit (with its own courtyard) and the special classrooms used by all age groups; farther to the west are the relatively "noisy" areas—cafeteria/multipurpose room; shop; boiler room.

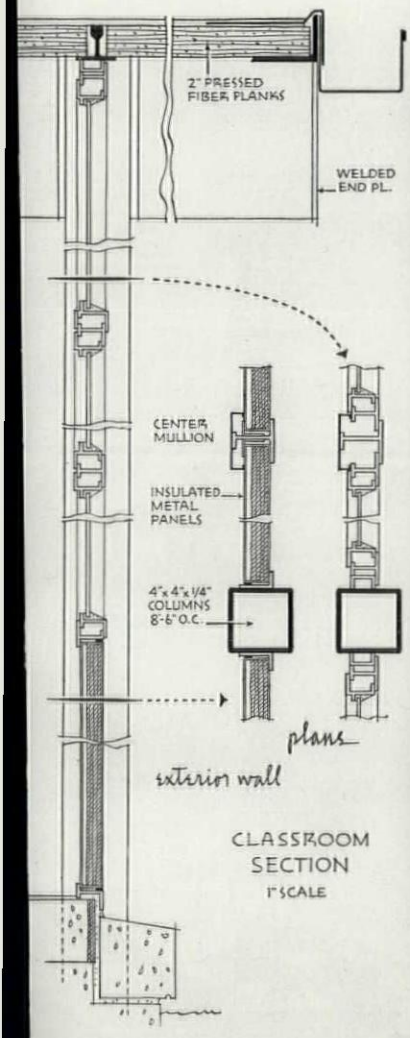
Except for small wall areas in service portions, structure consists of 4-in.-square columns of welded steel tubing and welded box beams made up of two lightweight stair string channels; in the multipurpose unit, the box beams radiate from a central bearing drum to columns along the perimeter of the circular space, continuing out to columns at the edge of the rectangular roof. Structural columns (with only four exceptions) are spaced 8'-4" o.c. All windows (aluminum projected sash), lighting fixtures (8-ft fluorescent tubes), purlins, 1-ft-wide building panels, lockers (in groupings of 8) etc., gee with the basic module. Interior light for rooms comes from plastic skylights. Exterior walls are either insulated metal panels or (in spandrel areas) insulated porcelain-enamel panels, a different color used in each wing. Toilet units at ends of classroom wings are wholly of glazed, structural, facing tile.

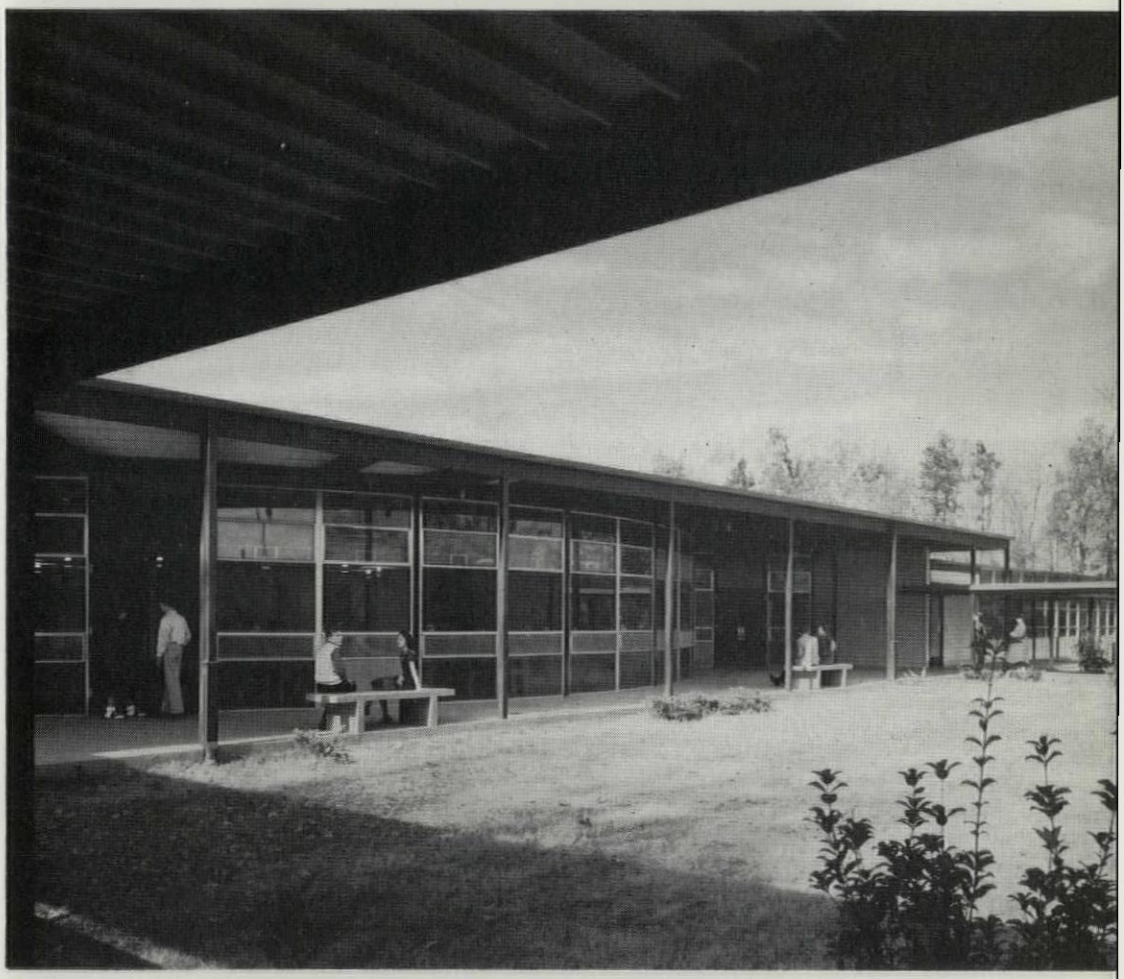
The roof deck, of compressed, wood-fiber planking, is laid on bulb tees, which, in turn, are supported on steel beams. This system not only provides the finished roof decking for receipt of built-up roofing, but also the finished ceiling (unpainted) and the required acoustical and insulating values.

Sectional drawings echo structure at central corridor and exterior wall, including suspended lockers, with pinboard-backup surface on classroom side.







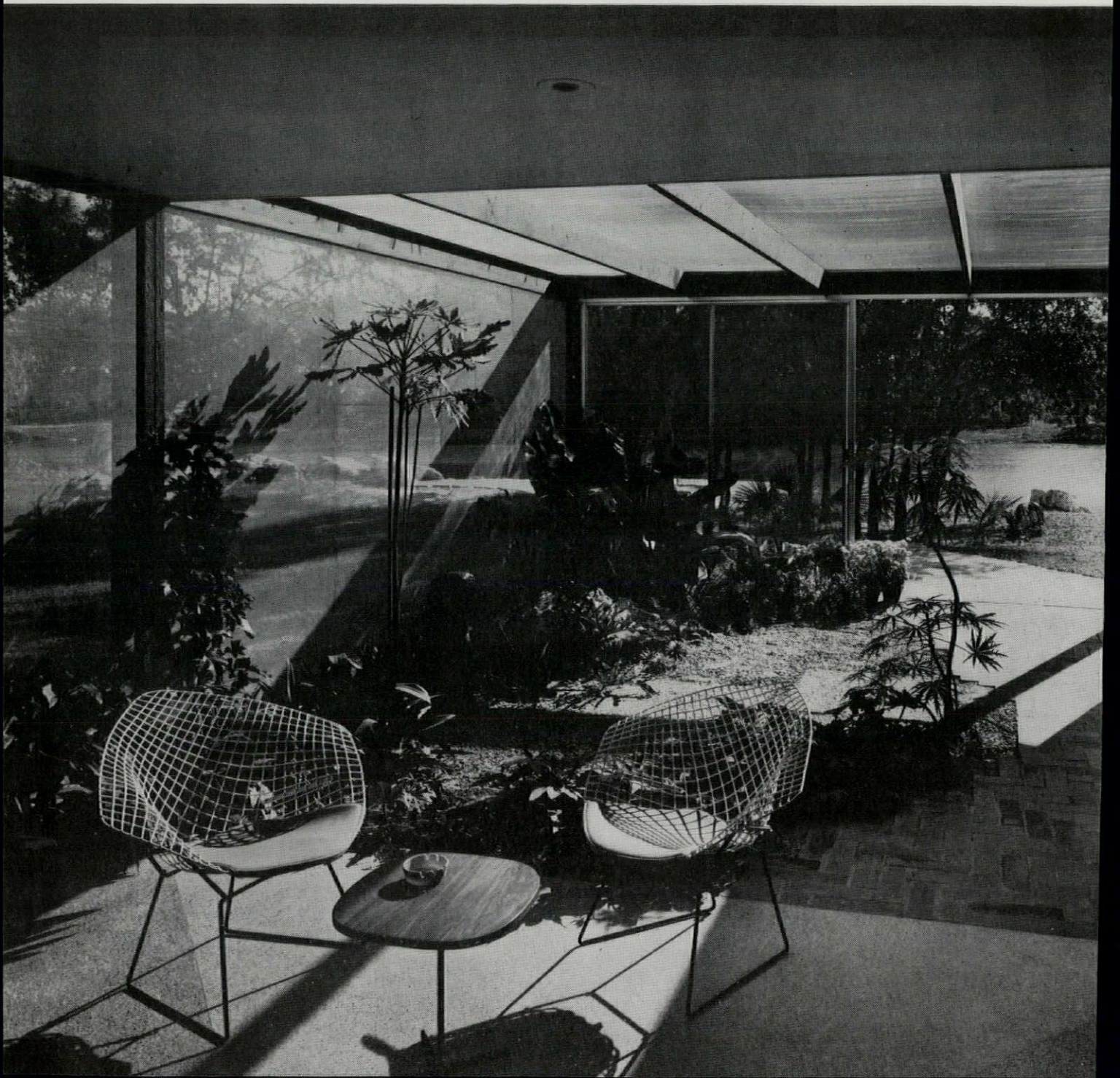


The curved multipurpose room (top) *is in a wing along with the shop unit and boiler room, separated from the special classroom block by yet another garden court* (above).

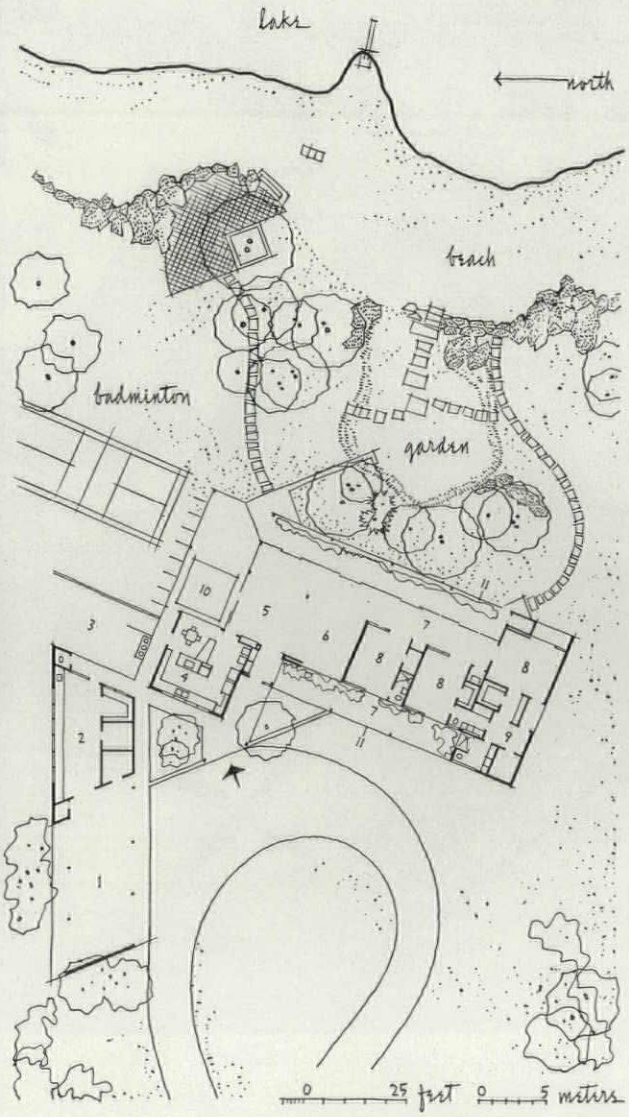
In addition to winning an Award Citation in P/A's Second Annual Design Awards Program, the Wilson Junior High School also was given an Award of Merit with Special Commendation, in the AIA, South Atlantic District, Honor Awards Exhibit, 1956.

Flexibility in architecture—that is the planning for foreseeable changes—is becoming an ever more important design consideration for the architect. Most often, such requirements are encountered in the field of residential design where a family's life cycle calls for a shift in functions, where part-time or multi-purpose use of an area is desirable, and where possible resale considerations may influence the design. The houses shown on the following pages have answered these demands particularly well.

climate-conditioned pavilion



location	Dade County, Florida
architects	Pancoast, Ferendino, Skeels & Burnham
landscape architect	Frederic B. Stresau
interiors	George M. Schwartz

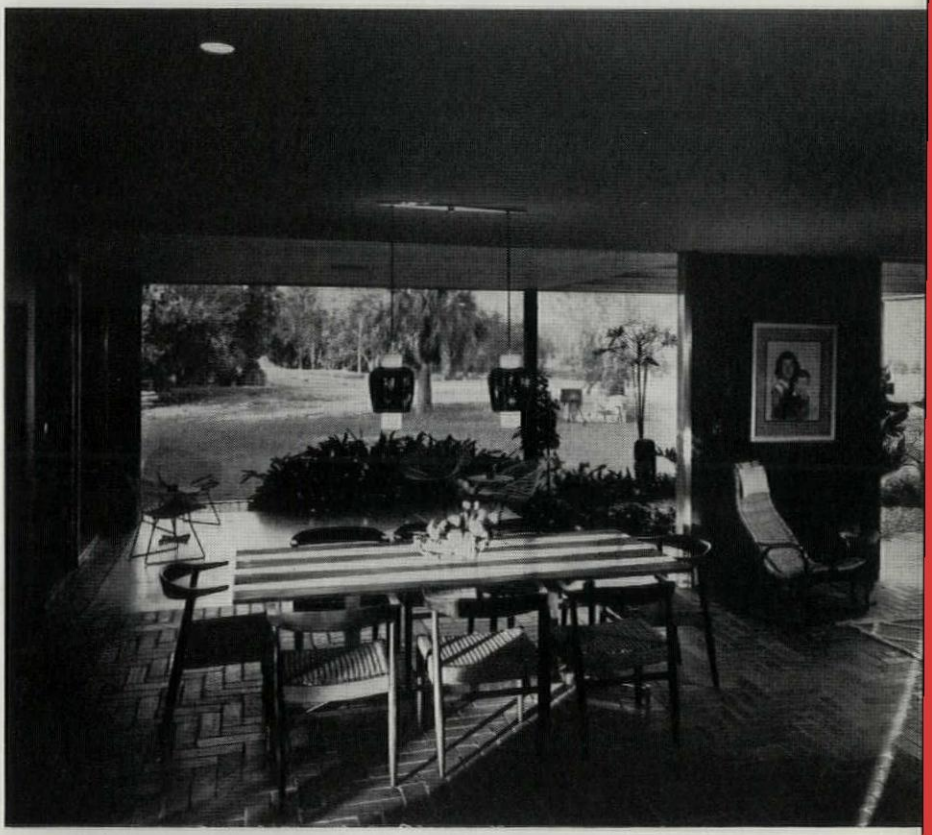


Site for this house is a 2½-acre lot—part of a 200-acre subdivision planned by the architectural firm in which the owner, Andrew J. Ferendino, is a partner. The site borders one of the artificial lakes created for the development. Existing trees, serene views, and proper orientation in relation to prevailing winds made this property particularly desirable. The architect-owner's basic design considerations: (a) minimum cost consistent with good design, quality of materials, and workmanship; (b) minimum maintenance cost; (c) effect of living outdoors; (d) adequate space for entertainment; (e) minimum housekeeping for servantless family; (f) workshop (wood working) for husband, workshop (flower and dry arrangements) for wife; (g) facilities for meals in kitchen; (h) wide overhangs; (i) interior planting; (j) all rooms with good exposure and view; (k) no blinds.

Photos: Alexandre Georges

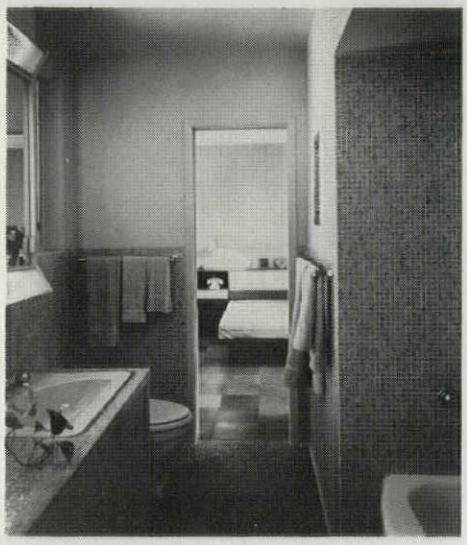
climate-conditioned pavilion

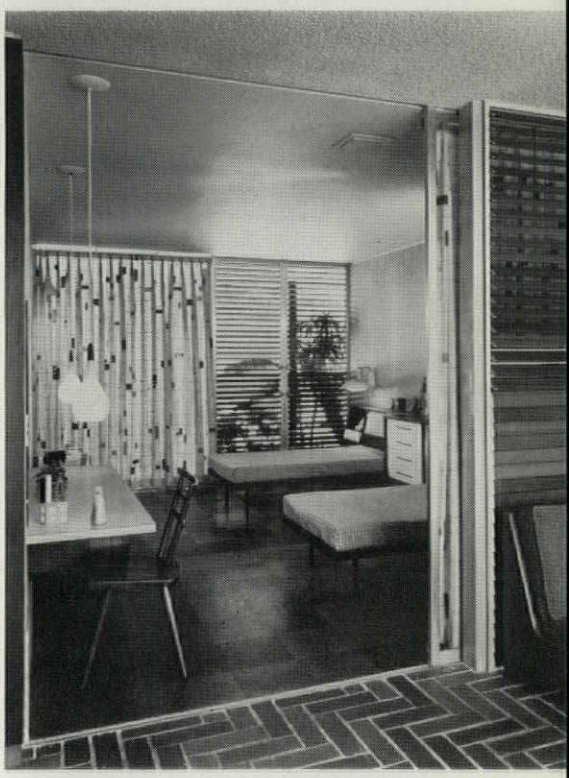
"In trying to create the effect of a large home with a minimum of square-footage," writes Ferendino, "the interior hall to the three bedrooms was omitted and a sliding-door-enclosed loggia (*acrosspage*) created. Making this loggia 8 ft wide instead of the normal 4 ft we were able to utilize this space for what we call 'milling area' for parties. Sitting groups in this area not only work out satisfactorily for entertainment, but also allow the children to have a place for their friends while the parents are entertaining small groups in the living room. The children have a sitting area in the west patio and this also serves as an alternate entrance to their bedrooms." Not only is flexibility evident throughout the plan, but it is also a most important factor in the design of the walls. Within the screened pavilion any degree of openness or enclosure is possible due to the floor-to-ceiling sliding glass doors and the wall sections of adjustable redwood jalousies. The structure is extremely simple, employing stud framing and a 4-ft module throughout. "An 8'-4" finished ceiling height was dictated by 8-ft studs plus plates, and allowed for 8-ft plywood sheets with 3" base and 1" strip at head."



climate-conditioned pavilion

Children's rooms (left *and* below) *open on both sides to loggias—one for circulation and entertaining, the other for private use. Bath* (below left) *may be used in conjunction with master bedroom or future study, now daughter's bedroom. Children's rooms have cork floors, master bedrooms is carpeted. For ease of maintenance and economy, brick flooring was used throughout the major part of the house, as well as outside for terraces and walks.*



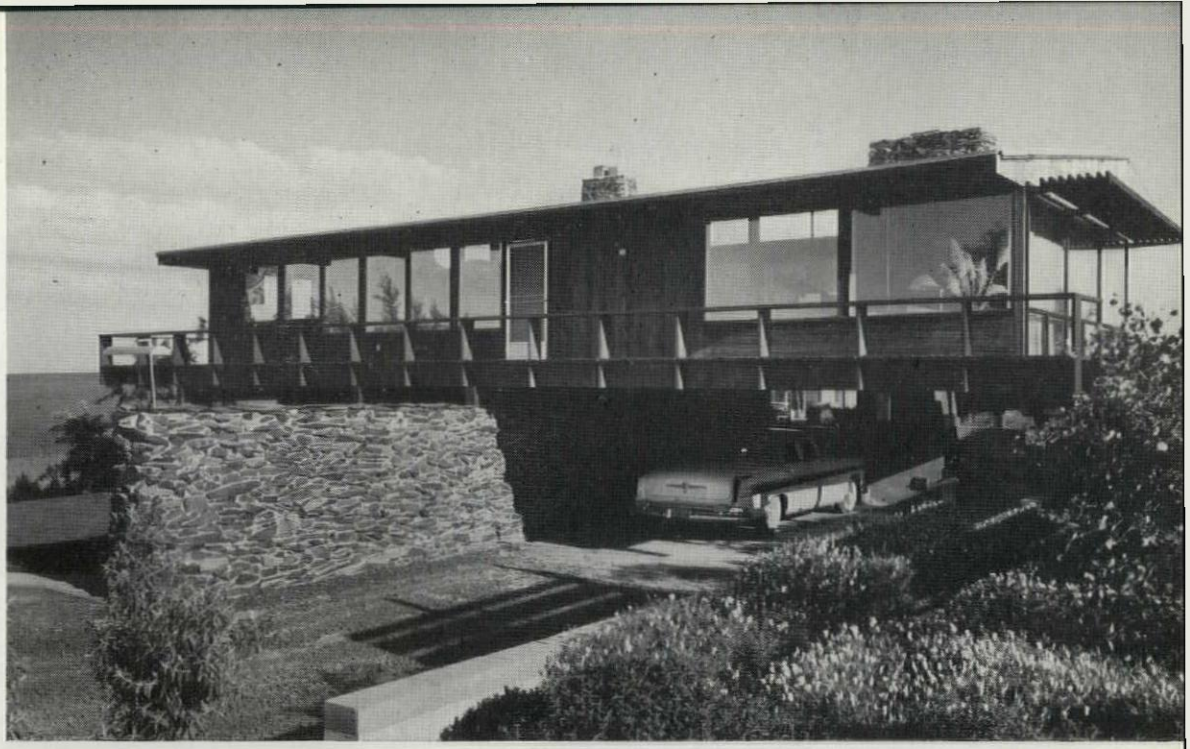


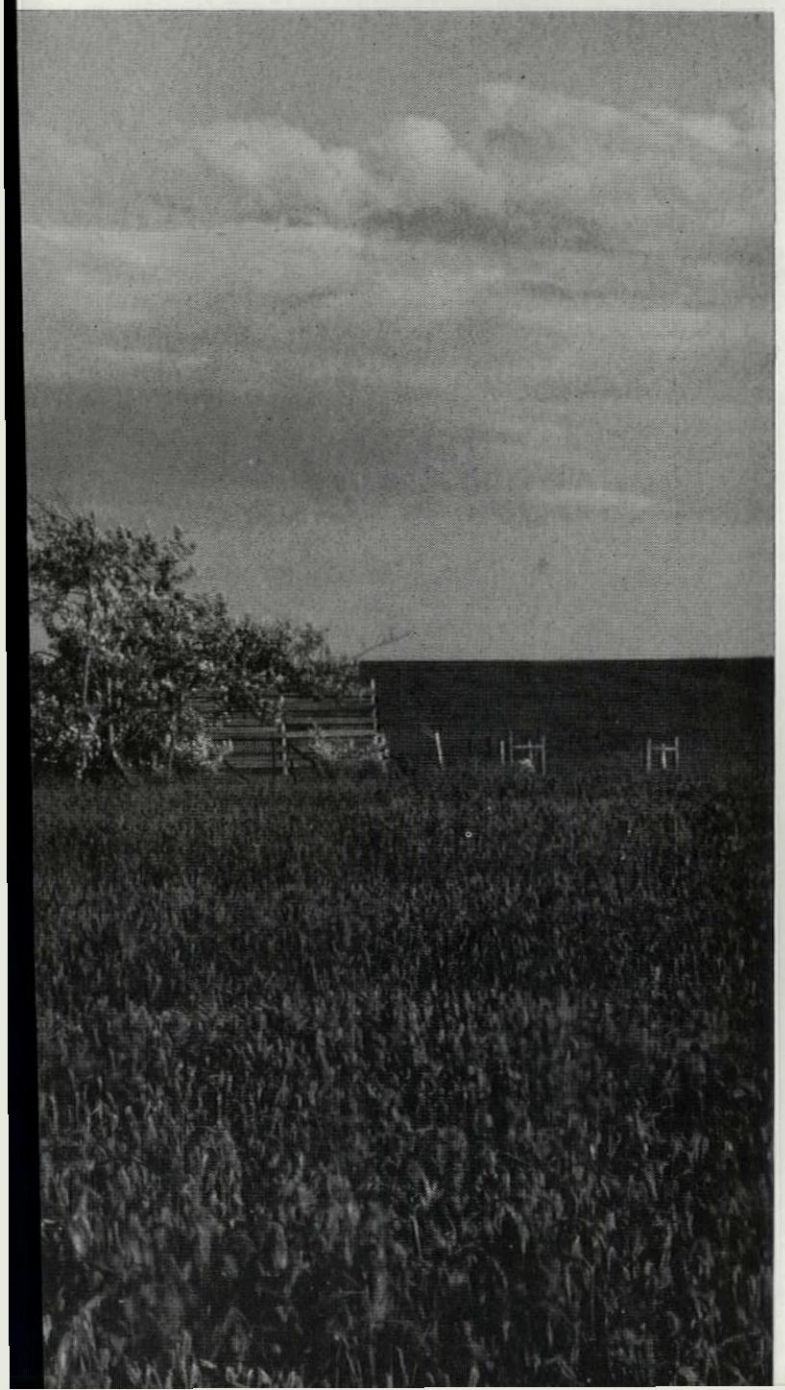
Special masonry block, left exposed on the interior of the master bedroom (acrosspage) *and other areas, was sand blasted to bring out the warm tones of the aggregate—in this case Chattahoochie River-Bottom gravel. In addition, various shades of red, brown, white, and gray cement were used in the manufacture of the blocks. The other prominent exterior wall material is a 5/8" pressure-treated redwood-plywood visible in private loggia* (left). *Ceilings in major living areas were sprayed with acoustical plaster. The building is heated by gas-fired hot air and cooled by a central air-conditioning system.*

ranch house

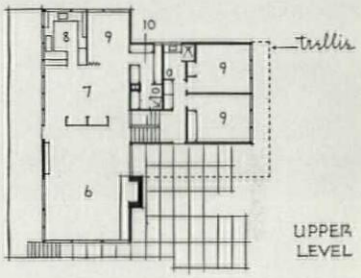
location	Moro, Oregon
architect	Paul Hayden Kirk
interiors	Del Teet Furniture Company

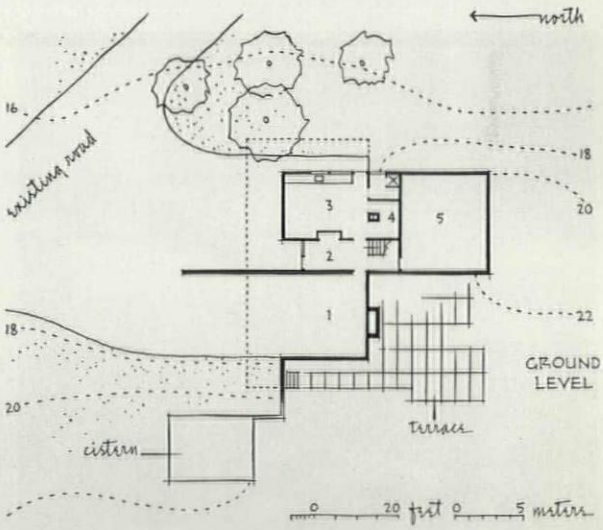
This house, situated at the top of a high rolling ledge in the midst of a vast Oregon wheat ranch was originally intended for summer use only. Occasional winter and spring visits required that kitchen, dining room, master bedroom, and bath be easily closed off from the rest of the house for heating purposes. From these rooms, the owner also wished to have the best possible view: for that reason they were placed at the top of the tri-level plan. Two bedrooms, one for the 'teen-age son, the other for guest use, are at the intermediate level. On the ground floor, readily accessible for showers and general clean-up, is a farm work room—an area particularly in demand during harvest time when meals are also served in this room. Since completion of the house, the owners, from Seattle, have chosen to make this their permanent year-round home.

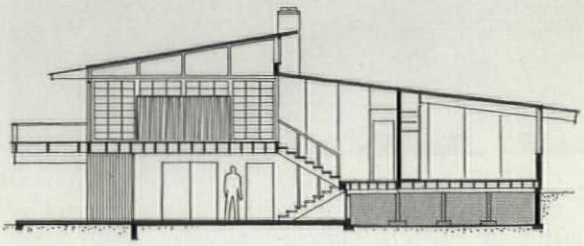




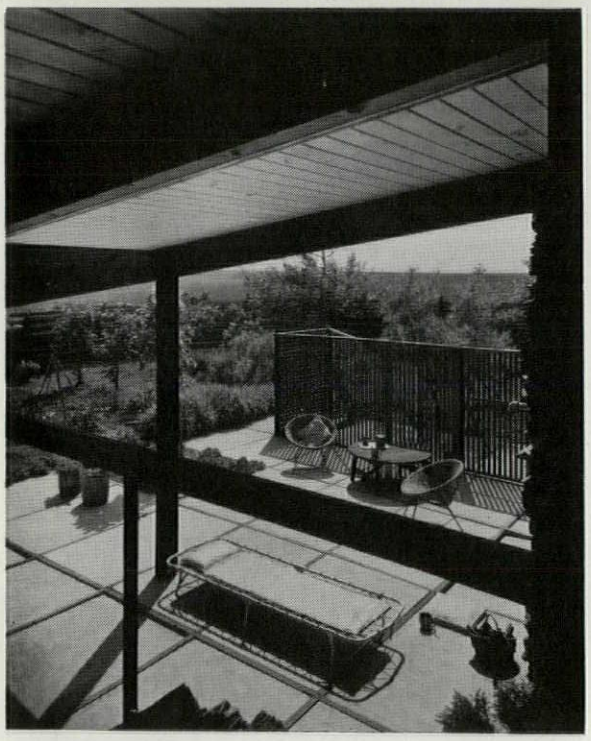
1 carport
2 entry
3 workroom
4 heater room
5 unexcavated
6 living room
7 dining room
8 kitchen
9 bedroom
10 dressing room

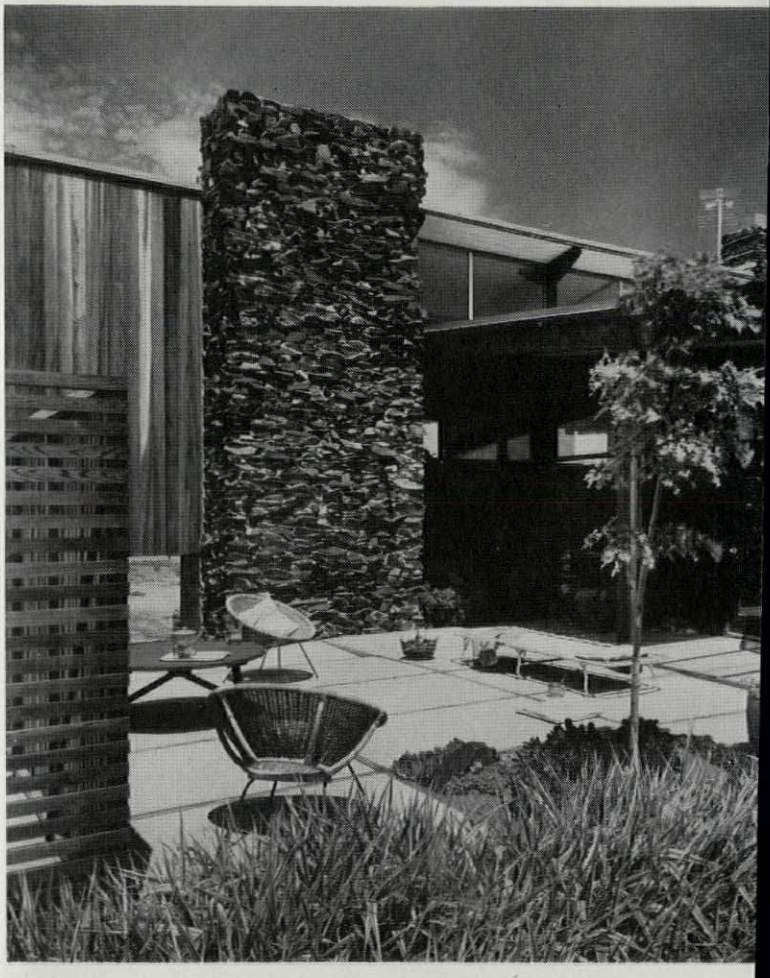




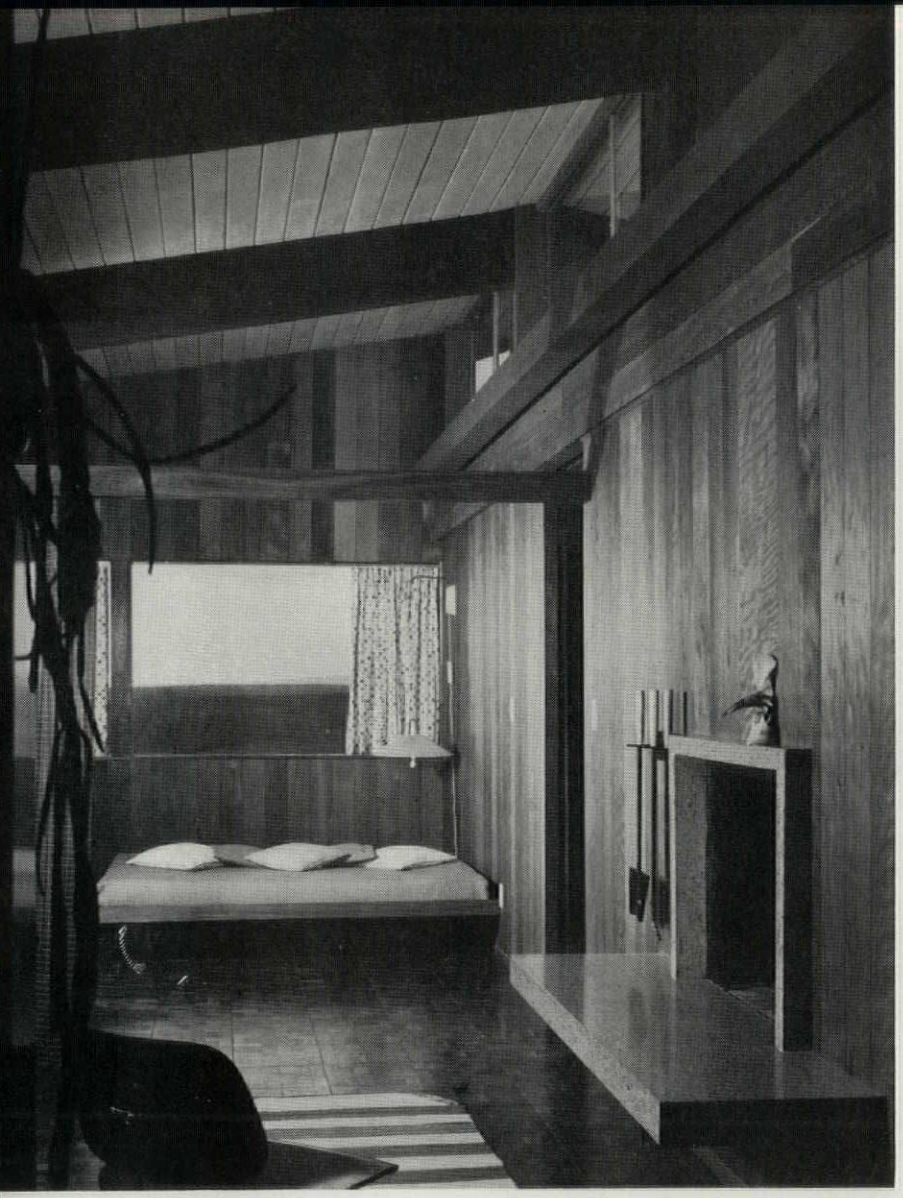


cross section at entry





Patio (above *and* right), *accessible from the intermediate level of the house, is protected from strong summer winds. Deck at north side* (opening page) *serves as dining terrace in summer.* Photos: Dearborn-Massar



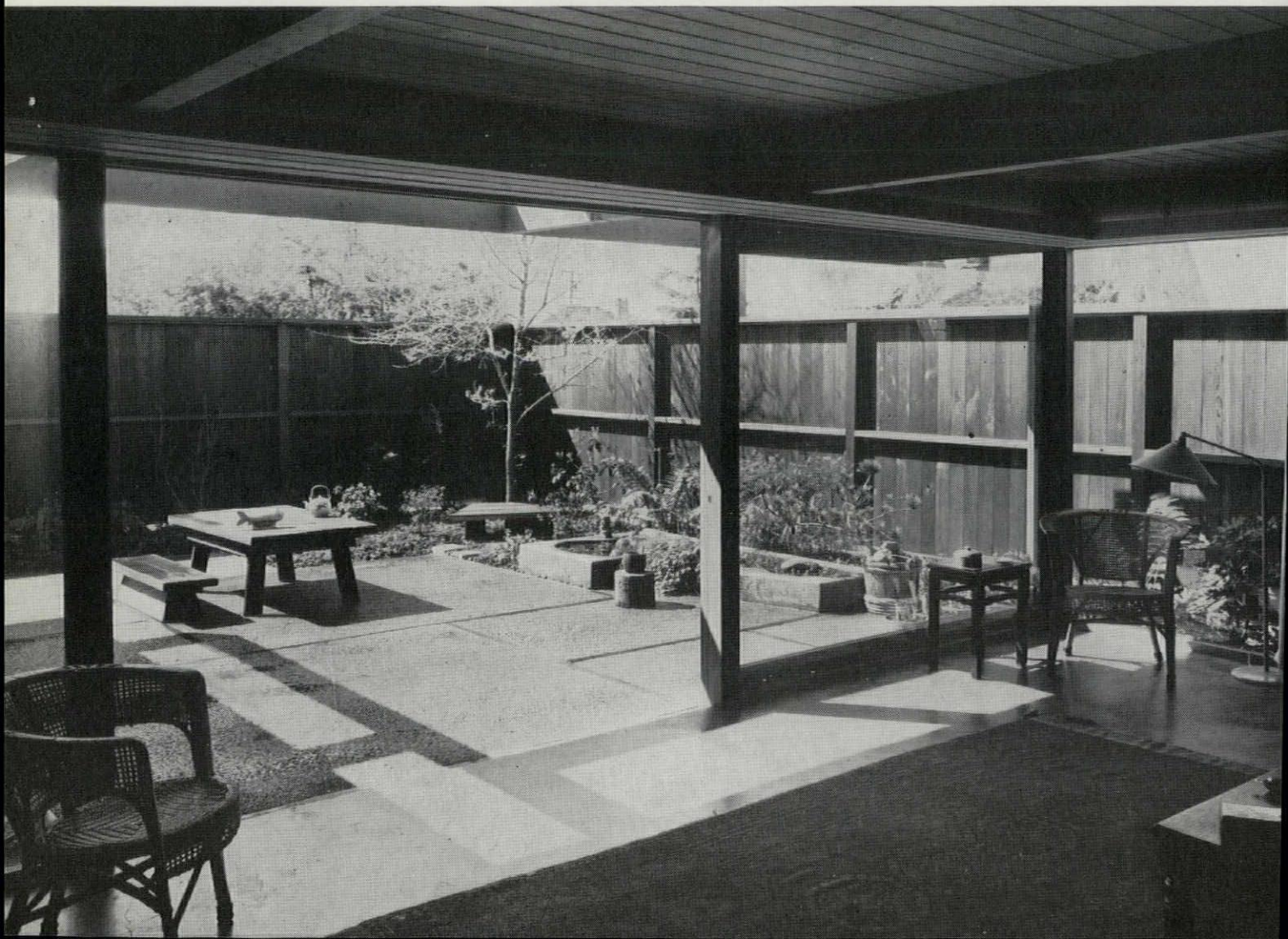
The structure is of wood, employing post-and-beam framing. Interior and exterior paneling is of redwood, now weathered to a warm gray-brown, a color which ties in well with the brown-to-black stone found on the site and used extensively in the construction of this house. Interior cabinetwork and parquet flooring are of walnut. In other areas of the house, the local stone was also used as flooring material.

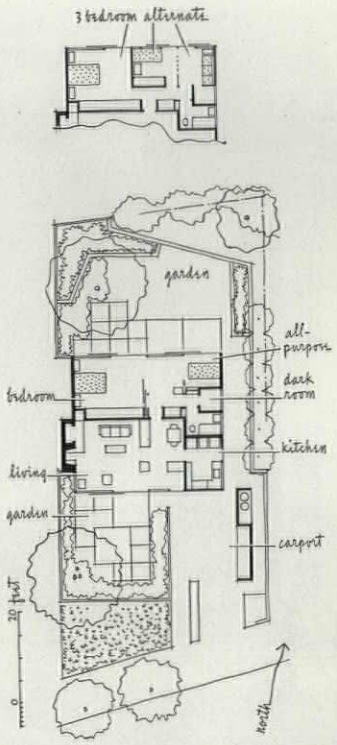
For winter use, upstairs area may be restricted to kitchen, dining, and master bedroom by adjusting sliding screens between living and dining rooms (bottom). *Heating is done by electrical space heaters.*

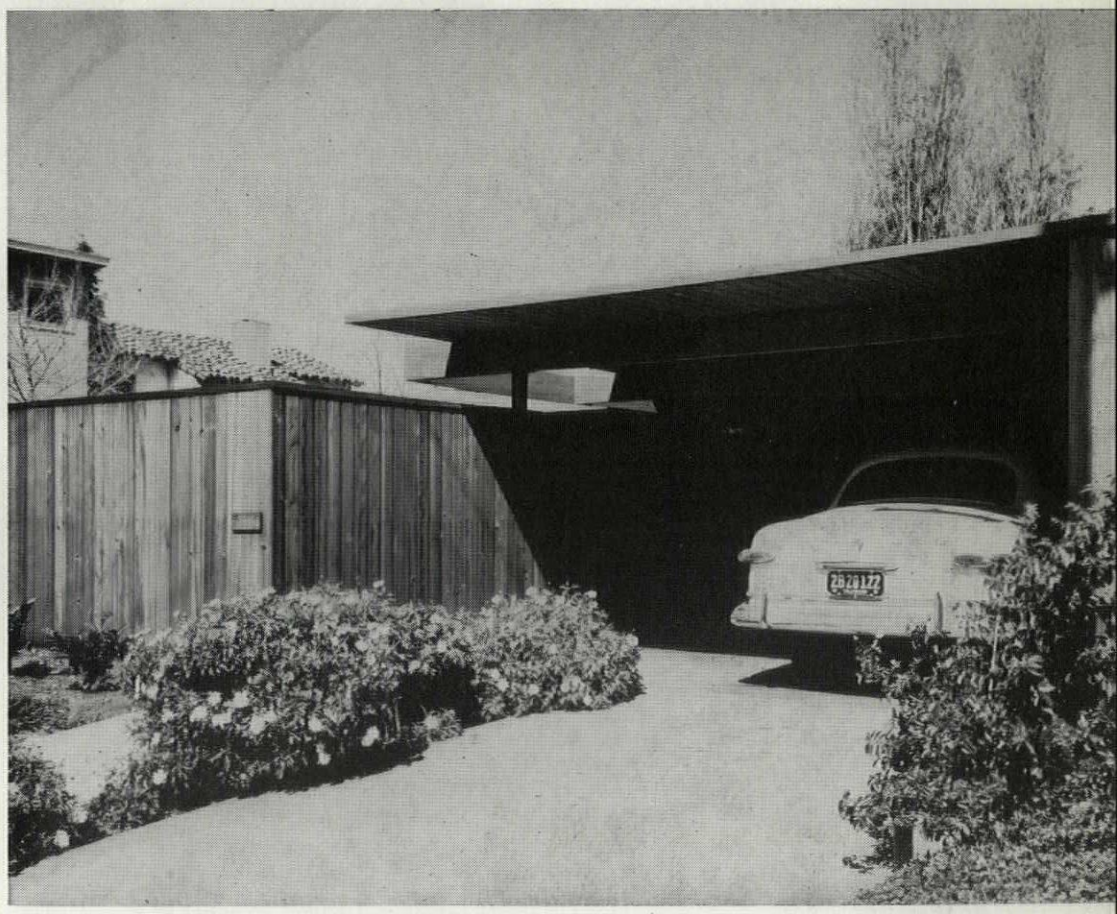
city retreat

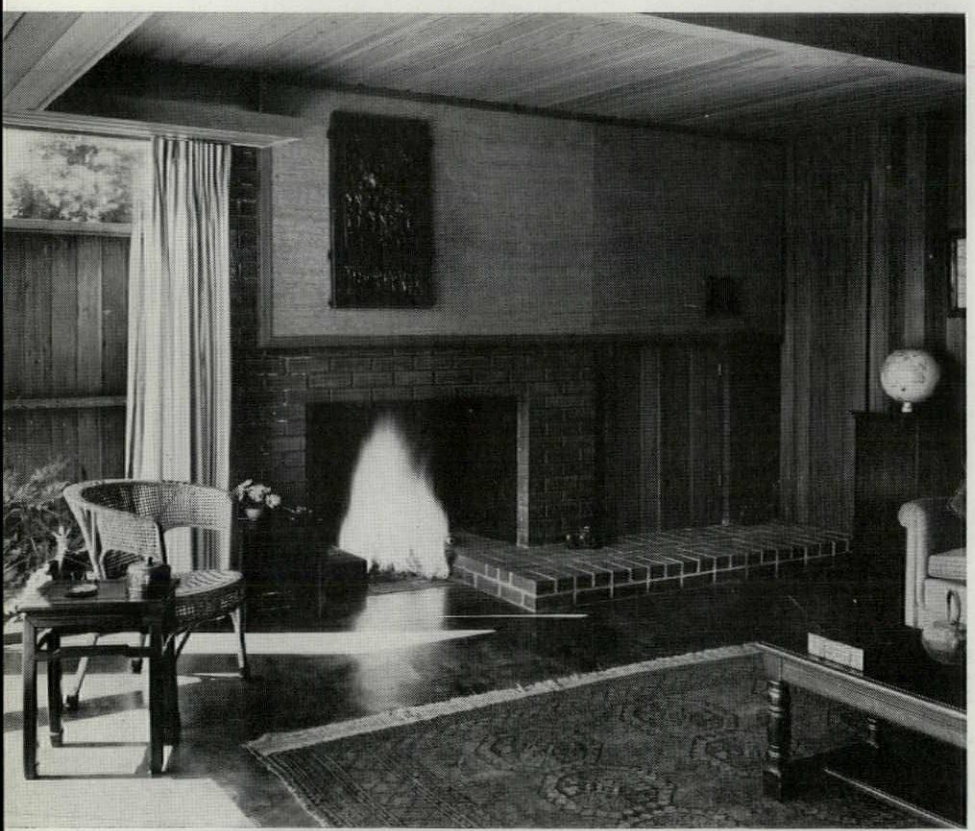
location	Berkeley, California
architect	Roger Lee
landscape architects	Osmundson & Staley

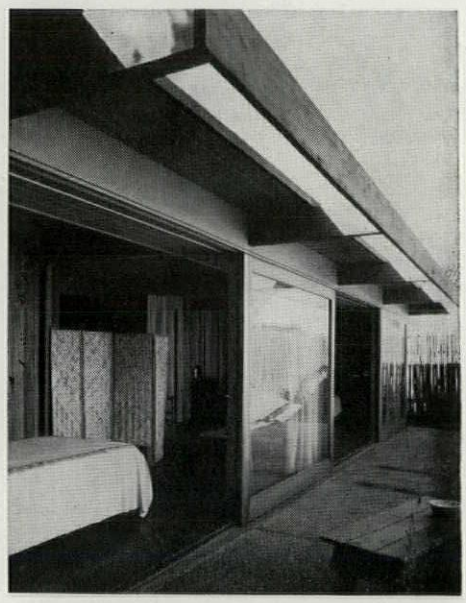
The business couple for whom this house was planned desired seclusion for their weekends and after-work hours. As much privacy as possible was also to be gained outdoors on the limited site—a narrow, interior, city lot. For the husband's hobby, a darkroom for photographic work was to be included. The wife desired gardens to be used and also to be enjoyed from the interior of the house. Since entertaining on a large scale was not an important factor, kitchen and dining facilities were kept to a minimum. Only one bedroom was required, though this room was to be of generous dimensions. In deference to the lending agencies, a number of alternate schemes submitted by the architect suggested simple, nonstructural changes for a conversion, if necessary, from the one-bedroom plan to a standard three-bedroom house. Posts and beams, 8′-0″ o.c. frame this structure. Roofing is of 2″ T&G planking; flooring, of concrete. Redwood siding is the exterior and interior wall material. The house is radiantly heated through copper pipes embedded in the concrete floor. General Contractor was P. L. Crane.




