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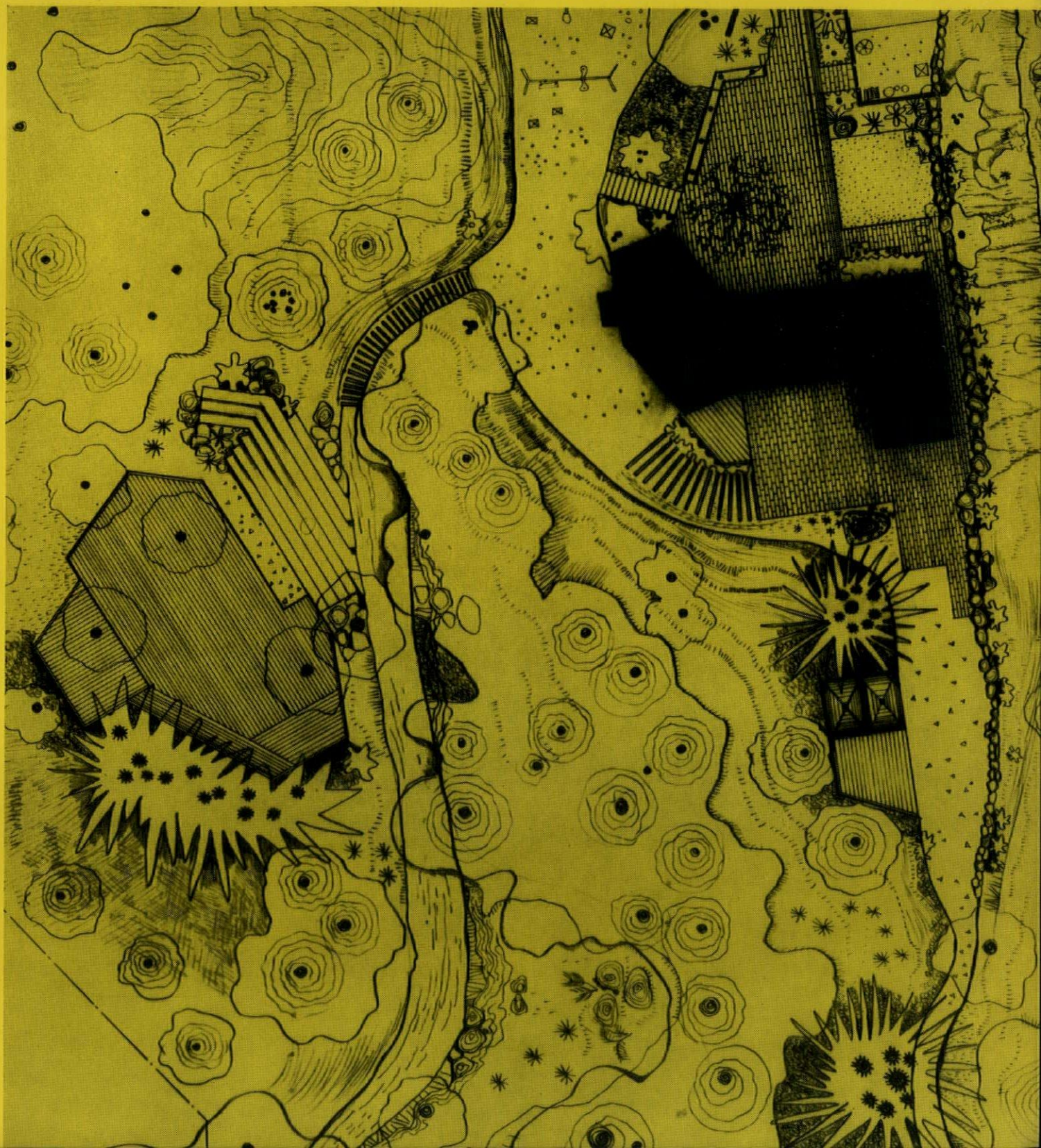