3 bdroom alternate
garden
all-purpose
dark room
bdroom
kitchen
living
garden
carport
20 feet
0
north





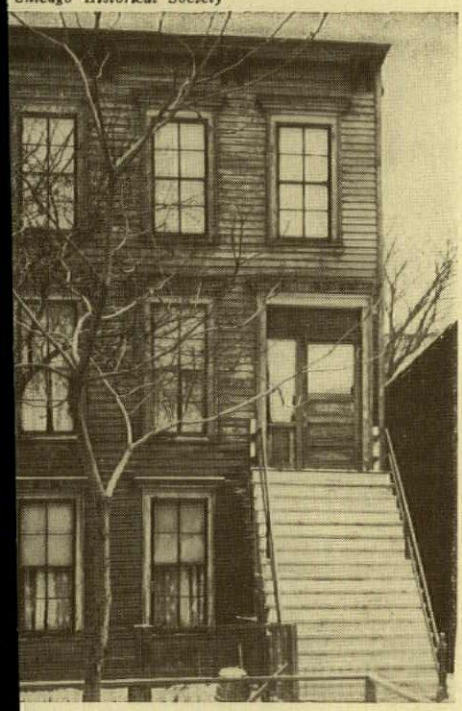


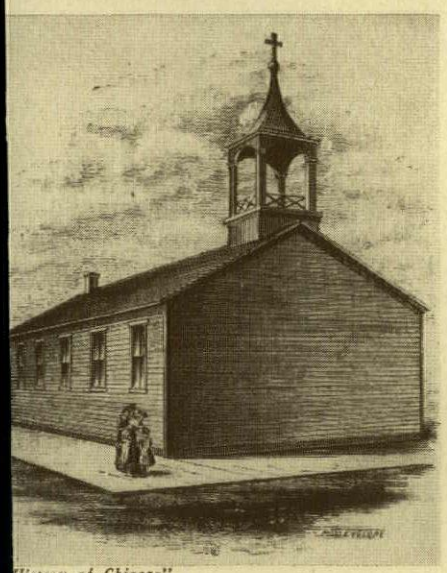
Living room (above left) *faces south garden closed off from the street by a redwood fence. Bedroom* (left *and* above) *on the opposite side of the house also opens onto a private garden.* Photos: Theodore Osmundson

PROGRESSIVE ARCHITECTURE IN AMERICA

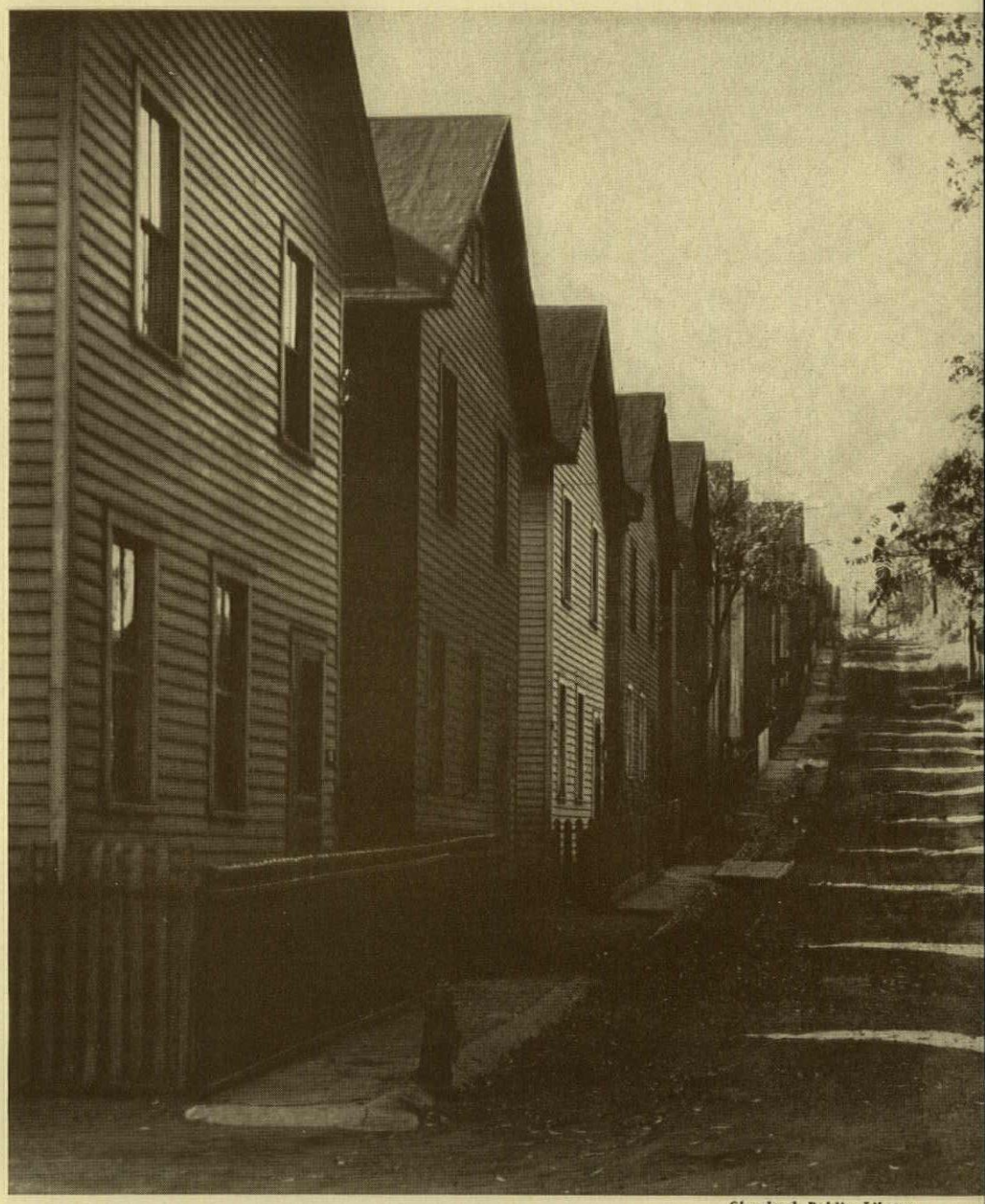
THE BALLOON FRAME — c. 1833
Chicago, Illinois

Chicago Historical Society



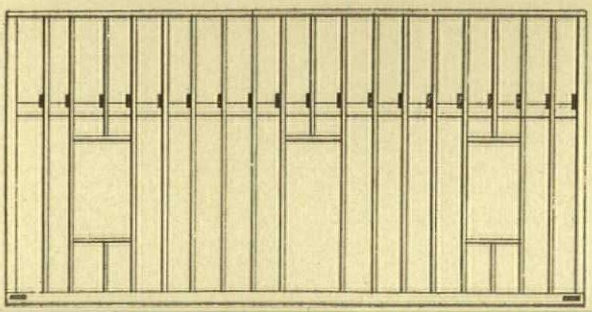


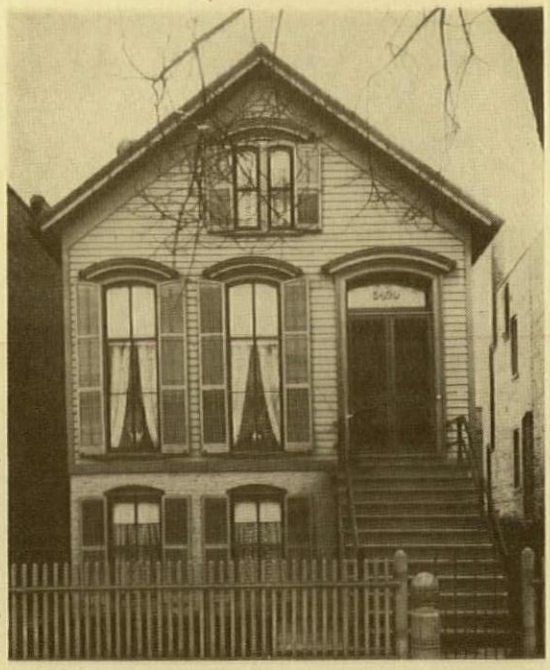
History of Chicago"



Cleveland Public Library

Fig. 1.





Chicago Historical Society

"Carpentry Made Easy; or, The Science & Art of Framing on a New & Improved System" by William E. Bell (1859)

Fig.2.

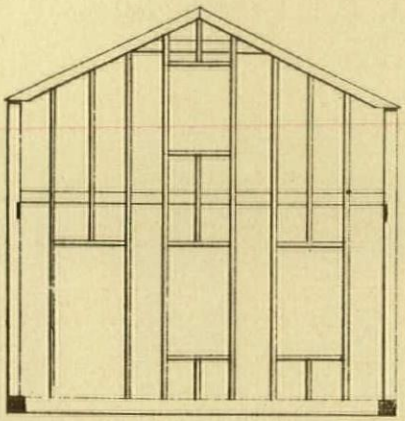
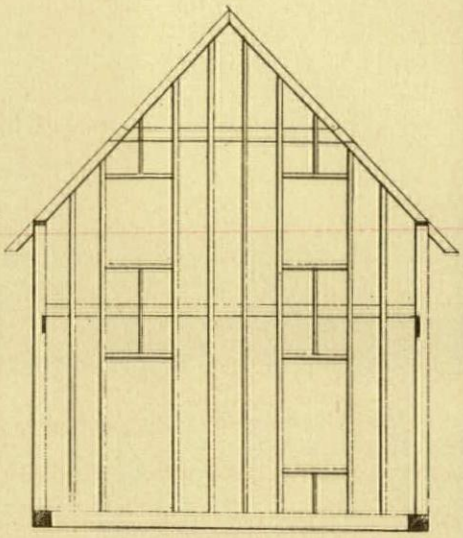


Fig.3.



The American dream, in its more pragmatic aspects, is one of efficiency, economy, and speed. In architecture, the will and the need to do things better, faster, and cheaper led to a building revolution with the most far-reaching effects: the 19th Century invention of the balloon frame. This novel and admirably simple system of construction quickly supplanted all earier types of wood framing, and remains the basic way of building in wood to this day.

Like many important innovations, the idea of the balloon frame seems almost self-evident. For the laborious, expensive, mortise-and-tenon joining of heavy wooden members, used universally until the 1830's, a readily constructed cage of slender plates and studs was substituted, running the entire length and height of the building and held together only by nails. As inevitable as it appears today, this logical method of construction was an impossibility until the Industrial Age had produced mechanically sawn lumber and (that small miracle) the mass-produced nail. Light, tight, and strong, such a frame might be lifted from its foundation by a cyclone, rolled along a Kansas prairie without damage, and re-erected with ease; thus earning it the name, initially not without derisive implications, of "balloon frame."

The importance of this invention goes beyond its structural and design significance to touch almost every aspect of American life. The balloon frame and the common nail were as vital in opening the continent as the building of the railroads and the unrest of the pioneer. It appeared at a fortunate moment in history, through an equally fortuitous combination of circumstances. Population in frontier communities and the new cities was increasing at a fantastic rate. The country was on the move. The invention of the balloon frame marked the initial industrialization of the building industry at exactly the moment to help solve the problem of housing a growing, shifting population. Because its simplicity and durability were matched by its economy and ease of erection, it became a vital element of the country's westward growth—serving the farmer, the homeowner, the merchant, the storekeeper, and the speculative builder with equal ease. Flexible, inexpensive structures could be erected with a minimum of skilled labor, in the shortest possible time, for a maximum of convenience, profit, and popular use. The American standard of living was raised as every man was able to have his own home at 40 percent less cost than conventional construction would permit. Stripped to essentials, the plane surfaces and the practical and utilitarian forms of the balloon frame were prophetic of 20th Century functional esthetics.

Credit for the invention of the balloon frame is disputed—given (with equal authority) by Sigfried Giedion to George Washington Snow, and by Walker Field to Augustine Deodat Taylor—but it seems certain that its birthplace was in Chicago, about 1833. St. Mary's Catholic Church, the earliest authenticated structure of the type, was erected in that year. A. T. Andreas, in his *History of Chicago* (1884) describes the building as "25 by 35 feet in size . . . the lumber brought in a scow across the lake from St. Joseph, Michigan, where it cost $12 per thousand . . . the total cost of the edifice was about $400 . . . the church itself was not plastered, it had only rough benches for pews and the simplest of tables for altar and pulpit. The outside of the building was not painted, and it had neither steeple nor tower. Sometime afterwards it was surmounted by a low, open tower. . . ." As evidence of the adaptability of the construction, St. Mary's was subsequently moved, with considerable ease though with some complaints from the congregation, to three different locations.

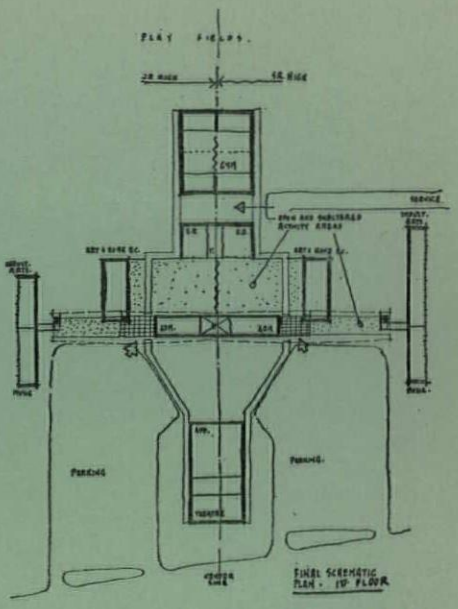
The raw, bustling frontier city of Chicago was a logical place for the appearance of the new balloon frame. In the four years from 1833 to 1837, population had risen from about 200 to more than 4000 persons. Building lots that sold for $300 in 1834 brought $6000 in the land boom of 1836. Westward migration, through Chicago, was reaching its peak. The advantages of the new method helped make it universally popular in the Middle West. By contemporary reckoning, nearly all of the frame buildings in Chicago and in all the surrounding country, were of this construction by 1855. Most of these light, wood-framed houses in the Chicago area were to serve as tinder for the great fire of 1871.

The balloon frame was a typically American solution to an American problem. According to Walker Field, who so effectively summarized its development, this structural advance represented ". . . the first great impact of Americanism on architecture. . . . Through it, one realizes the importance to progress of American individualism, as reflected in the pioneer, the land promoter, and the independent and practical craftsman. . . . Gradually, but irresistibly, structural developments have . . . influenced design . . . Americans have evolved a national architectural style characterized by simplicity and freedom . . . the balloon frame is an early crystallization of these vital principles . . . so important for the architecture of today and tomorrow."

ADA LOUISE HUXTABLE

Photographs and research assistance: Chicago Historical Society, Cleveland Public Library, Illinois State Historical Library, Prof. Edmund H. Chapman, Leo J. Weissenborn.

p/a design awards seminar I



Last January, at the time of announcement of results of the P/A Design Awards Program, a series of Case-Study Seminars were held at the School of Architecture of Tulane University. Award winning projects were discussed critically and analytically, and the comment was recorded on tape. In each case the architect first presented his building; then a prepared discussant who had previously studied the project spoke; general discussion followed. In four issues this year, beginning with this one, P/A will publish these discussions.

Project: **George Washington Carver Junior-Senior High School**
Client: **Orleans Parish School Board**
Location: **New Orleans, Louisiana**
Architects: **Curtis & Davis, Architects-Engineers**

Presentation:
Nathaniel C. Curtis, Jr.

The site of this project is about 80 acres in size, in a fairly undeveloped section of the city but adjacent to an area of newly developed residential districts. It is bordered on the north by a railroad, and most of the student-body will live to the south of the site. The city's long-range street plan calls for major streets to reach the site, but the only access at present is from the south, and present utilities and public services also enter the site from the south. For these reasons we decided to develop the southern part of the site for the building and use the northern part for the playfield.

Our first step in the design of the project was to divide the requirements of the plan into elements that seemed to have different structural requirements, such as the gymnasium with its 20-foot ceiling and long span; the auditorium, theater, cafeteria and kitchen; and then the academic classrooms, laboratories, and library.

We then took those elements and further divided them into quiet and noisy areas. For example, the gymnasium, auditorium, cafeteria, music rooms, and industrial arts rooms were considered noisy, and the instruction areas quiet. Next we considered those spaces that required a specific relationship to parts of the site: the auditorium and theater, for instance, should be near the public's access to the site; the gymnasium should be adjacent to the part of the site already established as playfield; the cafeteria, we felt, should be near the gymnasium.

The next step in diagramming was to establish a focal point—a point of entrance into the project—which we established as the half-way point between the two major elements of the project: Junior High School and Senior High School. Although these are really two separate institutions on the same site, with separate administrations, they share common facilities such as the auditorium, theater, power plant, and kitchen unit.

The final step in diagrammatic programming was the location of the quiet area (classrooms) between the two noisy areas (industrial arts and music) which were placed at the ends. Thus the final diagrams show the project completely symmetrical about a center line, with elements shared by both schools in the center.

The two-story classroom structure, about 800 feet long, accommodating 3000 students, is raised one floor above ground. This allows access through the site without interrupting classroom activity, and provides a sheltered activity area under the building, adjacent to an outdoor, unsheltered play space. The plan of the classrooms is a double-loaded corridor scheme. Studies showed it to be the most economical system, because it has less building perimeter, and less circulation in relation to the number of classrooms. Perhaps we are getting back to the plan that we once were trying to get away from in order to provide more light and air in classrooms, but we decided that even after all the studies of elaborate methods of getting natural light and natural ventilation in school classrooms, we have not found a means of eliminating artificial light entirely. So we decided that since we would have to provide some artificial light, we would frankly light the distant part of the classroom, and obtain ventilation by the method of treating the partitions between classroom and corridor. In section, the lockers that form these partitions are lowered from the ceiling and raised from the floor, allowing unobstructed air circulation through the building.

On the north and south walls of the classroom wing there will be a precast concrete, honeycomb sun-control screen.

The cost of the school will not be excessive, even though foundation construction problems are difficult. The site is an abandoned cypress swamp where the soil is so poor that it had settled about six inches between the time we had the survey made and the time the drawings were completed. We are in process of dewatering the soil and having it consolidated, so that the contractors will at least know the starting point

from which they must calculate fill. The building is constructed on 40′, 50′, and 90′ pilings, some composite and some untreated timber. Another budget item is an air-conditioned auditorium—the first in the school system here in New Orleans. And yet the cost will be around $12 per square foot.

***Discussion:* Harry Weese**

I think it's very good of Curtis & Davis to let us in on their trade secrets. I am referring to the very interesting brochure, which they say is a primary process in their practice, prepared for their clients in order to involve them in the process of the firm's reasoning. The drawings that you have seen are from this carefully contrived booklet. Reading it backs up, for me, the logical and persuasive development of a program and an organization of uses of space which not only solved the functional requirements but finally evolved into something that I think can be looked on as a very beautiful abstraction. I think that that first-glance reaction is very significant. When you are trained to look at site plans, you can tell very quickly whether one has Beaux Arts or Bauhaus background, whether it is new or old. And I think that this one, by whatever route it was arrived at, has a very original cast to it.

In the detailed development of the various units, I feel that the architects were operating from experience in their previous work. The raising of the classrooms above grade, whether it was dictated by cypress swamps or a small site, I think has a further aspect—it shows their understanding of human beings. They realize that human beings—particularly young, active ones—can climb stairs. It's a relief to see a school that isn't spread out all over the map. Of course in secondary school planning, with large site developments, there must be consolidation.

I think the general site development is the most exciting thing of all. Individual developed elements—such as the auditorium, which become almost exotic—are kept at the extremities where they do not interfere with the more straightforward, basic elements of the plan. The large classroom unit ties the site together transversely.

That classroom block is very interesting in its treatment of the problems of view, sun, shade, and so on. In their understanding of the human problem, Curtis & Davis have eschewed the picture window, the excess use of glass, and yet have realized that people have a psychological need of being oriented to the outdoors in some way or other. I think that the glimpses you will get of color and light through this screen will be perfectly adequate, and in this climate will be restful and will lend a tranquility to the classrooms.

The double-loaded corridor is good to see again, and so is the minimum of covered walks. Breaking the school into two halves — which in other times would have been male and female sections — will not be apparent in use of the building; I don't think there will be any sense of artificial division in that respect.

Sound transmission between classrooms is something that I will take at face value, but I hope that Bob Newman is involved in this project. I'm not sure how that will actually work out; perhaps Mr. Curtis will elucidate on that point.

I think that when we see a project of this kind in drawings we have to look ahead toward the finished work. Many projects are beautiful on paper, but in the last anaylsis architecture depends on the quality of execution, and its gracefulness depends on the way it stands up under use. I am confident that this firm will see this project through to a successful conclusion, and have what I consider to be one of the outstanding buildings in this field in this decade.

Nathaniel Curtis: On the question of acoustics in the classroom building, our analysis was as follows. In most of the older schools in New Orleans, with double-loaded corridors, transom windows have been introduced along the top of the corridor walls. And in most cases these schools are being used with those transoms open all of the time—and with the doors to the corridors open—so that air can circulate through. We said to ourselves: "Well, if they are to be left open anyway, why not leave them off completely?" No one seemed to be disturbed with the noise problem in these older schools. Actually, the School Board did not agree completely, so we ended up with a system of sliding panels for the spaces above and below the lockers, so that the teacher can close the panels if she desires. However, we expect that they will be left open most of the time. I think that the students and the teachers can become used to a certain amount of noise without having it become distracting, just as office workers become used to working in noise that might be distracting to someone coming in for the first time. Actually, corridor noise should be no greater than the noise that comes into a classroom from outside.

John Lawrence: Do the window walls go from floor to ceiling?

Curtis: No, they don't; they begin from a regular sill height—2′ to 2½′. Beneath are movable storage cabinets and heating cabinets.

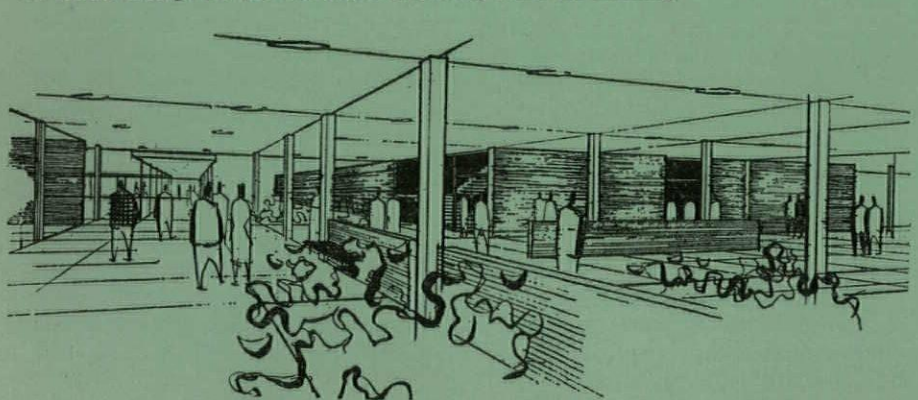
Lloyd Fleischman: You've done something here which we at Kelly & Gruzen have tried to do in New York: in your double-loaded corridor section, in opening the classrooms to the corridor you have the low separating element that you have described. We have never succeeded in doing that because of regulations about fireproofing the corridor, which is considered part of an emergency egress which demands a full-length fireproof partition.

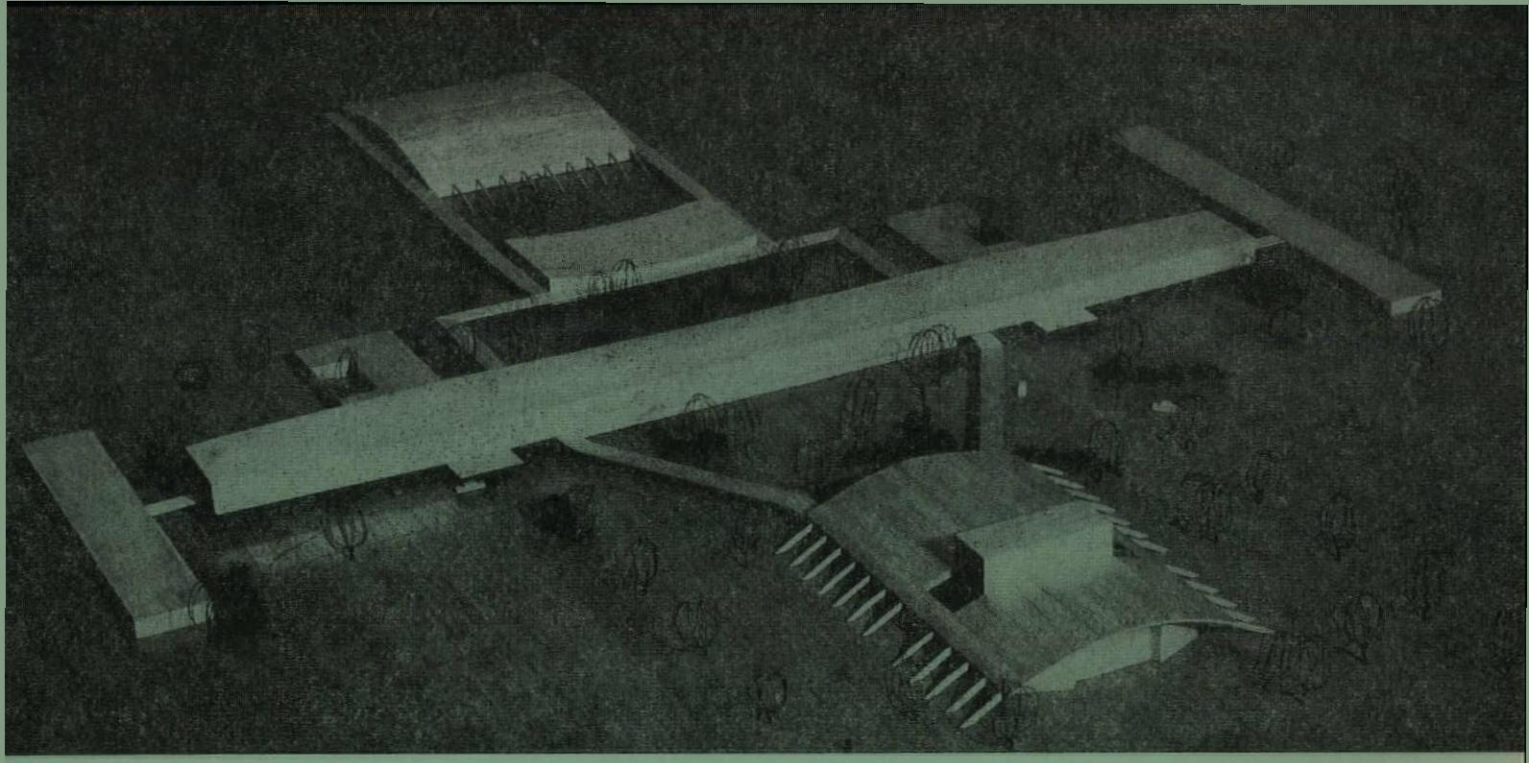
Curtis: The regulations must be different. We have to enclose the stairway only; the building is treated as one big room.

Question: How much actual vision will you get through the two sun screens?

Curtis: We actually made models of the screens and put them outside the windows of our office to look through; you would be surprised at the feeling of openness one gets in spite of the smallness of the honeycomb sun-control device. The windows we are using are awning type.

". . . access through the site and sheltered activity under the building."





". . . organization of space that can be looked on as a very beautiful abstraction."

and the screen is just far enough away from the window to allow it to open.

Victor Gruen: Why are the sunscreen grills on the north side of the classroom unit? Is that purely arbitrary?

Curtis: No; there's a very good reason for that. In another building that we designed this way—an elementary school—we used all glass on the north side, and the amount of glare that one gets from the clouds is very distracting. This is a screen against that glare.

Lawrence: Have you had at any time, or do you have now, any concern about the length of the main classroom element? You said it was 700 or 800 feet long.

Curtis: Well, the total length is, of course, for two schools, and the main circulation comes up in the middle of each school. We feel that 300-odd feet, with stairs in the center, does not make too long a unit. In appearance, we hope that the length of the building—a long, low building—will be a very striking thing.

James Lamantia: I should like to carry further the remarks Mr. Weese made about the site plan being a keynote of the design. I have been concerned to hear that the small auditorium might be eliminated. I think that would be too bad, because it gives a nice punctuation to the composition—what Weese called the abstract quality of the design.

Curtis: We did take an alternate for the addition of this theater on the other side of the stage in the auditorium. The roof shelter, however, is in the contract at present, so what we have there now is a sheltered space for the children to wait, to be picked up by the bus, for instance.

George Saunders: Remembering the coldly analytical program and the analytical approach to the structural system, what type of structure do you have over the cafeteria and kitchen area, which looks like a catenary curve?

Curtis: I must admit that the planning of this project was not as coldly calculated a thing as you might think. I know that we followed a careful sequence of thinking (perhaps sometimes unconsciously) in planning, but the presentation and the booklet Mr. Weese complimented were written after the building was planned.

Weese: I think it doesn't really matter whether you developed the rationale before or after, as long as you have found one.

Curtis: With regard to the roof of the cafeteria, which we thought we would make a playful thing, it is simply a steel frame with exposed bar joists bearing on the kitchen walls on the inside. The roof, I must admit, doesn't really express the fact that bar joists are straight and the kitchen is flat. We just flared that roof surface in because we thought it looked better that way.

Weese: I was going to make a negative remark about that fact, but I thought it wasn't important enough. To me it looked as though you had pumped air out of that area and blown it into the building next door.

Question: I see a number of rather flat arches of considerable span and, since I understand you have a compressible and poor soil in this area, I would like to learn something about the construction of the arches and the means of preventing them from spreading.

Curtis: They are precast arches, held together under the ground with tension wires covered with concrete.

Lamantia: There is something worrying me about that court between the gymnasium and the cafeteria. I wonder if there is any real reason for placing the gym so far distant from the parking area—other than the obvious one of getting it next to the playing field.

Curtis: I think that court is justified. The cafeteria opens toward the court on one side and toward the classroom building on the other, so that it is open all the way through. The little court will be developed with landscaping, even though part of it is used for service. As for the distance, we just felt that that was the right distance to separate gym and cafeteria, since we didn't want to put them under the same roof.

Lamantia: That's fine, but you are still making the public travel a circuitous route to get to the gym, and the use of this gym will be greater than that of the auditorium.

Curtis: Well, you can get to the gym from the parking lot under cover, and it didn't seem a disadvantage to have people walk a little farther. The students may get rid of some excess energy that way.

Mark Jaroszewicz: I have a question regarding the gymnasium, and the

reason I ask it is that we have a somewhat similar form, which is built now, and it raised a problem which you have solved. In your gym, the folding partition moves across the arched direction of the shell. In our gym we were forced to turn the shell, so that the folding partition runs along the apex, and when it is closed it produces two rather "cock-eyed" spaces. You do it the right way; how did you handle that?

Curtis: Actually this gymnasium can be divided into four parts: boys and girls of the Senior School on one side; boys and girls of the Junior School on the other. Then, in addition, the volume of the total space continues through, above door height. From that height up there is a wire mesh screen.

Question: What is the reason for turning the small auditorium 90 degrees to the large one?

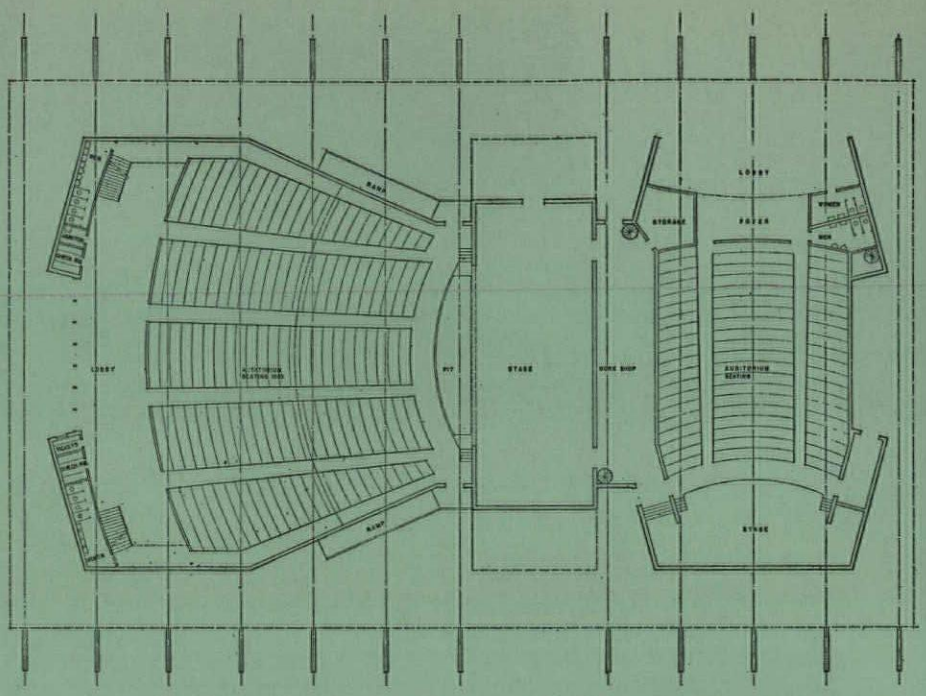
Curtis: It was simply another activity that we wanted to put under this shelter, and although it shares certain facilities—work shop and so on—it does not share the same stage.

Question: There would seem to me to be two criticisms of placing the small auditorium in that direction. Number one, by placing it that way, you have its roof running in the wrong direction. Number two, it places a lobby on one side, thus giving the building no particular orientation; you could come in from either side and you wouldn't know where the lobby was. The students will know, of course, but from the point of view of design, wouldn't it have been better to turn it on axis with the larger theater?

Curtis: I think we did try that way at one time; we simply thought it was better this way. That's probably a poor answer.

Weese: I don't think you have to answer everything; it's interesting enough to have some of these questions raised.

Minoru Yamasaki: I have no real quarrel with this project, because I think it is a fine one. I feel that the shape of the gymnasium is very valid, but I think that with a form as complex as that of the auditorium there might be some real trouble where the walls interset the arches. I am glad, particularly, that the small theater is left out, because there I think the trouble would have been even worse than in the auditorium proper. I feel that there is a tendency to *impose* a form on an auditorium, because they are such ugly things if they are built just as the most useful and best acoustical structure. We do the same thing in our office. Nevertheless, I think we are apt to get into trouble architecturally and acoustically with an imposed form. Further, I want to point out that when you do use a very strong form, any partitions or enclosures spoil the form. We found that out in the St. Louis Air Terminal.



". . . the small auditorium shares certain facilities . . . but not the same stage."

Weese: Isn't that a matter, too, of the inside being more important than the outside? So often we look at a building from the outside, from the inverse model point of view. In the Renaissance they didn't care what the outside was; it was the inside that counted.

Curtis: I don't know exactly what the answer to that is. As you say, an auditorium is a difficult thing to handle; with its stage requirements it tends to become an ugly thing. We simply designed a shelter covering the ground, and within that shell placed the seating arrangements, so that sight lines and acoustics and distance of seating from the stage and so on would be as accurate as possible. The intersection of the splayed walls with the curve of the shell may get to be complicated, but on the other hand might become interesting. We'll just have to wait and see.

Yamasaki: I think that if you could have afforded it, it might have been better if the roof had been made of some transparent plastic material, with the auditorium frankly built inside it. Then you would have an impression of the stage and the auditorium underneath it—which is what you are trying to do—without getting the one enmeshed with the other.

Gruen: We obviously, in this auditorium and theater, have another of those large shells which we sometimes call "envelopes." I don't think we should attack this one any more than the many others which have shown up recently, in reality or on the boards. I think, after all, that all envelopes should be marked on the outside: "Contents personal and confidential."

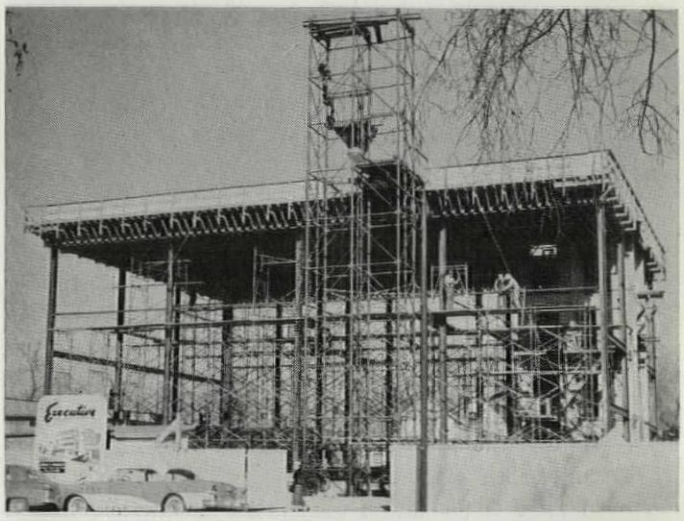
Arthur Davis: I want to say one thing in behalf of the design. It is nothing more or less than a simple shell, just as the old plantation houses had shell roofs that projected eight or ten feet beyond what actually functioned inside. The walls of the auditorium proper, which do intersect the shell at different angles, impose rough intersections but not, I think, uninteresting ones. The fact that the walls are well within the edges of the roof will create a lovely, exposed promenade area all around the outside of the auditorium. Out of the rain and out of the weather. it should be cool and would justify the design, in our climate.

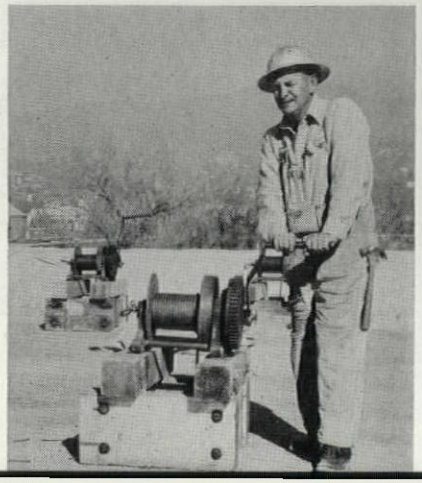
Thomas Creighton: I think that Mr. Curtis—and Mr. Davis—have been most patient, frank, and helpful to us in the discussion of this project. The project has certainly not suffered in its examination, nor have the architects. I feel sure we would all agree that it stands up under analysis, and remains, as Harry Weese said, one of the outstanding designs in this field in this decade.

drop-form construction

Fred Severud helped to make "slab-band construction" better known and better understood in the mid 1940's and, several years later, Philip Youtz and Tom Slick independently and concurrently conceived of "lift-slab construction"—now measured in terms of millions of sq ft in so far as total annual volume of construction is concerned. As the result of the recent erection of an office building in Salt Lake City, a new architectural description may soon come into popular usage—"drop-form construction."

Basic innovation of this construction method involves the construction of a single floor form and its repetitive use from top to bottom of structure. At the Executives Building in Salt Lake City, designed by Architect Lorenzo Young, structural-steel columns were erected to full height before the basic floor form was constructed at roof level. Wide-flange steel beams were first placed between columns and seated on preset steel brackets, then welded in place to provide principal support for the falsework. Wood trusses were next built perpendicular to the steel beams, so that the bottoms of their top chords were supported by the beams. Plywood panels were used to surface the tops of the trusses. After an 8-in. concrete slab had been poured and had set, brackets were cut by torches and the entire form lowered by use of 16 five-ton hand-operated winches; as the forms descended, the integral steel beams gradually came in contact with the set of brackets for the next floor below. All conduit, plumbing, and ductwork was installed prior to pouring.





This building was constructed by the Jacobsen Construction Company and a patent for the construction method has been applied for by Farspan Corporation, Jacobsen affiliate. George Nelson was Structural Engineer.

residential cooling with chilled water

by Warren S. Harris*

There seems to be a widely accepted belief that it is not possible to have central, summer, air conditioning in a home where winter heating is achieved through a hot-water heating system. This is an unfortunate misconception, since there are at least two basic approaches to providing summer comfort in these homes. One of these is the use of combination units through which either heated or chilled water may be circulated. A common piping system circulates the heated water in the winter and the chilled water in the summer. The second approach is that of providing fan coils operating with either chilled water or direct expansion of the refrigerant in the coils to cool the house in the summer, and a conventional hot-water heating system to provide heat for the winter. Of course, individual room-cooling units, such as the window unit or the console-type room cooler, may be used if it seems desirable to cool only one or two rooms.

Schematic representations of combination water systems used to provide year-around comfort are shown (*Figures 1A and 1B*). Water is heated in the boiler, during the winter, and circulated through the piping system to the combination heating and cooling units located in the rooms of the house. In these units, heat from the water is transferred to the room air. In the summer, the water passes through a water chiller where it is cooled to about 40 F. From the chiller, it is circulated through the same piping system used for the winter heating system to the same combination heating-and-cooling units; however, in this cycle the cold water in the combination units extracts heat and moisture from the room air so as to provide both cooling and dehumidification. Valves are employed to prevent the circulation of the chilled water through the boiler in the summer and the heated water through the chiller in winter.

A fan-coil system used for cooling only is also shown (*Figure 1C*). As many fan-coil units as required may be connected to the same water chiller, provided the capacity of the chiller is at least equal to the combined capacity of all fan-coil units attached.

All piping that handles chilled water must be insulated with a vapor-proof insulation to prevent condensation on the pipes and inefficient operation. It is important that no breaks occur in this insulation and that it cover all of the pipe, especially the sections of pipe concealed in the walls.

Controls and valves which make it pos-

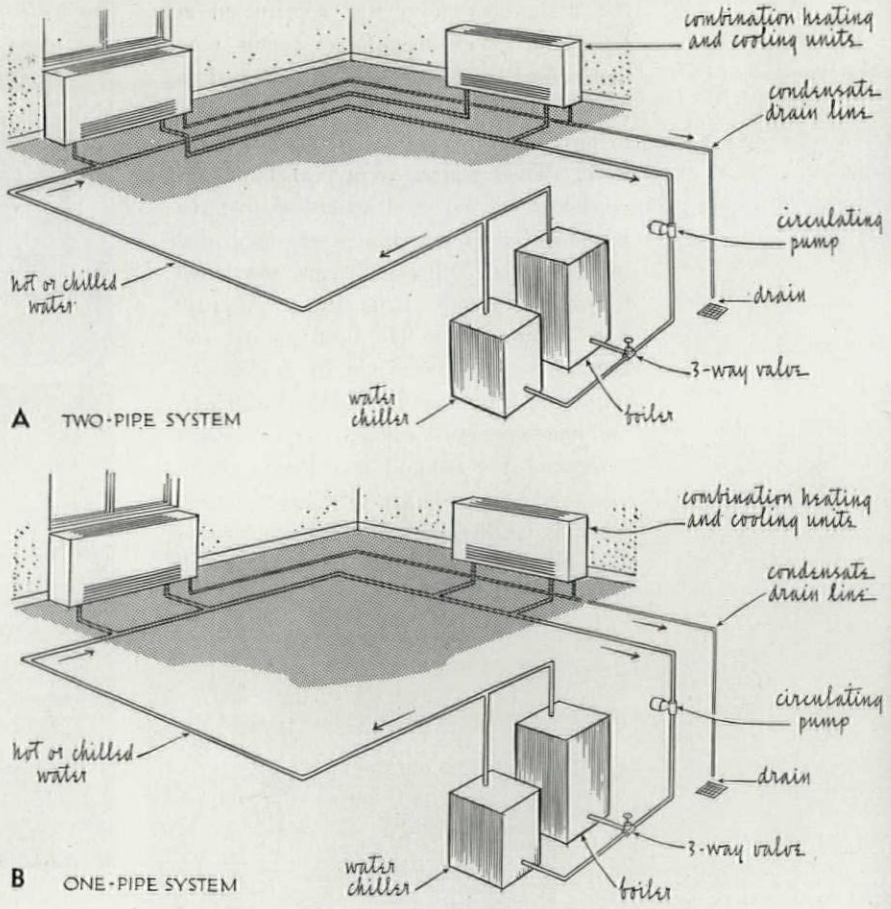


Figure 1—schematic representations of combination water systems used to provide year-around comfort **A** *and* **B**. *Fan-coil system for cooling only* **C**.

*Research Professor. University of Illinois Urbana, Ill.

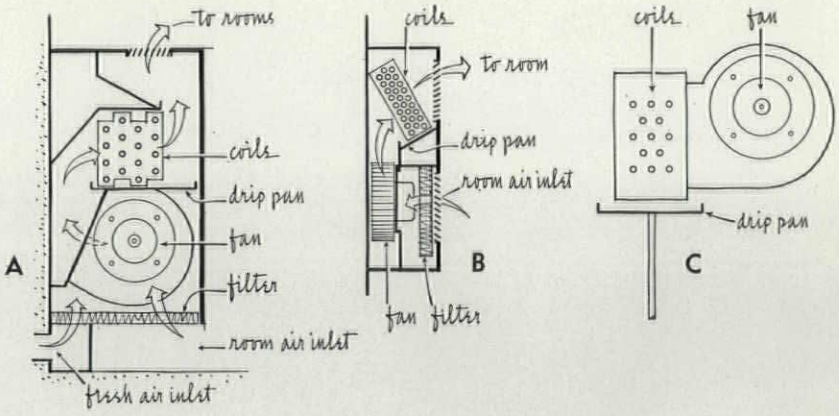


Figure 2—cross sections of different heating and cooling units tested at I-B-R Research Home. Units **A** *and* **B** *were used for both heating and cooling while unit* **C** *was used for cooling only.*

sible to switch over from heating to cooling automatically are available for either of these systems.

Cross-sections through typical room units are illustrated (*Figure 2*). Units **A** and **B** are combination units used for both heating and cooling. These are similar to convectors, except that fans are used to circulate room air through the unit. Usually they are equipped with a filter, and they must be provided with a pan to collect the water removed from the air. A condensate line connected to the pan carries this water to a drain.

Since the combination units are used for both heating and cooling, they should be located along outside walls of the room, preferably under windows. One or more units are used in each room, where both heating and cooling are desired. In rooms where only heating is required, conventional radiators, convectors, or baseboard may be used.

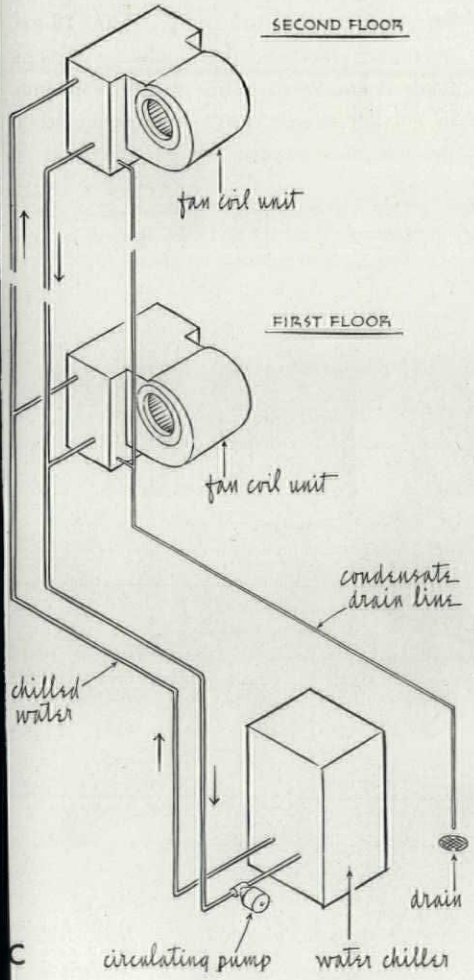
The fan coil is basically the same as the combination unit, except for method of application. In residential systems, one unit generally provides the cooling for several rooms or even the whole house. These units may be obtained with a metal cabinet provided with connections for supply and return-air ducts, or they may be obtained without cabinet for installations where they can be enclosed easily by a dropped ceiling in a closet or hallway.

Both a combination heating-cooling system and a fan-coil cooling system used in conjunction with a hot-water baseboard heating system have been installed and tested in the Institute of Boiler and Radiator Manufacturers' Research Home at the University of Illinois, Urbana. Records of the installation costs have shown that in houses similar to the I-B-R Research Home the equipment required for either method of providing year-around comfort may be installed at a cost of about $2200. In a one-story house the cost would be less.

In a sense, the principles involved in heating and cooling a residence are diametrically opposed. In heating, best results are obtained by introducing the heat into the room along the outside walls and particularly under glass areas so as to eliminate the down-drafts of cool air caused by the cold glass surfaces. When cooling a residence in hot weather, it is easier to obtain uniform temperatures without drafts by introducing the conditioned air near the ceiling, either through a high sidewall register located along an inside wall or through a ceiling diffuser. This, together with the fact that there is no fixed relationship between winter-heating and summer-cooling loads for the individual rooms, indicates that real advantages may be obtained by separating the heating and cooling systems so as to permit the designing of each for peak performance. Unless this is done, compromises must be made which are likely to affect adversely either summer or winter performance, or both.

This has been borne out in tests at the I-B-R Research Home where, since 1953, the staff has been studying residential summer air-conditioning systems using water chillers. The tests have included studies of systems using the combination, room heating-cooling units and the common piping system for both summer and winter operation, as well as a study of a fan-coil, summer, air-conditioning system that was independent of the heating system. Best year-around results were obtained when using a hot-water baseboard system for heating in winter and a separate fan-coil system for cooling the residence in summer. With other systems some winter comfort was sacrificed for the sake of summer cooling.

Two chilled-water fan-coil units were used in this system, one serving each story of the house. These units were connected to an air-cooled water chiller by a simple piping system independent of that used for the heating system. Insulation was required only on the pipe handling the



chilled water; no insulation was required on the piping in the heating system.

It was possible to locate the fan-coil units in such a position as to make sheet-metal ductwork unnecessary. The first-story unit was enclosed by a dropped ceiling, and this enclosure served as the air-distributing system. Registers were cut into the sides of the enclosure to supply cooled air to each room. One return was used for each fan-coil unit. All registers were located on inside walls near the ceiling. The second-story unit was used in similar fashion, except that the unit was located in the attic because of the low ceiling on the second story.

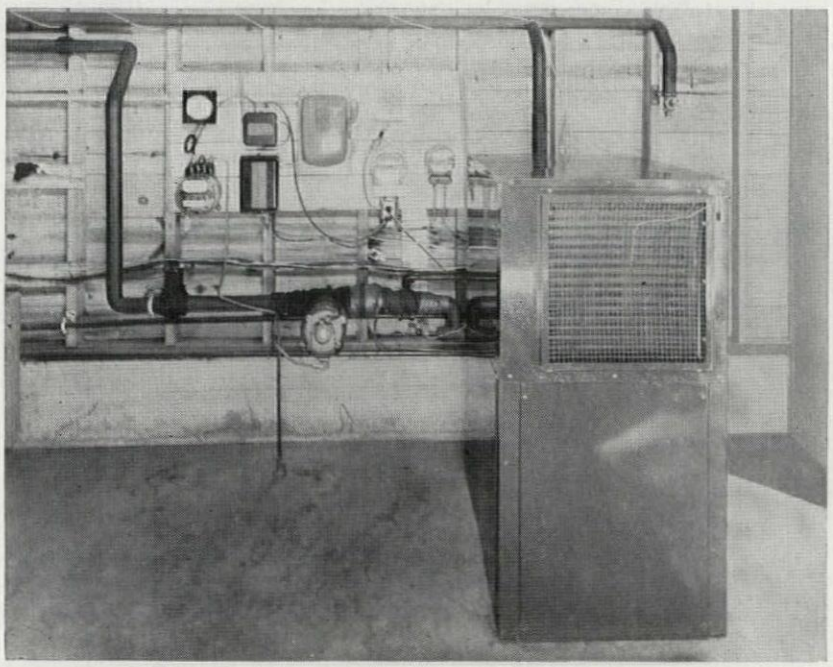
The fans in the fan-coil units were manually controlled and were operated continuously during all of the tests. The operation of the circulating pump and operation of the compressor motor were intermittent and were controlled by a room thermostat located on an inside wall in the living room. The operating differential of the thermostat was approximately 2 F. The chiller was protected by a limit control which would stop the compressor motor at any time that the water temperature in the chiller dropped below 39 F.

The principal operating characteristics of this system are summarized (*Table I*). This test was typical of days having outdoor temperatures approximating design conditions. The average room-air temperature at the 30-in. level was 75.7 F. The average temperature difference between the warmest and the coolest rooms was about 1.5 F, and the change in temperature in each room ranged from a low of 1.5 F in the northeast bedroom to a high of 3.5 F in the southwest bedroom. The average temperature of the first story rooms was about 1 F lower than for the second story, and there were no objectionable drafts of cold air in the rooms at any time.

The system operated a total of 17 during the 24-hour test period at a cost of $1.07 for the day. The average temperature of the water entering the coils was 42 F. Under these conditions of operation about 40 lb of water per day was removed from the room air, and the resultant indoor relative humidity was 57 percent. It is desirable to keep the indoor relative humidity below 60 percent, and to do so it is important that the temperature of the water entering the coil be maintained at a value not in excess of 43 F and the water temperature rise through the coil be limited to 7 F.

In all of the tests made in this Research Home, it was observed that the actual cooling loads were always less than the calculated, maximum, instantaneous load. Furthermore, installation of equipment having a cooling capacity in excess of that actually required invariably resulted in higher indoor humidities than were desirable for maximum comfort. In order to guard against oversizing chilled-water cooling equipment, a cooling-load calculation guide, No. C-30 has been published by the Institute of Boiler and Radiator Manufacturers. This guide gives a step-by-step procedure for estimating cooling loads and is intended for residential work only. The 24-hr-averaging method of calculating design loads is employed. This procedure results in smaller design loads than some other procedures; however, it is one that a

Figure 3—package water-chiller/air-cooled condensing unit installed in garage of I-B-R Research Home. Instruments for measuring performance of system and portion of insulated piping for circulating chilled water are in back of unit.



large manufacturer of cooling equipment has used with success in residential work, for many years.

The total cooling capacity of the fan-coil system just described was 14,400 Btu/hr as compared to a calculated design load of 17,600 Btu/hr (using I-B-R Cooling Load Calculation Guide C-30, but with no allowance for load due to cooking), yet it had ample reserve capacity to maintain comfort during unusually hot weather. During the summer of 1954, while using a chilled-water cooling system with a total capacity of only 10,800 Btu/hr, the hottest weather on record at Urbana was experienced. Over a one-week period the minimum outdoor temperature was 73 F while the maximum was 109 F (highest on record). During the last 24 hours of the period the outdoor temperature was above 100 F for a period of 6.5 hrs. Even though the daily maximum temperatures during this period were all well above the design outdoor temperature, the total overrun in room air temperature was only 4 F. On the whole, indoor temperatures and humidities were very uniform and within the comfort range throughout the entire period, indicating that even though the system had a total capacity well under the estimated design load it was capable of maintaining satisfactory indoor conditions with outdoor temperatures as much as 15 F above the design condition.

Tests in the Research Home on chilled-water residential cooling systems have demonstrated that such systems are successful in operation and reasonable in cost. The fan-coil system of cooling used in conjunction with a hot-water baseboard system for heating produced maximum comfort conditions the year around. The installation cost of this equipment was about the same as for a combination heating-cooling system using the same room units for both summer and winter operation.

Advantages of the separate heating-cooling system are:

1. Both heating and cooling systems may be designed for maximum performance.

2. This type of cooling may be added to existing homes regardless of the type of heating system now in use.

3. When desired zoning is easily accomplished by using more than one fan-coil unit, each having its own thermostat. Several fan-coil units may be connected to the same water chiller.

4. Heating is provided along cold walls and especially under glass areas to prevent cold floors and possible drafts in winter.

5. Cooling is provided overhead. Cool air may be introduced near the ceiling and allowed to settle to the floor with a minimum chance of creating a draft and with excellent possibility of obtaining uniform air temperatures throughout.

6. Since the chilled water is easily piped around the house, a hermetically sealed, package chiller/condensing unit may be used and placed at a remote location to minimize noise and to facilitate service. Units of this type are available which may be located outside.

7. Cooling may be provided at the same time as the heating system is installed or the cooling system may be added at a later date without change in the heating system.

TABLE I: COOLING-SYSTEM PERFORMANCE

July 28, 1955, two fan-coil units;

cfm: first story = 155, second story = 230

Maximum outdoor temperature	95.0 F
Average outdoor temperature	83.7 F
Cooling capacity of system	14,400 Btu/hr
Average indoor temperature	75.7 F
Average indoor relative humidity	57.2%
Total water removed from air	40.1 lb
Operating time	17.1 lb
Total operating cost (per day)	$1.07

Room	K	DR	LR	SwBR	NwBR	NeBR	Max. diff. between rooms
Max. air temp., 30" level, F	76.5	77.0	76.5	78.5	78.0	76.5	1.5
Min. air temp., 30" level, F	73.5	74.5	74.0	75.0	75.0	75.0	1.5
Max.-Min. air temp.	3.0	2.5	2.5	3.5	3.0	1.5	

electri-living house

by Robert Martin Engelbrecht*

Today we are witnessing a vast change in fundamental architectural construction; however, there appears to be a great inconsistency between the progress of some construction components and the influences controlling their reality in accepted construction practice. In house design, for example, most of the thinking in electrical planning has had its primary goal of bringing the design up to an adequate standard, guaranteeing a token representation of the possible electrical comforts. However, if the increased use of electricity during the past 15 years were taken as an indication of the growth to be expected in the next 15, we would find that we are writing up-to-30-year mortgages on properties which could be electrically obsolete in much less time.

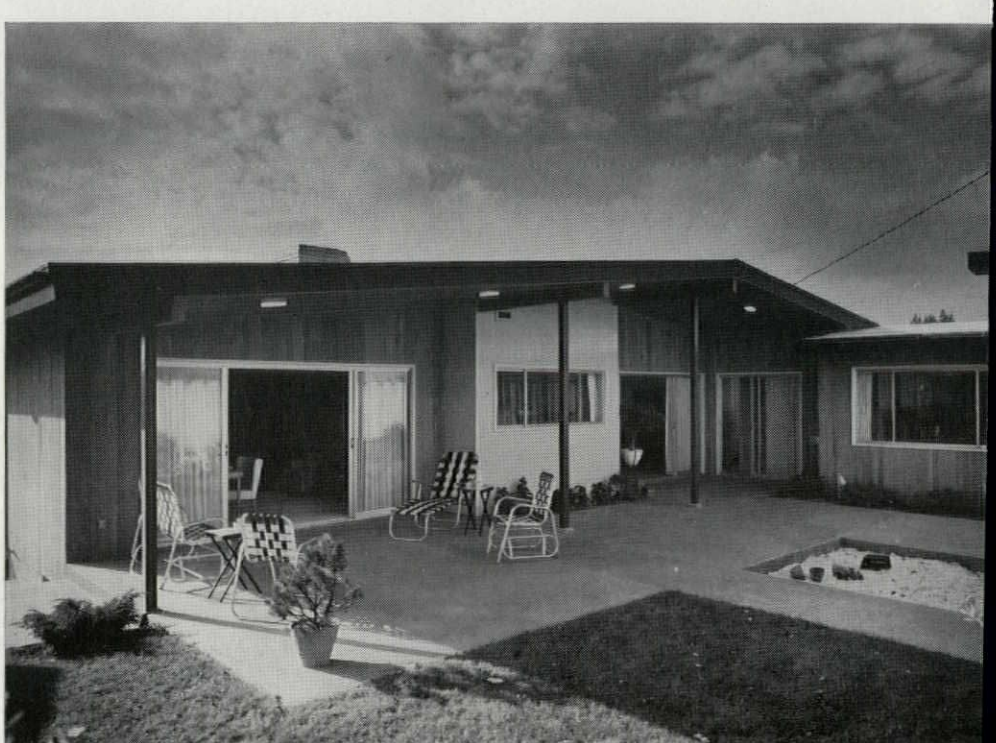
The continued rush in the development of electrical wonders leads one to surmise that new design departures for the house will require a much greater coordination of its esthetic and engineering aspects in order to produce a structure that will not be obsolete before having achieved financial solidity.

Last year, *Living for Young Homemakers* introduced its "Electri-Living Program" and dedicated its efforts to the encouragement and promotion of better integrated houses—esthetically, structurally, mechanically, and (with emphasis on) electrically.

In 22 geographically different areas, collaborative teams were organized to investigate, design, and construct examples of good house design conforming to the requirements of the program. Each local team—consisting of architect, builder, and utility company technicians—worked with *Living*'s staff in developing a house for that area. The architect was charged with the responsibility of designing a suitable house for a typical, average-size family. The builder was to contribute his knowledge of construction techniques peculiar to his area and to maintain a working harmony between the various trades. Because of the primary importance of electrical comfort, the utility representatives were expected to recommend the most advanced and practical uses of electrical power.

After the designs were completed, each house was presented before a jury of distinguished critics and was defended by the magazine's architectural department. The critiques were unbiased—the advisors were given only the architect's presentation, knowledge of the geographical locale, and the basic program. The entire analysis of each house was transcribed and later presented in confidence to the respective architects. No architect was required to correct or adjust his solution to follow the critique: he used it at his own discretion.

It is not uncommon for the secondary results of a given project to become as significant as the main objective—in this case, the bringing together of the architect-builder team. Some architects had



* *Editor of Architecture*, Living for Young Homemakers.

never worked with a builder before; for the most part, the builders had not felt that the small house could support the full services of an architect. The architect's interest and concern at this level of community architecture has been sorely needed and this program offered him the incentive to approach the small-house problem with the same degree of concern that he would normally apply to much larger structures.

It is obvious that where a sharp focus was made on electrical services and equipment, in such a program, there would be an abundance of electrical appurtenances; however, perhaps the most important result was the extensive engineering that went into the electrical services for each of the houses. In many cases, 100 percent over-capacity allowance in service-panel and distribution outlets was provided to allow for the electrical development anticipated within the next 10 years. The following items are among those incorporated in many of the houses:

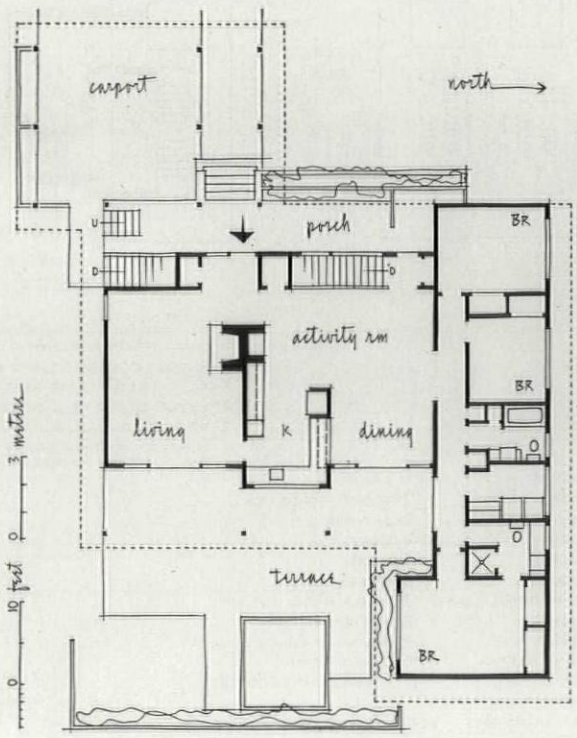
In the field of audio fidelity, many systems—standard and custom—appeared with combined features such as intercom, fire-alarm, and hands-off type of telephone.

Audio systems made their appearance as part of the ventilating hood over the range—easily accessible at mouth level—and in cabinets adjacent to kitchen in a master control—generally in arrangement with a master panel with various switching devices. Control panels contained many elements including timing devices for lighting, year 'round thermostatic controls for heating and cooling, dimmer switches, motor controls for electric traverse rods, master panel for fire-alarm system, control panel for remote low-voltage switching, remote garage door closing, and annunciator for front entry. A portable form of remote switching employed a switch box about the size of a package of cigarettes, that could be placed on an end table or night table.

Both mechanical and mercury-type full-voltage switches showed remarkable improvement in noise elimination. Dimmer controls appeared in wall-box form and as small portable controls. Although familiar to some commercial structures, central vacuum systems with several connection outlets were evident. Filtering devices, electrically activated, collecting dirt from recirculated air, were often specified.

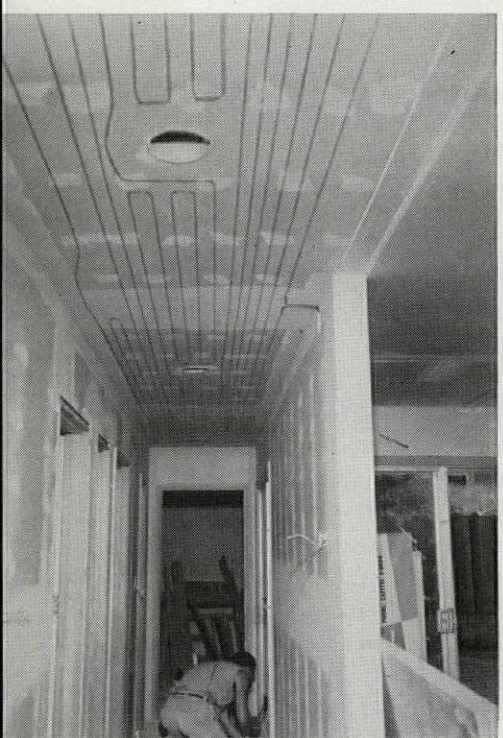
Strip outlets were universally accepted and appeared in varying forms from continuous to intermittent outlet spacings of 4 in. to 30 ft. There were many novel approaches to both interior and exterior lighting. In one instance, even the maintenance and care of the garden was automatically controlled by a moisture metering device which controlled the proper amount of sub-surface moisture necessary for proper plant growth.

One of the solutions is presented (*below and next page*). The collaborators for this house in Portland, Oregon, were: Walter Gordon, Architect; Jack C. Nunn, Inc., Builder; and Portland General Electric Company, Consulting Engineer.



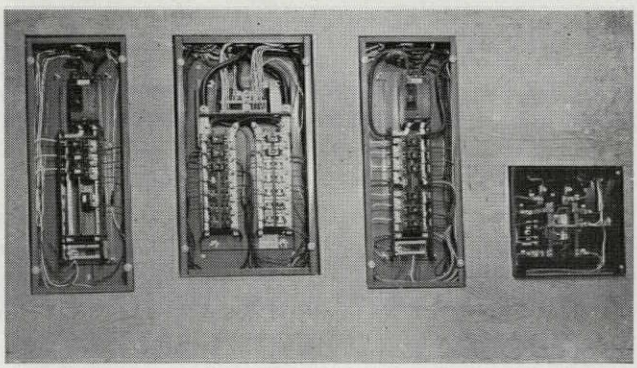
Electri-Living House built at Portland, Ore. (left). *Use of recessed-lighting equipment outside of house allows expanded use of outdoor living areas. Strategically located surface-mounted floodlights, illuminating entire yard, are controlled from various points within the house.*

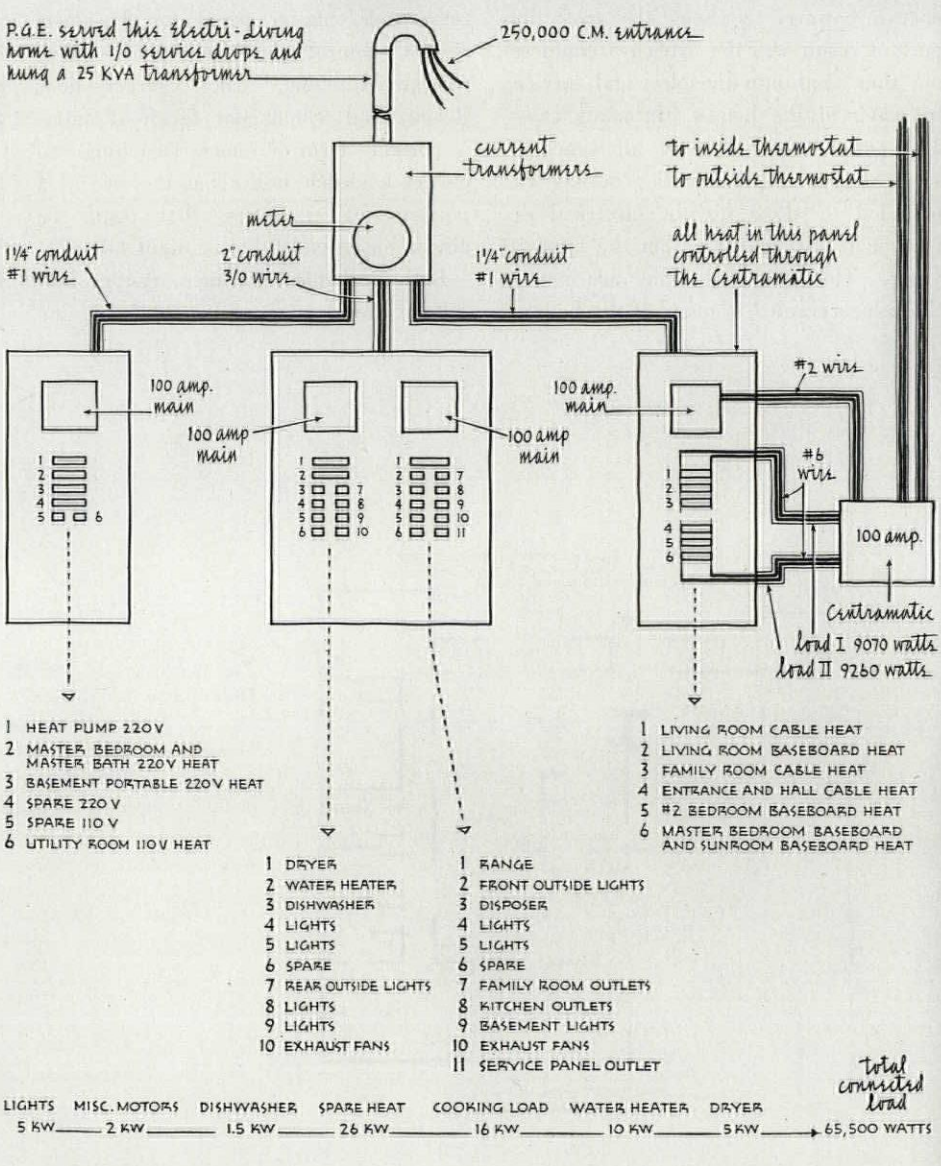
Photos: Chas. R. Pearson



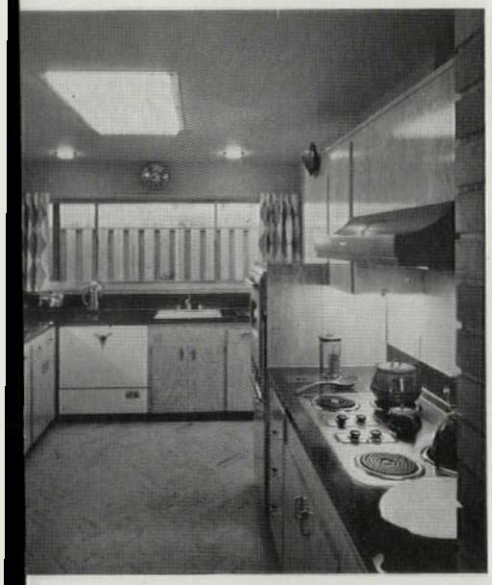
In addition to electric-heating cables in ceiling (above) *electric radiant-baseboard heating was provided in some areas of house.*

View of circuit breakers (right) *illustrated in wiring diagram* (below). *Extra breakers shown in photo* (and not in diagram) *are for future expansion.*





Kitchen has large-area general lighting in addition to concealed units under cupboards and over counters of all work surfaces. Strip outlets are located over back-splash above countertop area.



Total area of main floor of Portland Electri-Living House amounts to 1780 sq ft. Ceiling, exterior walls, and floor over vented crawl space are insulated in accordance with or in excess of FHA requirements. U-factors are: ceiling, 0.06; walls, 0.10; floor over crawl space, 0.12; floor over basement 0.28, at 15 degrees temperature difference. Design temperature difference between inside and outside, 60 degrees. Estimated hourly heat loss: main floor, 71,875 Btu (21.13 kw); sun room (basement) 4845 Btu (1.42 kw).

Utility records of hundreds of electrically heated homes, over a period of several years, indicate that kilowatt-hour consumption for heating the average insulated house in the Pacific Northwest will amount to about 1½ kwh per cubic foot of space, per year. The main floor of the Portland Electri-Living House contains 14,240 cu ft. Thus, the estimated power used for heating, by the above formula, would be 21,360 kwh. At a rate of 1¢ per kwh the annual cost would be $213.60.

The National Electrical Manufacturers Associations' Manual for Electric House Heating includes the following formula for kwh consumption:

$$\text{Annual kwh} = \frac{HL \times DD \times C}{TD}$$

Where HL = heat loss of building in kw
DD = annual degree days for area
C = constant (depends on local conditions)
TD = temperature difference between inside and outside

Applying the formula to the main floor:

$$\text{kwh} = \frac{21 \times 4143 \times 15}{60} = 21{,}751$$

Thus, at a rate of 1¢ per kwh, the annual cost would be $217.51. A practical estimate of the cost would be from $200 to $225 for a normal year.

In addition to individual heater and zone thermostats, the entire electric heating system (except for bath and utility units) may be switched to lower temperature levels or turned off by a master central thermostat. An outdoor anticipating thermostat automatically provides an increase or decrease in heat output according to the outside temperature changes.

This house has a 500-amp service capable of adequately serving the electric heating installation in addition to the many conveniences included in the house. The Portland General Electric Company feels that within a few years 400-amp service will be established as a minimum for this area.

Estimated monthly bill exclusive of electric heat is:

Lighting and miscellaneous	600 kwh
Iron	10 "
Coffee Maker	8 "
Dishwasher (with heater unit)	26 "
Ironer (mangle)	14 "
Radio-phonograph	10 "
Room air conditioner	80 "
Refrigerator	30 "
Clothes dryer	56 "
Home freezer (10 cu ft)	58 "
Range	100 "
Water heater	400 "
Television	24 "
Sewing machine	2 "
Electric clocks (2)	4 "
Electric mixer	2 "
Vacuum cleaner	2 "
Toaster	4 "
Automatic washer	4 "
Bed covering	12 "
Sun room (two hr/day)	90 "
Total	1536 kwh

Thus, at 1¢ per kwh, the monthly rate would be $15.36 or $184.32 per year. Estimated cost for total electric consumption would be:

$184.32 Conveniences
225.00 Heating

$409.32 Per year

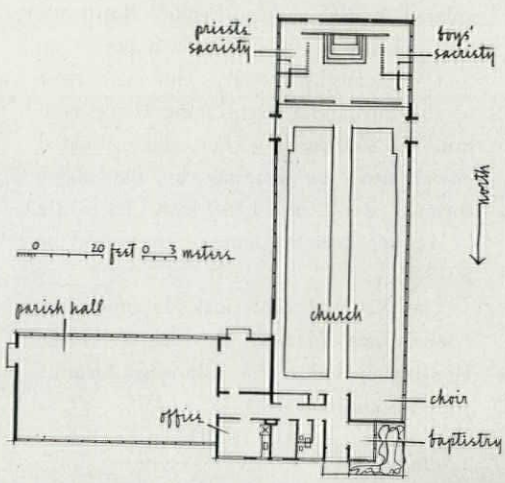
loadbearing aluminum walls

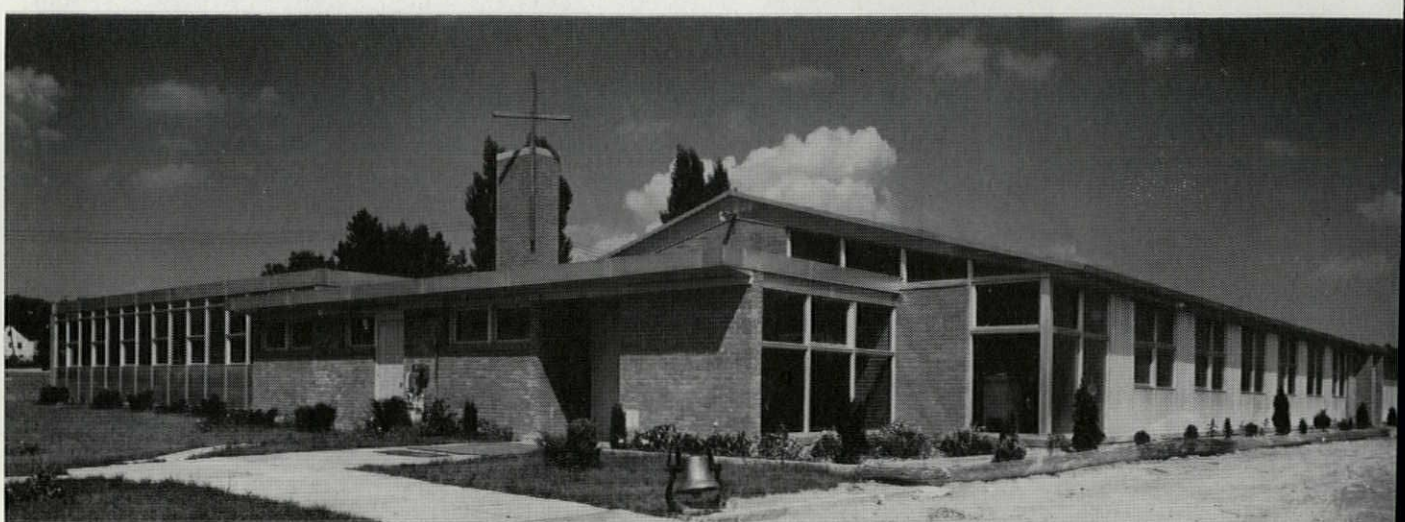
Saints Simon and Jude Church and Parish Hall, designed by Pittsburgh Architects Schell, Deeter & Stott, is one of the first churches in the country to have loadbearing aluminum walls in its structural system. This new framing-and-erection method not only helped to solve low-budget and quick-erection problems for this particular church, but also has a number of other inherent advantages which makes it likely that the system will find increased use in coming years.

In time, this building will become the recreational unit of the church—after the parish's permanent sanctuary has been built. Present accommodations, however, will seat 700 persons. The church area, which is 120 ft long and 40 ft wide, has space for 500; the parish hall measures 60 ft x 32 ft and seats 200 (*plan below*).

Motivating concept behind the development of loadbearing aluminum walls was a desire to take optimum advantage of aluminum's constructional characteristics. Other factors influencing the architects' decision to incorporate this system in their plans were: (1) logic of the idea; (2) economy realized by the elimination of unnecessary subcontractors; and (3) unit responsibility by *one* subcontractor for the structural walls, exterior wall finish, wall insulation, interior wall finish, integral window, door, and louver frames, window vents, roof structure, and roof deck.

It can be realized readily that elimination from the contract of any one of the component parts listed above as (3) would defeat the fundamental reasons for designing the church so as to accomplish unit responsibility for lower cost, erection speed, and a single structural





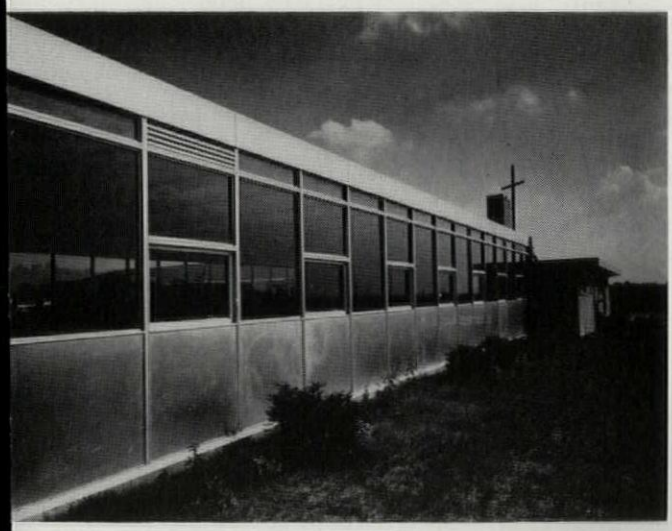
finish material to perform several functions.

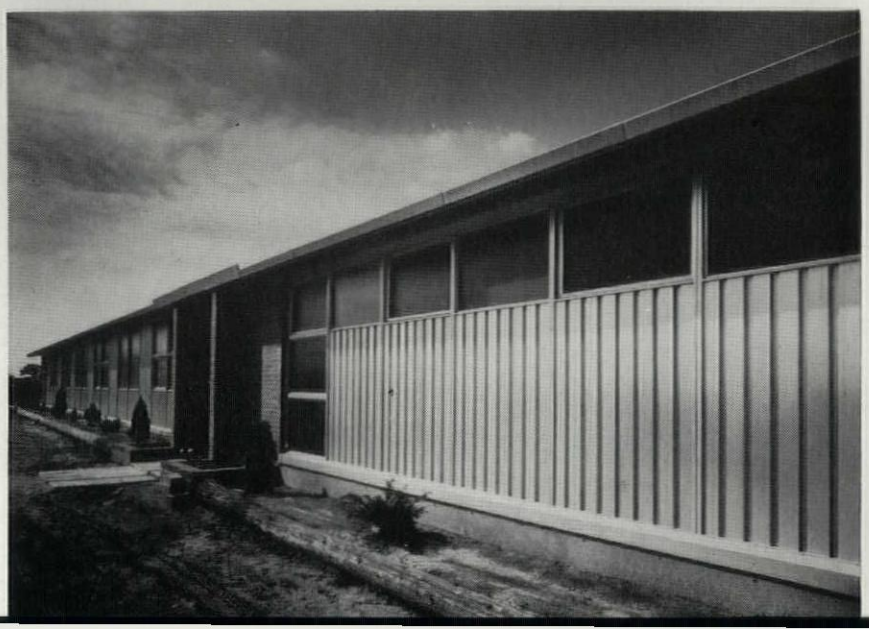
The current situation in steel fabrication, according to the architects, served as an additional catalyst in this development: "Perhaps the one single factor which drove us to this solution was the usual and accepted practice of steel fabricating companies to erect steel work to unusual and intolerable tolerances to which aluminum must be fitted."

Although individual wall panels were initially made 4 ft wide, they were factory assembled into 12-ft-wide units to simplify erection. Rapid installation of the large wall assemblies (*sequence shown on last page of article*) was made possible by their light weight—approximately six lb per sq ft. Vertical aluminum edges of component panels, when joined together, provide the necessary panel framing and, as well, form the columns necessary to carry load from the structural-steel roof members. Doors and windows were also fitted into the basic panels. Interior finishes, such as plaster, woodwork, etc., were eliminated.

Construction costs for the church totaled $12.08 per sq ft; 79 percent of this amount, or $9.59, was for structure. Cost per cu ft was $0.90; $0.71 being for structure. Seven hundred seats were provided at $135 per unit. Total construction time was six months.

The original loadbearing aluminum wall system was developed jointly by Architects Schell, Deeter & Stott and Aluminum Structures, Inc., of Pittsburgh; the latter also acting as fabricator, erector, and subcontractor for this job. Structural Engineer was Martin Knabe.

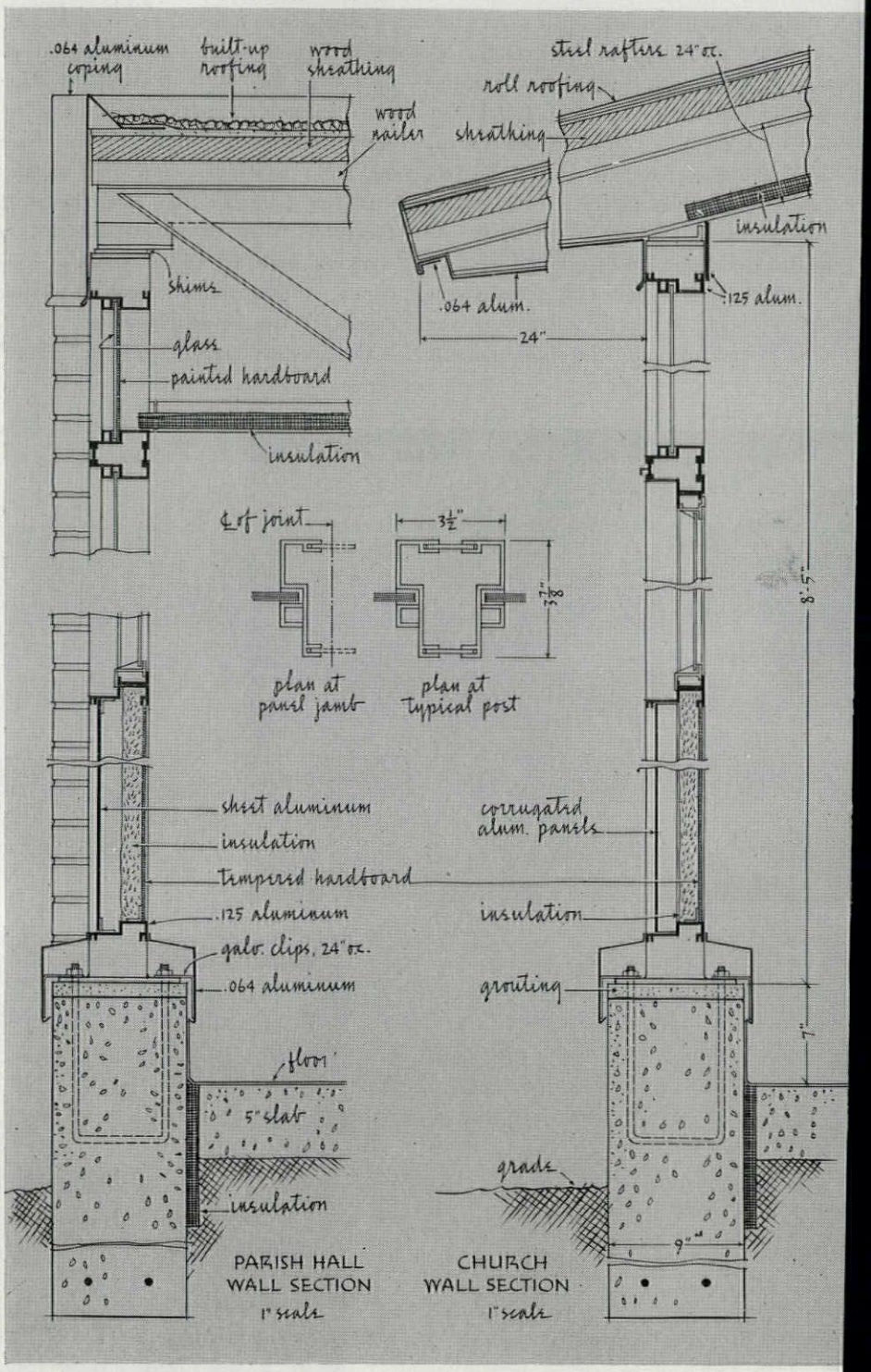




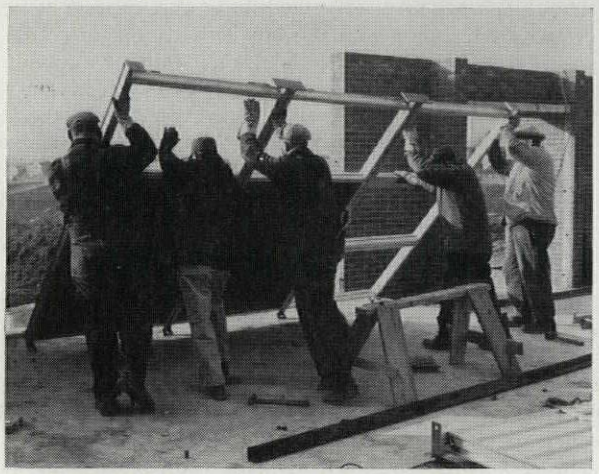
Plan and view of Saints Simon and Jude Church and Parish Hall at Scott Township, Pa. (across-page). *Parish Hall is at left of structure and Church Nave at right.*

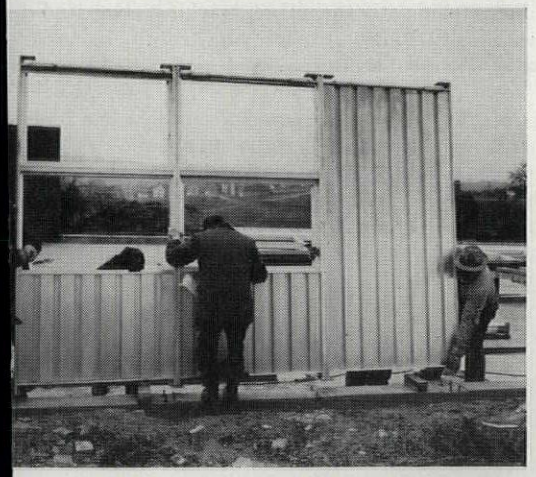
Closer views of parish hall wall (left) *and church nave wall* (right). Photos: Robert E. Dick

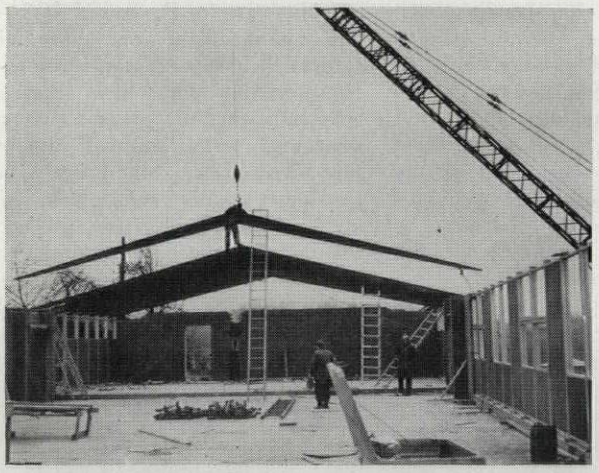
Detail drawings of prefab loadbearing aluminum walls of parish hall and church nave.

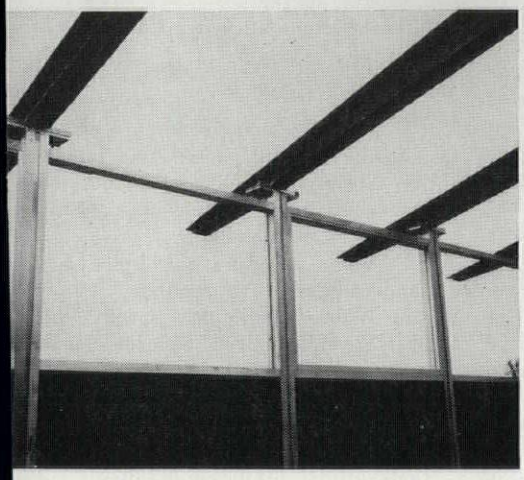


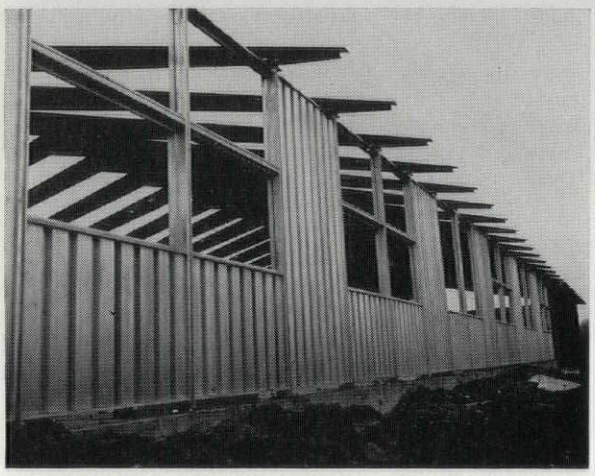
Prior to erection of loadbearing aluminum walls, 4-ft panels were pre-assembled at factory into 12-ft units. Lightweight assemblies were quickly placed in position (below) *to receive load from structural-steel roof bents.*











Employment of Concrete-Masonry Units

by Harold J. Rosen

Concrete-masonry units have developed into an important material in the building-construction industry. The many advantages of the concrete-masonry unit include economy, fire resistiveness, suitability for both loadbearing and nonloadbearing walls or partitions, use as backup in walls of other facing materials, and adaptability to various styles of architecture. The masonry units are made of portland cement and inert aggregates —such as sand, gravel, crushed stone, cinders, expanded slag, pumice, and other similar materials. The development of large, semi-automatic machines for the manufacture of these concrete-masonry units has resulted in a large increase in production of the units.

While concrete-masonry units have many advantages, these have been somewhat offset by the tendency of concrete-masonry walls to develop cracks which are unsightly and often permit leakage through the walls. Observations of concrete-masonry walls damaged by cracking indicates that the development of tensile stresses, which produce cracking, is caused largely by shrinkage of the masonry units. One of the most important contributing factors is believed to be volume change in the blocks themselves, due to drying shrinkage.

The Housing and Home Finance Agency in *Housing Research Paper No. 34* (April 1954) summarizes the results of an investigation into the behavior of concrete-masonry units. The investigation dealt with many variables in the manufacture of such units, and is by far one of the most comprehensive investigations made to date in the field of concrete-masonry construction.

The variables which were investigated —and which have a considerable influence on the drying shrinkage of concrete-masonry units—are as follows:

(a) Type of aggregate.
(b) Method of curing.
(c) Moisture content of units when laid up.
(d) Thickness of face shells.
(e) Cement replacements.
(f) Reinforcement of horizontal joints.

Of the four aggregates tested, for walls laid with saturated blocks, sand-gravel-aggregate block walls showed the lowest shrinkage. Cinder-aggregate block walls had the highest shrinkage and expanded-shale and expanded-slag block walls were between the first two values.

Walls laid with saturated, high-pressure-cured, concrete-masonry units showed an average shrinkage of one-third less than for high-temperature-cured blocks. High-pressure curing may be defined as a process of curing in saturated steam between 338 F and 366 F and at a steam pressure of between 100 and 150 psi for a period of between 6 and 12 hours. Many plants cure concrete blocks at about 120 psi (corresponding to about 350 F) for about 10 hours. High-temperature curing is a process of curing at a temperature of about 170 F.

Walls laid with blocks that had been dried to equilibrium with 70° relative humidity at 73 F showed large reductions in shrinkage over those laid with saturated blocks in unrestrained walls. However, this reduction in shrinkage was not sufficient to prevent cracking of restrained walls built of high-temperature-cured blocks. Significantly, however, restrained walls built with predried high-pressure-cured units did not crack when dried down to equilibrium with 25% relative humidity. The results of the tests where walls were built with blocks dried to equilibrium with 70% relative humidity (30% moisture content, or less) indicate that, for long interior partitions in heated buildings which are subject to low winter humidities ranging down to 25% relative humidity, well dried high-temperature-cured heavy-aggregate or well dried high-pressure-cured light-aggregate units should be used to minimize shrinkage cracking. Neither high-pressure-cured units laid with high-moisture-content nor high-temperature-cured units dried to 30% moisture content appear to offer sufficient protection against shrinkage cracking of long interior partitions in heated buildings.

High-temperature-cured blocks with experimental ¾"-face-shells showed less shrinkage than blocks with standard 1¼"-face shells while high-pressure cured blocks showed approximately the same shrinkage. However, the experimental ¾"-face-shell units developed somewhat stronger concrete. This may be due in part to better compaction, and similar increases in strength may possibly be obtained by longer or more effective vibration of the standard 1¼"-face-shell units.

Replacement of 40 to 45% of the cement with silica flour in combination with high-pressure curing produced units that compared favorably with similar high-pressure-cured units having the standard cement content. The combination of cement replacement with silica flour and high-pressure curing reduced the shrinkage by approximately one-half when compared with high-temperature cured units and standard portland cement mix. This information should be of particular interest to block manufacturers having access to fly-ash and silica flour.

Steel-wire reinforcing placed in the horizontal mortar joints of walls built with saturated-masonry units, did not eliminate shrinkage cracking, but it did distribute stresses and result in many small scattered and less conspicuous cracks instead of one large one. Cracks in dense-aggregate, well dried, or high-pressure-cured walls would be less noticeable with less reinforcement than walls built with saturated-high-temperature-cured cinder-aggregates with reinforcement in every horizontal joint.

ASTM specifications permit a maximum moisture content of 40%. However, the Housing report recommended the following maximum moisture contents:

	absorption
For exterior exposures:	
Heavy aggregates	30%
Lightweight aggregates	25%
For interior exposures:	
Heavy aggregates	25%
Lightweight aggregates	20%

The following specification recommendations are offered:

(1) Specify that concrete masonry units be shipped, stored, and laid dry.
(2) Specify that the maximum moisture content of concrete masonry units be not more than 30%.
(3) Where weight is no objection, use sand-and-gravel aggregates.
(4) Where available, specify high-pressure-steam-cured concrete-masonry units.
(5) Before using steel reinforcement ascertain the type of block to be used, length of walls, and humidity conditions of the proposed building.

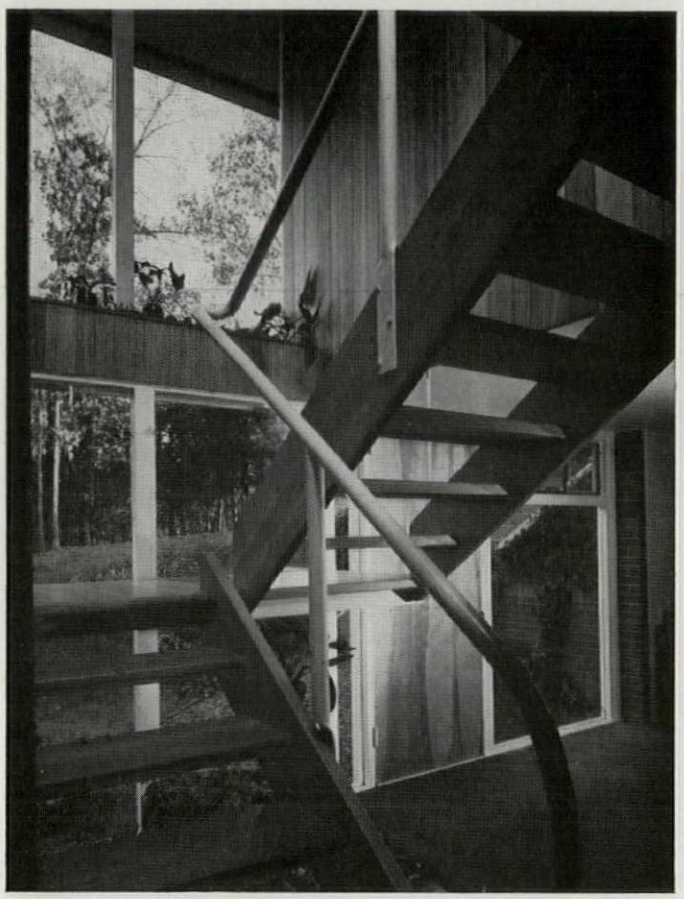
charging desk

JOSEPH W. MOLITOR

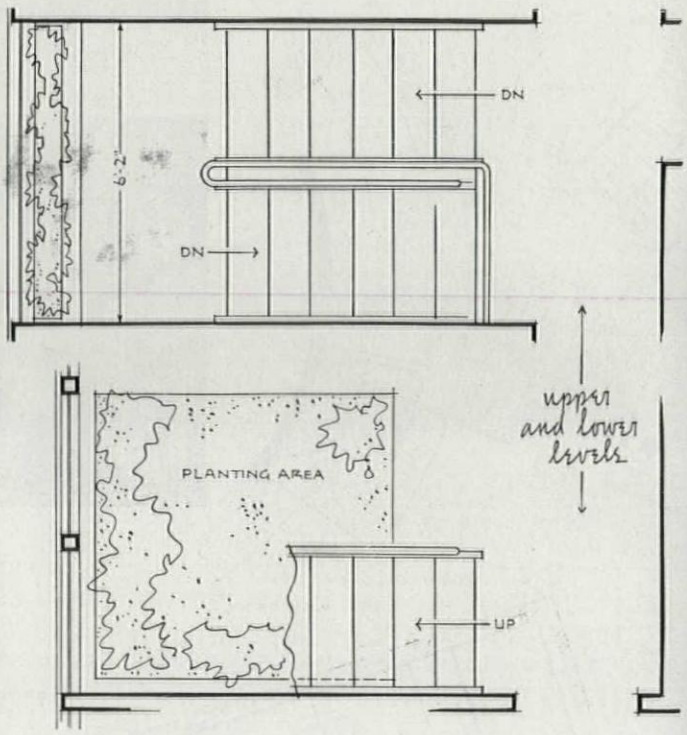
IBRARY, Charlotte, N. C.

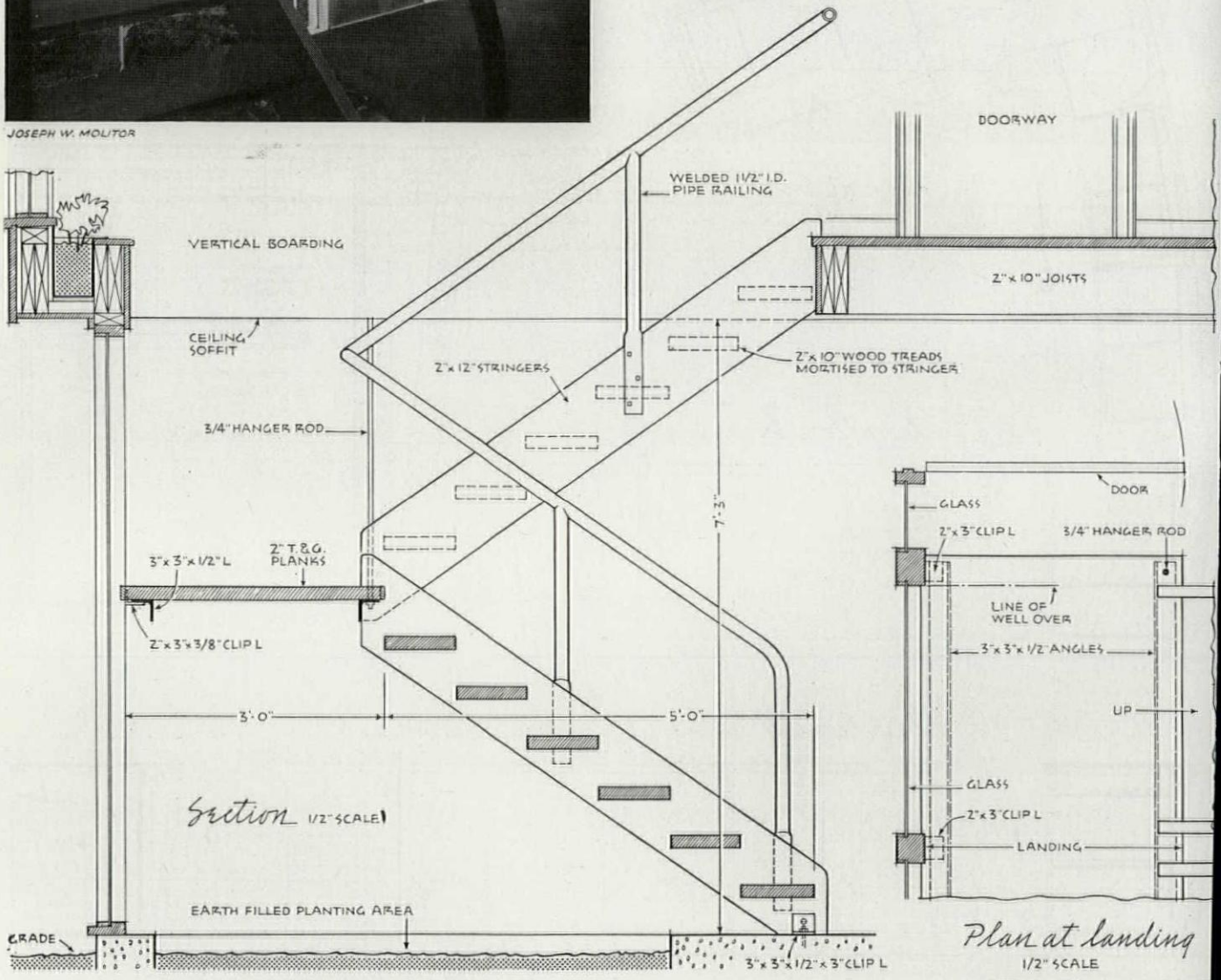
. G. Odell, Jr. & Associates, Architects

stairway



JOSEPH W. MOLITOR





HOUSE, Charlotte, N. C

A. G. Odell, Jr. & Associates, Architect

Louise Sloane

residential details

The two examples in this section, a house in Lexington, Massachusetts, by Hugh Stubbins, and a house in Rochester, Minnesota, by Jan Ruhtenberg, are expressive performances of "the architect as interior designer" at his most fluent.