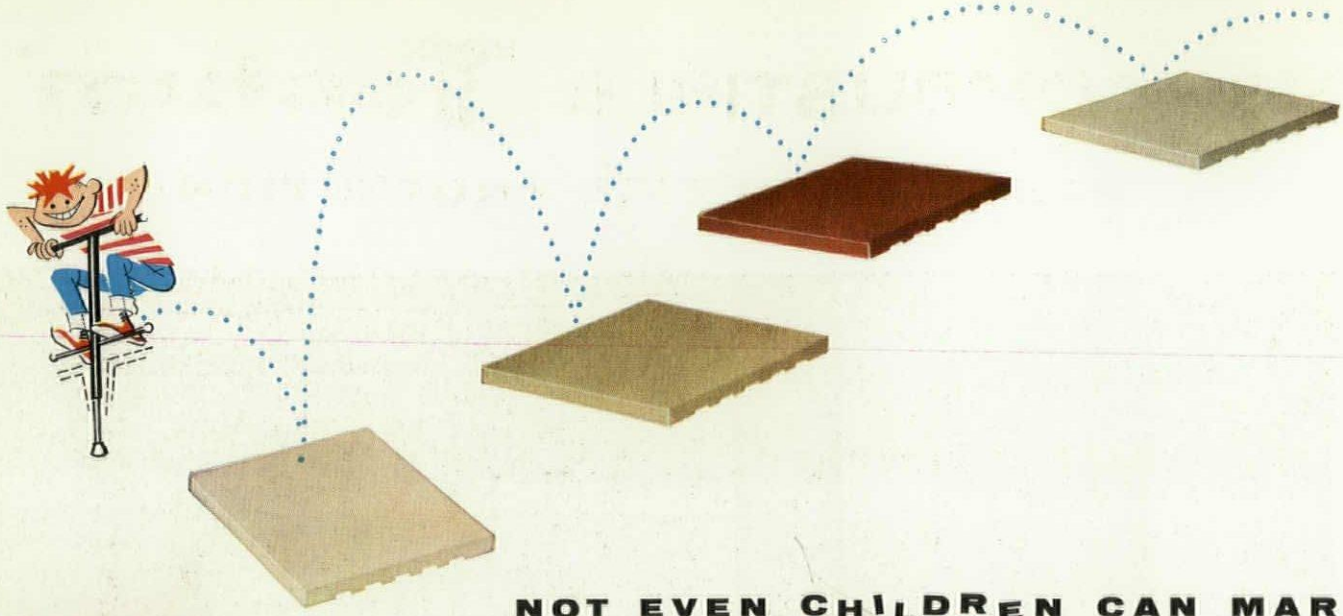

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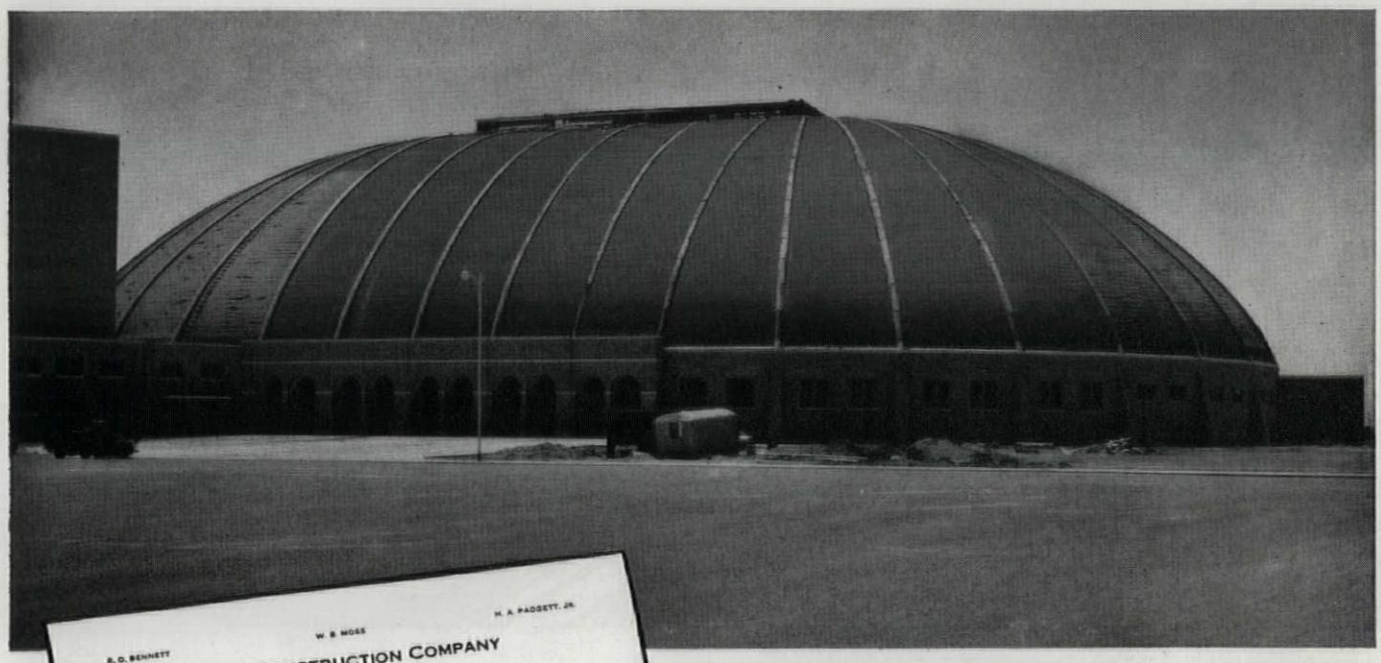