In each house, the interior—plan, materials, colors, furnishings—is an integral part of the design, not a separately conceived afterthought. The architecture *is* the "decorating," the structural elements and the finishes are the design, the components are virtually the furnishings.

The two houses, though differing in their appropriate reflections of the highly personal signatures of their designers and the individual tastes of their occupants, share the concept of the open plan. Each, carefully and successfully, introduces within this concept actual as well as visual privacy. Both houses are decidedly "people-conscious," clearly tailored to the lives and habits of the families who live in them.

This is apparent, too, in the choice of the portable furnishings, an area in which architects are not always this successful—or interested, perhaps? Chairs, tables, rugs—even lamps—have been selected, and in some cases designed, with a sure concern for their importance in the total scheme.

In the Stubbins house, a happy air of warmth, balanced living, and motility is conveyed through such design elements as the placement of the two fireplaces, the storage-wall that holds a small piano, the island cooking counter. In the Ruhtenberg house, pleasing elegance is the effect achieved through fine proportion, rich surfaces, custom-details. In each example, the architect's special sensitivity to the good use of space, the relationship of surfaces to function, and the structure as a living whole, results in interiors of commendable excellence.

residential details

client	Dr. and Mrs. F. Edmund Donoghue
location	Rochester, Minnesota
architect	Jan Ruhtenberg

Open living space (separated from the master bedroom suite, nursery and kitchen) includes an entrance hall, family and formal living rooms, and dining room. For privacy, the areas are separated from one another by U-shaped angles created by a Travertine wall, by a blue-stone fireplace, and by teakwood screens. The family living room—containing bar, kitchenette, and built-in barbecue—has sliding glass walls to the east and south, and can be converted into a "screened porch" during the summer months.

Natural colors and materials establish the bland beige-to-brown color scheme, with floors of hone-finished Travertine, ceilings of white acoustical plaster, walls of natural teakwood. Draperies are light, sand-colored, spun-glass fabric, rugs are natural India raw silk, upholstery of natural calf leather and dark brown Rugby fabric. Notes of aqua, green, and black are introduced in staircase walls, and in some of the upholstery. Photos: Warren Reynolds

data

cabinetwork

Cabinet Doors, Panels, Partitions: "Roddiscraft"/ teakwood/ custom-built/ Roddis Plywood Corporation, Marshfield, Wis.

furniture, fabrics

Furniture: architect-designed, custom-built/ executed by Pete Baroni, cabinetmaker, Colorado Springs, Colo.

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

Drapery Fabrics: Thortel Fireproof Fabrics, Inc., 101 Park Ave., New York, N.Y.

Other: Knoll Textiles, Inc.,

hardware

All: architect-designed/ executed by Charles Arcularius, New Canaan, Conn.

lighting

Fixtures: Kurt Versen, Englewood, N.J.; Finland House, 41 E. 50 St., New York, N.Y.

windows

All: Anderson Corp., Bayport, Minn.

walls, ceiling, flooring

Walls: "Roddiscraft"/ teakwood/ Roddis Plywood Corporation.

Ceiling: "Sprayolite" acoustical plaster/ National Gypsum Co., Buffalo 2, N.Y.

Floor: Roman Travertine/ Twin Cities Tile and Marble Co., Minneapolis, Minn.

Rugs: Raw silk/ imported from India.

hone-finished Roman Travertine

ue-stone

sliding-glass walls

residential details

client | Mr. and Mrs. Albert Goldman
location | Lexington, Massachusetts
architects | Hugh Stubbins & Associates

Open planning, adapted throughout the living-dining-kitchen area, modulates the various spaces so as to present an interesting view from the different centers of activity. The major structural elements are judiciously expressed to increase the occupants' general awareness of the anatomy of the house. Muted colors are discreetly used in the background of white ceilings, gray walls, and dark-stained structural elements, to create a calm setting for colorful paintings and furnishings, and for the people who live and entertain there.

Photos: Louis Reens

Shoji paper, white, green fern, gold flecks

dark-stained oak floor

white, plastered chimney

dark-stained heavy-timber lintel

red-brick lining

residential details

house: Lexington, Massachusetts (continued)

The dining-room fireplace, with its white-painted hood (metal lath and plaster on ¼"-steel pencil-rod frame), and its red-brick chimney and hearth, is happily placed to serve both dining room and kitchen. Also accessible to both areas is the island stove counter, treated like a handsome piece of furniture, with walnut case and marble-slab top. Storage, in divider units and wall-hung cases, is suavely detailed in walnut, glass, and dull-chromium hardware.

plate-glass sliding doors, grooved plate rails

marble-and-walnut island cooking counter

data

cabinetwork

All: architect-designed built-in cabinets, bookshelves/ walnut, oil-finished, dull-chromium hardware/ Custance Brothers, Lexington, Mass.

doors, windows

Doors: steel sliding doors, plastic screens/ Arcadia Metal Products, 801 S. Acacia Ave., Fullerton, Calif.

Windows: steel, projected sash/ Hope's Windows, Inc., Jamestown, N.Y.

equipment

Range: stainless-steel counter-top unit/ "Thermador"/ A. J. Lindermann & Hoverson Co., 601 W. Cleveland Ave., Milwaukee, Wis.

Stove Counter Top: "Cremo" marble/ Vermont Marble Co., Boston, Mass.

Ovens: stainless-steel built-in-wall ovens/ Hotpoint Co., 5600 W. Taylor St., Chicago, Ill.

Dishwasher: custom walnut-front panel/ General Electric Co., 310 W. Liberty, Louisville, Ky.

Sink: stainless-steel sink, Hudee trim/ Elkay Mfg. Co., 1874 S. 54 Ave., Cicero, Ill.

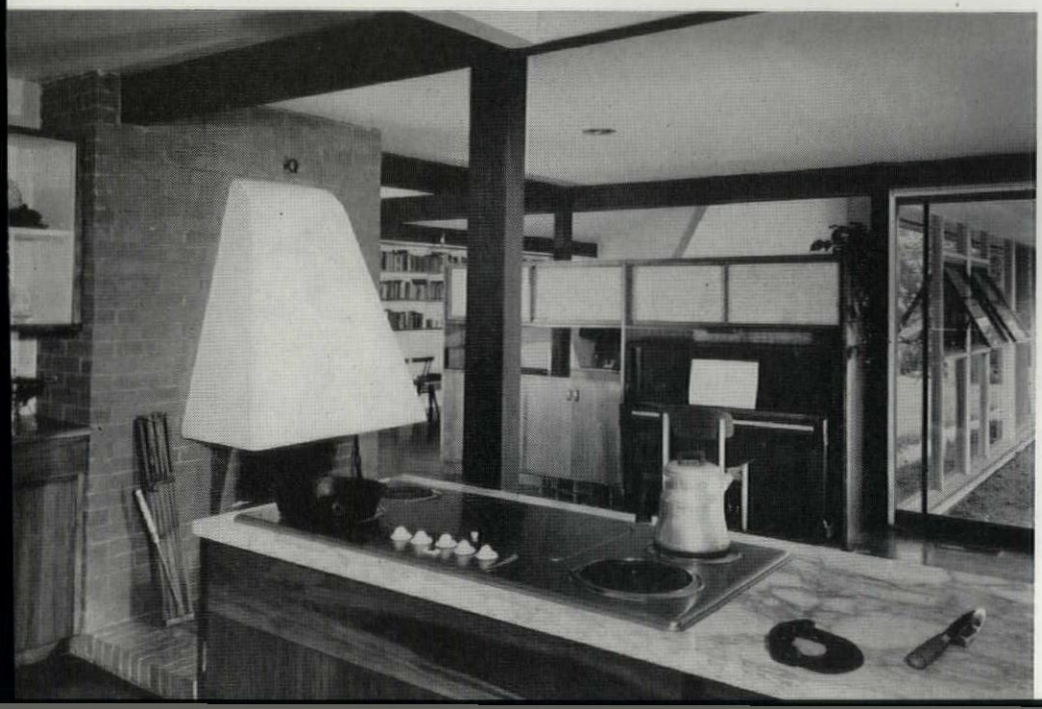
furniture

Living Room Sofa, Dining Chairs: sofa covered in tan-and-white hand-woven Haitian cotton/ chairs of walnut/ George Nakashima, New Hope, Pa.

Lounge Chair: woven rope/ frame by Knoll Associates, 575 Madison Ave., New York, N.Y.

lighting

Lamp Over Dining Table: designed by Orno/ Georg Jensen, 667 Fifth Ave., New York, N.Y.



Lamp in Stair Hall: designed by George Nelson/ Howard Miller Clock Co., Zeeland, Mich.

Living-Room Wall Bracket: hourglass/ Gotham Lighting Corp., 3701 31 St., Long Island City, N.Y.

Downlights: recessed can-lights/ Litecraft Mfg. Co., 8 E. 36 St., New York, N.Y.

walls, ceiling, flooring

Walls: plaster on gypsum lath/ all painted white, or gray, except kitchen walls of light gray-blue, and stair hall of pale Daffodil yellow/ United States Gypsum Co., 300 W. Adams St., Chicago, Ill.

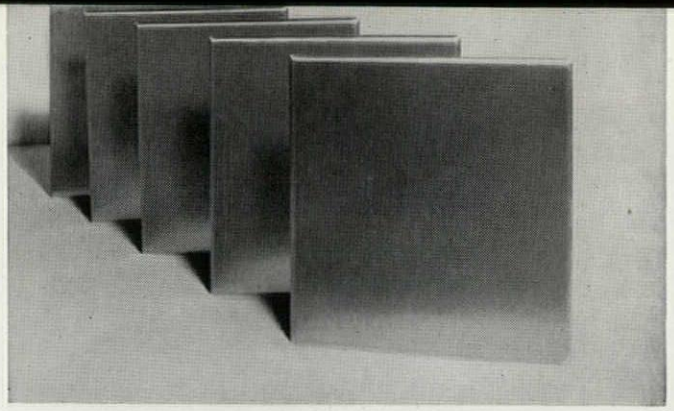
Stair-Hall Walls: horizontal, matched, cedar boarding, stained with Cabot's Driftwood Gray/ Samuel Cabot Inc., 1371 Oliver Bldg., Boston, Mass.

Ceiling: metal lath and plaster, painted white.

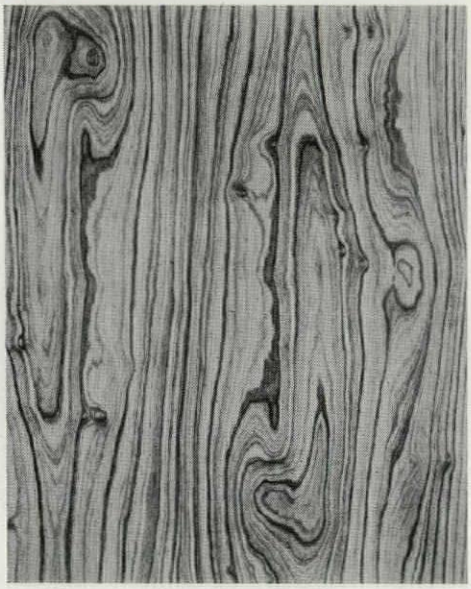
Floor: selected oak, stained dark, hot-waxed

Rugs: Navajo Indian, by Two Gray Hills Indians, N. Mex.

p/a interior design products

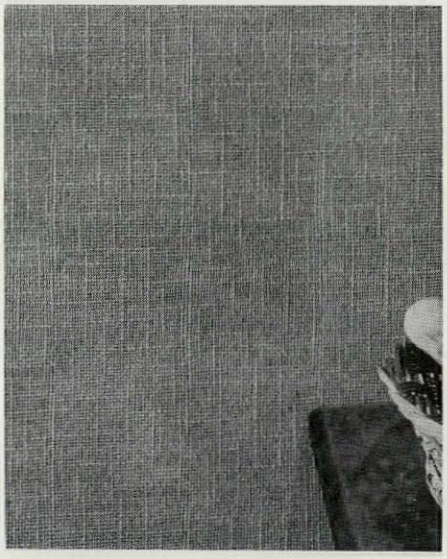


Natural Metal Tile: solid brass/ gold-colored, grain-polished/ tarnish-protected by clear baked-on enamel/ available in 3 sizes of field, 2 sizes of trim/ **Vikon Tile Corporation, Washington, N.J.**

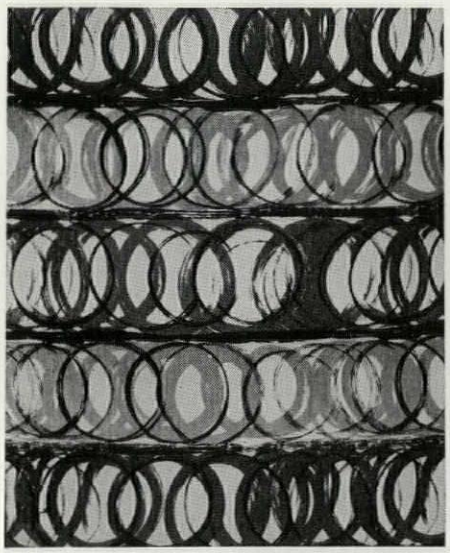


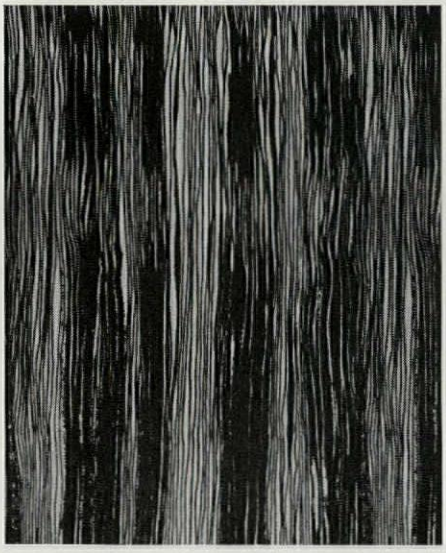
Wood-grain Laminate: "Nevamar" high-pressure laminate/ cherry pattern/ in Burgundy red or Sauterne beige/ first in a series of domestic and foreign wood-grain laminates/ **The National Plastic Products Co., Odenton, Md.**

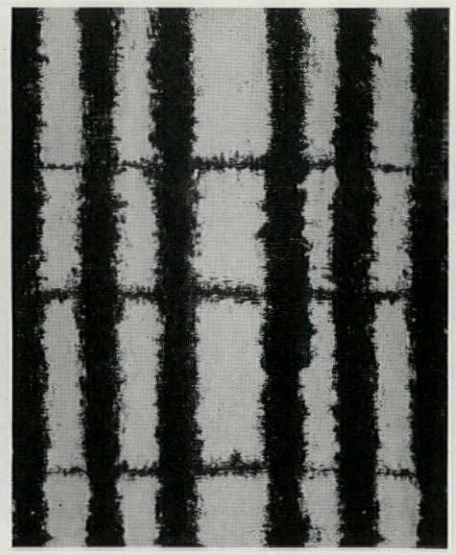
Sculptured Wall Covering: "Burlap"/ three-dimensional texture/ in china white/ eliminates necessity of plaster wall finishing layer/ durable, washable, waterproof, may be painted/ single roll 8 yds long, 19⅞" wide, trimmed/ **retail:** $12/ **Katzenbach & Warren, 575 Madison Ave., New York, N.Y.**



Hand-Printed Linens: from the new "Austrian Contemporary" import group: (left) "Jubilee"/ in three-color combinations of bark, gray and smoke; olive, gold and brass; flame, coral and wine; (center) "Divertissement"/ in peacock, flame, gold, olive, or black on natural; (right) "Festival"/ in turquoise, brass, wine, olive, bark, or black on natural/ all 50" wide/ **Greeff Fabrics, Inc., 4 E. 53 St., New York 22, N.Y.**







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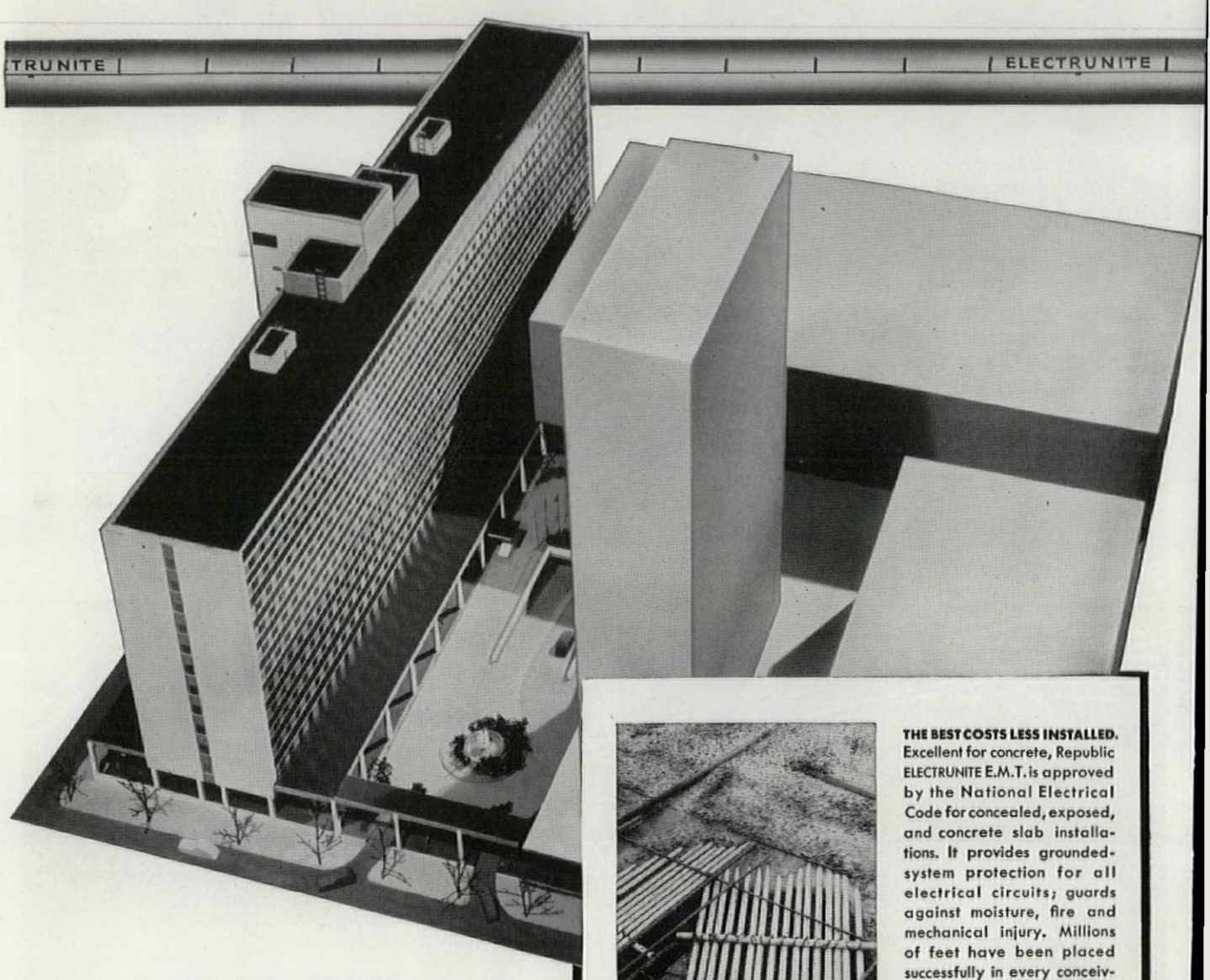

Peachtree-Baker Office Building, Atlanta, Ga.
Architects: Alexander and Rothchild
General Contractors: Ben J. Massell Enterprises
Electrical Contractor: Whitehead Electric Co., Atlanta, Ga.

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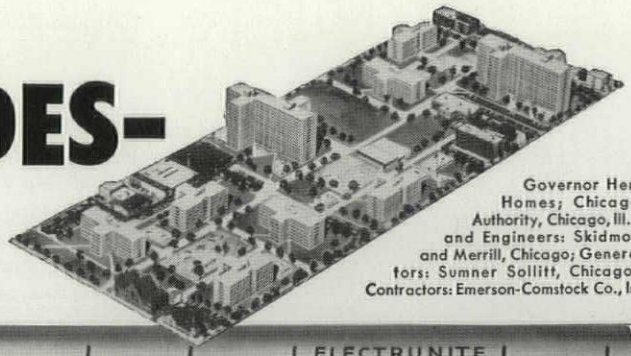
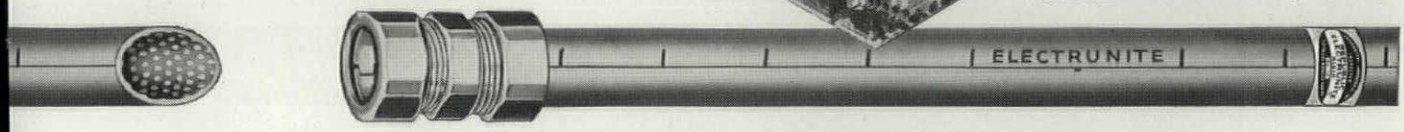


Governor Henry Horner Homes; Chicago Housing Authority, Chicago, Ill.; Architects and Engineers: Skidmore, Owings and Merrill, Chicago; General Contractors: Sumner Sollitt, Chicago; Electrical Contractors: Emerson-Comstock Co., Inc., Chicago



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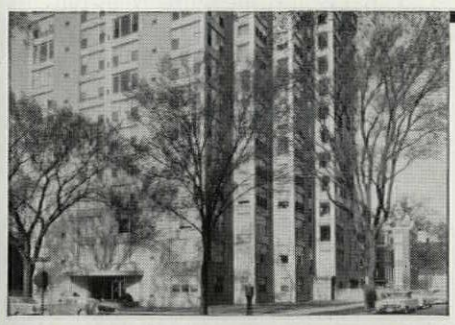

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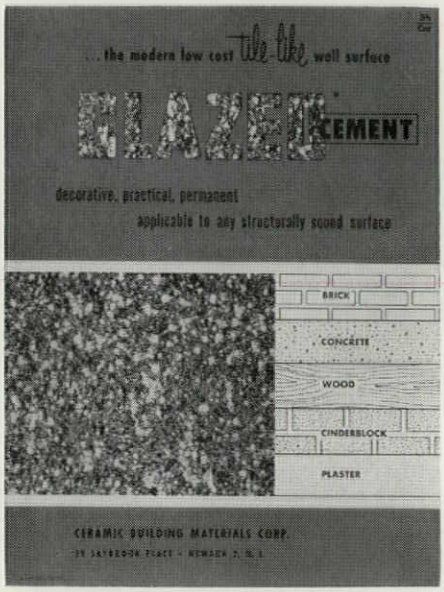
p/a manufacturers' literature



"Cold-glazed Cement Finishes," by Guy G. Rothenstein, appeared in October 1956 P/A. This technical article contained discussions of properties, field- and factory-applied uses, cost, equipment and application, and the future of this age-old material now making a successful comeback in the 20th Century. Examples of installations using finishes of the Vitricon Corporation of Long Island City, N. Y., and Cement Enamel Development, Inc., Detroit, Mich., were illustrated.

Another manufacturer active in this field is the Ceramic Building Materials Corporation. Properties of its glazed cement, in a number of instances, differ from those found in the article referred to above. Readers who wish to add to their file of literature on this subject may obtain additional property tables, standard performance specifications for glazed cement vitreous wall surfacing, specifications for building block and brick wall for glazed cement, as well as abbreviated literature (shown at left).

960. *Ceramic Building Materials Corp., 39 Saybrook Pl., Newark 2, N. J.* B.H.H.

Editor's Note: Items starred are particularly noteworthy, due to immediate and widespread ★ *interest in their contents, to the conciseness and clarity with which information is presented, to announcement of a new, important product, or to some other factor which makes them especially valuable. Unnumbered items to be obtained directly from manufacturer.*

air and temperature control

112. Better Control Electrically, 16-p. publication using photos, diagrams, and drawings to explain selection of proper heating and ventilating systems for contemporary schools and colleges. Sections written in nontechnical terms cover: control of convector systems, direct-fired warm-air systems, zone systems, and unit ventilators as well as application of electronic control centers. Drawings show complete piping arrangements and air patterns for different systems. Barber-Colman Co., 1300 Rock St., Rockford, Ill.

113. Duct Sizing Calculator, 21-p. instruction manual with pocket containing sliding-scale air-conditioning duct calculator. Manual explains procedure for determining residential heat gains. Supplies map and chart for calculating outdoor temperature range to determine capacity of air-conditioning units; discusses factors influencing duct and register size and location. Gives instructions for using calculator to size complete supply- and return-duct systems for small homes. Armstrong Furnace Co., Columbus 8, Ohio.

construction

277. Flexon Expansion Joints, 8-p. file folder giving data on flexible metal hoses and corrugated expansion joints for wide range of industrial applications. Photos show construction features of seamless, interlocking, and elbow-forming hose types as well as standard and dual-type joints with welding ends or flanges. Discusses materials, anchoring and guiding procedures. Specifications, dimension tables. Flexonics Corp., 1322 S. Third Ave., Maywood, Ill.

278. Porcelain Enamel in Architecture: Part I—Veneer-Type Construction, AIA 15-H-2, 24-p. design manual for porcelain-enameled steel and aluminum veneer panels. Discusses how and where to use porcelain enamel on exterior walls, exterior trim, special details, and interior surfaces; includes typical details as well as photos for each type of installation. Design-data section gives information on colors, finishes, and fabrication of panels, back-up materials, and attachment methods. Specifications. Architectural Div., Porcelain Enamel Inst., 1145 19th St., N.W., Washington, D. C.

279. Nelson Stud Welding in Construction, 4-p.

280. Nelson Stud Welding in Windows, 4-p. Two brochures featuring different aspects of stud-welded fastening system. First brochure shows components of system and variety of fasteners for curtain-wall construction, roofing, siding electrical equipment, and anchorage. Illustrates welding procedure. Second folder outlines advantages of system using on-the-job photos and construction details to explain use of studs in window installation. Nelson Stud Welding Div., Gregory Industries, Inc., Lorain, Ohio.

281. Starkote Wall Tile, AIA 10-B, 4-p. leaflet announcing availability of modular structural facing-tile units with integral ceramic glaze for use in homes, factories, hospitals, or schools. Photos show unit finished in popular blue-gray speckle glaze and variety of interior installations. Specifications. Stark Ceramics, Inc., Canton, Ohio.

282. Hardwood Plywood, 24-p. handbook reprinted from June 1955 *American Builder,* serves as guide to installation and specification of hardwood plywood panels for walls, doors, and built-in furniture. Gives step-by-step procedure for applying panels to stud, masonry, or plaster walls; suggests designs for storage walls and cabinets; supplies data on purchasing plywood and identifying panels by grade. Color photos illustrate some popular grain and figure patterns which are recommended for specific applications. Hardwood Plywood Institute, 600 S. Michigan Ave., Chicago 5, Ill.

283. Asbestos Transitop, AIA 19-D, 36-p. guide demonstrating use of fire-resistant insulating-structural panel for: curtain-wall construction over steel or wood framing; roof decks; interior walls. Numerous isometric drawings and details show steel and panels joined by clip & bolt, screw, welded stud, and other fasteners; panel-purlin installations with nails or roof-deck clips; partitions constructed with metal mouldings, wood battens and dowels; panels installed between framing as well as exterior application of corrugated transite. Provides design data and specifications for painting. Johns-Manville, 22 E. 40 St., New York 16, N. Y.

284. Modern Construction Through Engineering in Wood, AIA 19-B-3 (TSG-15), 16-p. catalog illustrating use of glue-laminated wood members in schools, churches, homes, and commercial buildings. Gives typical haunch sections for tudor arches and outlines design procedure; also provides sections for constant-radius arches, glue-laminated beams, and purlins. Includes data on timber roof deck which combines properties of sheathing, insulation, and finished ceiling. Specifications; information on factory-stained color finishes for glue-laminated structural members. Timber Structures, Inc., P. O. Box 3782, Portland, Ore.

doors and windows

396. International Doors, 20-p. catalog of doors designed specifically for aviation and industrial buildings such as hangars, piers, and warehouses. Features tabulated guide to aid architects in selecting door for particular operating pattern and location. Gives complete data on series of doors in typical applications; door type

included are: telescoping canopy, turnover canopy; low-headroom braced; straight-slide, around-the-corner slide doors; crane doors; and vertical-lift pier doors. Elevations, sections, details, specifications, photos. International Steel Co., 1983 Edgar St., Evansville 7, Ind.

397. International Revolving Doors, AIA 16-G, 20-p. catalog of revolving door entrances featuring two-speed motorized door and new 12 RPM maximum speed control. Provides graphic data to show how revolving doors reduce heat loss and cooling costs, data on mechanical features, design and installation. Photos and floor plans illustrate typical arrangements. Gives formula to determine doors for specific needs and architectural details of stainless steel, all-glass, and standardized models; also shows basic enclosure designs, folding features, special two- and three-wing doors. Specifications, diagrams. International Steel Co., 1983 Edgar St., Evansville 7, Ind.

398. Stanley Hinge Selector, durable spiral-bound hinge selector device consists of data chart and slide-rule which simplify specification of hinges for particular door and frame construction. Provides factors for determining size, type, and finish of hinges used on entrance, toilet, corridor, and closet doors in schools, office buildings, or dwellings. The Stanley Works, New Britain, Conn.

399. Procedure for Installing Geyser Windows, 4-p.

301. Geyser Tracing Guides (I, II). Installation data sheet showing eight steps in procedure for erection of aluminum bar windows includes: instructions for locating bolts; assembling steel sub-frame; installing frame, ventilators, and trim; glazing. Set of two tracing guides designed for architects doing commercial/industrial buildings, supplies ¼" scale details for "Contemporary" Series aluminum bar windows. Standard window sections, vent details, sections and details for dual-glazed sash and door frames, installation and special details. E. K. Geyser Co., 915 McArdle Roadway, Pittsburgh 3, Pa.

302. Lustraglass and Lustracrystal, AIA 26-A, 4-p. brochure presenting data on gray or green-tinted heat-absorbing and glare-reducing glass products. Lists features and transmission factors of two glass types used for glazing windows, doors, and storm sash or used to replace ¼" plate glass where slight distortion is not objectionable. American Glass Co., 2000 Farmers Bank Building, Pittsburgh 22, Pa.

303. Calder Garage Doors, 16-p. bulletin offering data on overhead sectional garage doors for homes, commerce, and industry. Illustrates popular paneled and flush surface patterns. Assembly of component parts and mechanical features are explained by drawings and exploded views; details show vertical-lift track assemblies, chain-lift doors, service station door rails and mullions. Headroom information, photos, specifications. Calder Mfg. Co., Lancaster, Pa.

electrical equipment, lighting

489. Trim-Line Fixtures, 16-p. pamphlet presenting series of shallow rectangular surface- and ceiling-mounted fluorescent fixtures with interchangeable bottom panels designed for contemporary interiors having limited headroom. Photos of louvered and prismatic-glass surface models are accompanied by exploded views indicating construction features, tables of engineering and dimension data. Also shows adjustable and fixed stem hangers for pendant mounting. The Sechrist Mfg. Co., 4990 Acoma St., Denver 16, Colo.

★ **490. Wilson Luve-Tile,** AIA 31-F-2, 16-p. guide for planning and installation of 12" square louvered tiles of molded plastic material for ceiling-light diffusion. Drawings explain suspension system which permits hinging from either side. Photos show tiles installed over entire ceiling and in decorative patterns. Discusses key factors in planning. Sample layout; wall sections; analysis of basic elements; pictorial installation and maintenance instructions. J. A. Wilson Lighting & Display, Inc., 260 Delaware Ave., Buffalo 2, N. Y.

491. Interior Lighting Design Data, 52-p. manual intended as basic reference book for architects and engineers designing interior lighting installations. Describes footcandle levels required for such seeing tasks as drafting, bookkeeping, and machine operating; levels are assigned to specific interior areas of all conceivable types from armories and airplanes to textile mills. Also, suggests methods of calculating light quantities as well as selecting lighting systems, maintenance factors, and locations for luminaires. Provides tabulated textbook data on room indexes and coefficients of utilization in addition to series of charts that facilitate computations. Westinghouse Lamp Div., Bloomfield, N. J.

finishers and protectors

522. Materials for Construction and Maintenance, 20-p. product guide describing properties and advantages of compounds for joining, protecting, strengthening, and repairing construction materials. Products include: brickwork calking, masonry dampproofing, latex expansion joints, water-repellent concrete admixtures, as well as pigment powder for integrally colored abrasion-resistant concrete floors. Specifications, application instructions, drawings, photos. A. C. Horn Companies, 10 St. and 44 Ave., Long Island City 1, N. Y.

insulation (thermal, acoustical)

644. Certified Pile Weather Seal, 30-p. loose-leaf catalog illustrating metal and plastic-imbedded woven-pile weatherstripping designed to fit individual specifications. Covers: U-shaped glass-run channels with pile strips along one, two, or three surfaces; flat shapes; special plastic shapes. Photos, dimensioned drawings. Schlegel Mfg. Co., Rochester 7, N. Y.

645. Mineral Wool Insulation, 16-p. booklet outlining advantages of mineral wool insulation for electrically heated homes. Recommends insulation standards. Illustrations show installation of batts, blankets, and vapor barriers under various conditions. Indicates minimum vent openings for attic and basement; provides guide for use of blown mineral wool; discusses perimeter insulation of on-grade concrete slabs. National Mineral Wool Assoc., 2906 Americas Bldg., Rockefeller Center, New York 20, N. Y.

646. Armstrong Acoustical Materials, AIA 39-B, 24-p. product guide offering range of acoustical ceiling materials for commercial/institutional buildings. Discusses acoustical problems with reference to basic principles; provides chart for selecting perforated, striated, or textured tiles according to size, cost, maintenance, and other key factors. Gives complete data on wood fiber, mineral fiber, fissured mineral wool, metal pan, and all-cork types. Photos show individual tiles and

(Continued on page 182)

p/a manufacturers' literature

(Continued from page 181)

completed installations. Describes procedures for installing with cement, nails, staples, or screws while five mechanical suspension systems are illustrated. Specifications. Armstrong Cork Co., Lancaster, Pa.

sanitation, plumbing, water supply

735. Good Practice in Sewer Construction, 4-p. bulletin recommending techniques for preparing, back-filling, and finishing sewer-pipe trenches as well as inspecting completed job. Offers formulas and discusses general methods for determining trench width, depth, and slopes. Also, data on bedding. Photos, drawings. Clay Sewer Pipe Association, Columbus, Ohio.

736. Eljer Plumbing Fixtures, 40-p. catalog exhibiting line of kitchen and bathroom equipment. Includes: enameled cast-iron bathtubs, vitreous china or metal built-in flat-rim counter installed sinks, standard lavatories, wash sinks, toilets, urinals, cabinet-enclosed sinks, base cabinets, drinking fountains and new line of brass fittings. Shows seven available pastel colors; recommends color-schemes to coordinate fixtures, walls, ceilings, trim, and woodwork. Suggests alternate bathroom groupings. Plumbing connections are indicated on dimensioned drawings. Photos. Eljer Div., The Murray Corp. of America, Three Gateway Center, Pittsburgh 22, Pa.

737. Plumb-Easy Drains, AIA-29-C, 96-p. spiral-bound catalog, tab-indexed in six sections that cover wide assortment of: cast-iron or bronze drains for floors, roofs, and showers; swimming pool fittings; access boxes; hydrants and trap standards; interceptors. Illustrations of each item are accompanied by clearly drawn details, giving full information. Provides installation data for grease interceptors serving commercial sinks and dishwashers; instructions for installing oil interceptor serving multiple floor drains, metal chip bins, trench drains. Jay R. Smith Mfg. Co., Union, N. J.

specialized equipment

859. Mills Toilet Compartments, AIA 35-H-6, 20-p. catalog exhibiting line of junior-height toilet enclosures, hospital cubicles, and shower units for institutional use. Provides color illustrations, complete details, and specifications for ceiling hung, floor-braced, or overhead-braced compartments. Photos show standard hardware and accessories. Drawings suggest layouts for compartment groups. In addition, explains how finishes are applied; sample chart shows 20 standard colors available in porcelain or baked-on enamel finish. Mills Metal Compartment Co., 965 Wayside Rd., Cleveland, Ohio.

860. Printed Acetate Drawing, 4-p. leaflet describing cellulose acetate sheets with transparent pressure-sensitive adhesive for applying standard component drawings, wiring diagrams, uniform title blocks, or bill of materials to drawings—in order to save drafting time. Samples of typical sheets are enclosed. Application instructions, photos. Stanpat Engineering Co., Whitestone 57, N.Y.

Economy Lifting Equipment, 38-p. spiral-bound notebook exhibiting array of materials handling equipment for industrial use. Sections cover: custom-built hand and electric lifters; sectional drum or barrel racks; telescopic platforms for overhead maintenance work. Fully illustrated with photos showing equipment in actual use. Dimensions, capacity charts, drawings, specifications. Request from: Economy Engineering Co., 4511 W. Lake St., Chicago 23, Ill.

861. Food Serving Equipment, 48-p. booklet illustrating line of stainless-steel food-serving and preparation equipment installed in schools and colleges throughout U.S.A. Studies of individual dining areas feature floor plans, descriptive data and photos of single units as well as entire

(Continued on page 188)

the Two Grand Old Names in Lighting *Announce* the New

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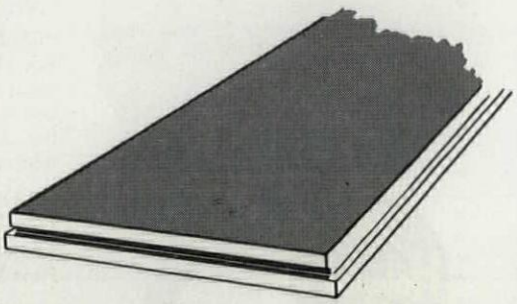

Tectum tile with rabbeted edges on the long dimension

Tectum roof tile with rabbeted edges are designed for laying on bulb-tee sub-purlins. Grout poured around the bulb-tee cements the tiles in place and mechanical clips or special fasteners are completely eliminated. Here are the advantages: Tectum's rabbeted edges allow plenty of space for a full grout seal and grout flows evenly around the bulb-tee. Grouting eliminates metal fasteners and possible condensation problems at the bulb-tee. Your men can't make a mistake. Just fill the opening with grout and drag it smooth. 15 lb. felt, factory applied on the Tectum provides a perfect base for built-up roofing. When the Tectum's down you're ready to go—and Tectum *goes down fast.*

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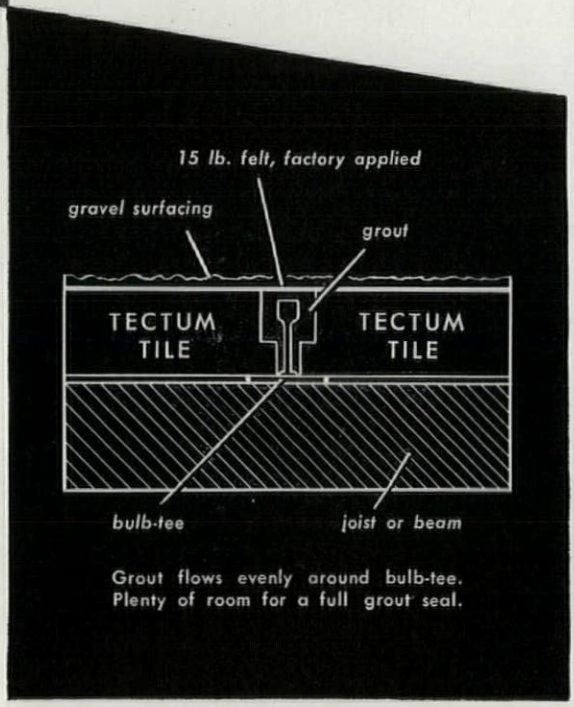
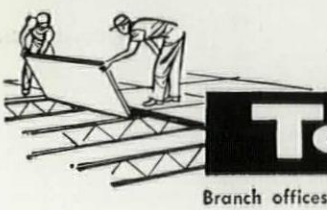


Grout flows evenly around bulb-tee. Plenty of room for a full grout seal.



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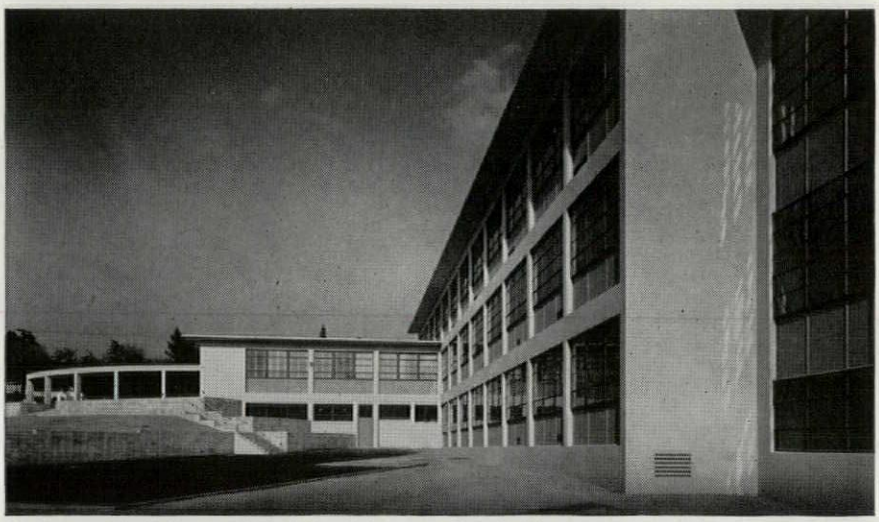
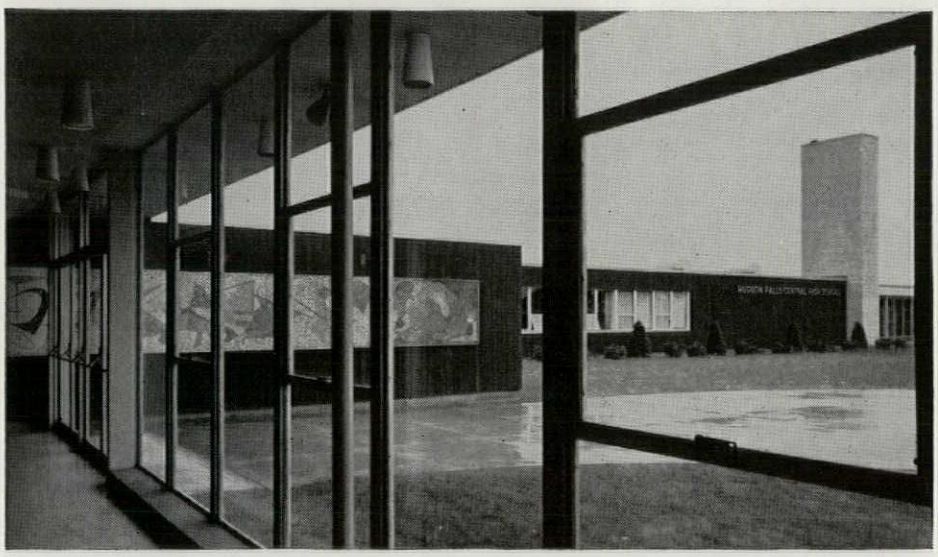


Anderson Clark Junior High School, Los Angeles, Calif.
Architects: Risley and Gould



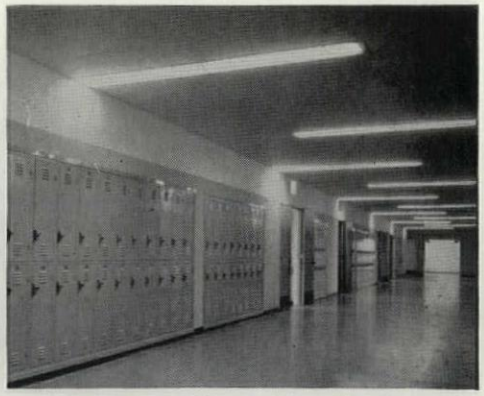
Hudson Falls, N. Y. High School
Architects: Sargent, Webster, Crenshaw & Folley

Students who attend modern schools like these . . .

New Trier Township High School, Winnetka, Ill.
Architects: Furst, Maher & McGrew
Consulting Engineer: Arthur Bladen of Neiler, Rich & Bladen.

Pattern No. 70 glass in New Trier Township High School cafeteria. Fixtures by Electro Silv-A-King.

Pattern No. 70 glass in Hudson Falls High School Library. Fixtures by Sylvania.



Alba-Lite panels in corridor of Anderson Clark Junior High School. Fixtures by Fluorescent Fixtures of California.

Lenslites in a new auditorium-gymnasium. Fixtures by Eastern Lighting Fixtures.

Alba-Lite panels light this college library. Fixtures by Pittsburgh Reflector.

Pattern 70 panels light this modern grade school classroom. Fixtures by R. & W. Wiley.

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p/a manufacturers' literature

(Continued from page 182)

food center. Points out construction and design refinements. Southern Equipment Co., 4550 Gustine Ave., St. Louis 16, Mo.

862. Kitchens by Keck, 16-p. booklet featuring series of residential modular kitchens designed by Architect George Fred Keck. Two-tone perspective renderings and floor plans stress simple, open layouts with integral or adjacent dining area. Describes advantages of compact, modular arrangements which concentrate cooking, cleanup, and utility equipment to permit free movement between rooms. Hotpoint Co., 5600 W. Taylor St., Chicago 44, Ill.

863. Architectural Building Products, 4-p. catalog sheet giving statistical data on accessories for public buildings. Covers: several lettering styles, indicating those adaptable to neon lighting; straight and beveled-edge tablets. Photos illustrate design variety in directories and church crosses; drawings show upright, wall-bracketed, and outrigger-type flagpoles as well as sign poles and standards with various base and face-panel shapes. Nelson-Harkins Industries, 5301 N. Kedzie Ave., Chicago 25, Ill.

surfacing materials

957. Glazed Ceramic Tile, AIA 23-A, 10-p. booklet offering series of installation drawings for large-size (8½" x 4½"; 6" x 4½") glazed ceramic wall tile for horizontal or vertical applications in commercial/institutional buildings. Exploded drawings show assembly of trim shapes used with adhesive and mortar. Set of structural details covers flush and projected tile-face applications over variety of wall materials. Decorative effects possible are suggested in four-color photos. American-Olean Tile Co., Lansdale, Pa.

958. Ceramic Tile, AIA-23a, 4-color catalog with charts showing colors available in glazed and unglazed ceramic tiles for floors or walls. Tables show trim shapes and sizes. Includes selection of china bathroom accessories as well as permanently conductive tiles for hospitals; suggests many color combinations with patterns using geometric shapes and pictorial tile strips. Shows unusual effects attained by decorating surfaces with preconceived all-over design instead of reiterating basic pattern such as octagon and dot. American-Olean Tile Co., Lansdale, Pa.

959. Vina-Lux Flooring, 4-p. folder showing selection of colors available in reinforced vinyl-asbestos tile units featuring delicate uniform veining. Presents data on special characteristics, installation, size, thickness. Also illustrates matching colors used in flexible bases and feature strips. Azrock Products Div., Uvalde Rock Asphalt Co., Box 531, San Antonio, Tex.

interior furnishings

67. Wood-Furniture Specifications, AIA-35, 44-p. specification guide intended to provide architects with up-to-date information on materials, finishes, and construction of wood laboratory furniture as well as aid him in specifying installation procedures for best results. Key drawings, sections, and details indicate important construction features of sliding and swinging door cabinets; open-leg tables; table tops of various compositions. Paragraphs in specification section, covering all necessary data can be copied intact or condensed. Kewannee Mfg. Co., Adrian, Mich.

68. Invincible Office Chairs, 4-p.

69. Invincible Steel Desks, 8-p. Two catalog brochures featuring contemporary-styled metal office furniture. First folder illustrates line of upholstered swivel and side chairs with glass, fiber, or steel bases. Shows design features and fabrics. Photos, dimensions. Second brochure covers series of modular desks with molded- or square-edge tops to permit combination with auxiliary units; sketches suggest alternate arrangements. Photos show pedestals, tops, supports, and tables for designing custom groups. Invincible Metal Furniture Co., Manitowac, Wis.

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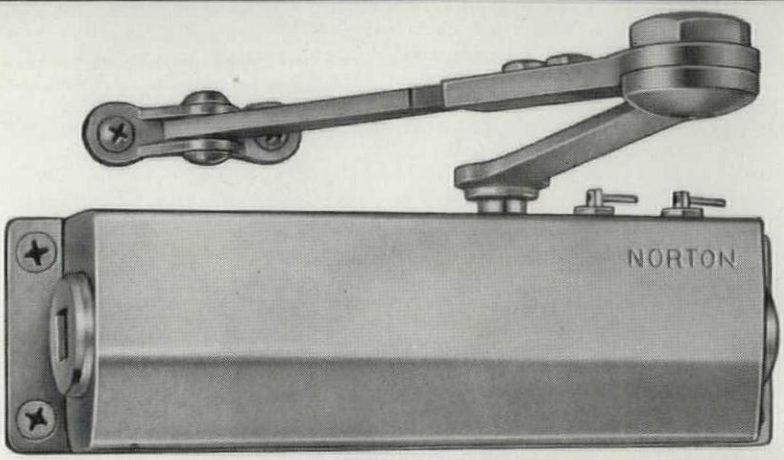
NORTON DOOR CLOSERS!



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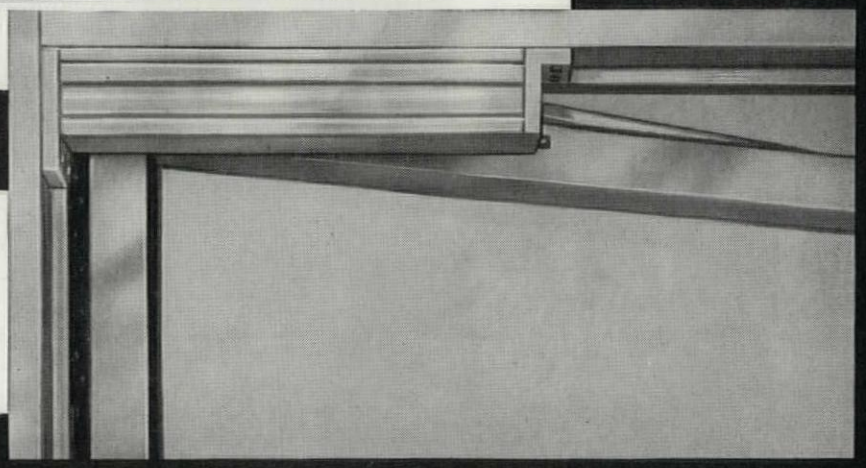
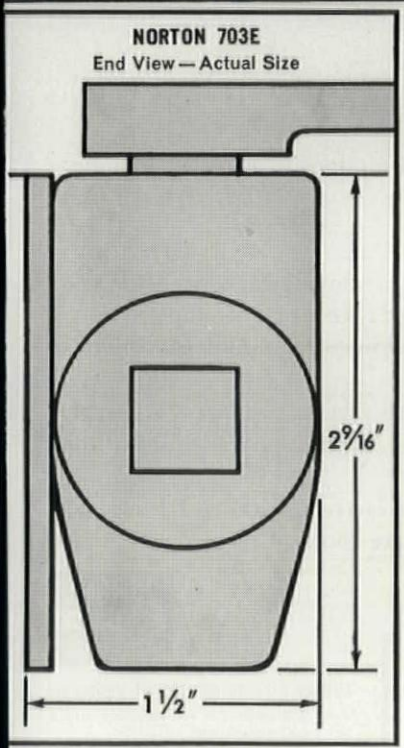
Surface-mounted type... First door closer ever made with extruded aluminum alloy shell.



Norton 750
Revolutionary corner design with concealed arms and extruded aluminum alloy shell.



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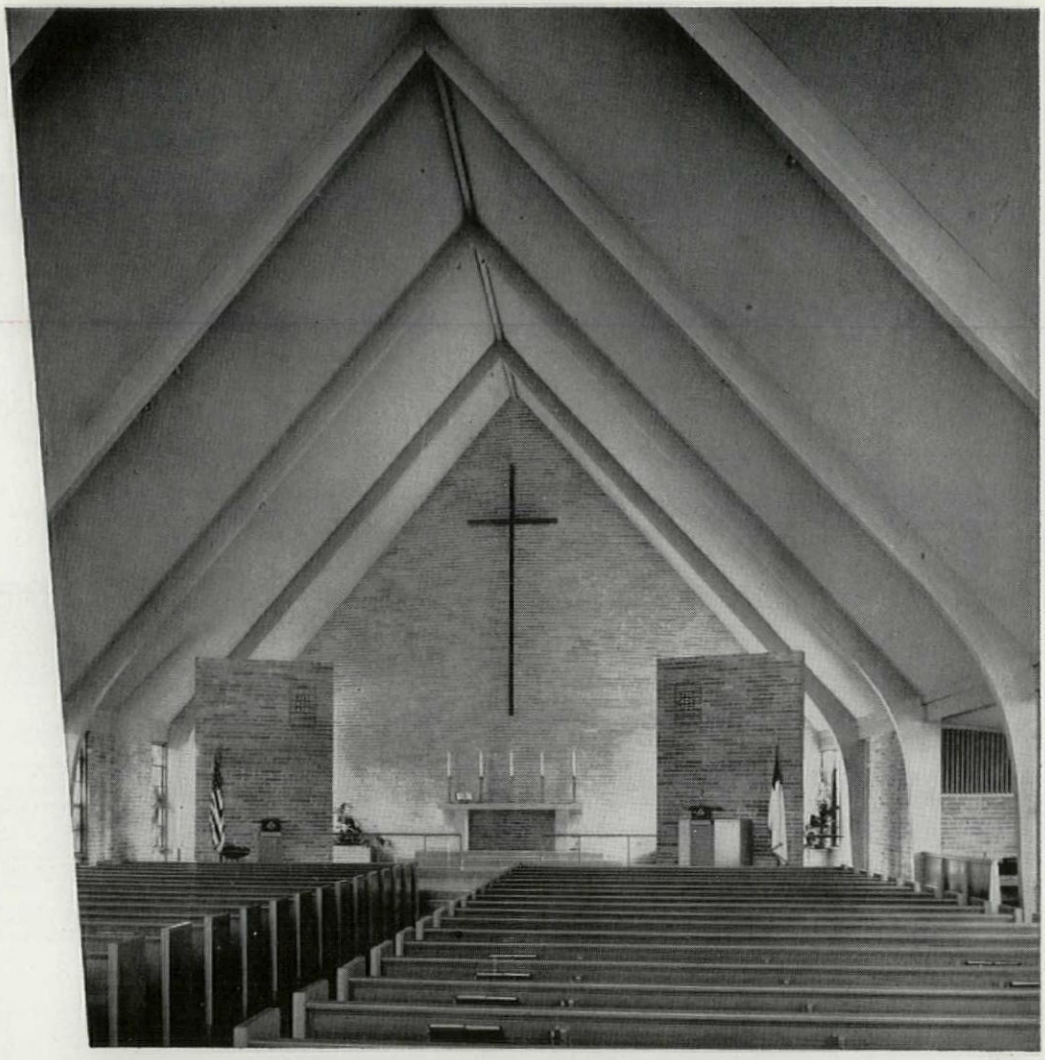
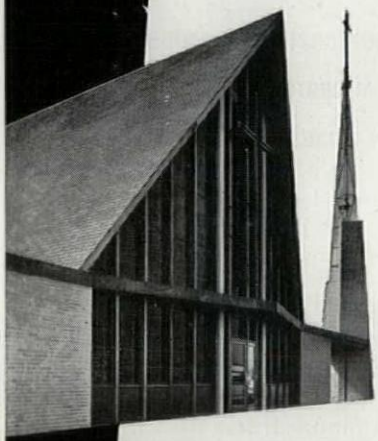
Concordia Lutheran Church, San Antonio, Texas, is 44′ x 117′-5″ plus wing for sacristy, organ and choir. Construction is concrete slab and beam foundation on fill. Ceiling is sprayed-on acoustical plaster; heating is by warm air; nave lighting is on rheostat.

Architect: Henry Steinbomer, San Antonio, Texas

Contractors: F. L. Scott & Son, San Antonio, Texas





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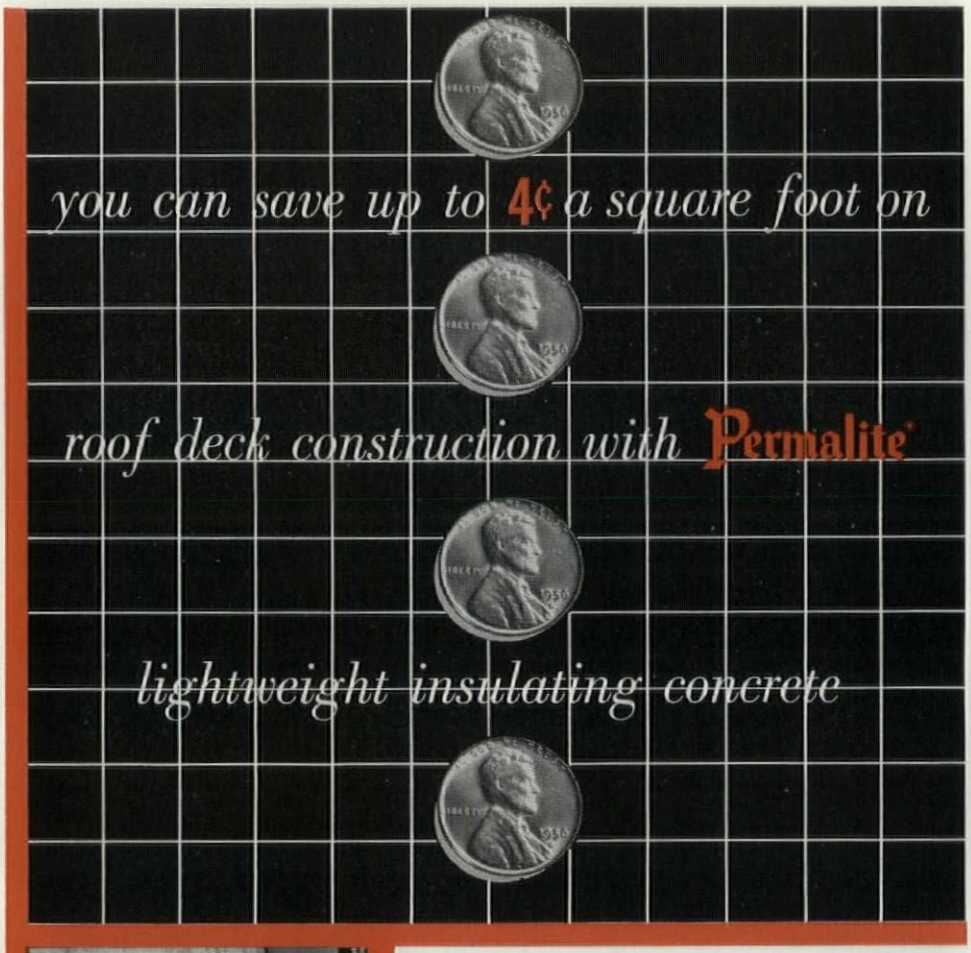

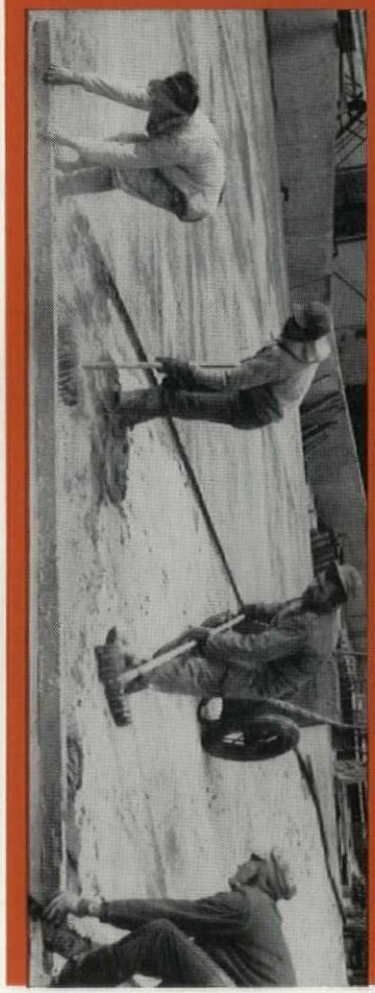

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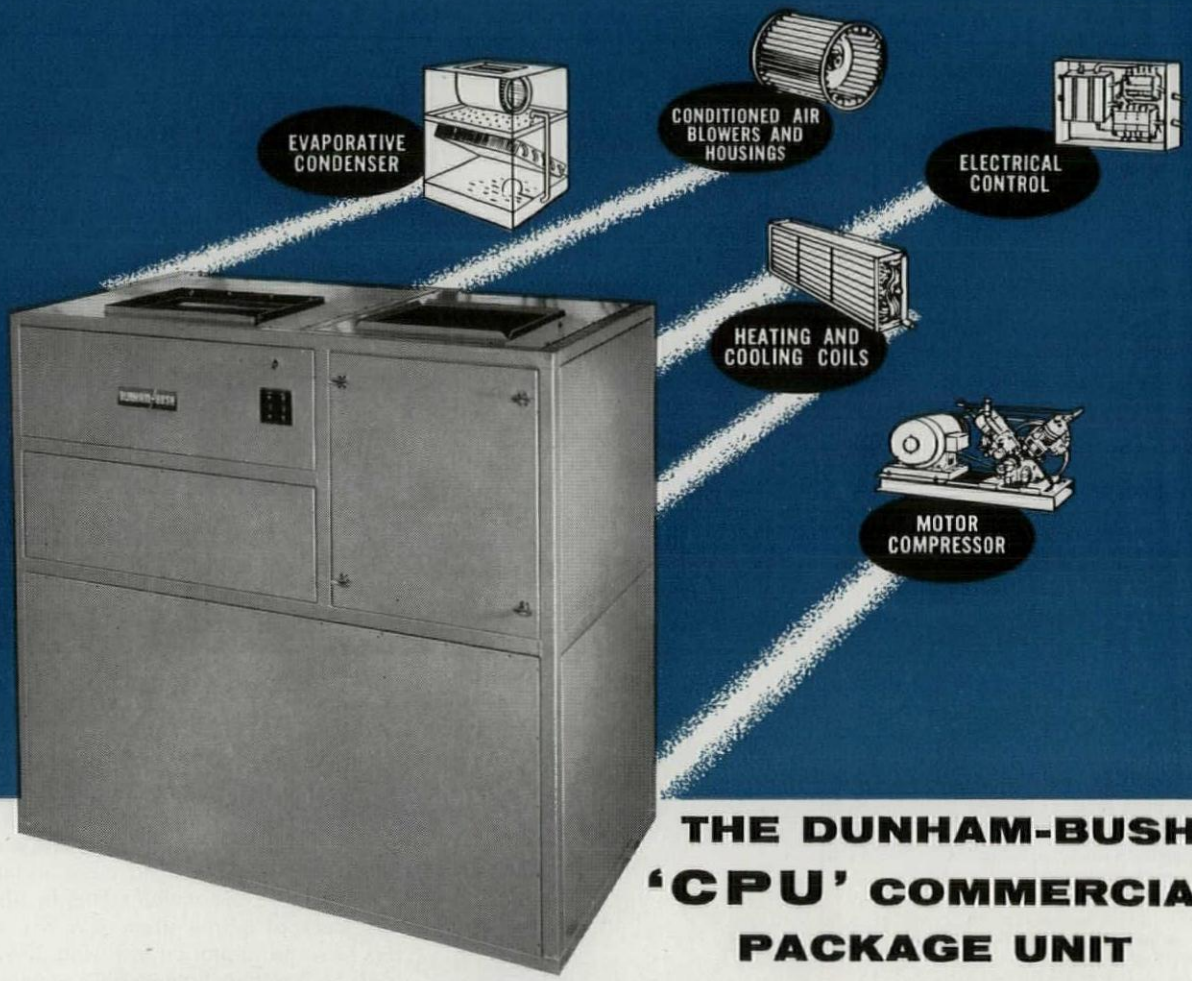

THE DUNHAM-BUSH 'CPU' COMMERCIAL PACKAGE UNIT

This pre-engineered Dunham-Bush unit is a complete air conditioning ***system*** housed in one cabinet. Each unit is ***entirely self-contained*** . . . with evaporator, compressor, evaporative condenser and pump, fans, motors, piping and controls . . . all ***pre-engineered*** to provide peak operating performance at minimum operating cost. Installation requires only connection of power supply to control panel, connection of water make-up line and necessary duct connections. All units are run in and tested before shipment and are shipped with a holding charge of Freon.

The Dunham-Bush 'CPU' unit features patented high efficiency Inner-Fin® cooling coils; slow speed compressors specially selected for quiet operation; and forced-draft, blow-through type Inner-Fin evaporative condenser. Available in 10, 15, 20, 30 and 40 Ton models.

Get complete details today. Contact the Dunham-Bush Sales Engineer in your area or write for 'CPU' catalog.

Dunham-Bush, Inc.

DUNHAM-BUSH

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MICHIGAN CITY, INDIANA • MARSHALLTOWN, IOWA • RIVERSIDE, CALIFORNIA • UTICA, NEW YORK

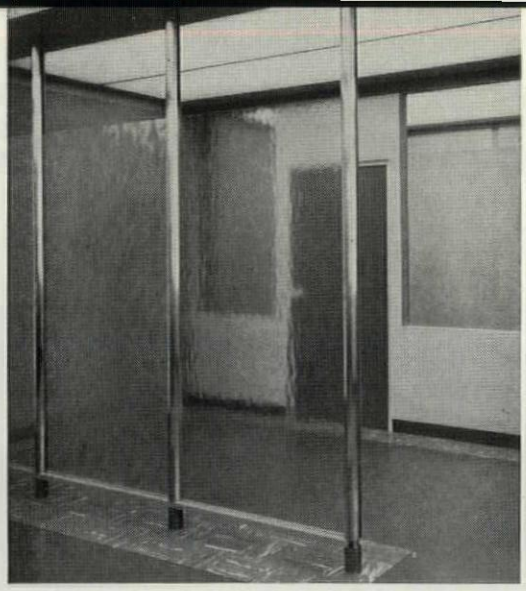
SUBSIDIARIES

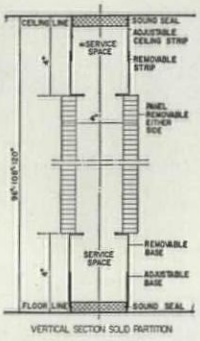
heat-x HEAT-X, INC. BREWSTER, N.Y.

DUNHAM-BUSH DUNHAM-BUSH (CANADA), LTD. TORONTO, CANADA

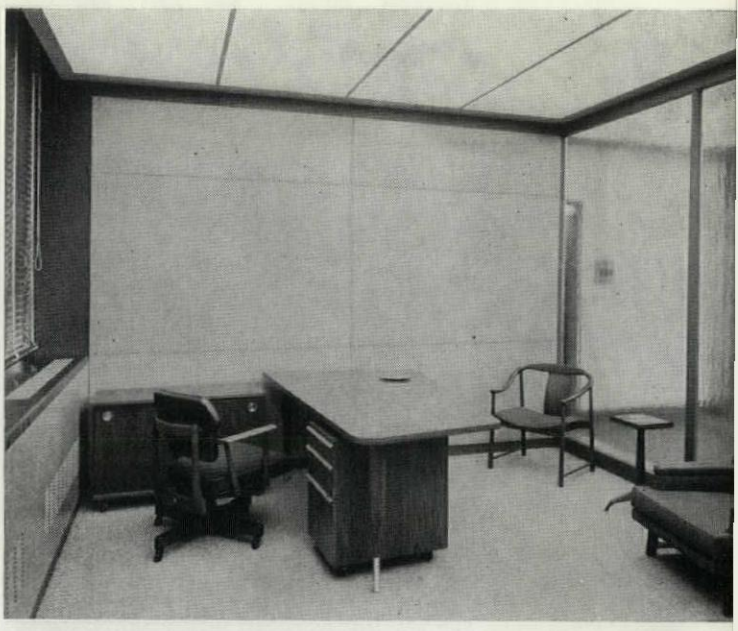
BRUNNER THE BRUNNER CO. GAINESVILLE, GA.

DUNHAM-BUSH DUNHAM-BUSH, LTD. LONDON, ENGLAND

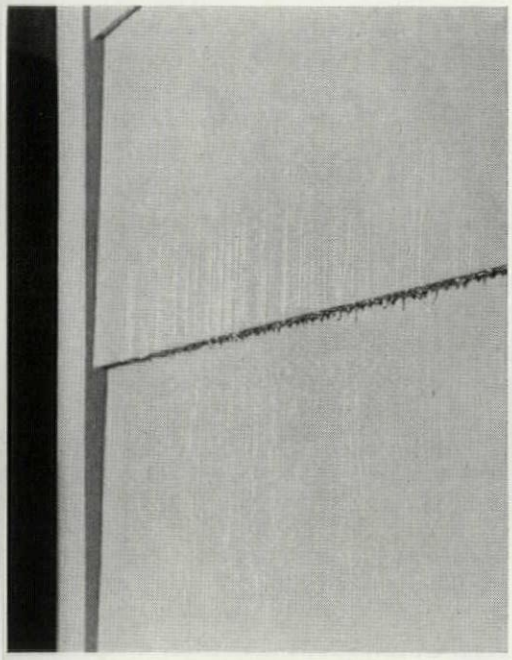




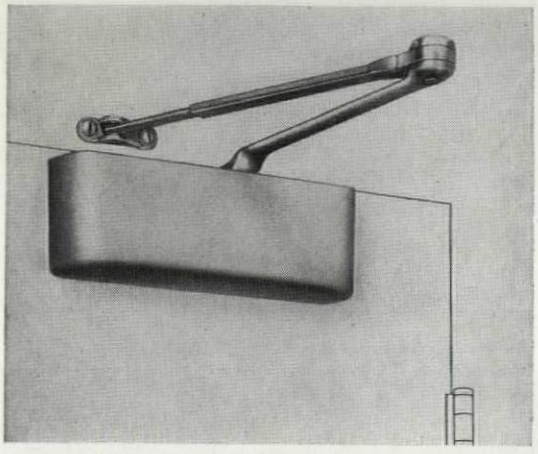
VERTICAL SECTION SOLID PARTITION



New all-modular, movable, interior-wall system allows architect to incorporate in his design any type of panel—metal, wood, plastic, glass, fabric, or any combination of these. He may also specify any type or shape of post—flush, recessed, protruded, or any combination. Further, the wall style may be varied—floor-to-ceiling, off-the-floor, or off-the-ceiling—using only standard, mass-produced components and all based on a four-in. module. Called "Horizon," this system provides custom design advantages: at the same time, it has all the benefits of mass-production economies. Principal features are: (1) panels are available in a wide variety of shapes, surfaces, materials, and colors; (2) panels are removable from either side and completely interchangeable; (3) posts of many shapes and materials are available; (4) adjustments are provided at base, ceiling, and ends; (5) provisions are built-in for utility services and electric wires; (6) walls are sound resistant, and fireproof (when all parts are made of incombustible materials); (7) walls require minimum maintenance and have maximum durability; (8) complete wall installations are readily disassembled, moved, and erected elsewhere in a matter of hours; (9) walls are economical. The E. F. Hauserman Co., 7500 Grant Ave., Cleveland 5, Ohio.



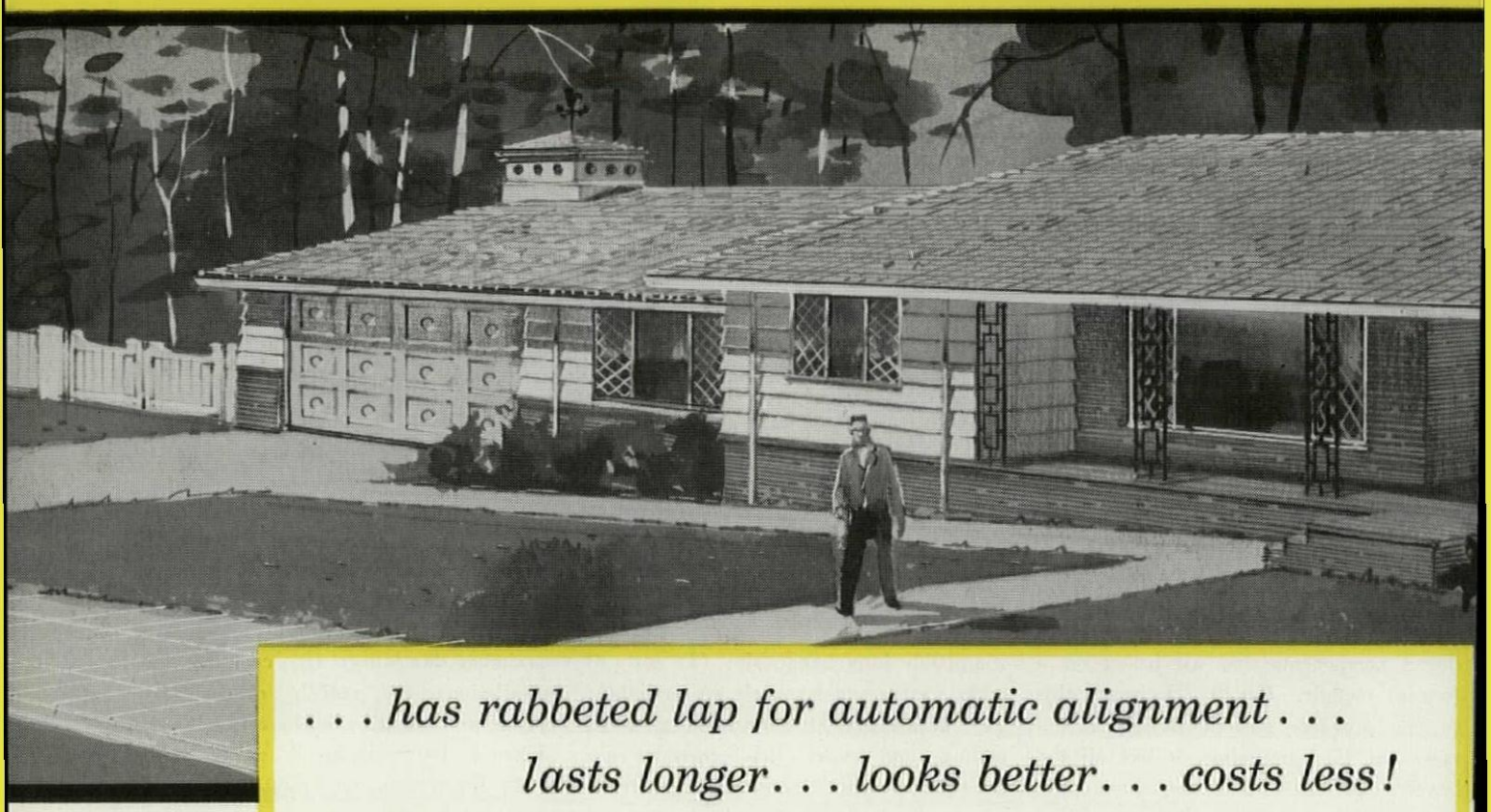
Primed sliding (left) *looks, feels, and works like wood; has no surface or structural grain, knots, or slivers; will not split, splinter, or crack from nailing. Prime coating is applied to face, back, and ends. Both long edges are cut at precise angle with corner slightly rounded; weatherstrip edge causes water to drip straight down preventing flow back behind siding. Single-cut edges also make product reversible. Insulite Div., Minnesota and Ontario Paper Co., 500 Investors Bldg., Minneapolis 2, Minn.*



New "Smoothee" exposed closer for interior doors —wood or metal—comes in three capacities, allows wide opening of door, and is adaptable to any conventional trim. Available with regular or hold-open arm (90-140 degrees). New feature increases power by simple reversal of arm shoe. LCN Closers, Inc., Princeton, Ill.

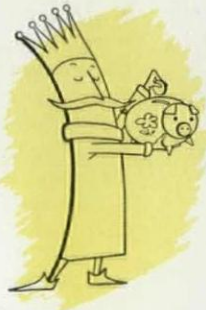
NOW! HARBORITE

Harborite is the miracle overlaid fir plywood



. . . has rabbeted lap for automatic alignment . . .
lasts longer. . . looks better. . . costs less!

EASY WORKING! Harborite Beveled Siding is easier to apply . . . easier to work with standard tools. No furring strips, wedges or shims are required. No chalklining or measuring is needed . . . the rabbeted lap provides automatic alignment. Nailing and caulking are easier. Joints are smooth and weathertight.



LOWER COST! Ease of handling, working and painting greatly reduces precious man-hours . . . slashes time and costs! No waste effort or material. It's re-humidified . . . shrinkage and warpage reduced to an absolute minimum! Maintenance costs cut, too . . . the hard surface wears far longer than ordinary sidings!

EASY PAINTING! Harborite Beveled Siding has a super-smooth overlaid face . . . paint goes on easier, lasts longer, looks better. Harborite Beveled Siding is completely Resin-Sealed. Overlay eliminates checking . . . minimizes grain raise!

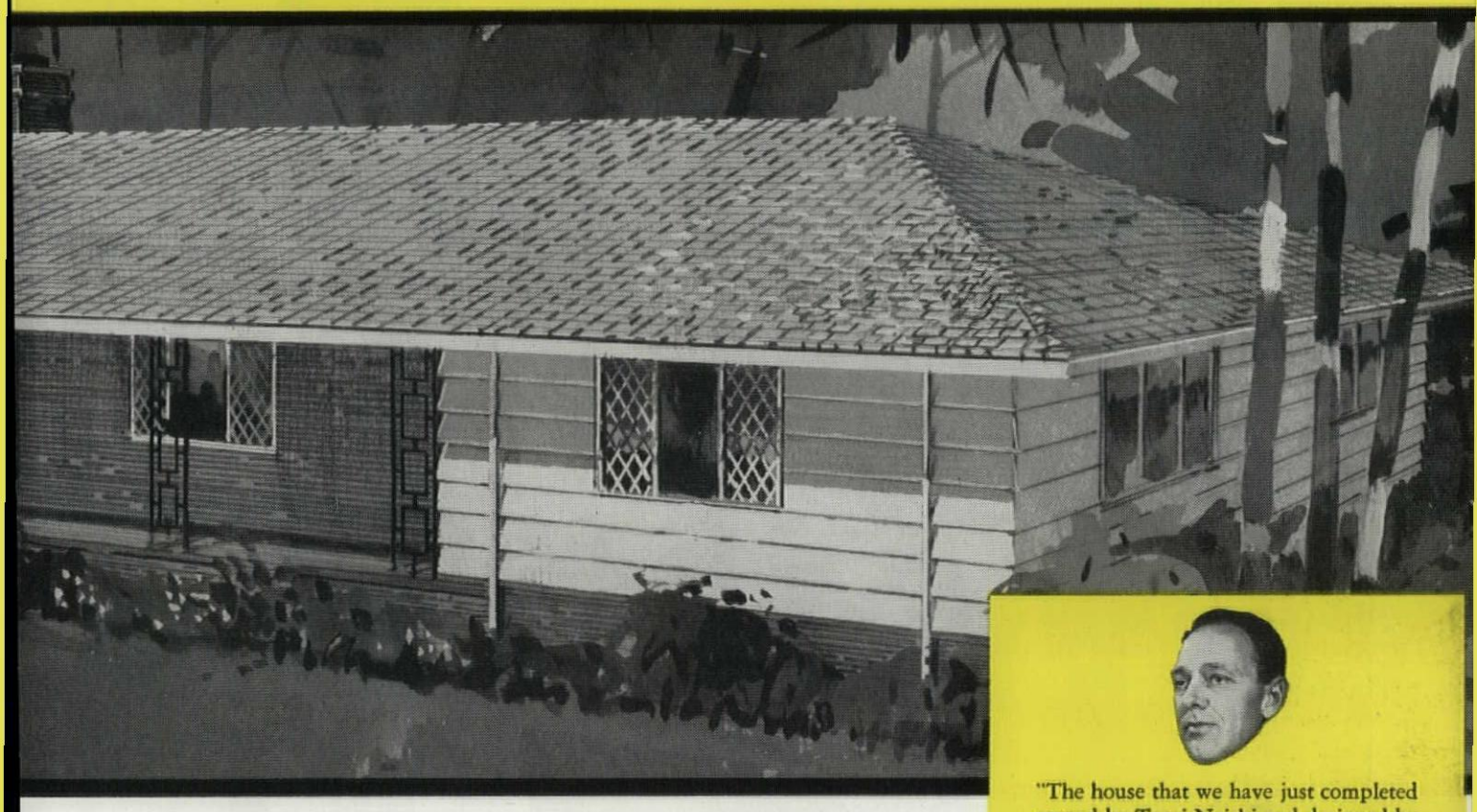
EASY HANDLING! Harborite Beveled Siding is light weight. One man can apply it quickly, accurately. Easy to fit around all openings. It's packed in sturdy, easy-to-handle cartons. 14 pieces, 12″ x 96″ to the carton . . . net coverage 105 square feet.

Available at your lumber dealer

Sales offices and warehouse stock in **ABERDEEN • ATLANTA • CHICAGO • CINCINNATI • DALLAS • HOUSTON • INDIANAPOLIS • JACKSONVI**

BEVELED SIDING!...

super-resistant to wear, weather and water!



"The house that we have just completed owned by Torai Neishi and designed by Guy L. Rosebrook, Architect, specified the use of Harborite Beveled Siding.

Our labor, painting and material cost was reduced by at least thirty percent.

In our opinion, no siding has the quality appearance after painting that this material has."

Russell C. Frerichs

FRERICHS & TOMLINSON
Oakland, California

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the building product of 1001 uses!

Harborite is also available in standard 4′ x 8′ panels, and over-size panels on special order. Overlay on one or both sides. Two grades: *Special* HARBORITE (C grade core) and HARBORITE *Super-Grade* (Solid wood core).

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Soffits . . . Gable Ends
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Cabinets . . . Built-ins
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Flat Siding . . . Concrete Forms
Board/Bat Siding. . . Others

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☐ HARBORITE Beveled Siding
☐ HARBORITE ☐ Sample of Beveled Siding

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Address_____
City_____ Zone_____ State_____

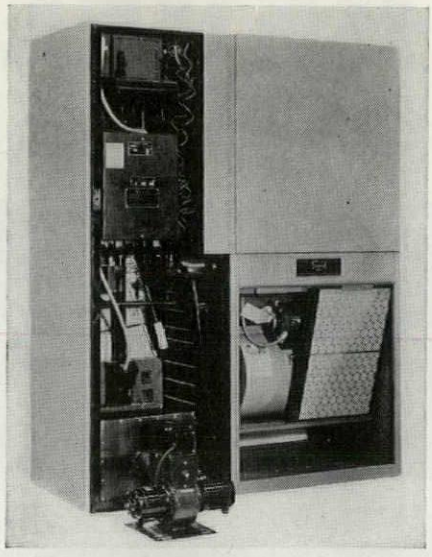
LOS ANGELES • SAN FRANCISCO • SEATTLE • TAMPA • other major cities *(See yellow section of phone book under "Harborite" or "Harbor Plywood*

(Continued from page 193)

air and temperature control

Repco Thrift-Master Baseboards: new baseboard radiation panels for hot-water heating systems feature improved design consisting of two 8-ft-long plate sections which house heating element; front plates —in recessed or surface-mounted installation—may be removed for cleaning. End-cap and corner sections provide finished appearance for units available in four baked-enamel colors. General Republic Heating Products Co., 7420 State Rd., Philadelphia 36, Pa.

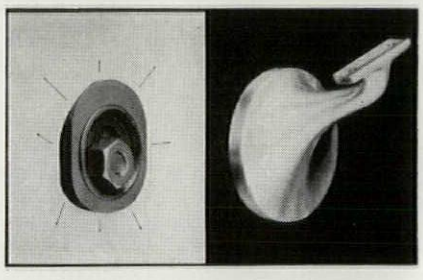
Sun-Valley Air Conditioner: new oil-fired absorption-type air conditioner (*right*) for homes provides both heating and cooling from single unit. Special low-pressure air-atomizing burner—designed to meet both low requirements of cooling cycle and higher requirements of heating cycle—is



adjusted by switch. With capacity of 96,000 Btu/hr, unit is said to utilize ½ gal of oil per hr to produce three tons of refrigeration. Models are equipped with factory-installed controls and require 10.4 sq ft of floor space. Servel, Inc., Evansville 20, Ind.

construction

Ariston Hand-Rail Brackets: newly designed hand rail brackets are adjustable in any direction on wall surface. Clean contours are attained by concealing anchor-



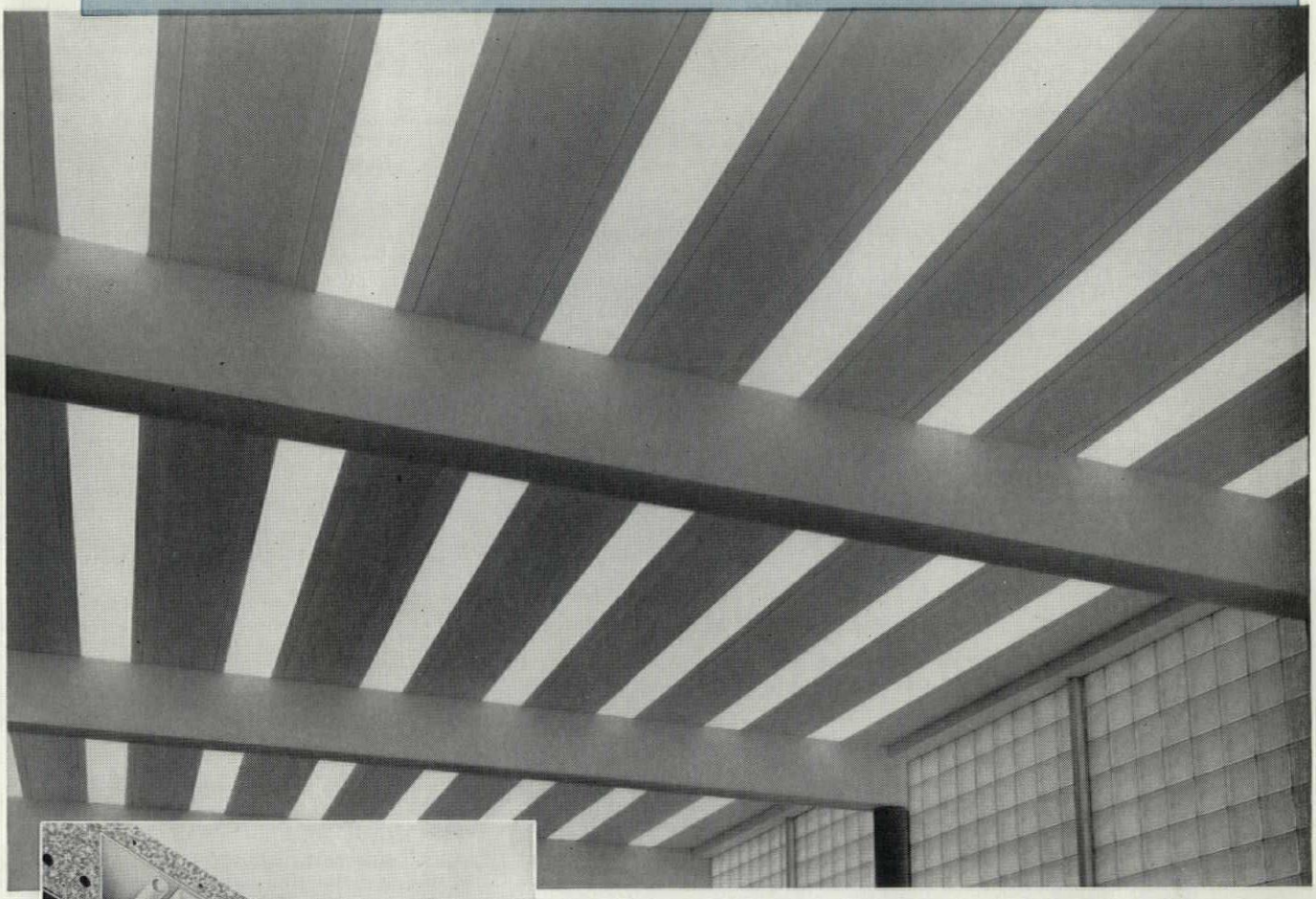
age. Shell-molded bracket (*above right*)—held by stainless-steel socket-set screw—fits over mounting plate and adjustment disc (*above left*). Adjustable feature permits use of preset anchor bolts; special locking device cinches bracket flange to wall, even if anchor bolt is loose. Finished in aluminum or bronze, brackets may be installed on any wall material. Michel & Pfeffer Iron Works, Inc., 212 Shaw Rd., South San Francisco, Calif.

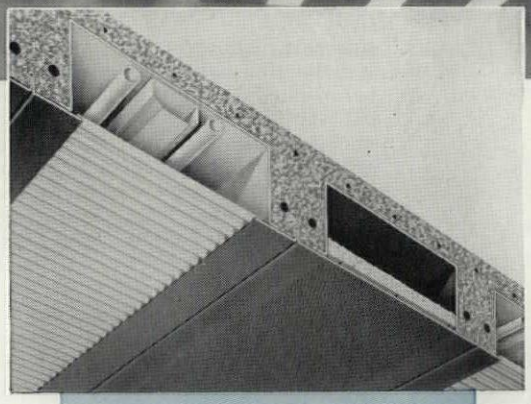
doors and windows

Push/Pull Latch: for patio, porch, and sundeck doors in traditional or contemporary-styled homes, attractive low-cost latch is designed to operate by normal pressure on interior side and easy pull from exterior. Installation on doors from ¾" to 1⅜" thick, requires boring of single hole; strike is mounted flush on jamb without mortising; simple locking mechanism secures latch from inside. Brass-, bronze-, or satin-chrome-finished models are available. Kwikset Locks, Inc., Anaheim, Calif.

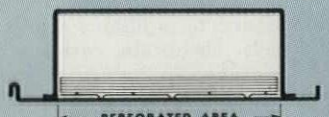
(Continued on page 198)

ACOUSTICAL and TROFFER FORMS

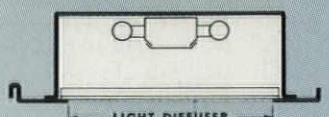




MAHON
ACOUSTICAL and TROFFER FORMS



SECTION M1A (Acoustical)



SECTION M1T (Troffer)

Above is the Ceiling of the Auditorium in the Eugenia Mettetal School, Detroit, Michigan. It is one of 50 rooms with Mahon Acoustical-Troffer Ceilings. Shreve, Walker & Associates, Inc. Architects. Alfred A. Smith, Inc., Gen. Contractors.

. . . for Acoustical Ceilings with Recessed Lighting!

Mahon Acoustical and Troffer Forms provide an effective acoustical ceiling and recessed lighting as well as serving as the permanent forms for concrete joist and slab construction of floors and roofs. These are long span units which are integrated with and supported by conventional concrete beams at each end. Only a minimum of temporary shoring is required at mid-span during pouring and curing of concrete. This is permanent, fireproof construction which has a broad application in modern buildings . . . it is used extensively for auditoriums, school classrooms, and in other rooms where an acoustical ceiling with recessed lighting is desirable. Mahon Troffer Sections are also available for use with Mahon M-Deck Sections to provide a combined roof and acoustical ceiling with recessed lighting. In this arrangement the long span M-Deck serves as the structural unit, the interior finish material and the acoustical treatment—all in one package. Purlins are eliminated . . . M-Deck Sections span from wall-to-wall or from truss-to-truss. Some of these Mahon Forms and Structural Sections do not appear in the current Sweet's Files. Why not have a Mahon sales engineer call and bring you up to date on Mahon products now available for Floor, Roof and Ceiling Construction?

THE R. C. MAHON COMPANY • Detroit 34, Michigan

Sales-Engineering Office in Detroit, New York and Chicago • Representatives in Principal Cities

Manufacturers of Acoustical and Troffer Ceiling Forms; Steel Roof Deck and Long Span Acoustica M-Decks; Electrified M-Floors; Insulated Metal Curtain Wall; Rolling Steel Doors, Grilles, and Underwriters' Labeled Automatic Rolling Steel Fire Doors and Fire Shutters; and Underwriters' Rated Fire Walls.

MAHON

p/a products

(Continued from page 196)

Thermo Doors: fully insulated sliding glass doors designed exclusively for dual glazing are now available for use in areas where temperature falls below 32 F. Insulation strips applied both to exterior and interior surfaces of alumilited all-aluminum frame are said to eliminate moisture condensation by preventing heat flow through extrusions. Other features are: heavy, double weatherstripping; stainless-steel ball bearings; wide, 5¼" sloping threshold with stainless-steel track. Doors, sized to accommodate standard insulating glass sheets, are 6'-6", 8'-6¼", or 10'-6¾" high and 6'-10" wide. Ador Sales, Inc., 2345 W. Commonwealth Ave., Fullerton, Calif.

Solargray & Pennvernon: two gray-tinted glass products provide "new look" in environment-controlling glasses. Neutral gray polished plate glass, ¼" thick, is said to transmit about 45% of total solar radiant energy; transmission of visible light is rated at about 40%. New plate glass, available in sizes up to 75" x 128", is recommended for use in any common building type. Neutral gray sheet glass is claimed to transmit only 53% of visible light. Sheet glass is supplied in 3/16" or 7/32" thickness and sizes up to 70" x 126". Pittsburgh Plate Glass Co., 632 Fort Duquesne Blvd., Pittsburgh 22, Pa.

Reversible Window: new series of monumental aluminum windows features 360-degree reversible models. Neoprene weatherstripping, applied to perimeter of vent in two continuous strips, is vulcanized at corners. All frame members, 5/32" thick, are precision-mitered, reinforced, mechanically jointed, and welded. S. H. Pomeroy Co., Inc., 25 Bruckner Blvd., New York, N. Y.

Triple-Matic Window: triple-track tubular-aluminum frame storm window claims several new design features: trigger locks for raising, lowering, and locking panels; retainer locks to prevent panel rattle, reinforced corner construction. Frame corners are solid die castings; keyed sill section insures proper drainage. Inserts can be tilted for cleaning while bottom storm panel can be adjusted vertically for varying venting requirements. Windows are pre-assembled. Keystone Alloys Co., Derry, Pa.

electrical equipment, lighting

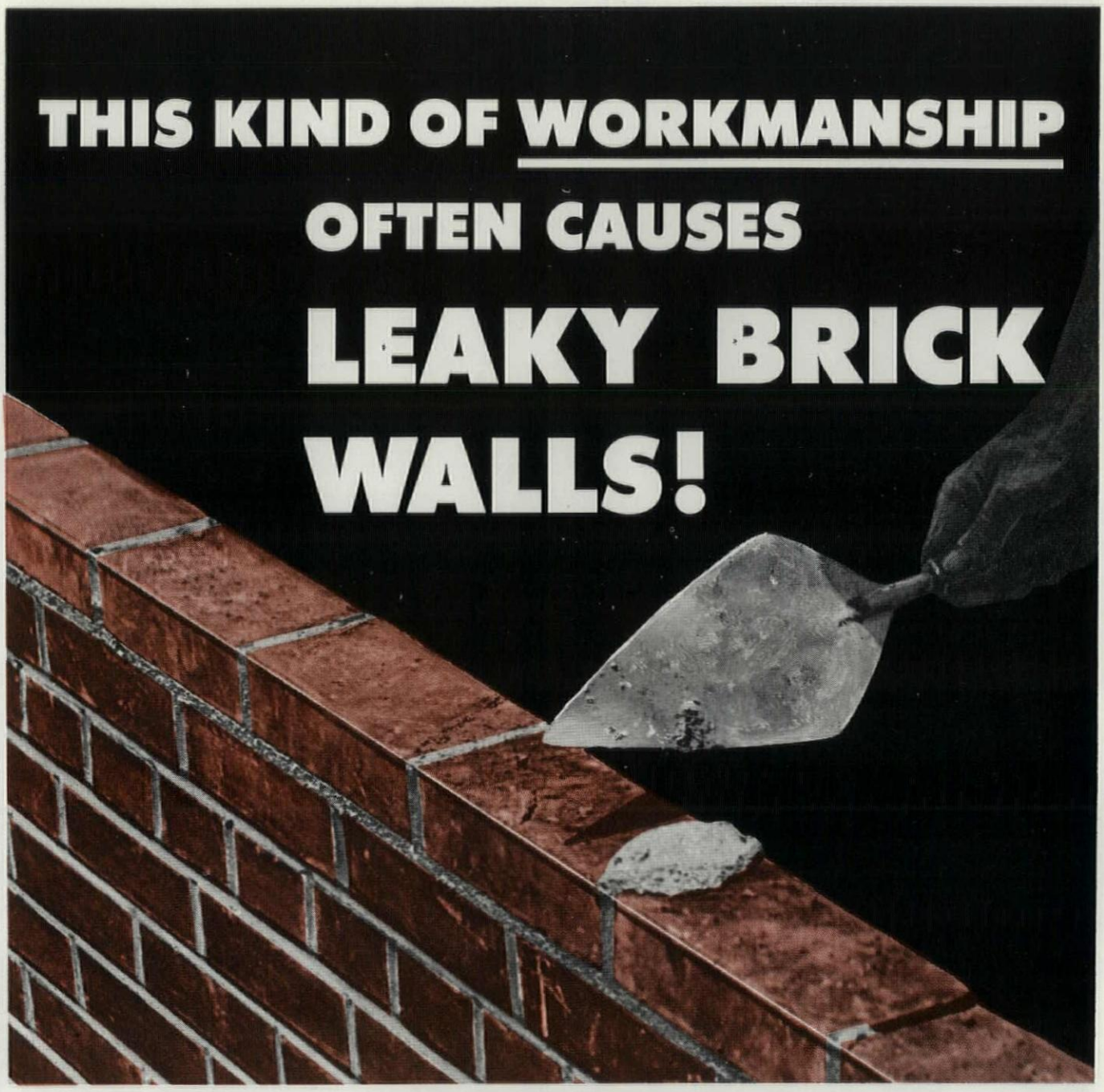
Celio-35 Fluorescent Fixture: new design for shallow surface-mounted fluorescent lighting fixture eliminates dark areas necessitated by conventional mounting of ballasts in similar fixtures. Ballasts are mounted at ends instead of mid-section to provide solid panel of light; parabolic reflectors direct rays downward for even light distribution over entire diffusing area. To install unit, reflector section is snapped off and on without fastenings. Plastic egg-crate louver in metal frame swings down for relamping. Special hinge permits removal of louver for cleaning. Fixtures using two or four light units are 2¾" deep. Gibson Mfg. Co., Atlanta, Ga.

Flex-Seal Type XL: unusual flexibility and small-bend radii are said to characterize new liquid-tight electrical conduit designed to withstand deterioration by coolants, chemicals, corrosive fumes, fats, or moisture in industrial plants. Galvanized-steel conduit with copper bonding strip is sheathed in extruded vinyl plastic. Product, adaptable to pumps, compressors, printing presses, and other common machinery is manufactured in trade sizes ranging from ⅜" to 2" diameter. Columbia Cable & Electric Corp., Brooklyn, N. Y.

Mark-Time Turn-Off Switch: increase in installations of fans, air conditioners, or special lighting in new homes has stimulated demand for inexpensive remote-control units with pre-set time cycles and automatic cut-off. To fill these requirements, new time switch, installed in standard wall box, permits manual setting of

(Continued on page 200)

THIS KIND OF WORKMANSHIP OFTEN CAUSES LEAKY BRICK WALLS!



PARTIALLY filled head joints are one of the common causes of leaky brick walls.

Instead of throwing enough mortar on the brick to fill the joint completely, bricklayers often spot a dab of mortar only on one or both corners of the brick—and then slush the head joint after the brick is laid. This slushing is not enough to fill the joint solid. Result—water may work its way through voids in the head joint, to the inside of the wall.

Brixment's exceptional workability makes it easy for the bricklayer to use enough mortar to completely fill the joints without slushing, and still lay the brick easily and accurately to the line.

Brixment mortar has great plasticity, high water-retaining capacity and bonding quality, great resistance to freezing and thawing, and freedom from efflorescence. Because of this *combination* of advantages, Brixment is the leading masonry cement on the market.

BRIXMENT

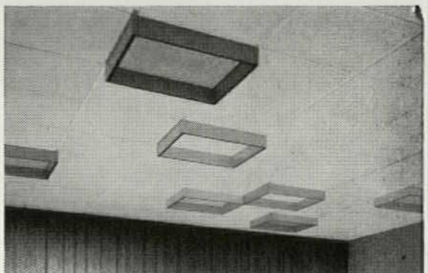
LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

p/a products

(Continued from page 198)

dial up to 12-hr period; switch turns off automatically when pointer returns to zero. Dial can be spaced in minutes instead of hours to keep garage or porch lights on just long enough for driver to enter house at night. Six turn-off and six turn-on models are available with optional "hold" feature to allow use as toggle switch. M. H. Rhodes, Inc., 30 Bartholomew Ave., Hartford 6, Conn.

Sylva-Lume Lighting: modular, interchangeable, plastic-panel lighting system encourages creative approach to ceiling



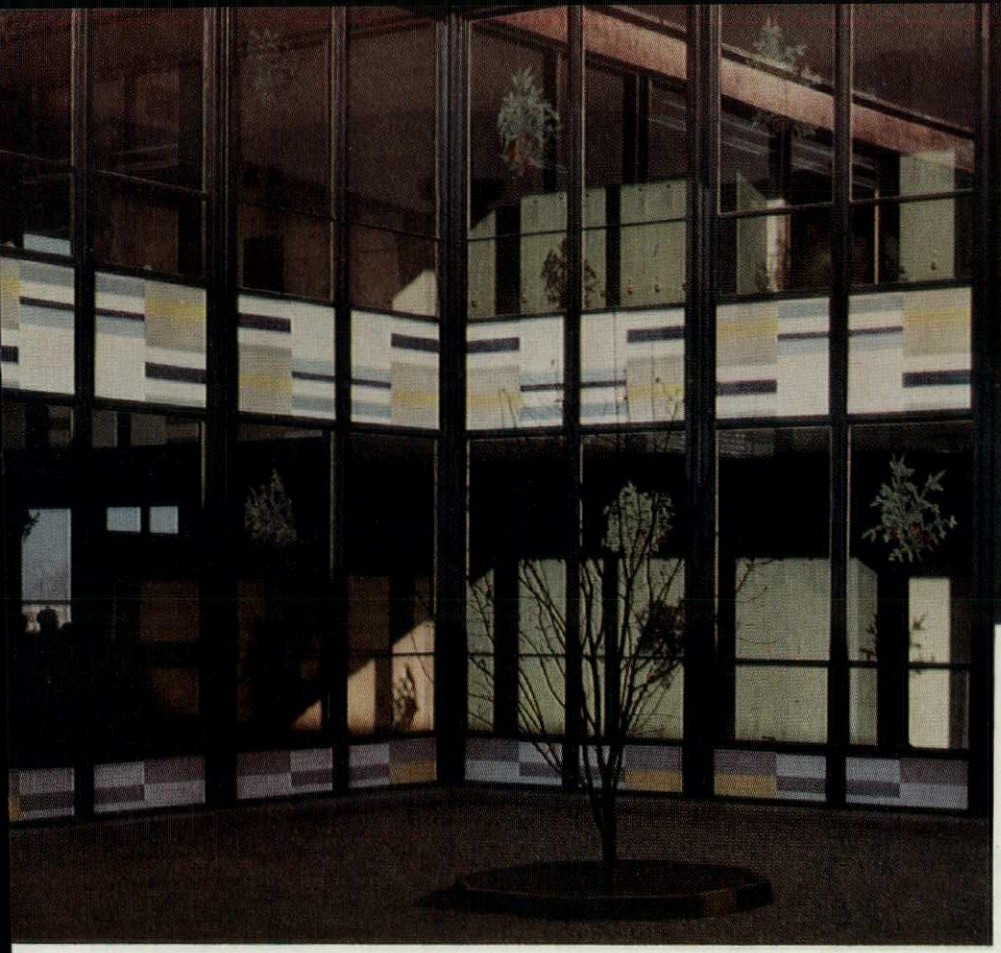
design (*above*) for offices, schools, or showrooms. Six basic components are: extruded aluminum suspension-grid system for panel support; 3-sq-ft contoured vinyl-plastic diffusers; acoustical wedges or baffles; flat-steel perimeter units; bare-lamp fixtures for wall-to-wall lighting; lamps. Decorative elements are available in three patterns and several pastel colors to permit numerous custom combinations. Sylvania Electric Products Inc., 1740 Broadway, New York 19, N. Y.

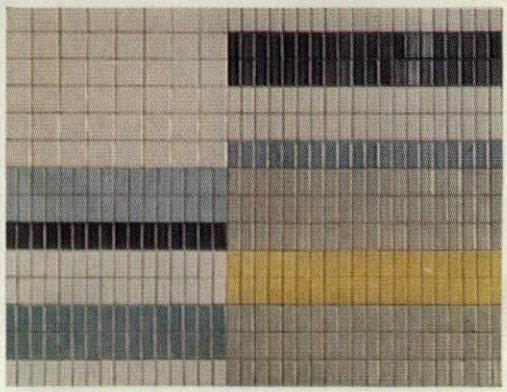
insulation

Zonolite Bermuda Roof Tile: precast insulating-concrete roof tiles are designed to provide terraced effect of Bermuda Roof style. Lightweight tiles with key connection are applied on top of built-up roofing to give added roofing protection. Tiles measuring 19½" x 12" and 2½" at thickest point may be painted as desired. Zonolite Co., 135 S. LaSalle St., Chicago 3, Ill.

specialized equipment

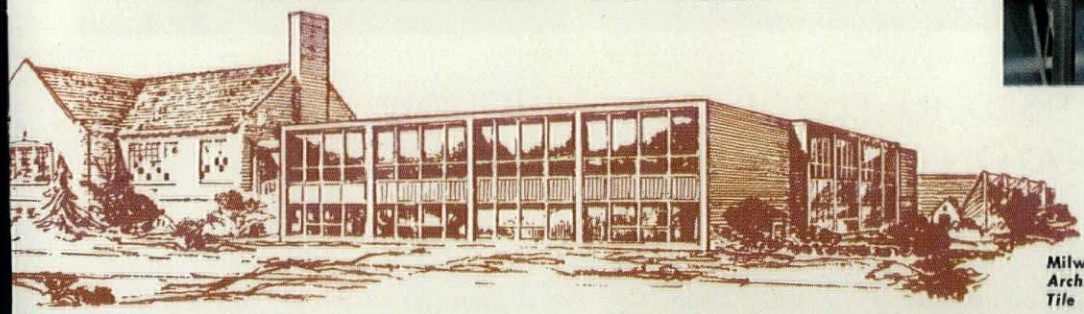
Riding Mower: designed to facilitate garden chores, midget motor-car mower with adjustable blade and two powerful safety rotors provides uniform 26" wide cut. Clearance pedal lifts blade pan high enough to ride over rocks and other lawn hazards while brake pedal control will disengage blades even when engine is running. Automotive-type differential delivers equal power to both rear wheels; single lever controls forward and reverse speeds. Provided with adjustable seat, wide wedge-shaped hand bar, rear draw bar, grass discharge chute, and foot rests; four-wheel unit is said to be capable of hauling 1000 lb loads up-grade. Porter-Cable Machine Co., 1714 N. Salina St., Syracuse 8, N. Y.





Above: *Close up of inner court wall panel*
Below: *Outer court panels of unglazed tile*

Exterior panels of Romany·Spartan ceramic tile bring new low cost beauty to Wisconsin school



Milwaukee Country Day School, Milwaukee, Wis.
Architects: Scott, Kloppenburg & Scott, Milwaukee
Tile Contractor: Durner Company, Milwaukee

Here's an outstanding exterior application of ceramic tile. In the recently completed addition to Milwaukee's Country Day High School, the architects achieved this eye-catching design in inner court walls through the skillful use of Romany•Spartan buff body glazed tile in two sizes; seven colors. No less attractive, but entirely different, are the outer court walls, made of unglazed 2″ x 2″ Romany•Spartan Orsans.

But beauty is only one of the many desirable qualities of Romany•Spartan tile. It's fireproof, impervious to moisture and changes of temperature. It will never fade or discolor and its self-cleaning characteristic will keep it bright and fresh looking through the years.

Low initial cost and ease of maintenance make Romany•Spartan ideal for corridors, stairs, cafeterias, washrooms, locker and shower rooms, swimming pools and auditoriums.

Select from Romany•Spartan's complete range of colors, sizes, finishes and textures. If you'd like help in working out your design problems, get in touch with your nearby Romany•Spartan representative or write: United States Ceramic Tile Company, Dept. P-12, Canton 2, Ohio.

ROMANY SPARTAN

Member:
Tile Council of America
The Producers' Council, Inc.,

UNITED STATES CERAMIC TILE COMPANY • THE SPARTA CERAMIC COMPANY

Architect: Perry, Shaw, Hepburn & Dean, Boston; *structural engineer:* Maurice A. Reidy, Boston; *builder:* McCloskey & Co., Philadelphia

STEEL JOISTS USED IN FLOOR CONSTRUCTION OF NEW SHERATON HOTEL IN PHILADELPHIA

Centrally located in Philadelphia's Penn Center is the new 22-story Sheraton Hotel, first hotel to be built in Philadelphia in over a quarter of a century.

The new Sheraton will provide 1,000 guest rooms, with one floor, the twenty-first, entirely given over to balconied luxury suites. Parking for guests' automobiles will be handled in a 1,000-car garage just across Pennsylvania Boulevard, and connected to the hotel by an underground concourse.

Bethlehem Open-Web Steel Joists were used in the floor construction of the new Sheraton Hotel, from the sixth floor to the twenty-first floor, inclusive.

The advantages of using Bethlehem Joists were many. They were delivered to the job site tagged and ready for immediate placing, with no delays to the construction schedule. They required only field welding to secure them permanently in place, forming a rigid, permanent floor structure, which will help to hold future maintenance to a minimum. And used in combination with floor slab and poured ceiling, Bethlehem Open-Web Steel Joists provide a fire-resistant building construction.

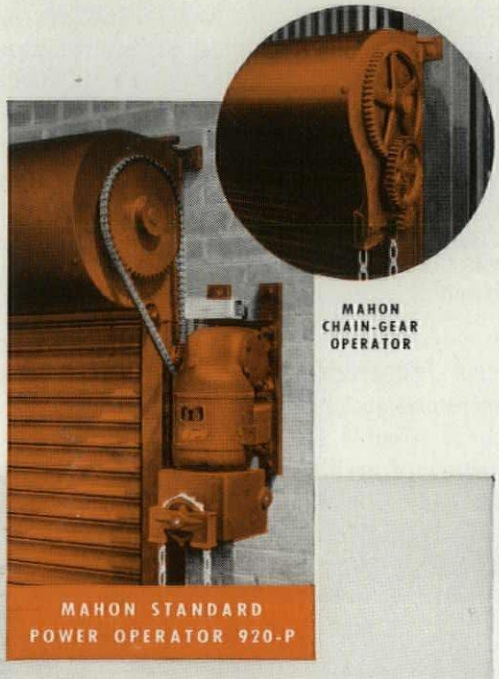
BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation. *Export Distributor:* Bethlehem Steel Export Corporation

BETHLEHEM OPEN-WEB STEEL JOISTS

BETHLEHEM STEEL

Rolling Steel Doors

Manually, Mechanically or Electrically Operated



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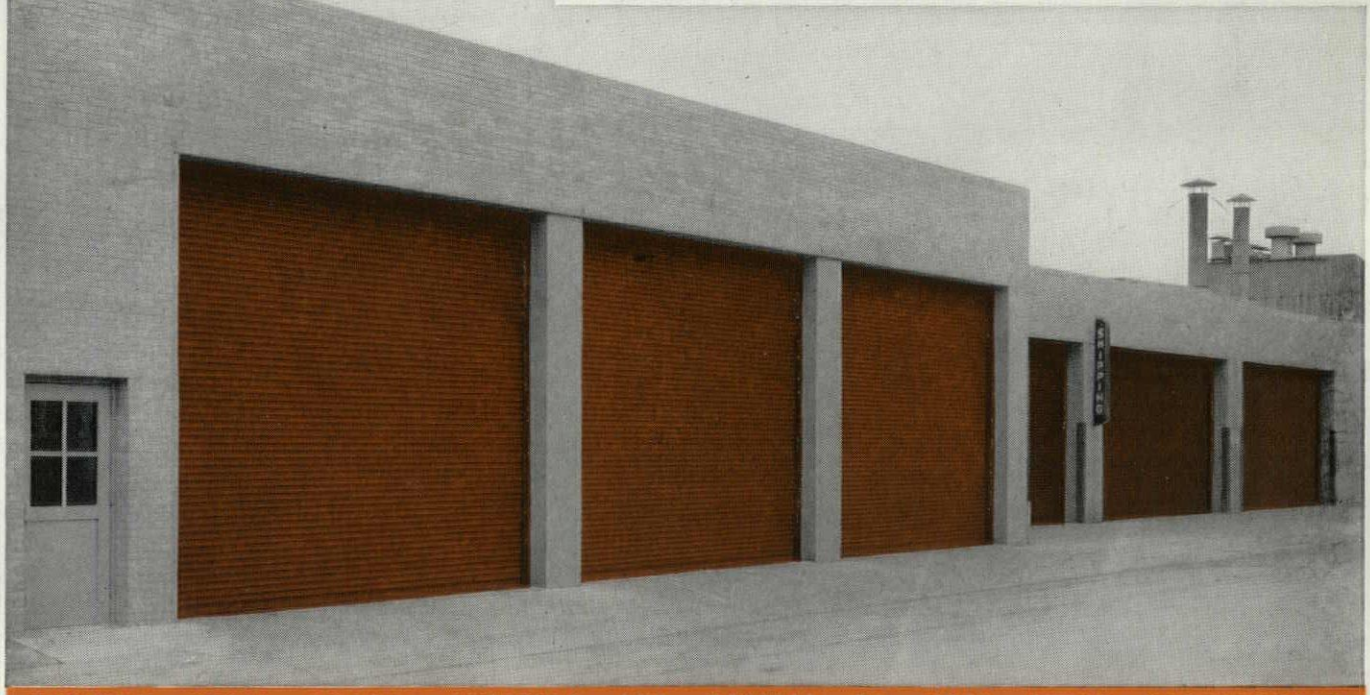

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M A H O N

As a special insert for this issue (and in three similar inserts to follow) the Editors of P/A present portions of the recorded transcript of the Design Awards Seminars held in January this year. The Seminars were in conjunction with the announcement of results of the fourth annual PROGRESSIVE ARCHITECTURE Design Awards Program. On the campus of Tulane University in New Orleans, with the co-operation of the School of Architecture there, the case-study Seminars extended through an entire day, morning and afternoon. A large participating audience kept the discussion going until it seemed that the patience of the architects whose work was being analyzed must surely be exhausted—proving beyond a doubt, in the minds of the Editors, that there is a hungry need for analytical criticism of outstanding new design.

Another need was felt, however. These were individual, isolated buildings that were being explored. What of their relation to the total community? What of their contribution to urban design in the broader sense? To consider this aspect of 1957 architectural design, Victor Gruen—whose Fort Worth project had won the only honor in the Planning category of the Design Awards—was asked to speak to the assembled Seminar group at luncheon.

introverted architecture

Victor Gruen

I was asked to express some of my thoughts on this year's PROGRESSIVE ARCHITECTURE annual Design Awards Program. On the plane from Chicago to New Orleans, I met some colleagues (happy Citation winners) also on the pilgrimage to New Orleans, and they possessed a copy of the January issue of PROGRESSIVE ARCHITECTURE, which I had not seen. This was an extremely lucky coincidence in two ways. It not only made it possible for me to get a preview of this yearly preview of architectural design, but also I found in the same issue, an article entitled, "How to Give a Speech," by L. A. Keating.

Without studying this article and the Awards Program, I really would not know what to say to you—and, most important, how to say it. But relying on Mr. Keating's assurance that "anyone can give a good speech who wants to," I am standing before you with courage. Following Mr. Keating's recommendations even for speakers of long experience, I will now perspire, fidget, and shake before getting under way. Mr. Keating also gives this bit of advice: "While the chairman is introducing you and you wish you were home in bed, say to yourself, 'Well, they are asking for this. Let the audience be nervous.'" Well, that is exactly what I have been thinking.

And now, ladies and gentlemen, I will pause, as Mr. Keating recommends. He assures me that the pause is as effective as the words I will speak. So let us pause.

After the pause, I am supposed to pick up speed and confidence and my nervousness is supposed to be forgotten.

And now I have good news for you. You will spend an extremely restful half hour. Mr. Keating says, "Never read your speech. That puts people to sleep." I am going to read mine.

And now to the Awards Program. It has been discussed and dissected and criticized and analyzed in many ways. We have organized the projects into the ones which show austerity and into the ones which show sensuous shapes and emotion-producing forms. I want to attempt a different type of classification. After making a highly effective pause, I will attempt to develop some statistics.

Of the twenty-five Design Awards and Citations, six deal with Education, two with Health, four with Commerce, one with Industry, four with Public Use, one with Religion, five with Residential, one with Recreation, and one with Planning. Of all these twenty-five projects, three, namely: Junior High School No. 22, for the City of New York; the Columbia & Pratt apartment building for Chicago; and the Library for New Orleans, are located within a built-up urban environment; and even in these three cases, special conditions exist. The two-and-one-half-acre site on which the New York school is built, permits window openings on all sides, and the Chicago apartment building makes utmost use of its location, with a view onto a God-made environment, Lake Michigan.

introverted architecture

All other projects, with the exception of the one in the Planning category, deal with buildings which either stand all by themselves in a natural environment, like the single residences, the Opera House for Colorado Springs, and the Airport Terminal building for Minneapolis; or they form by themselves a new environment consisting of a grouping of buildings separated from all other buildings, like most of the schools, the Nursery Building for the State of Michigan, the Children's Reception Center for Philadelphia, the Civic Center for the City of Los Altos, and the Methodist Church near Biloxi, Mississippi, which is part of a 40-acre redevelopment project; or, lastly, they carefully separate themselves by means of wall-enclosed fore-courts or terraces from the rest of mankind, like the American Concrete Institute Building, the Public Library for New Orleans, the Mortuary for New Orleans.

After a short but effective pause, I would like to see whether we can draw any conclusions from these statistics. If, of twenty-five prize-winning projects only three are of the sociable type, willing to mix with existing elements of urbanism (and if even they mix reluctantly, two by lifting themselves on stilts over the whole hubbub and the other one by looking away from its neighbors), shall we conclude that we are faced with a new type of architecture, which we might call the "running-away" or "escapist introvert" movement?

Our buildings flee the companionship of structures other than their own kind.

And why, I ask you, shouldn't they? Through fifty years of inactively sitting by as the mechanical monsters and gadgets of the technological civilization swept the urban areas, we have permitted anarchy and ugliness to take over to such a degree that good architecture has no chance to express itself. It has little if any chance to be effective within our cities, and thus we architects have followed the merchants and the commuters. We have become suburbanites and exurbanites.

It would, of course, be wrong to conclude from the results of this program that architects are not engaged in designing and planning buildings within the built-up areas of our cities. But I believe it is correct to conclude that their best and most fruitful efforts are achieved within the reference frame of either nature itself or when they are given the possibility to create not single buildings but groupings or clusters of buildings, thus engaging in environmental planning.

We have turned our attention away from the stand-

ard, existing urban environment in disgust and frustration. As people of sensitivity and taste, we can be expected to close our eyes when we see vulgarity and ugliness around us, and to hold our noses and cover our ears when passing through the urban inferno.

But, and this is the question which bothers me, do we have the *right* to do so? Do we, as representatives of a profession concerned with the shaping of the man-made human environment, have a right to enjoy the luxury of discussing from Olympian heights the merits or demerits of styling certain "aristocratic" buildings —which stay away from the plebs—in a period of architectural history in which the over-all standards of architecture and planning have reached the lowest possible level?

In this city of New Orleans, in which we have met to witness the ceremony of giving Awards to outstanding future buildings, there are two types of sight-seeing activities in which we engage. We see the sights of the old French Quarter, demonstrating that there was once such a thing as a truly urban environment, and we go out—and here we have to travel pretty far—to see the scattered examples of contemporary architecture. On our trips between the various points of interest we don't sight-see. We close our eyes. We engage in philosophical conversation as we pass through the avenues of horror, stretching for endless miles through the suburban areas, flanked by the greatest collection of vulgarity—billboards, motels, gas stations, shanties, car lots, miscellaneous industrial equipment, hot dog stands, wayside stores—ever collected by mankind. (And this is not to say that our host city is any worse than the typical American City.) We discuss the fine points of the detailing, of plan and elevations of an individual and highly individualistic house—as we pass through the endless desert of suburbia, with its rows and rows of stupid, identical little houses, standing there lined up like soldiers on parade. We converse smartly about the merits of a sensuous approach to architecture which we feel comes to the foreground, as we pass through the hellish conglomerations of garbage and rubbish, into which the terror regime of industrialization and mechanization has converted our city cores and side stretches of urban and suburban areas and of our landscape.

I am not proposing that we should give up being people of sensitivity, imagination, and taste. I am, however, concerned with the possibility that a future generation will look at the products of our genius as rare collector's items and regard us as well meaning screwballs.

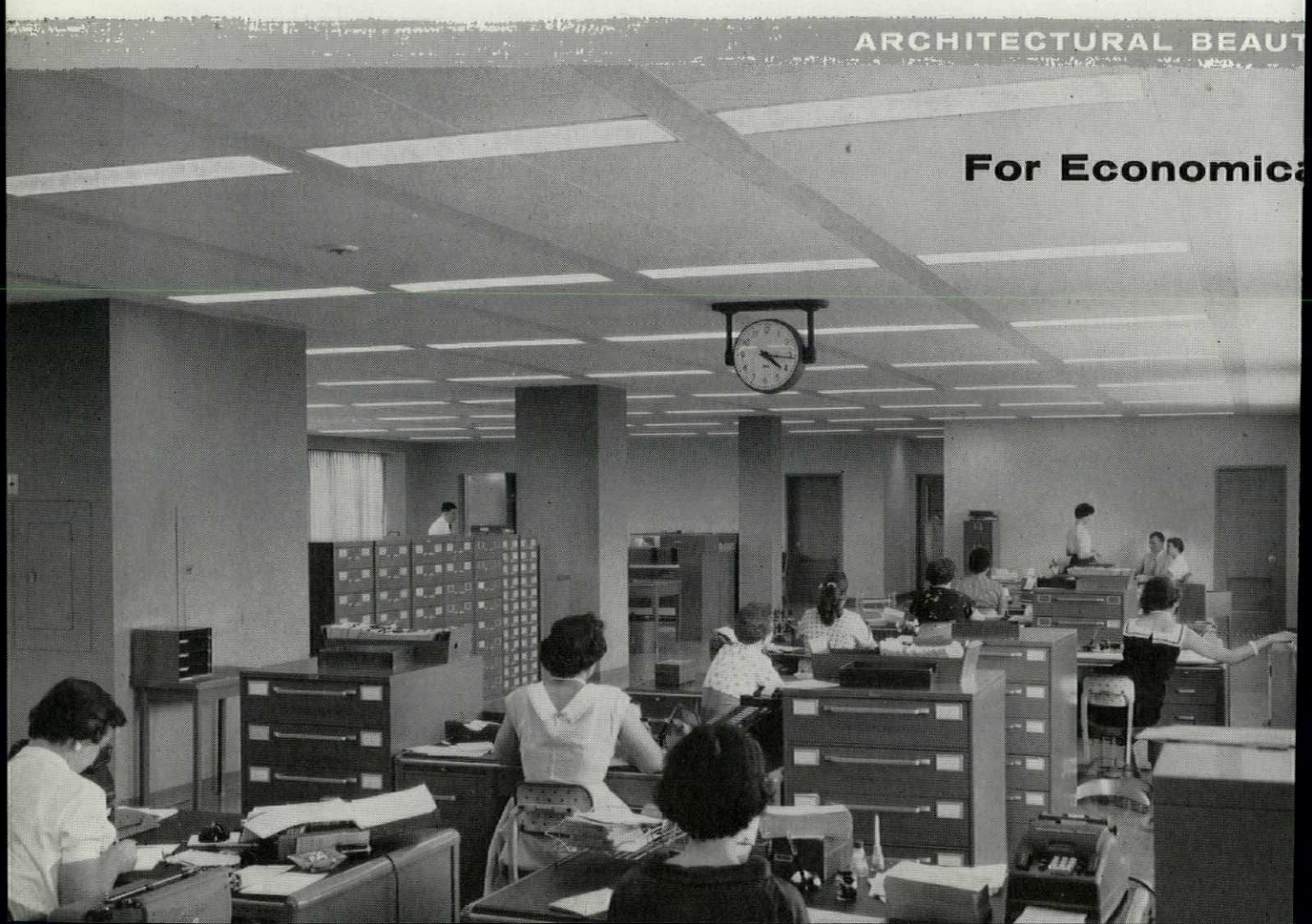
I believe that our abilities, our experience, our sensitivity, our taste put a heavy burden of responsibility on us from which we should not run away. I believe

that we must live up to the true meaning of our profession, to be shapers of the man-made human environment, where ever it may be located and however distasteful it may be to touch it. Right now we are sitting by, happily engaged in superior individual creations of architecture, as others concern themselves with misshaping our cities—an unholy alliance of real estate speculators, traffic experts, industrial entrepreneurs, merchandising enterprises—with filling the vacuum which we have created by our disconcern with our urban environment. They are succeeding quickly in making our cities unworkable and unlivable places from which they themselves finally escape carrying their sins into further removed sections of suburbia.

Now that the mess reaches, in many cases, the saturation point, many practical men in business and industry often ask, "Why don't you architects do something about it?" And even if they are men who, as little as ten years ago, told us in so many words, to keep our noses out of planning, we should work with them now.

If we want to prevent the breakdown of our entire urban civilization; if we want to prevent the good contemporary buildings which we create from appearing as nothing but monuments of frustrated efforts, standing ineffective and useless in the mire of this broken down civilization, we must take into our hands the leadership in a dynamic move for the over-all reorganization of the urban scene, a reorganization which will bring the forms and shapes of our cities up to date with our technological progress, a reorganization which will take fullest cognizance of all the tools which science and technology have given to mankind—but which will put these tools into their proper place of subservience and which will re-establish man as master over them and his environment.

In practical terms, I propose that architects should concern themselves in ever increasing measure with the problems of urban design, of mass housing, of environmental planning. We should co-operate with city planners, economists, road planners, and traffic engineers. We should take, with strong hands, the reins in urban planning endeavors. It is high time—if we want to prevent our urban areas from being further cut into slices by mishandling of the largest road building program ever devised; if we want to prevent the misuse of the billions which will be spent in the next ten years for rehabilitation projects; if we want to prevent mankind from being forever subjugated by the dictatorship of the mechanical monsters of this technological age



At the conclusion of the day's case-study Seminar discussions, after five Award-winning projects in P/A's 1957 Design Awards Program had been taken apart in many details and—in almost all cases—put back together again to the satisfaction of both the designing architects and the participating audience of architects, Tulane faculty members and students, there were several general summaries. Gordon Bunshaft, partner in the firm of Skidmore, Owings & Merrill, a Design Awards Jury member, and a Discussant at the Seminars, spoke first. Then Harry Weese, Chicago architect, Chairman of the 1957 Jury, picked up Bunshaft's point and carried it further, to draw some general conclusions from the Awards Program, not only from the winning designs, but also from the great bulk of other submissions—the "five-sixths of the iceberg" that remained under the surface for all but the Jury. Finally, Victor Gruen rose again to comment, graciously, on the over-all value of this first attempt to carry the results of the Awards Program further through the case-study Seminar method. Transcriptions of the remarks of those three architects follow.

five-sixths of the iceberg

Gordon Bunshaft: These critical, case-study Seminar sessions have been a great deal of fun, but I think we have sounded pretty rough on some of the projects. Perhaps we have been a little out of perspective in being so severe. I think that we should remember that the Design Awards Jury selected 25 projects as the best of about 800 projects submitted to PROGRESSIVE ARCHITECTURE and that these four we have been discussing were judged to be tops among those 25. I assure you that if you also had all had the opportunity to see the 800 you wouldn't want to

five-sixths of the iceberg

criticize these at all. I have felt rather guilty saying anything about them because they are very good compared to what is being done in the country as a whole, by, I suppose, the best architects, who presumably submitted their best work. When you think of that, these are gems and it may be unfair to isolate them for criticism.

Harry Weese: Not only is it true, as Gordon Bunshaft points out, that this is the work that was premiated by our Jury but you must realize also that a Jury is not by any means infallible. A Jury of this kind has so much to go over that it must operate to a certain extent on impulse, and all one can say is that the results are an approximation of what these particular people felt was significant in the grist of projects,

which covered a very long table in PROGRESSIVE ARCHITECTURE's handsome conference room, about sixteen layers deep.

I think the thing that is significant is not the quality of the work that we have been discussing today but the hundreds of projects which were submitted which you have not seen. We are inclined to see only the outstanding things in this country. We make a point of collecting in our publications and our exhibits the things that we are most proud of. Since the United States is fortunate in having the most advanced technology in the world (and the wherewithal, to go with it) we are more experimental. Our climate also allows us tremendous latitude that other countries and other artists and architects living in those countries do not have. So I want to say, about the work you didn't see —the five-sixths of the iceberg, or more, that had to be rejected for one reason or another—that we have no grounds to be complacent. When I think of a country like Denmark, which has perhaps four or five million people, and the contribution made by this culture, which we often write off as being peasant-inspired or folksy, and when I see there the general level and appreciation of architecture and planning, and the new programs that they have worked out in their social approach to housing, their co-operatives and so on, I have a feeling that we have no grounds to be too satisfied with what

five-sixths of the iceberg

we are doing today in America.

There are certain trends that we noticed in work submitted to this Program. I found that one of the most exciting things about serving on this Jury was to be able to go back to my office and scrap some designs that I was working on. As a matter of fact, I unfolded some slabs! Everybody is doing it and there are now 20 bad examples for every good one, which makes it not something that we should shy away from; but all the more challenging.

We see the continued consolidation of the structural principles that grew out of the regular frame of the Chicago School and the work of Mies van der Rohe. I think that in terms of its expression of our repetitive processes and production methods it is certainly the most significant thing that is happening to us. There are many people who think we ought to be spending more time consolidating the gains and less time on dead-end experiments.

We see a continuation of primitive architecture in terms of the ranch style. My daughter is a much better architectural critic than I am, and her definition of a ranch house, as we see it sprouting up around Chicago

in the typical builder's development, is a very straightforward one. At the age of five years she says, "Look Daddy, first they ran out of brick, then they ran out of stone, then they ran out of wood." I don't think I can improve on that. That, of course, is the enemy: the ranch style, which is turning residential architecture to every purpose that we can possibly conceive of, from ranch funeral parlors to ranch banks. It is the formless arbitrariness of a multiplication of materials covered by roofs running in all directions. Somehow we must organize our cities in such a manner that they are rebuilt, not by the mass builders who have taken over the countryside but by those capable of producing a multiplication of machine-made forms with textural richness, of which Yamasaki's building, with its roof, which we discussed today, was a very good example.

In summary, then, I think we should be judged by our failures rather than our successes if we honestly want to consolidate our gains in architecture in America. We certainly have all of the tools and all of the talent. Most architects perhaps work too close to their boards and pay too little attention to what other architects are doing. There is a big job now of getting architects closer together so that they agree more and more with one another and so that we can perhaps evolve something that might be called, some day, a style, so that our century will be remembered as finally

five-sixths of the iceberg

having made up its mind about what it stood for and where it was going.

Victor Gruen: I believe that this is the first time that a seminar program such as this has been held. I would like to express my opinion that it was a most excellent and successful way of following up a competition program. I am sure that everyone here agrees with me. I believe that the Award winners have been taken down from their laurel-surrounded pedestals but that they have not suffered by it in any way. They have become closer to us; let's say we have become more familiar with them. I believe that we have grown in the process, and I also believe that the architects who so very graciously sat on the platform and had a certain amount of criticism directed at them have grown too. It has been wonderful to see how they accepted the critical discussion. I would like now to ask PROGRESSIVE ARCHITECTURE, in the name of this group, to consider seriously keeping alive this institution of Seminars, in connection with their Design Awards Program, and to build it up even further.

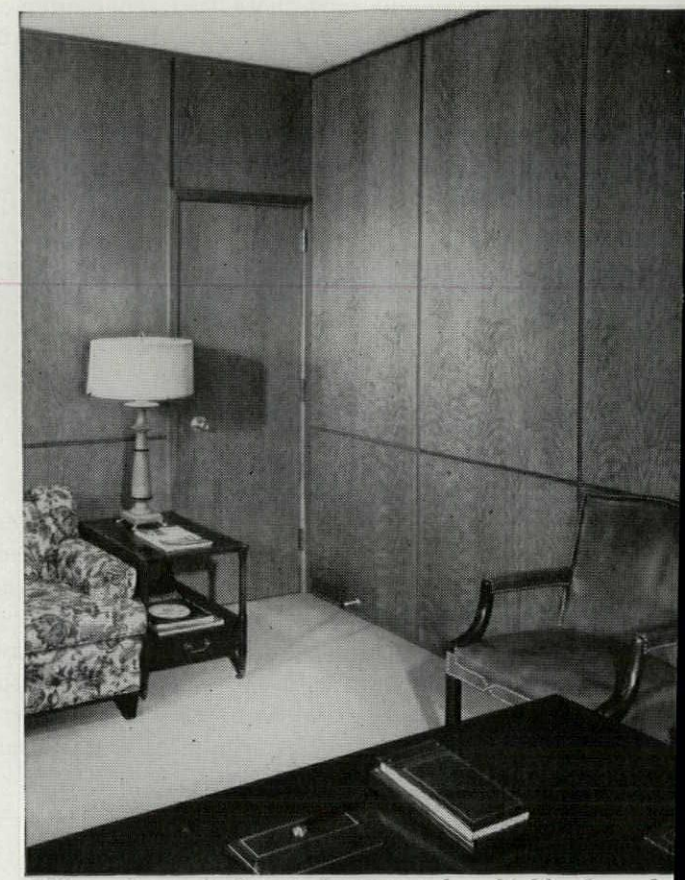
Thomas Creighton: If today has been successful—and I believe that it has been—credit goes to the architects

who have been willing to submit themselves to this critical discussion and analysis. To the people who prepared discussions, to those who spontaneously participated from the floor, and to the Dean, the staff and the students at Tulane who have co-operated to make it possible.

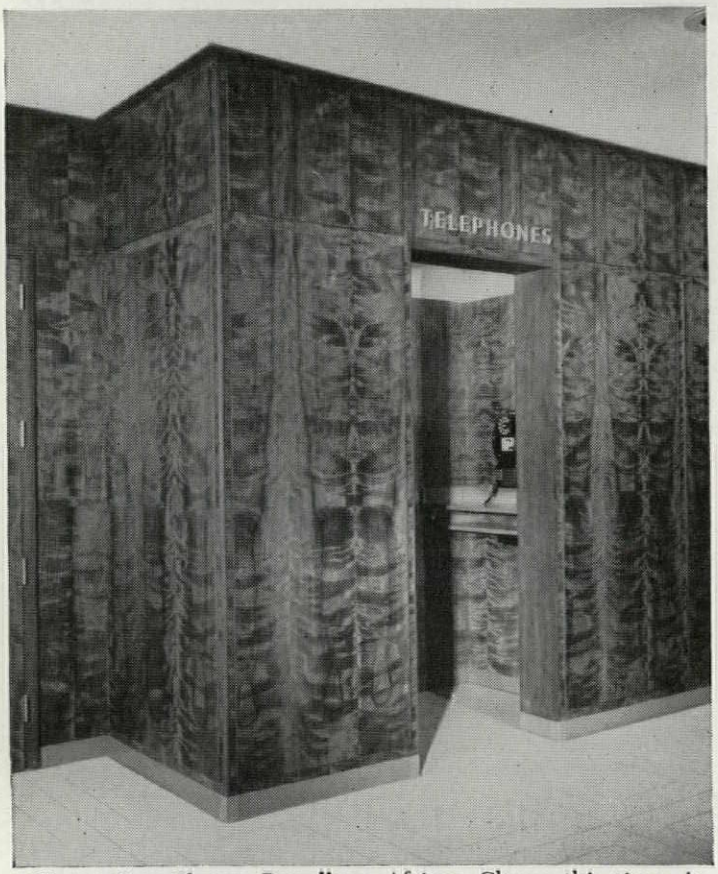
To me it seems that these Seminar discussions have had the value, primarily, of making possible intra-professional critical discussion, of a type impossible through other means. In the first place, questions have come from many individuals in a group—questions of a nature that no *one* critic would be likely, from his limited interests and experiences, to raise. In the second place, answers from the designing architect have been immediate, not relayed by post, published a month after the criticism, and separated from the original comment.

As to the question about continuing this type of Seminar discussion: P/A's Editors have every intention of repeating this sort of discussion if conditions in succeeding years permit it. That is to say, there must be a group of projects whose designers are willing to undergo the sort of searching analysis we have had in New Orleans; and there should be a co-operating School of Architecture able to provide space, participating faculty, and the other hospitalities which made this session possible.

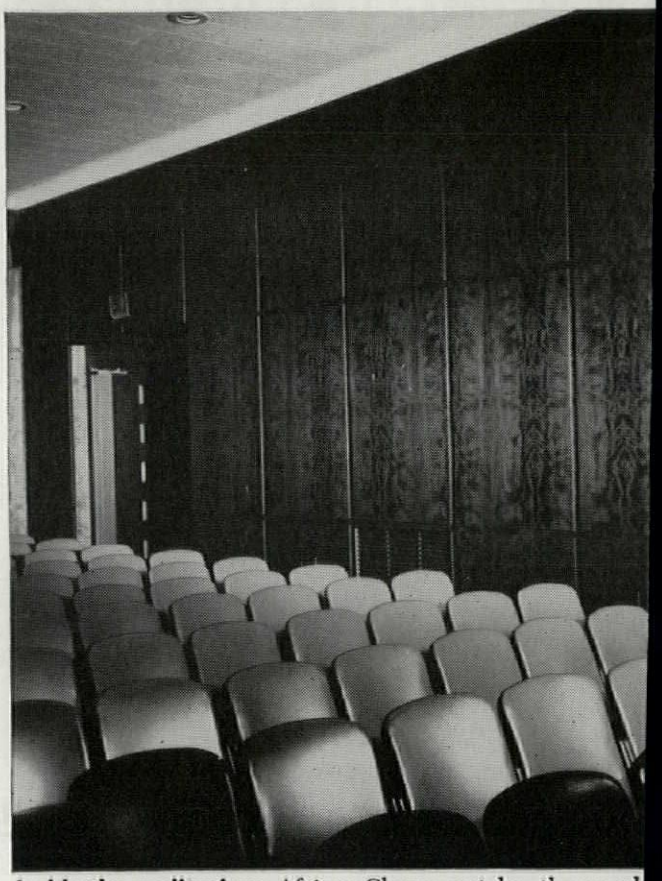
Weldwood Cherry Paneling is a relaxing note in the Office of the Treasurer, Occidental Life Insurance Company.



Office of an Assistant Treasurer has highly figured Weldwood Cherry Paneling. Door matches wall paneling.



Still another Cherry Paneling—African Cherry this time—in the lobby and auditorium entrance.



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books received

Modern Architecture in Brazil. Henrique E. Mindlin. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1956. 256 pp., illus., $12.50

Lichtarchitektur. Walter Kohler & Wassili Luckhardt. Bauwelt Verlag, Mariendorfer Damm 1/3. Berlin West, Germany, 1956. 232 pp., illus., 39 Marks

Tropical Architecture. Maxwell Fry and Jane Drew. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1956. 320 pp., illus., $10

This is Japan 1957. The Asahi Shimbun, Yurakucho, Chiyoda-ku, Tokyo, Japan, 1957. 395 pp., illus., $6.50

rewarding analysis

Doctors' Offices & Clinics. *Paul Hayden Kirk and Eugene D. Sternberg. Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y., 1955. 218 pp., illus., $12*

Why this timely and well presented book should turn out to be so difficult to review, puzzled me, indeed. I can remember, not so long ago, when architects or doctors starting on a planning program for a medical group set-up, had practically no reference to turn to. Available existing examples as outpatient departments of the hospitals and typical clinics may have had the working elements but, on the whole, still in a disorganized assembly which had grown like Topsy and too dismal or institutional to encourage further analysis. However, as Kirk and Sternberg point out, there have been many changes. The horizon has been so extended by modern architects that now it is possible to discuss the planning of this important strand of the total community fabric, the health centers.

Another outstanding quality in the book—in contrast to the typical, dry textbooks on medical planning of prewar vintage—is the eloquence with which the subject is broached. The search for a vision in terms of an architectural experience is there. Perhaps, in showing the accomplishments

(Continued on page 222)

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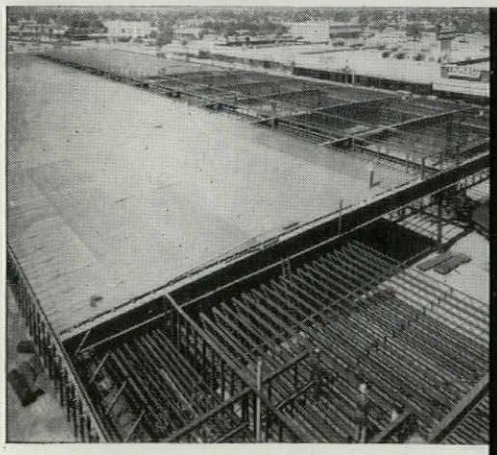

Shopping Center, Panorama City, Los Angeles, Calif. / Architect: Welton Becket & Associates / Contractor: L. C. Dunn, Inc. / Structural Engineer: Brandow & Johnston.

Remington Rand Building, Chicago, Ill. Architect: Harry O. Bartlett / Contractor: J. L. Simmons Co. / Structural Engineer: John W. Emig.

Meadow Brook National Bank Building, West Hempstead, L.I., N.Y. / Architect: W. Thomas Schaardt / Contractor: John J. Dixon Co., Inc. / Structural Engineer: Albert Roselli.

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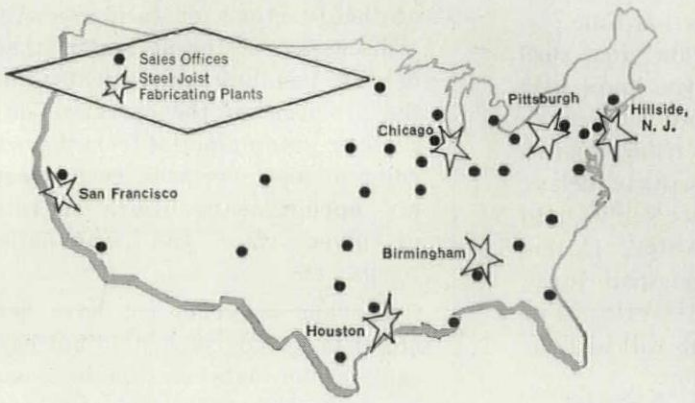

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(Continued from page 218)

to date, it is setting the standards for a medical architecture that not only functions well, but also architecturally will have the beginnings of that plastic poetry which is the evidence of maturity and greatness in a people. It is possible that this very eloquence is responsible for a certain sketchiness and incompleteness within the book. Although acceptable in a monthly professional journal, this is lamentable in a technical reference book which undoubtedly will be the only source for years to come.

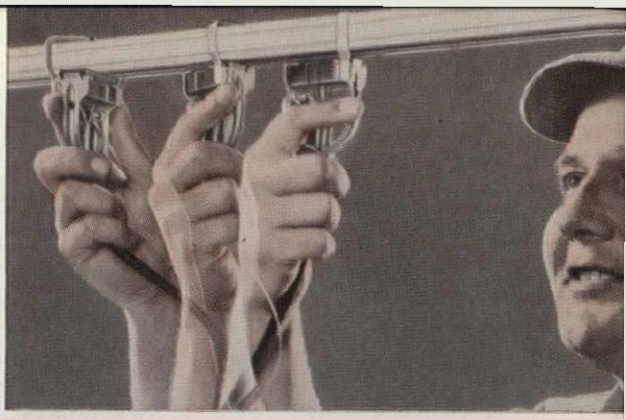
To begin with, there has been considerable controversy in the last few years on the nature and scope of community medical care. The core of the discussion is no longer on the procedures or the nature of the acute hospital, but in the other services needed by the community: diagnostic, therapeutic, restorative, and preventative. The development of an old tool in a new setting is that of group practice. Group practice, whether prepaid or not, is a significant step in the return of the specialties to grass-root levels. What appears to have happened is that the general hospital, like a cell, has split to recreate itself as a new entity, one remaining for the care of the acute cases and the other carrying with it the following key techniques of the general hospital: the adjunct facilities of X-ray, laboratory, physiotherapy, as well as medical records, and central supply procedures and standards. A comprehensive discussion of the current questions surrounding the integration of medical services, as well as of the functions within the different types of medical offices would have underscored and clarified many of the type plans presented in the book. This would have warned the inexperienced planner, who may be rather overeager, not to cannibalize the given examples for an immediate benefit but to proceed with caution.

In the fine introduction and excellent collection of medical centers in the book, the material might have been expanded to include analyses of the functions of each specialty; a discussion of the various methods of the handling of patients; and the problems of the operation of a clinic or group practice from the *staff* point of view (records, central supply, appointments, utilization rates of given office and examination rooms, etc.).

Perhaps it would not have been amiss to include such staid but basically sound data on the minimum requirements of the various specialties as published by the USPHS in "Guide for the Planning of Physicians' Offices."

I found it difficult to accept the authors' statement that they made

(Continued on page 228)



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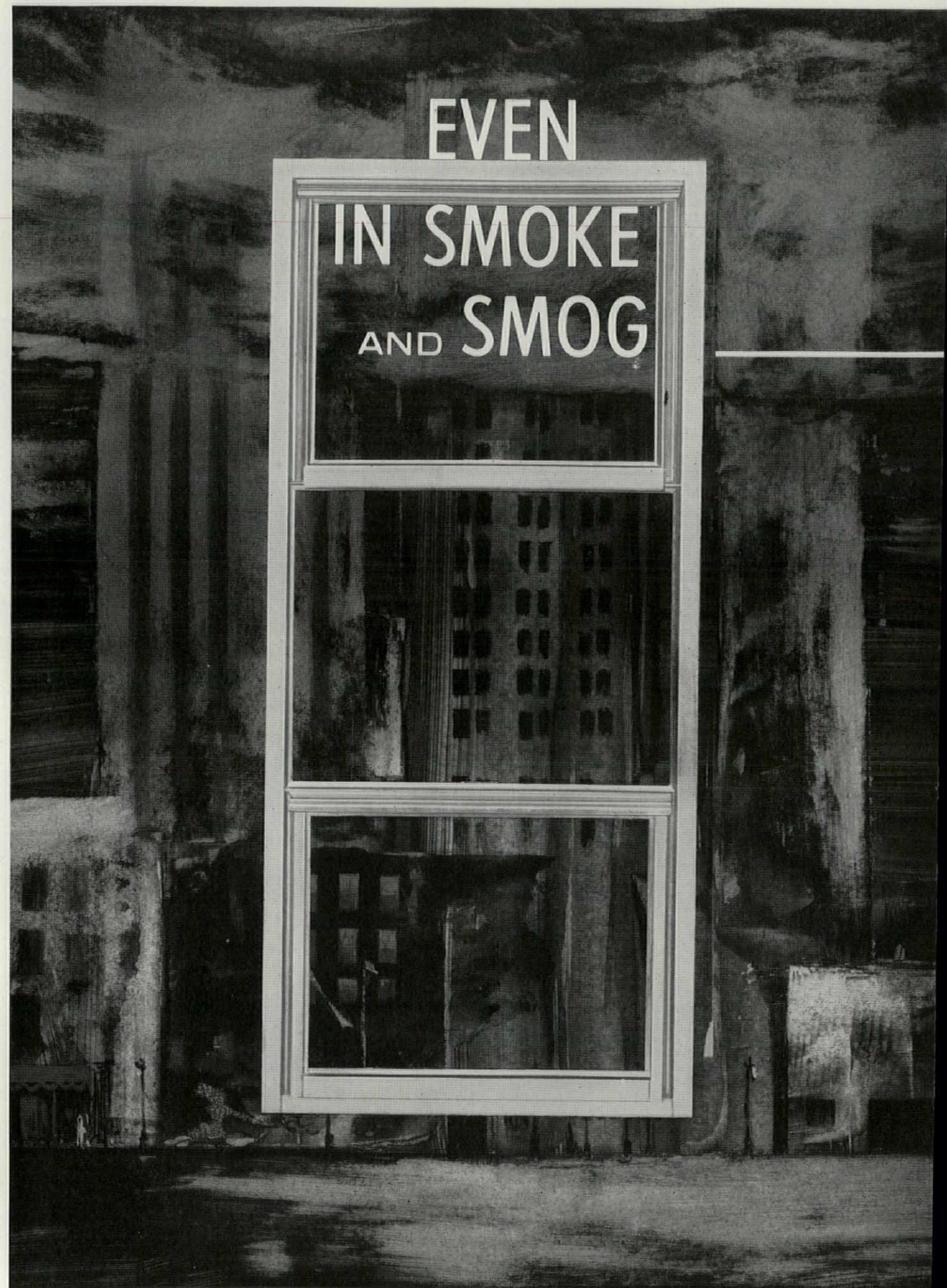
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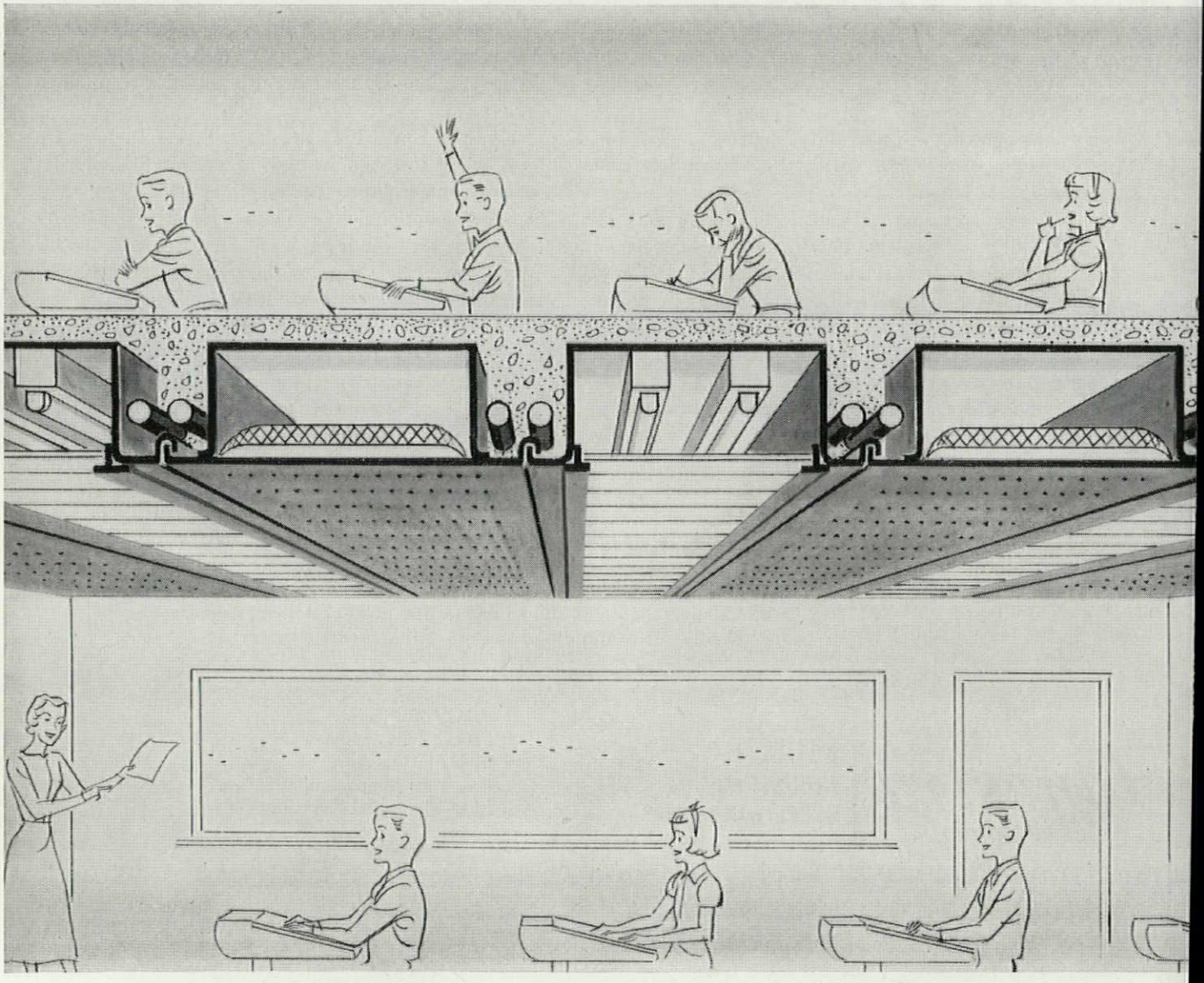

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reviews

(Continued from page 222)

an international search for examples and found only one worthwhile to reproduce (the Corby Center, North Hampshire, England). The model prewar center at Peckham, England (the source of most contemporary thinking on community, integrated health centers), the excellent clinics in Switzerland, and the clinics put up by the Olivetti factories are worthy of inclusion. Even the inclusion of a review of the various spas in Europe, as well as outpatient departments of hospitals, would have given added depth for understanding of the problem.

From the point of view of significant architectonic contribution to the scene today, the work of such masters as Neutra, Neufeld, Pereira, Madden, and O'Connor would have helped both the architect and the doctor studying this book.

The history of the development of the facilities for the Mayo Clinics is a rich page in American medical history; its inclusion with a discussion of their particular methods of operation might have been contrasted to the methods of prepaid group practices, such as the Health Co-operative in Seattle and the HIP Group in New York. It is impossible to believe that these group programs which have been so instrumental in shaping methods of medical care, as well as the facilities, should have been deliberately left out of the scope of the book.

The authors emphasize that the architecture of clinics is not just the housing of functions but also should represent the qualities of warmth and hospitality. The examples shown, particularly those in the West, have these qualities, even though the idiom is the ranch style. Unfortunately, the group centers I have seen in the East appear institutional in character. I recently visited an important labor clinic in Philadelphia which, according to the doctors who ran it, was the acme of warmth and hospitality. In actuality,

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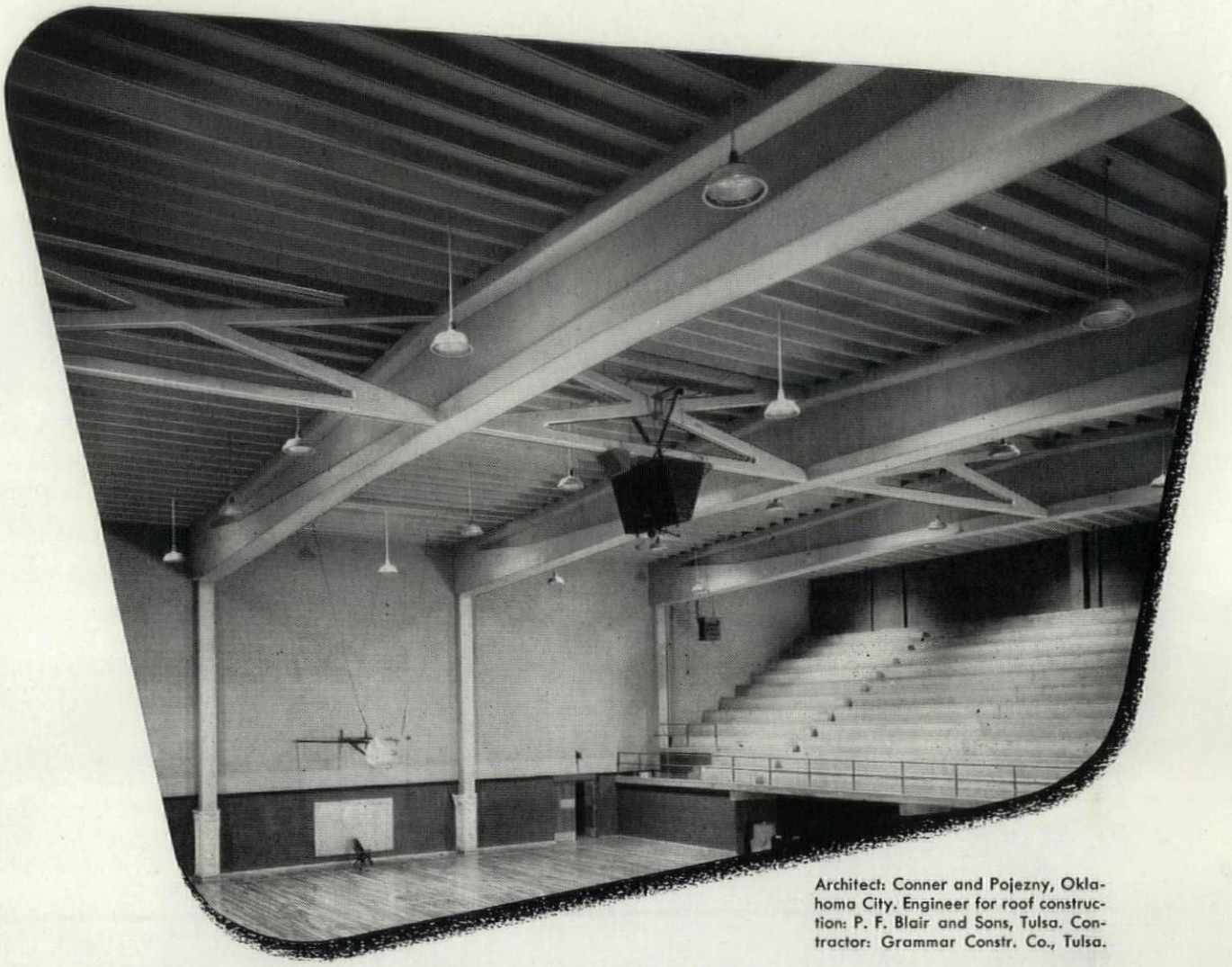

Architect: Conner and Pojezny, Oklahoma City. Engineer for roof construction: P. F. Blair and Sons, Tulsa. Contractor: Grammar Constr. Co., Tulsa.

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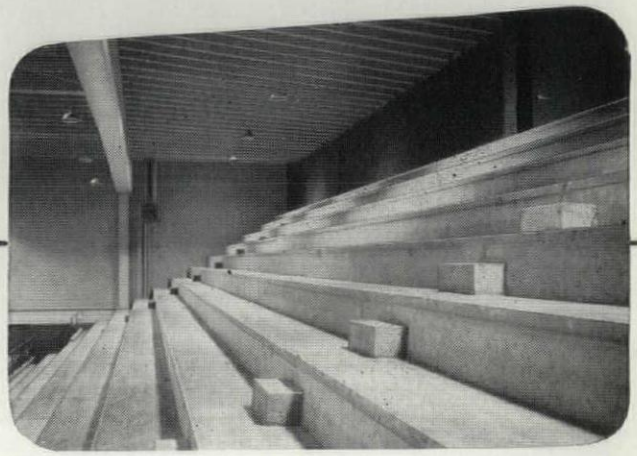

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reviews

(Continued from page 228)

the atmosphere was leaden; all waiting was on the typical single-corridor, widened this time with marble and stainless steel partitioned screens between which visitors were pigeonholed; the air was heavy with hospital odors; and the corridor appeared to culminate in the rotating tube of a therapy room, which gave the impression of a modern Aztec altar. All of this was reflected in the depressed appearance of the patients. This clinic had two elements in common with hosts of others: the single-corridor plan with examining rooms on both sides, and a decorator's cosmetic job which was meant to disguise the institutional horrors enclosed but which, in the end, failed to cover the fundamental error in planning.

Probably no single factor has been more responsible for chaos, inefficiency, and the look of institutionalism in medical facilities than has the single-corridor plan. Whether in a hospital or in a group center, a single artery through a building with room feeding from both sides, cannot hope to accommodate the flow of patients, visitors, doctors, nurses, technicians, and maintenance personnel. In group centers, where the corridors also serve as waiting areas, one encounters the worst association with the hospital out-patient clinic, regardless of whether the chairs have cushions and the walls are finished in pastel paints. The solution to this problem lies in the separation of public traffic from staff traffic: the principle of traffic control is fundamental in the planning of medical facilities.

The subdivision of the areas into systems of clusters with small-scale waiting rooms interdigitating the circulation with consulting and examining rooms and these, in turn, interconnected by staff-service corridors, to encourage the doctors and staff to work as a team, is a step in the right direction. This leaves the waiting patient protected from

(Continued on page 238)

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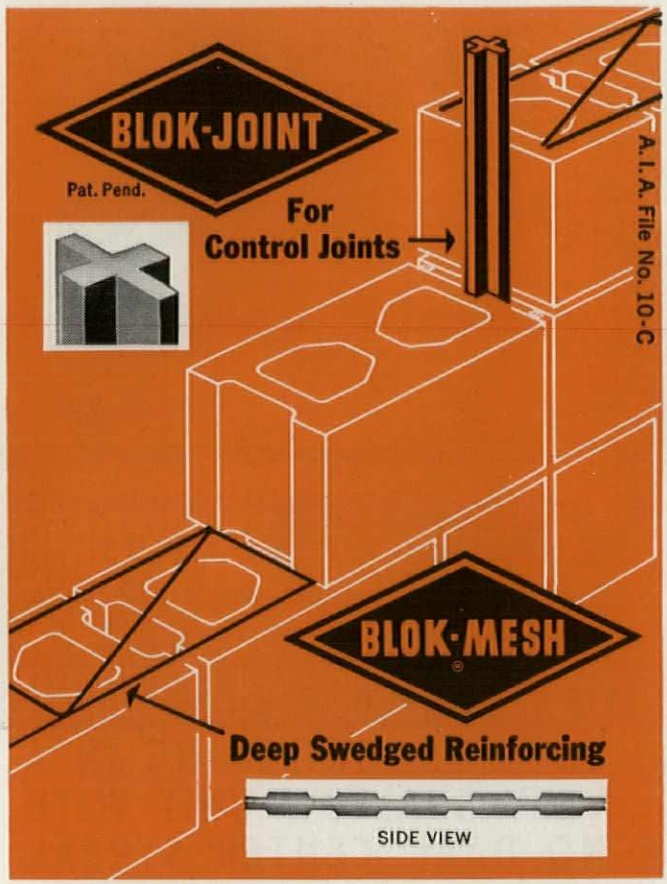

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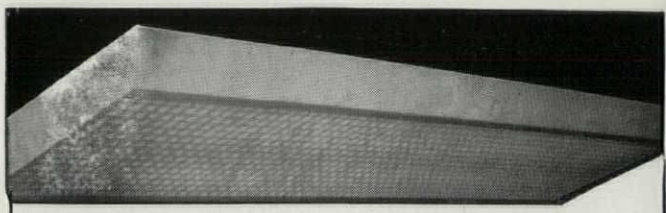

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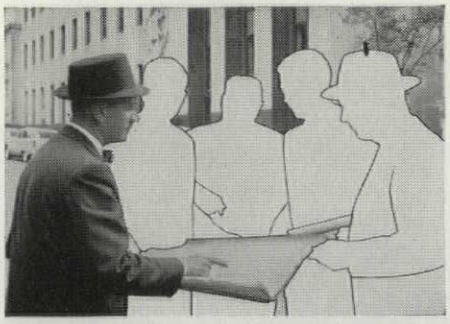

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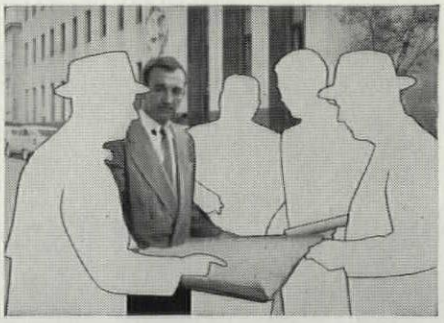

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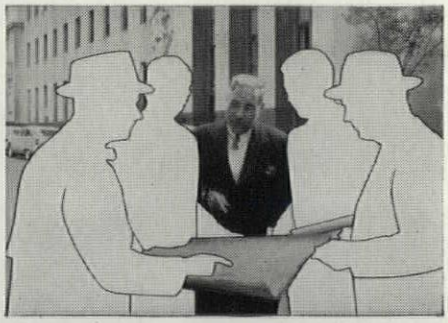

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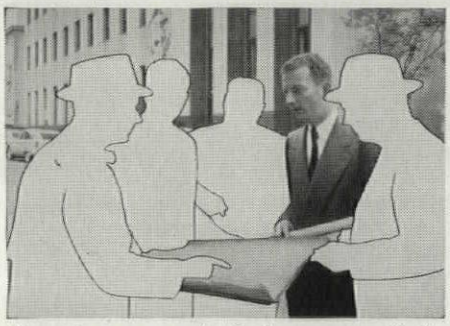

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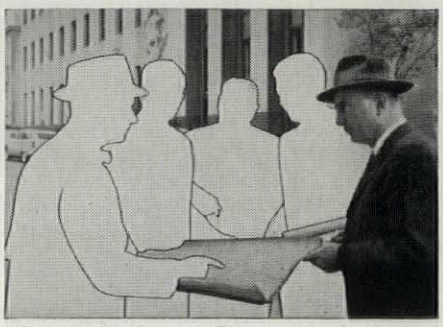

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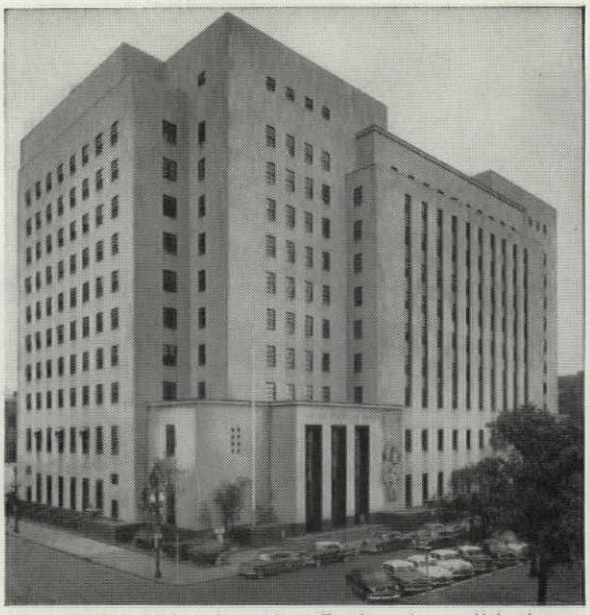

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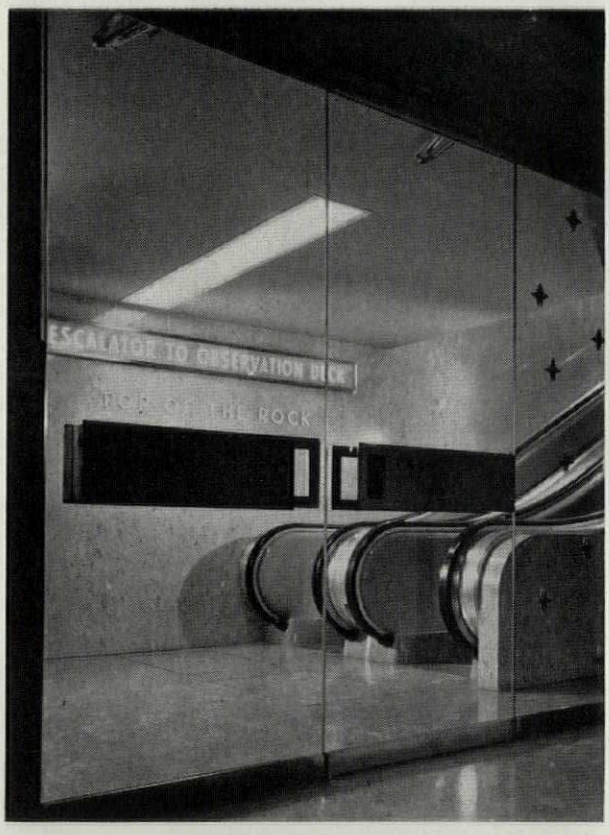

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reviews

(Continued from page 232)

the inner routine, a quality so long associated with the advantages of the private practitioner's environment. In the hands of careless or rigid architects, even this can become institutional.

In the last analysis, the reader of this book will agree with Gutheim, in the closing lines of his introductory essay, that both doctors and architects will find this a rewarding book.

BASIL YURCHENCO

important building type

Small Commercial Buildings. *Richard W. Snibbe. Reinhold Publishing Corp., 430 Park Ave., New York 22, N. Y., 1956. 216 pp., illus., $13.50*

This book contains a selective collection of illustrations of small commercial buildings in many parts of the world and offers a fine selection of work of this type published in magazines of the last fifteen years. The buildings are well chosen; the photographs are well reproduced. Floor plans for each building are included: these are free-hand sketches drawn in very small scale and in a somewhat mediocre manner.

The architect-author comments generally on the building type which is the subject of this publication, and specifically on each building. Unfortunately, his intent was better than his comment: the publisher's editors should have helped to overcome this shortcoming in an otherwise superior book.

A foreword by Pietro Belluschi states the advantages of a specialized collection of this kind.

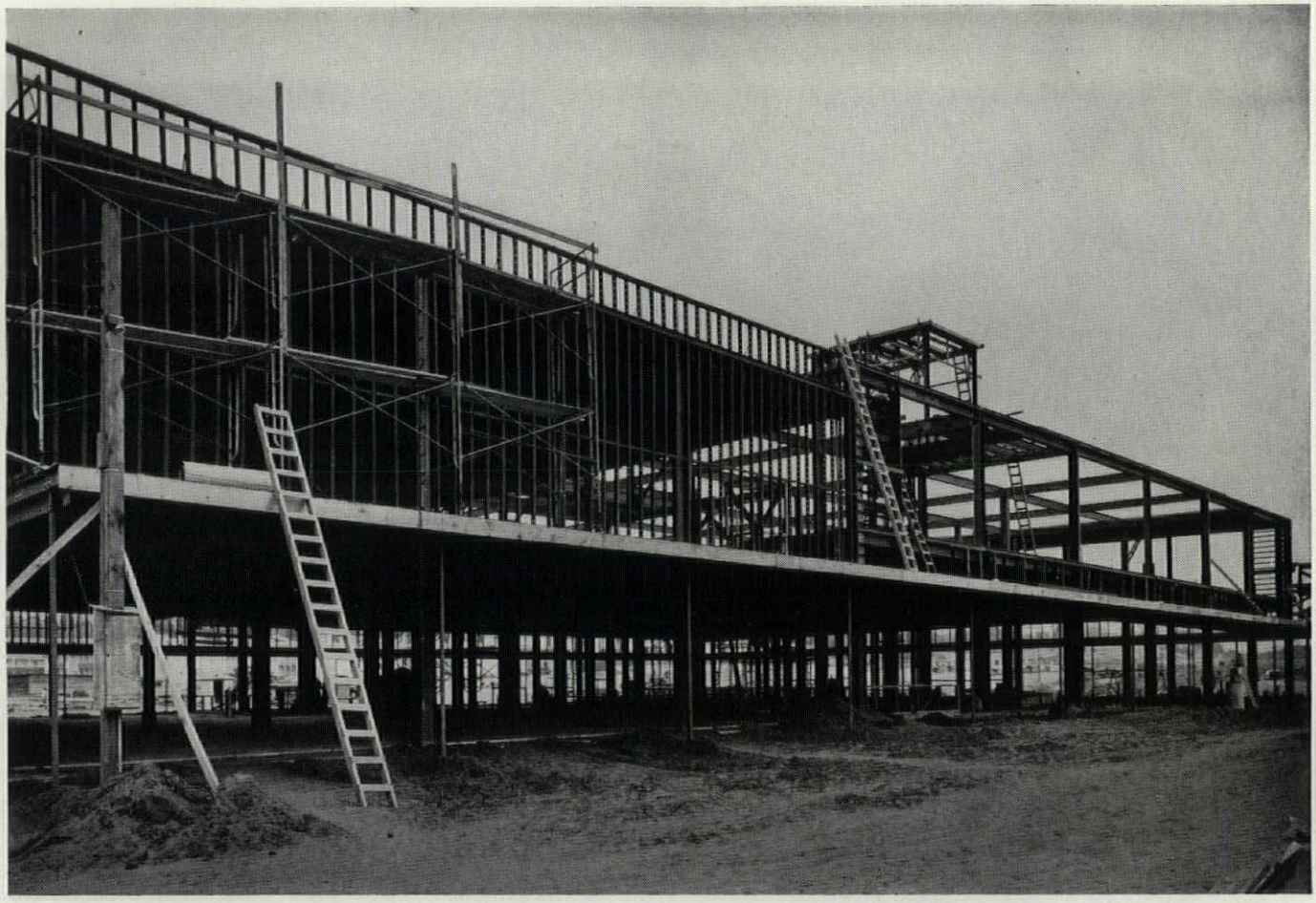
LAWRENCE E. MAWN

reassuring report

The Mutual Mortgage Insurance Fund: *A Study of the Adequacy of Its Reserves. Ernest M. Fisher and Chester Rapkin. Columbia University Press, New York, N. Y., 1956. 162 pp., $4*

Some pontiff of modern philosophy

(Continued on page 242)



LIGHTSTEEL cuts the cost of curtain walls in new J. C. Penney Co. department store

The handsome J. C. Penney Co. department store at Westlake Shopping Center, Daly City, California, is a two-story and basement structure with a welded-steel rigid frame. Penmetal LIGHTSTEEL was specified for exterior curtain walls, parapet walls, penthouse and elevator machine-room enclosures because of its recognized cost-cutting potential.

The light weight of the Penmetal studs cut dead-weight loads, helping the architect save on foundation size and cost. They provided the necessary rigidity but reduced the quantity of structural steel required. And, they were easily, speedily placed.

Important economies were effected by using the LIGHTSTEEL nailing groove for the attachment of lath to both sides of the studs, and by installing wiring and piping through the carefully engineered openings in the sections. The LIGHTSTEEL was cut to size at the job site and spot welded to the framing, eliminating costly shop work.

Send for data on versatile LIGHTSTEEL. Ask for catalog SS-14 and technical manual SS-8.

The new J. C. Penney Co. department store in Daly City, California was designed by Lloyd Gartner, A.I.A, and Associates of San Francisco.

Owner and contractor: Henry Doelger Builder, Inc.

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***General Sales Office:* 40 Central Street, Boston 9, Mass.**

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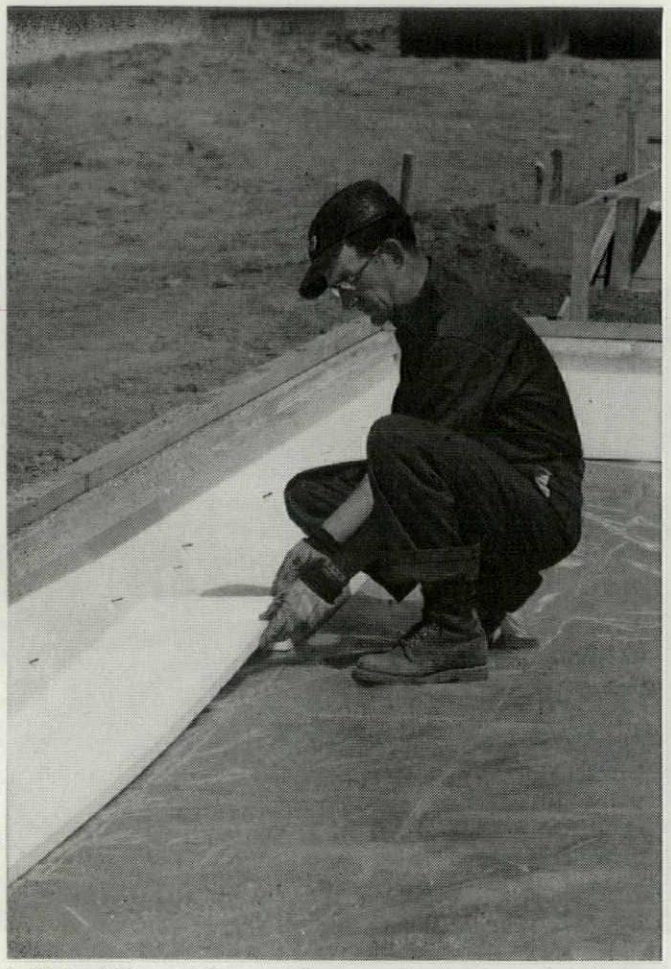
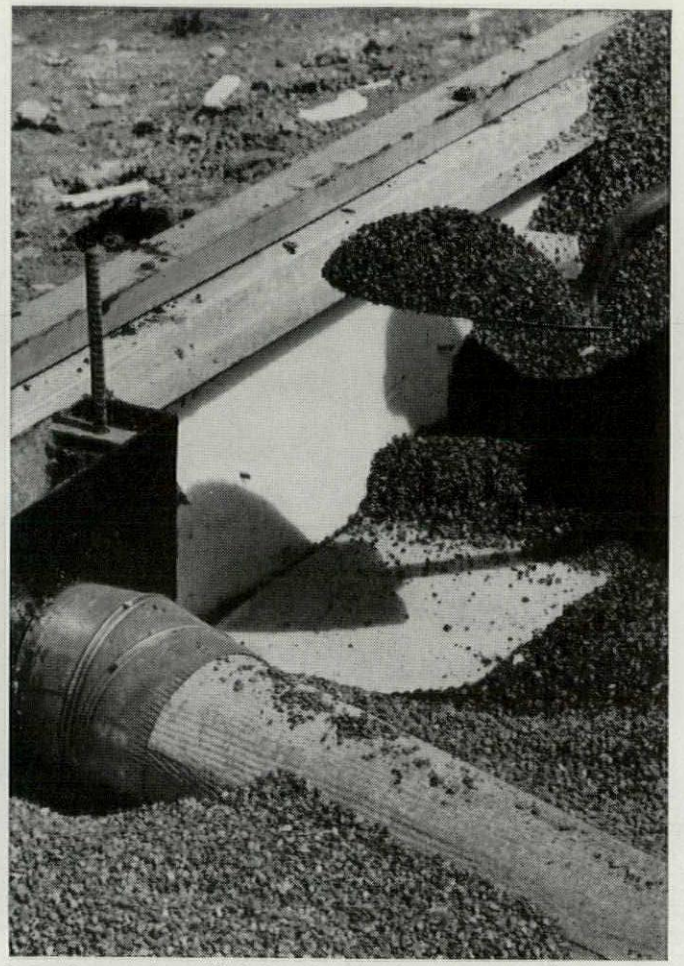
PM-139

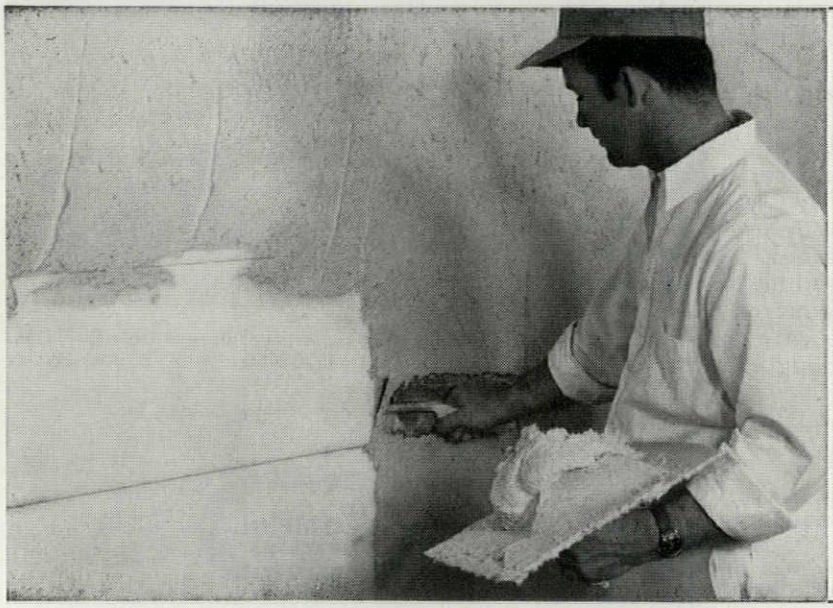


1. National Homes, Lafayette, Indiana, specifies Styrofoam 1″ thick placed horizontally around the perimeter 12″ from the foundation wall of the house.



2. Styrofoam insulation 1″ thick is then placed at an angle 12″ high against the poured foundation wall.

National Homes uses Styrofoam



A new concept for construction of all masonry structures:

Styrofoam is used to eliminate dampness and cut building costs. Portland cement mortar bonds Styrofoam to the masonry—permanently, without studs. Plaster keys directly to Styrofoam surface—smoothly, without lathing. No special training or tools are needed. And the warm, dry walls keep their smooth, crack-free appearance year after year. The man who looks ahead will investigate this!

3. Next the slab is poured—and that's it! From experience National Homes finds it has protection from cold and damp for the lifetime of the house.

for lifetime perimeter insulation

There are good reasons why this is so. The same reasons that can help you enhance your reputation.

Styrofoam* (a Dow plastic foam) is a homogeneous insulation with a remarkable combination of properties. This rigid insulation contains millions of noninterconnecting air cells. As a result, it can't absorb water. It provides true protection against dampness and water. Its low thermal conductivity stays low. In addition, it resists rot, mold, deterioration. And having no food value, vermin and rodents won't bother it.

But what makes Styrofoam even more outstanding is its unparalleled performance in such fields as low-temperature and plaster-base construction . . . industrial equipment . . . roofs, cavity walls and wall panels. This clean, odorless, lightweight insulation has many applications that are well worth your investigation. You'll find Styrofoam pays off in lifelong efficiency and economy.

*Styrofoam is a registered trademark of THE DOW CHEMICAL COMPANY

For further information, contact your nearest Styrofoam distributor: CALIFORNIA, San Francisco: Western Foam Products, Inc. • CALIFORNIA, Los Angeles 13: Pacific Foam Products Company • FLORIDA, Tampa: The Soule Company • GEORGIA, Atlanta 8: Badham Sales Company • ILLINOIS, Chicago 11: The Putnam Organization, Inc. • IOWA, Des Moines: Wilson-Rogers, Inc. • KANSAS, Kansas City: Styro Products, Inc. • MASSACHUSETTS, Ipswich: Atlantic Foam Products Company • MICHIGAN, Detroit: Par-Foam, Incorporated • MICHIGAN, Midland: Floral Foam Products • MINNESOTA, Minneapolis 8: Edward Sales Corporation • MONTANA, Billings: Madden Construction Supply Company • NEW YORK, Rochester 20: William Summerhays Sons Corp. • NEW YORK, Long Island City 1: Styro Sales Company, Inc. • OHIO, Cincinnati: The Seward Sales Corporation • OHIO, Cleveland 8: Structural Foams, Inc. • PENNSYLVANIA, Plymouth Meeting: G & W H Corson, Incorporated • TEXAS, Houston: The Emerson Company • UTAH, Salt Lake City 10: Utah Lumber Company • WASHINGTON, Seattle 9: Wiley-Bayley, Inc. • WISCONSIN, Milwaukee: S & S Sales Corporation • CANADA, Edmonton, Alberta: Northern Asbestos and Building Supply Co., Ltd. • CANADA, Kitchener, Ontario: Durofoam Insulation, Ltd. • CANADA, Vancouver, B. C.: Wiley-Bayley Co., Ltd. Or write THE DOW CHEMICAL COMPANY, Midland, Michigan—Plastics Sales Department PL1740Z-1.

SEE OUR CATALOG IN SWEET'S

YOU CAN DEPEND ON DOW

reviews

(Continued from page 238)

should have said that so-called reality is only one aspect of a statistical picture. To put it objectively: Sir Isaac Newton's apple fell dutifully to the ground; but today's scientific theorist darkly hints that if the experiment were repeated often enough (within the known limits of space-time continuum) a recalcitrant apple would detach itself from the bough and hang poised in midair. To the lay reader, at first contact, a similar atmosphere of refined hypothesis surrounds this Fisher and Rapkin book.

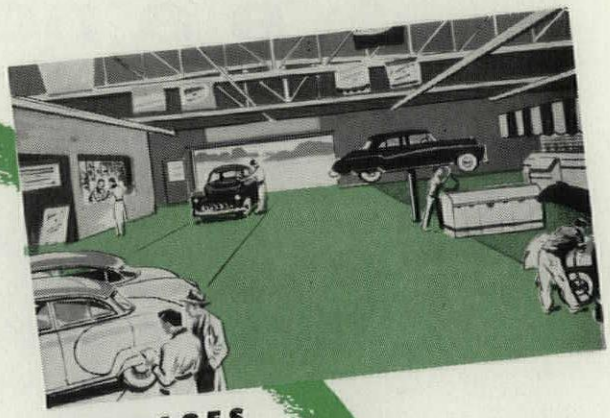
We say "at first contact" because, on opening the book, that same reader may encounter the mathematical formula used by the FHA for required insurance reserve on mortgages: "Rx-Hx[v 1/2 . . ." and so on for some 140 terms, signs, brackets, parentheses, exponents superior and inferior, to an extent that would have given Einstein pause.

In addition, there are numerous tables and charts, with most of the figures carried to six or more decimals. On the whole, our authors have presented us with "a study in depth," as the Harvard *Haruspices* might say. Nevertheless, it is a study well directed and lucidly styled, having a manifest aim toward which it moves in easily distinguished steps. The reader, therefore, need not be specially skilled at figures in order to follow—and even enjoy—the present volume's orderly progression and reasoned conclusions.

The aim of the book is simple enough. A colossal, well-nigh galactic liability has been assumed by an instrumentality of the United States Government, namely, the Mutual Mortgage Insurance System. To meet this liability, the System accumulates fees, commissions, premiums, and the like. A reasonable and oft-propounded question arises: to what extent are these reserves adequate or inadequate, and how can their condition be improved? The book before us seeks an answer.

(Continued on page 248)

TERRACES



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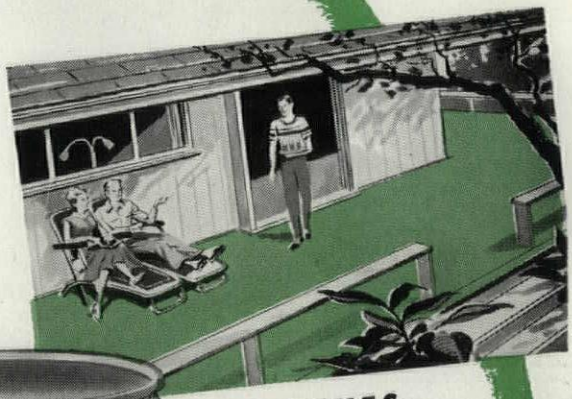

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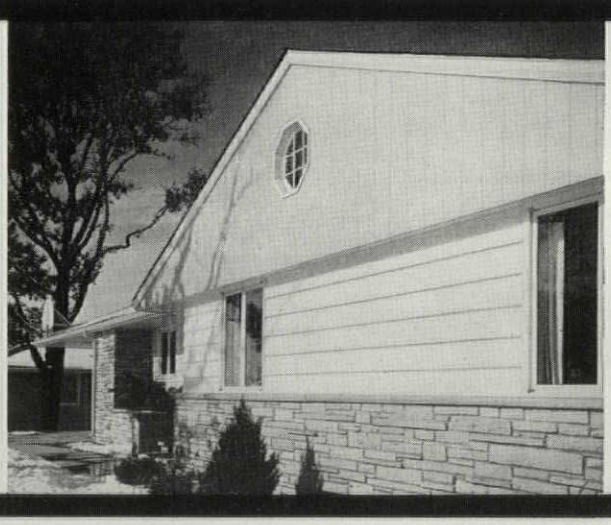

No more paint blisters? Experience to date indicates that new Insulite Primed Siding has exceptional resistance to paint blistering. In laboratory test shown above, moisture has bubbled and blistered paint on ordinary siding (in foreground), while Insulite Primed Siding (at back) shows no trace of blistering.

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reviews

(Continued from page 242)

Throughout the work, an attempt is clearly noticeable to equate the mutual mortgage insurance problem with that of any other actuarial task—as, for example, that which is posed when determining adequate reserves of a life-insurance company. On the whole, this effort is fairly successful. However, a missing series of factors, available to the life-insurance actuary but inaccessible to the student of mortgage insurance, are found in what the actuary calls his "experience" tables. The latter knows to a nicety, by consulting such tables, how many persons of a certain age group will die at a certain time. Architects also—to digress a moment—know from collated and standardized data, based upon physical experience, what materials will stand specified stresses and in what cross-section.

The mortgage actuary, on the other hand, has a very limited equipment of experience as to "life expectancy" of his units, because that expectancy is so largely governed by alternating (and well-nigh unpredictable) periods of general prosperity and depression. These periods affect the demonstrable risk in two ways—by breeding foreclosures and by impairing the saleability of foreclosed property. As there has been but one examinable major depression (in the 1930's) followed by one major expansion period (1945 to date), the situation is as if the actuary, instead of having for study a million or more individual life histories, should possess only two—those of his parents.

Nevertheless, with the available material, our authors have managed ingeniously well. They have promulgated among other things, the dictum that the risk of foreclosure declines with the age of the mortgage. In fact, the 1-to-5 year mortgage age groups practically monopolize the foreclosures.

The book devotes much space to analyses and simplifications of FHA

(Continued on page 256)

specify for LIFE! in schools everywhere

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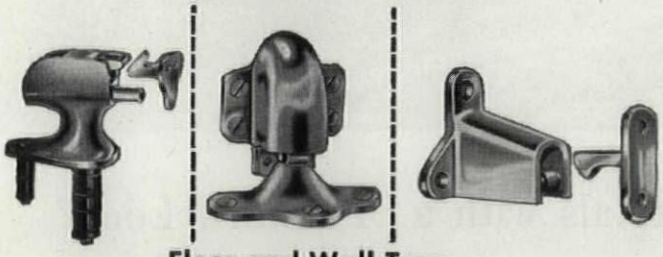
Overhead Type Door Holders, Stops, and Shock Absorbers for **ENTRANCE and CLASSROOM DOORS** opening up to 110°



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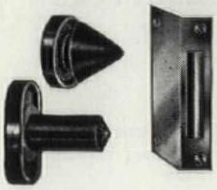

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This new 34-acre Chrysler roof deck brings together the most modern materials to establish a new level of fire-resistance and fire-containment. Specifications: Walcon steel deck, Koroseal vapor barrier and non-flammable Lexsuco cold adhesive R907T—(manufactured for Lexsuco, Inc., Cleveland, by B. F. Goodrich), Schundler's Fesco Board Roof Deck Insulation, and Koppers 4-ply tar and gravel built-up roof.

ARCHITECT and ENGINEER: F. A. Fairbrother and George H. Miehls with Albert Kahn ASSOCIATED ARCHITECTS and ENGINEERS, CONSULTANTS, Detroit. GENERAL CONTRACTOR: Hunkin-Conkey Construction Company, Cleveland. ROOFING CONTRACTOR: Industrial Roofing and Sheet Metal, Inc., Cleveland. LEXSUCO ROOF construction engineered and distributed by Lexsuco, Inc., Cleveland.

**Non-flammable Lexsuco adhesive R907T
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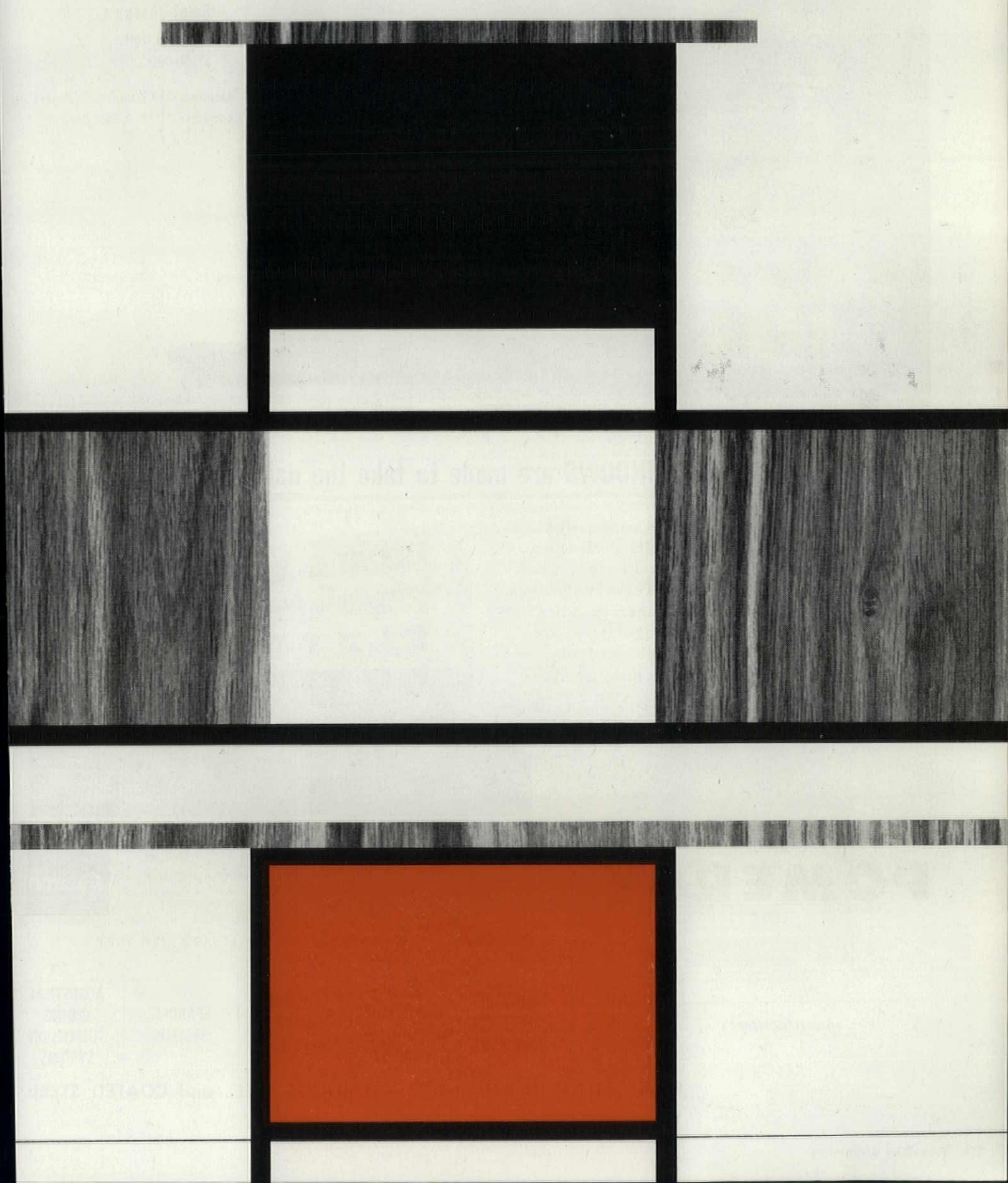
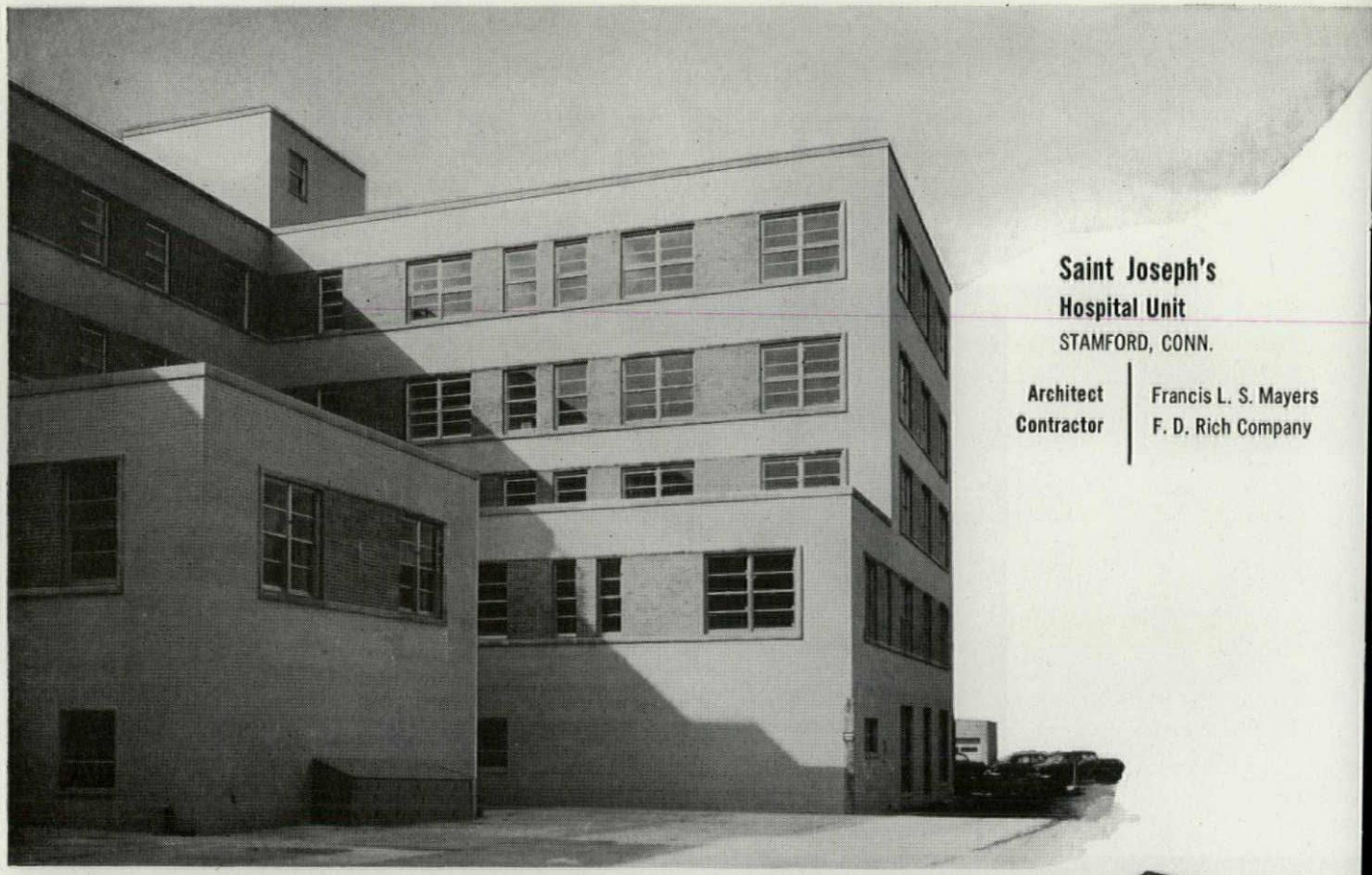
LEHIGH





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Architect Francis L. S. Mayers
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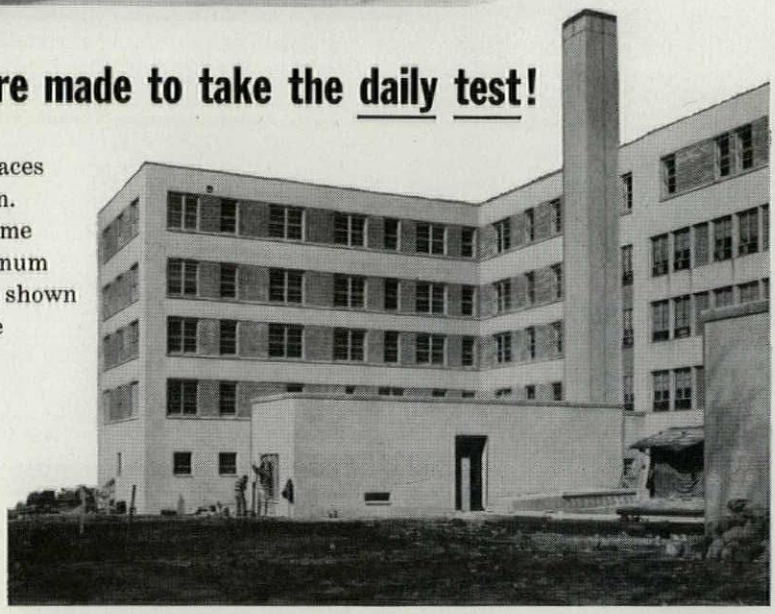

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This laminated roof is constructed of random thickness lumber, interlaced at the roof peak for additional sturdiness. Cantilevered over the supporting beam at the right, the structure is given both stiffness and pattern by the angled bracing at left. Siding of rough sawn one-inch stock adds interest to the wall texture.

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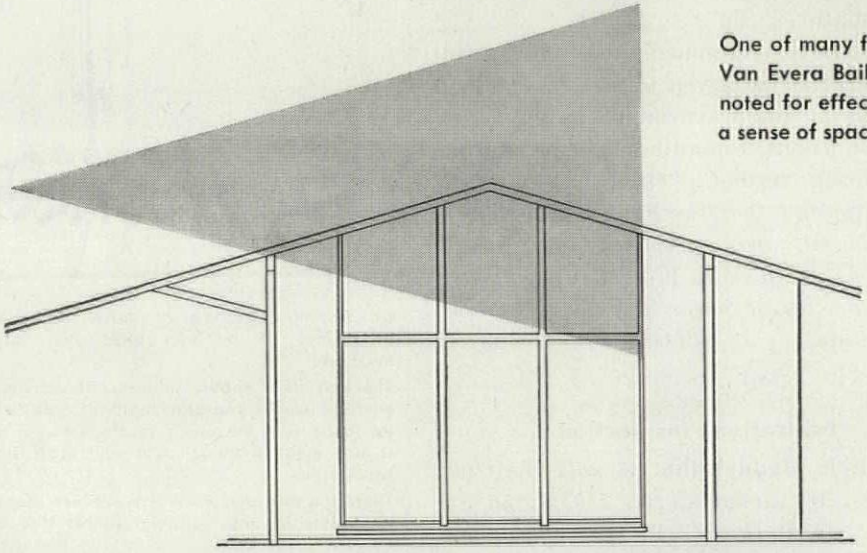

One of many fine, modern homes designed by Van Evera Bailey, architect, A.I.A. His designs are noted for effectively combining livability and a sense of spaciousness.

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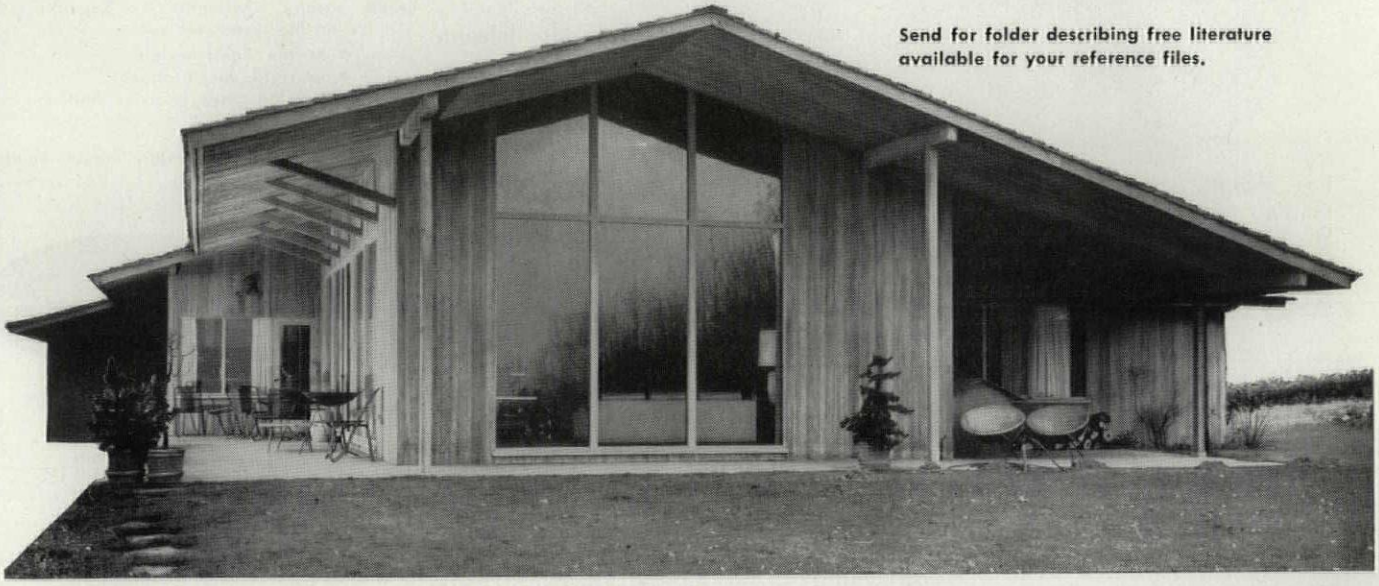


reviews

(Continued from page 248)

figures and formulae, including mortgage termination factors other than foreclosure, such as prepayment and the like. As a result of these and collateral studies, a comforting conclusion is reached: "With reserves of over $200 millions as of December 31, 1954, the Mutual Mortgage Insurance System would be able to encounter a depression that would result in the foreclosure of 18.75 percent of the most recently insured mortgages, on which insurance is in force, to sell acquired properties at prices representing approximately 60 percent of the costs of these properties to FHA, and to meet still its obligations as they mature."

After recommending that consideration be given to size of the loan as a "major variable" in FHA calculations, the authors reach an italicized verdict: *"On net balance, it appears that the FHA calculation is based upon premises that should make adequate provision for contingencies of major depression magnitude."* WILLIAM HURD HILLYER

aspiration, inspiration

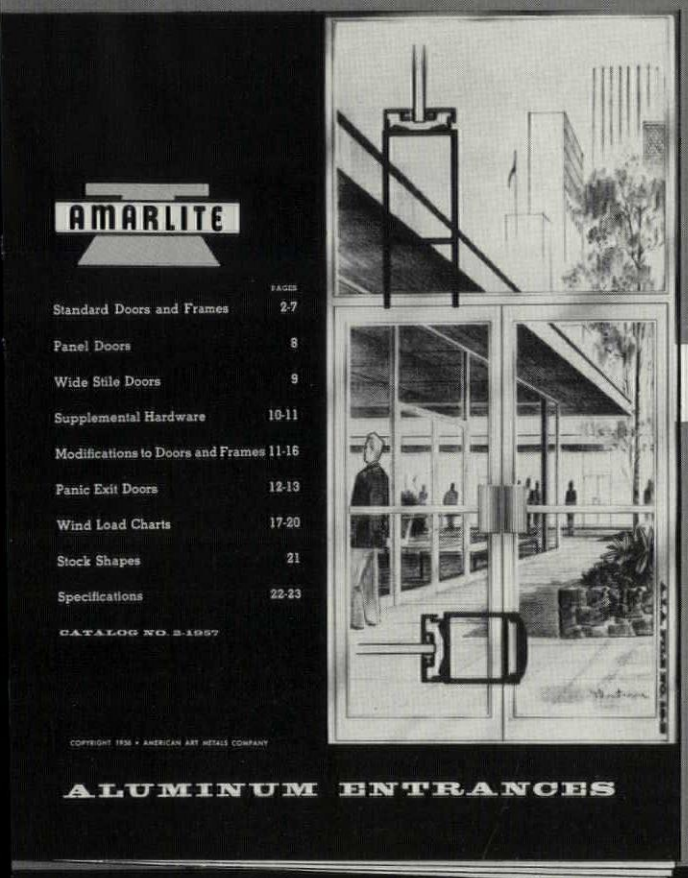
Eric Mendelsohn. *Arnold Whittick. F. W. Dodge Corp., 119 W. 40 St., New York, N. Y., 1956. 219 pp., illus., $9.85*

This reviewer met Eric Mendelsohn during the first years of the last war. He had recently come to this country to stay, and he was about to make a fresh start.

At that time one could rightly admit that his past career had been definitely great; on the face of things, one would also readily admit that his great career was definitely passed.

He did make another and successful start; he had previously done the same after leaving his native Germany, in England and, later, in Palestine. From that time until his death in 1953, his work equaled and

(Continued on page 258)



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reviews

(Continued from page 256)

possibly excelled his past great work. His reputation and standing, insofar as they are great, are uncommon; and insofar as they are uncommon, are permanent and secure.

The present volume is generously illustrated with photographs and drawings. The Mendelsohn sketches and drawings are a sound source of architectural aspiration and inspiration.

This book completes a partial biography by the same author, published in 1940: it presents the full story of unusual ability, high artistic accomplishments, and the final attainment of immortality as architect and man. LAWRENCE E. MAWN

notices

new addresses

ABUGOV & SUNDERLAND, Architects-Consulting Engineers, 909 15 St., S. W. Calgary, Alberta, Canada.

JOSEPH L. COGGAN, Architect, 1444-A Gulf-to-Bay Blvd., Clearwater, Fla.

SCHEINER & SWIT, Architects (successors to Edwin Kline), 134 Middle Neck Rd., Great Neck, N. Y.

HELGE WESTERMANN, Architect, 113 West 57 St., New York, N. Y.

PERCIVAL GOODMAN, Architect, 1860 Broadway, New York, N. Y.

PAUL SCHWEIKHER, Architect, 5935 Fifth Ave., Pittsburgh, Pa.

THOMAS F. WRIGHT, Architect, Box 108, W. Sand Lake, N. Y.

CHARLES W. HOEFLING, Architect, 1006 Third Ave., New Brighton, Pa.

SEYMOUR A. GOLDSTONE, Architect, 33 Great Neck Rd., Great Neck, N. Y.

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Builder: Steed Brothers, Alhambra, California.

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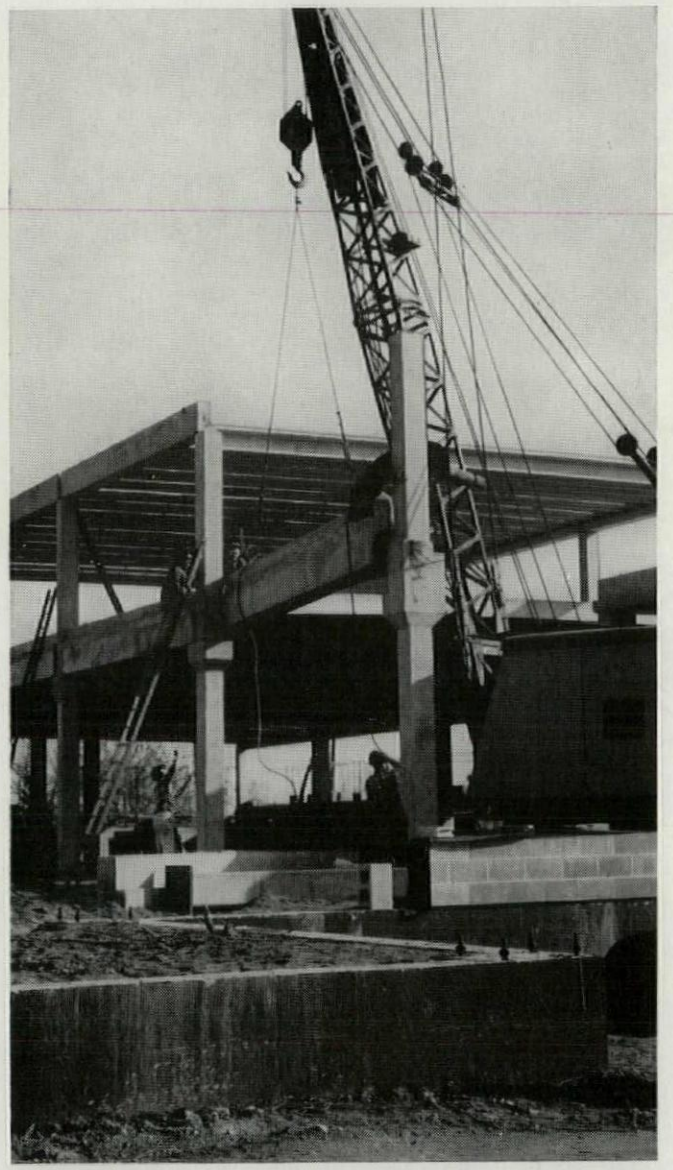

Placing prestressed spandrel beam 28′ x 36″ x 18″ at new Albert Godde Bedin, Inc. plant, Depew, N. Y. Precast columns shown are 24′ x 14″ x 14″.

• The entire frame of this industrial plant in Depew, N. Y.—with a total floor area of 25,617 sq. ft.—was erected in *9 working days.*

Such fast work resulted from the use of prestressed concrete beams, floor and roof channels and precast columns, precision made by Frontier Dolomite Concrete Products Corporation, Lockport, N. Y.

IN THE MANUFACTURE OF THESE PRECAST UNITS, Lehigh Early Strength Cement and steam curing were used to achieve maximum production efficiency and economy. The concrete reached 3500 PSI in 12 hours, permitting removal of units and re-use of forms in *less than half the time required with regular portland cement.*

This is typical of the advantages of Lehigh Early Strength Cement in modern concrete construction.

Owner: Albert Godde Bedin, Inc., New York City
Architect: John R. Weber, New York City
Engineer: Freyssinet Company, Inc. New York City
Contractor: George W. Walker & Sons, Inc. Buffalo, N. Y.

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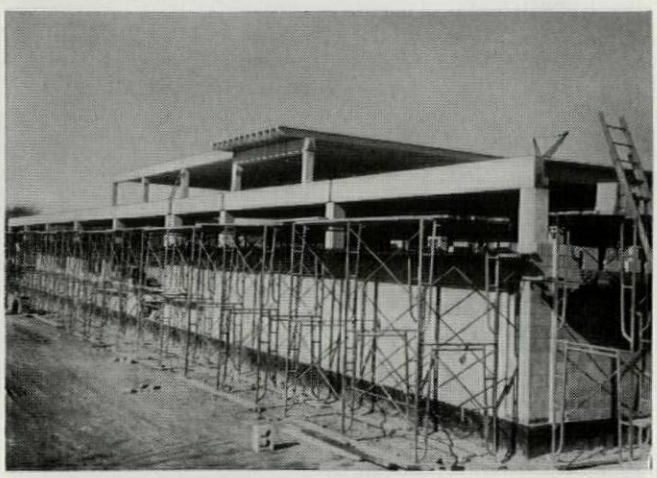
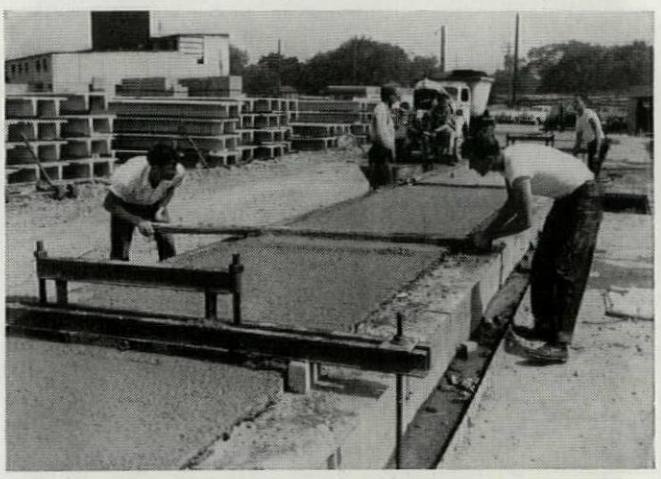
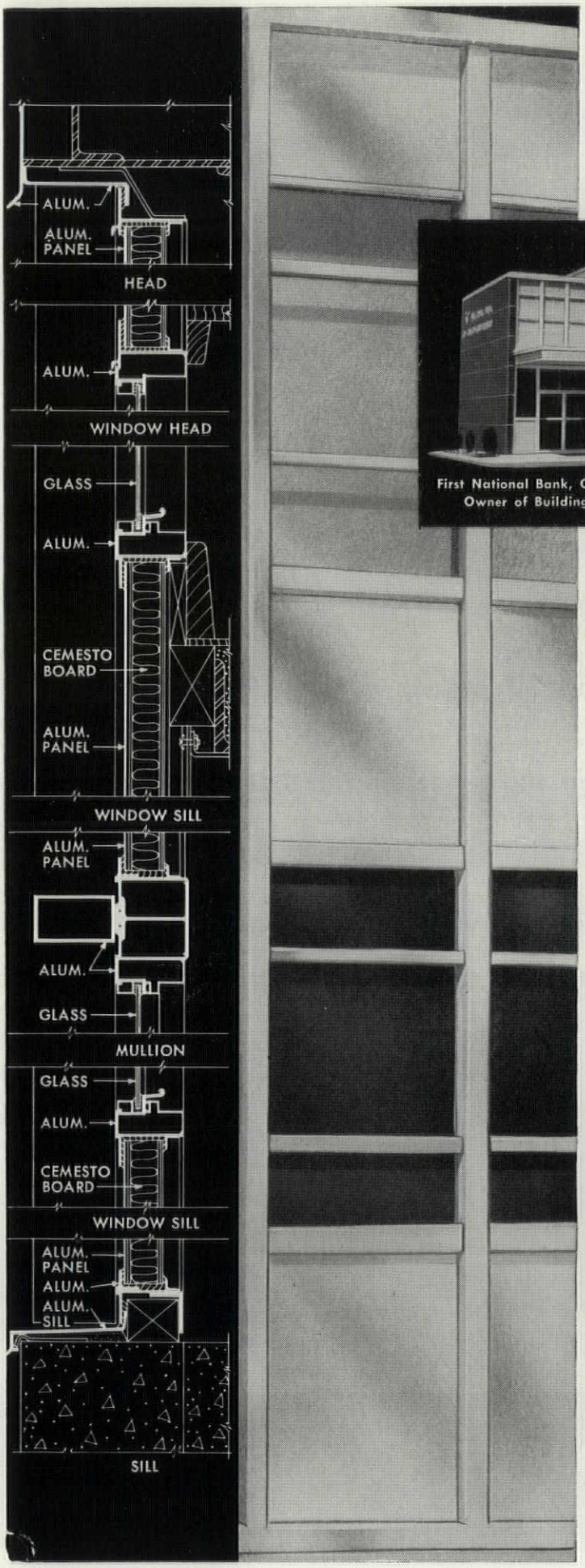


Frontier Dolomite also manufactured the concrete block for the exterior walls. Blocks were made with Lehigh Air-Entraining Cement.



Wood screeding prestressed double tee, 42′ long, 4′ wide, 14″ deep, at Frontier Dolomite plant.



Built-In Savings for First National Bank with

First National Bank, Old Canton Road Branch, Jackson, Miss. Architect — Jay T. Liddle, Jr.
Owner of Building — E. E. Morgan Contractor — Southeastern Construction Co.

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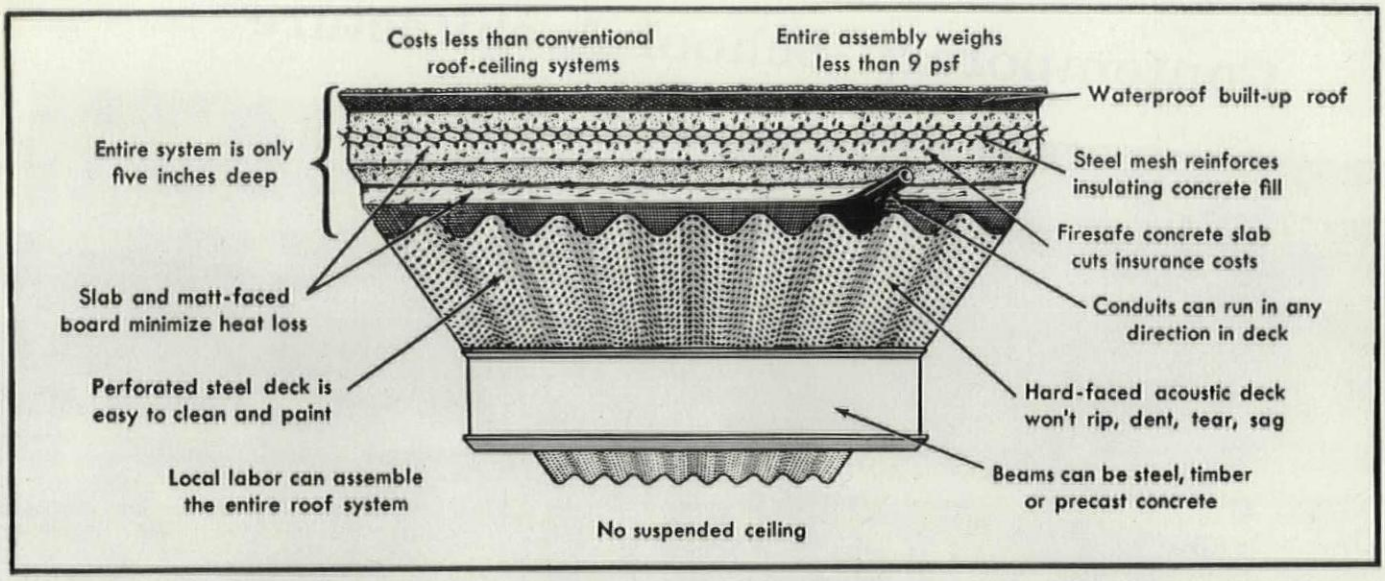
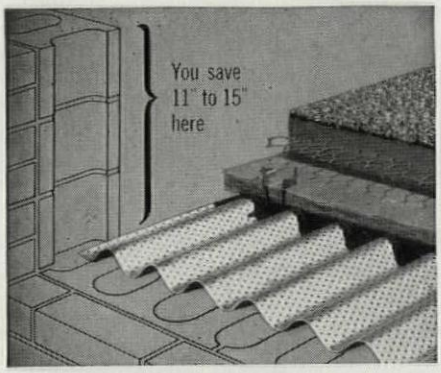
(Continued on page 266)



New idea in school ceiling-roof construction



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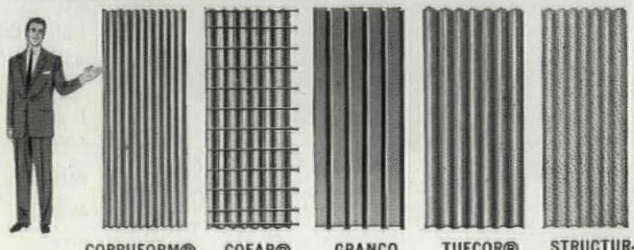

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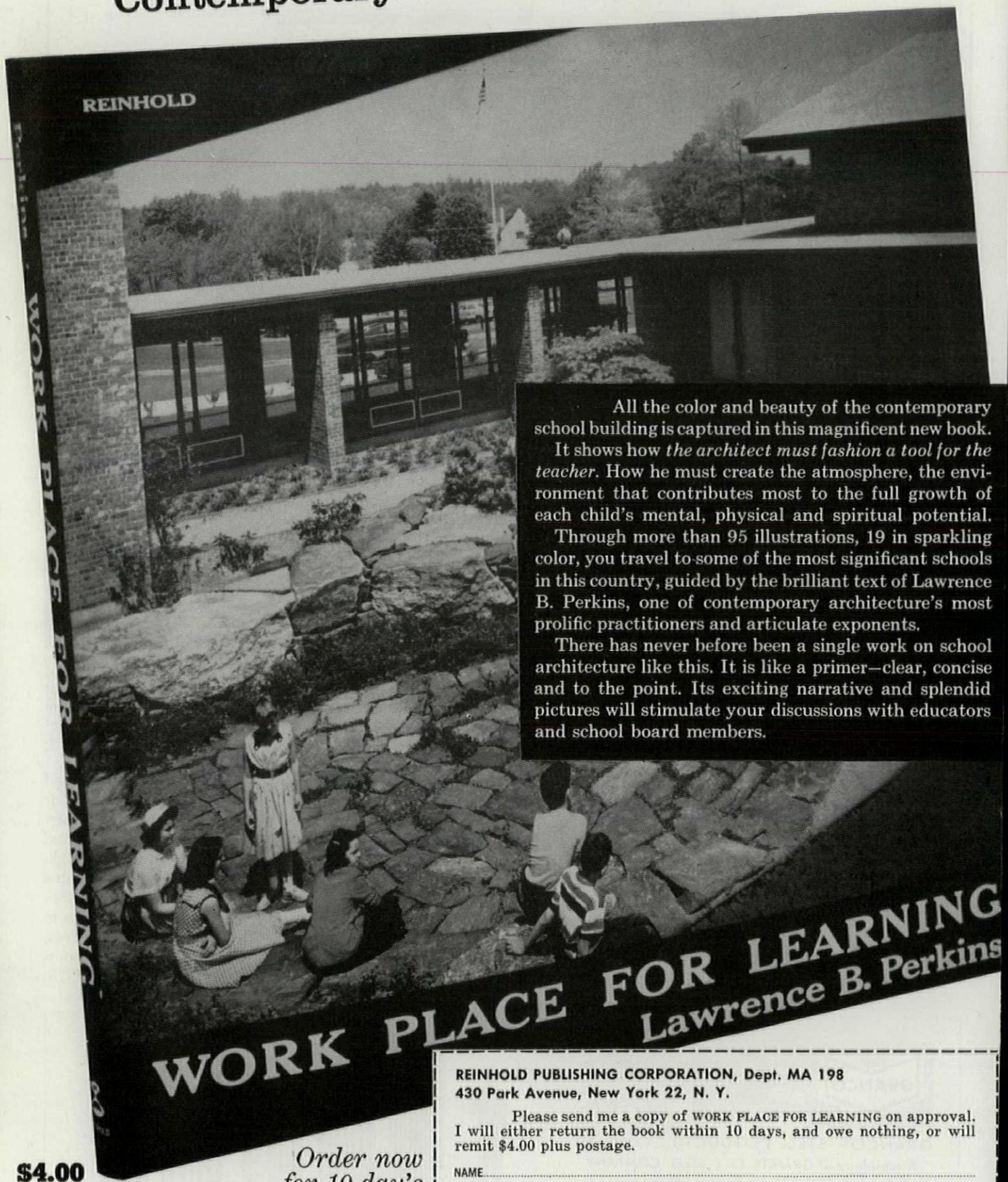

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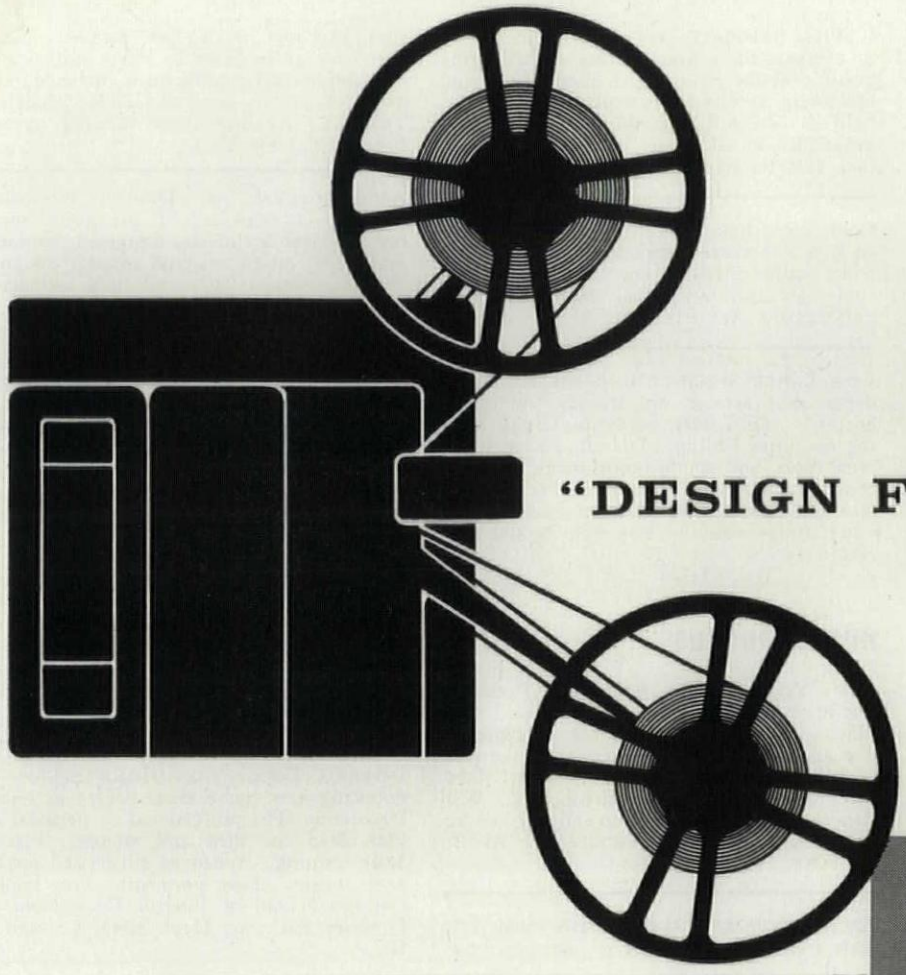

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JOBS AND MEN

(Continued from page 262)

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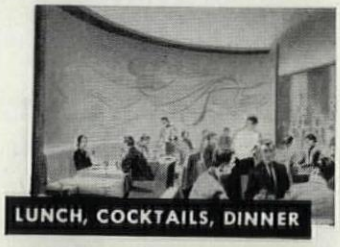

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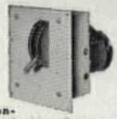

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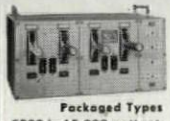

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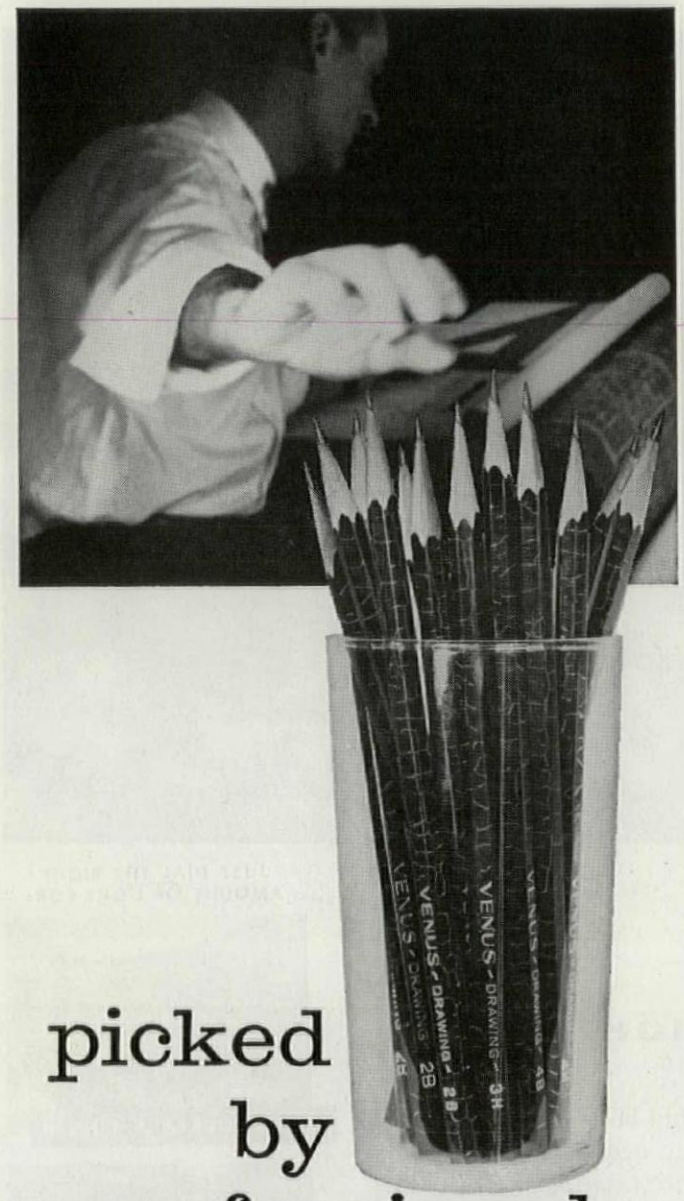

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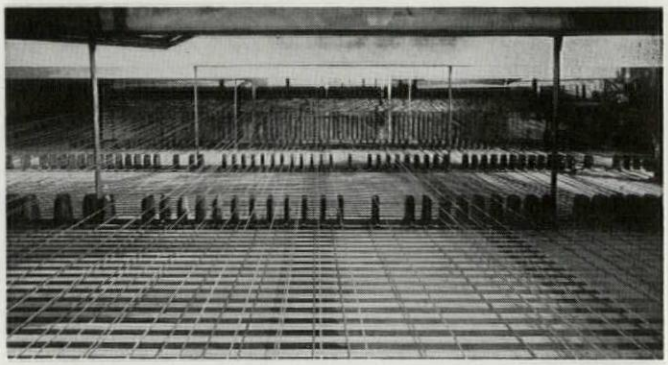

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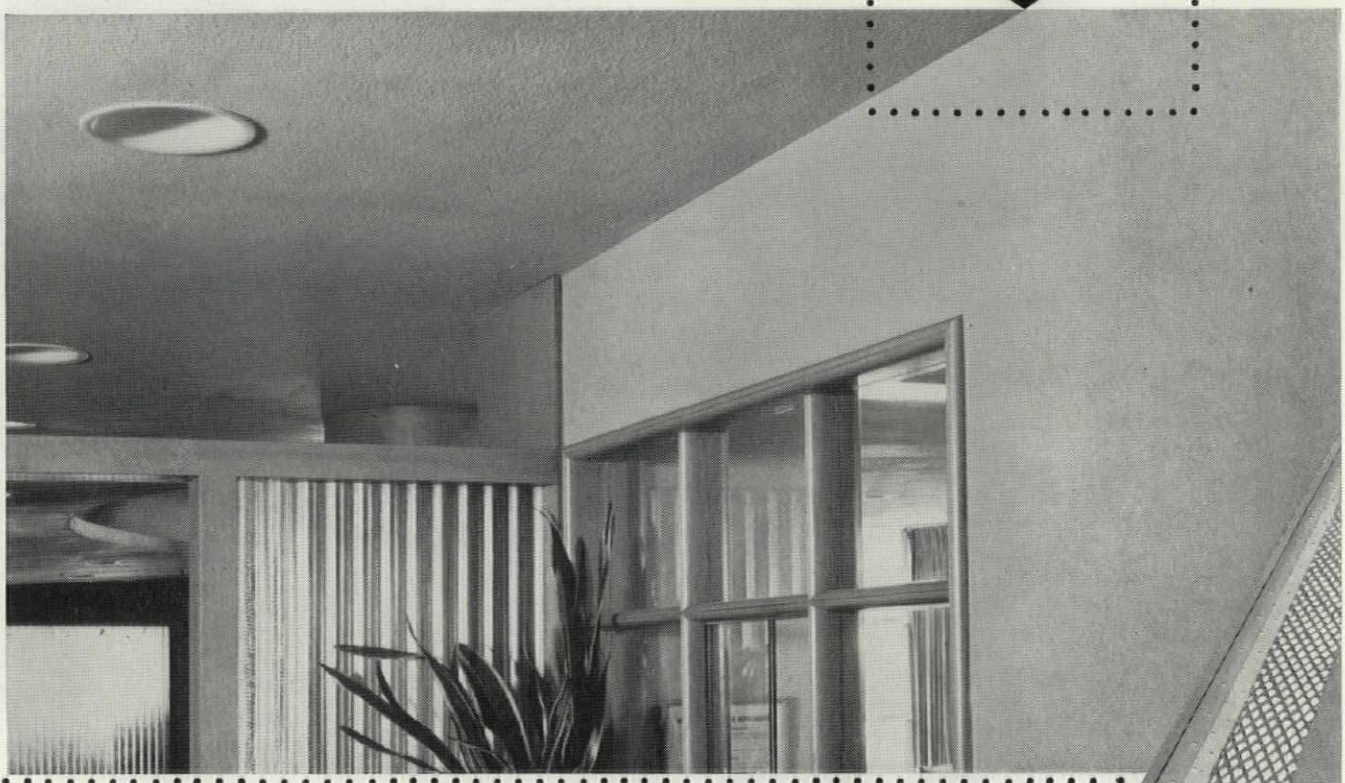

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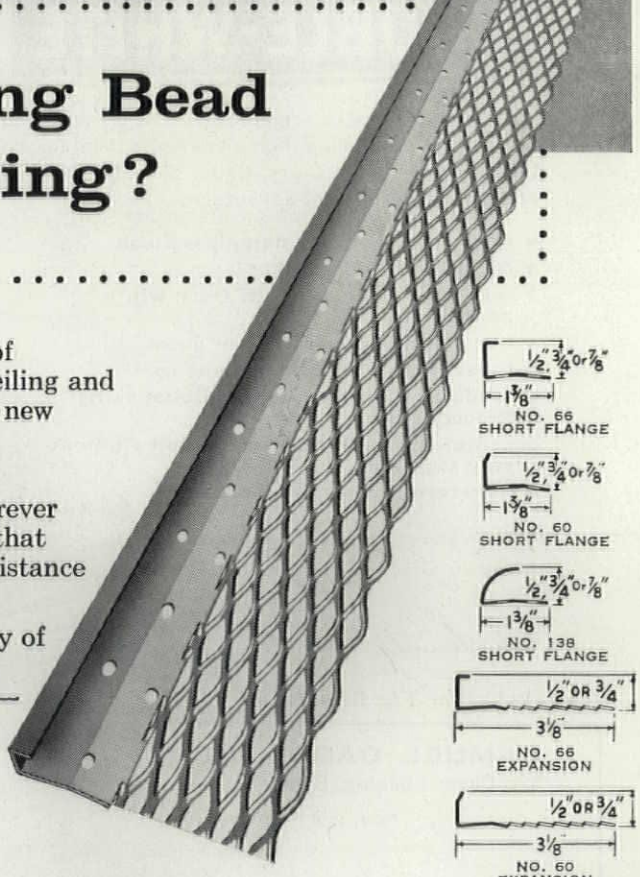

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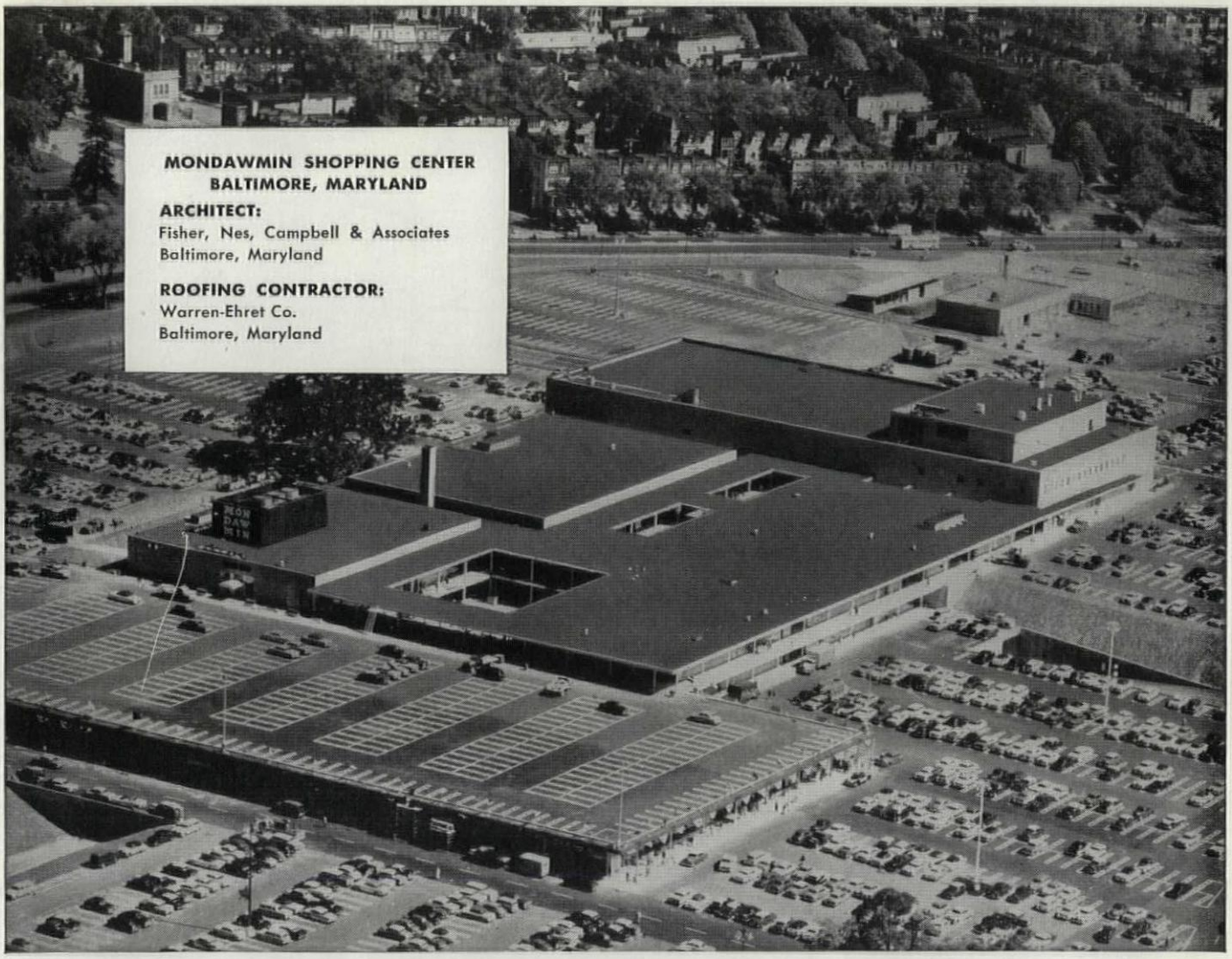

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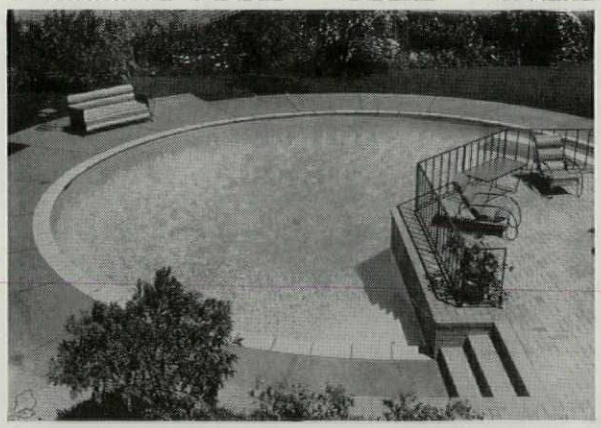

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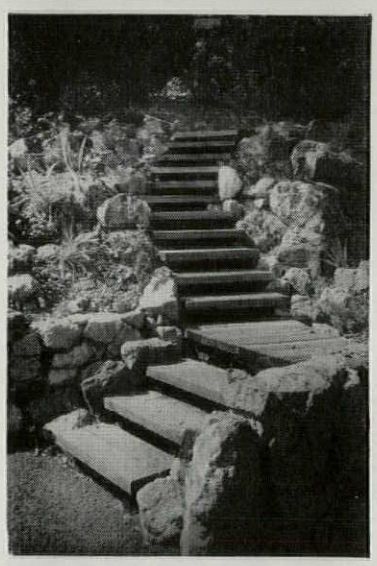

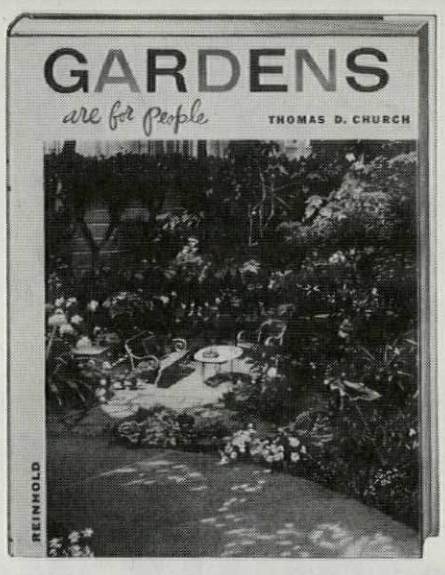

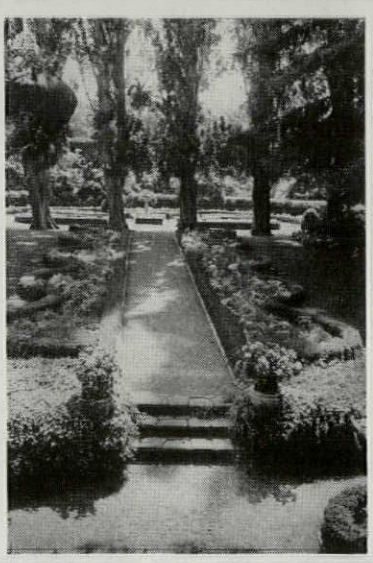

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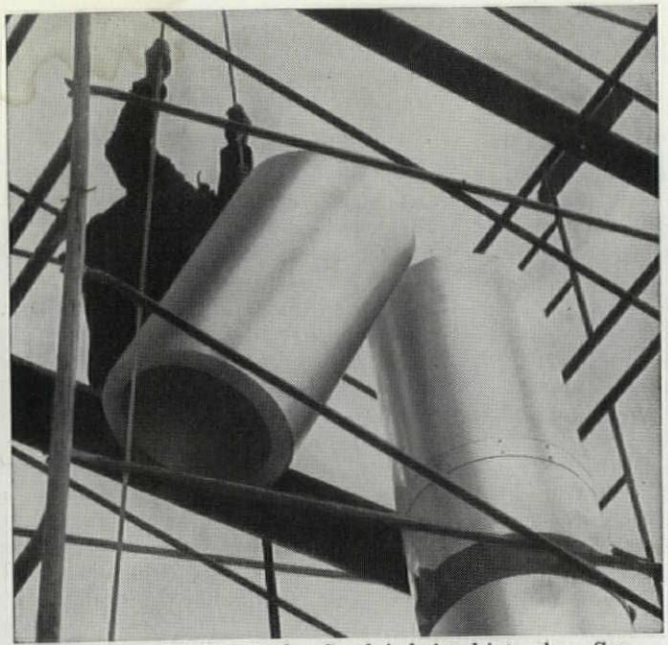

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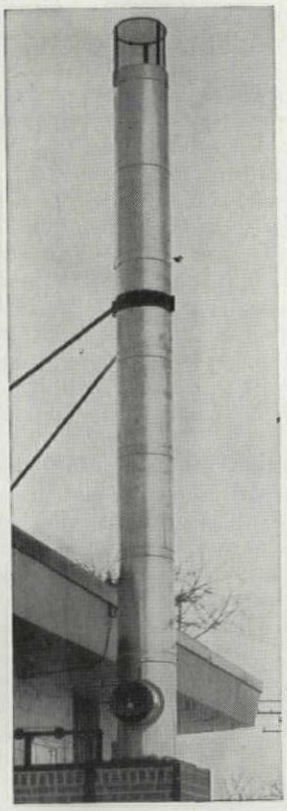

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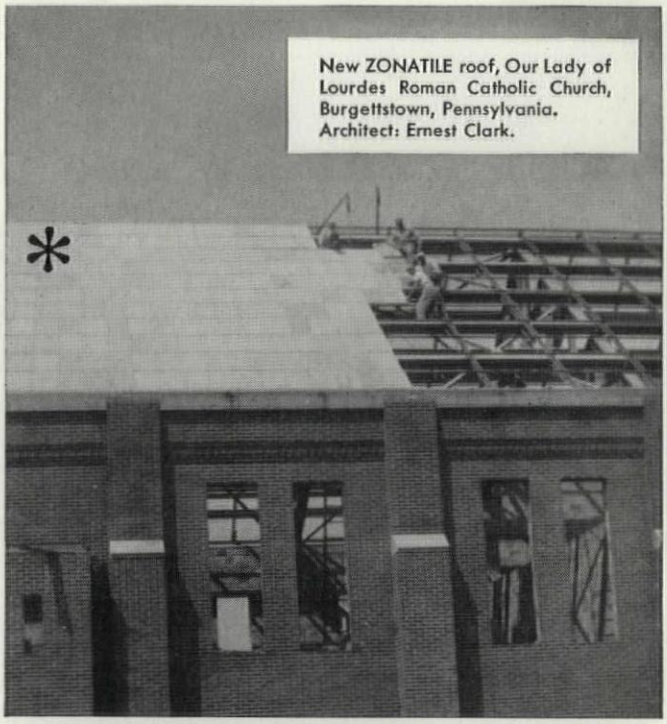

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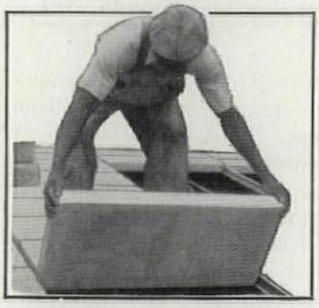

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P.S.

submitting your work

How should I submit some of my work to P/A for possible publication? This question is often asked us, with added queries about timing, photography, and so on, and it might be well to answer on this page again. Several years ago I wrote a P.S. on the subject, but I realize that many new firms deserving to be recognized have since come into existence.

First, P/A's Editors are always anxious to see work which is sent to us directly by the designer. As in the case of any unsolicited submissions (manuscripts to publishers, entries in competitions, or whatever) it should be remembered that many other buildings and possible stories are being weighed at the same time. Design excellence, according to the Editors' best judgment, is the first criterion, of course, but there are many other editorial, journalistic, and budgetary considerations to be met after that. These are our problems, not yours, except as they may affect the acceptance or rejection of a project.

We think that our system of consideration of submissions is as fair as it can be made. No single Editor can make a commitment for the magazine. Each Editor, however, is constantly on the lookout for potential material. Possible future stories come to us from various sources; the two most important are the Editors' nominations, from work seen on trips and visits, and material sent to us by architects. Other sources are "speculative" submissions from photographers, stories from public relations agencies, promotions from manufacturers whose products have been well used, tips from friends in the profession. Each week we have a group editorial meeting at which all of us who are not away from the office carefully examine and consider all newly submitted material, from whatever source. I have often wished that some of these meetings could be recorded, because they can develop into most interesting discussions, debates, defenses, and rebuttals. If you have sent us something during the week, it will be taken up at that meeting.

Now, for that first submission: in what form should your work be seen by the Editors? If it is a project, not yet built, send prints of preliminary drawings, photographs of any model that may exist or a print of a rendering, plus a brief statement of program, solution, and outstanding aspects of the design (planning, siting, structure, materials, related arts, landscaping, details, use of color, etc.) If it is a finished building, not professionally photographed, then instead of the preliminary graphic material, send us snapshots—black-and-white or kodachromes—sufficient in number so that the total design and the environment can be evaluated, plans, pertinent sections and details and, again, a brief statement of aims and accomplishments. For these initial submissions, please do *not* prepare special drawings, *pochés*, etc. Selected prints from the working drawings are entirely adequate; in fact we prefer them. You will receive from us a prompt response of *Yes*, *No*, or *Maybe*. If it is a negative answer, the only remaining problem is ours—how to retain your friendship.

The *Maybe* reply will probably say, in effect, that we like your job but for some reason can't say definitely that we can *promise* to publish it (possibly too many other commitments in that field or type; perhaps a hesitation about the final result of a fine-looking project which may still be subject to compromise). In that case we suggest that if you want to submit it elsewhere we'll be sorry, but you're free to do so, of course. And in that case we will keep in touch with you and will ask you to keep us informed of progress.

If the answer is a definite *Yes*, then the next steps will depend on the status of your job. We on P/A have a strong feeling that architecture should not be photographed too soon; planting, if any, should have a chance to grow, and the building should be in use (much as this sometimes complicates the photographer's assignment). We also schedule far ahead, as our past contributors know, unless unusual circumstances cause quick (and therefore, usually, less complete) presentation. This is partly for our own peace of mind, and equally to allow full, sober preparation of the story.

Another question often asked has to do with photography. Who pays for what? We make our own financial arrangements with professional photographers, for the right to use once the pictures we select for publication. Those arrangements are standard, although they may vary depending on the type of assignment or purchase. This "contract" of ours with the photographer, however, has nothing to do with his other business relationships: additional photography for architect, owner, or manufacturer; sale of prints to any of those or other interested persons; subsequent publication of the same job in magazines or newspapers in other fields.

P/A has no staff photographers as such. If any one tells you that he is "representing" the magazine, unless you and we have arranged together for photography, that is not the case. If a photographer asks your permission to photograph a job on speculation, to be submitted to P/A, that is another matter. It will be considered at our weekly meeting in the same way as any other submission; if it is accepted, he will be paid for photographs used at our regular rates. Again, any arrangements you may want to make with him for pictures for your own use are your business and his.

There is one other sticky little matter which I might as well touch on: "exclusives." While there is more than enough material available today (projects, finished work, articles, reports) to fill all the pages of the magazines in the field, there inevitably develop outstandingly good, absorbingly interesting projects that we all would like to publish. When I first came to P/A there was a sort of gentlemen's agreement among the editors that the one who got there first and secured a "commitment" from the architect would have his rights respected by the others. Then one of our competitors began going over the heads of the architects to the owners for commitments, and confused the picture; more recently another magazine has followed a policy of publishing regardless of—or contrary to—commitments elsewhere. And I know that a brother editor is now proposing in many cases *simultaneous* publication of work committed to others. I am told this is good journalism, but I regret it. I think it is unfair to the reader, in a field where we know there is a certain overlap of circulation, to show him the same work twice, when there is other work that needs to be shown. And I know that this rushing for "scoops" results in too quick, too superficial presentation. So in the case of work we want to publish, we still ask for protected first-publication rights *in our field.*

Which leads to the final point, often mentioned in our pages; we encourage, and try to assist in publication of the same work we are presenting in media in *other* fields—before, at the same time as, or after our own story. This, we think, is publication education regarding architecture and public relations for architects, and we want to encourage it. Our only selfishness is a desire to avoid duplication in the architects' own professional journals.

I hope that I've covered the subject sufficiently. Now I have a couple of very difficult rejection letters to write which make me very sad; and several letters of acceptance which make me very happy.

Thomas H. Creighton