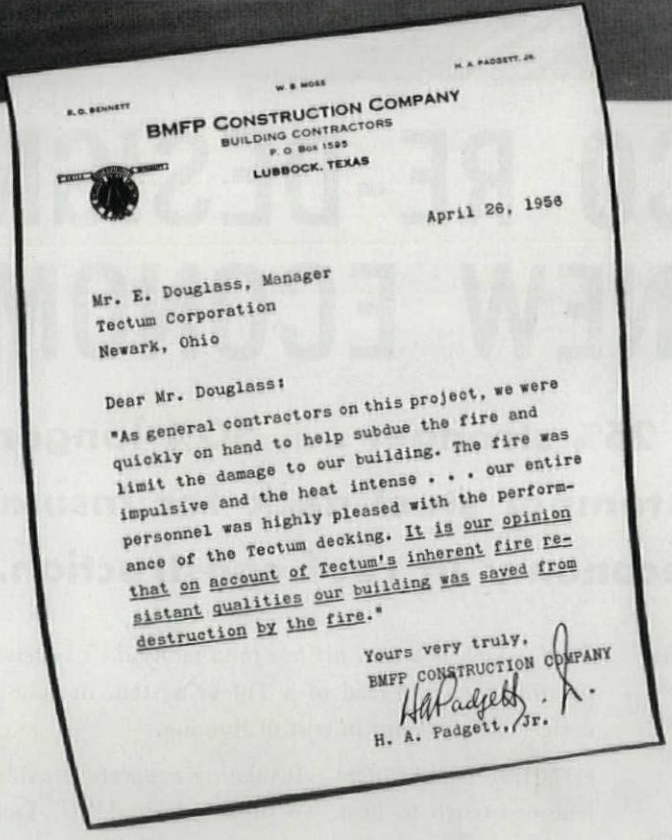

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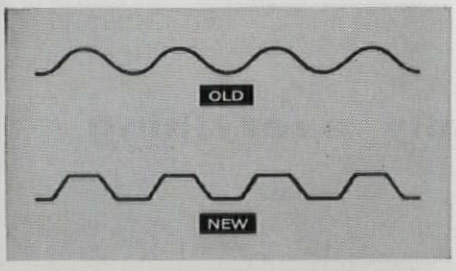

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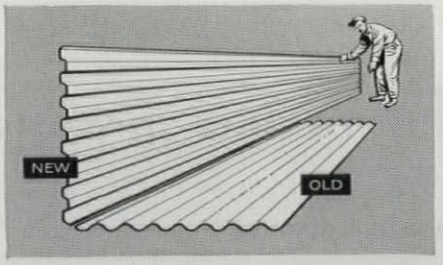

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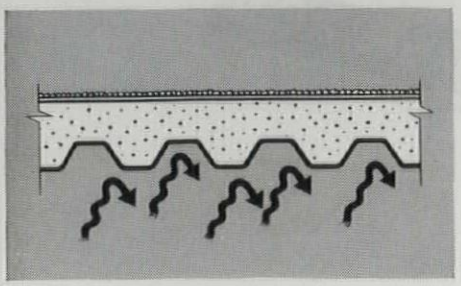

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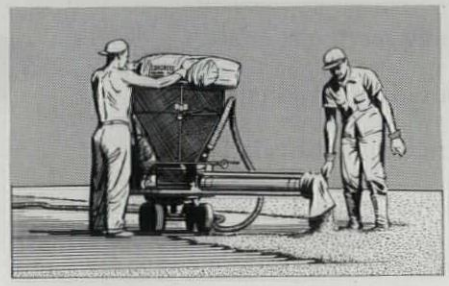

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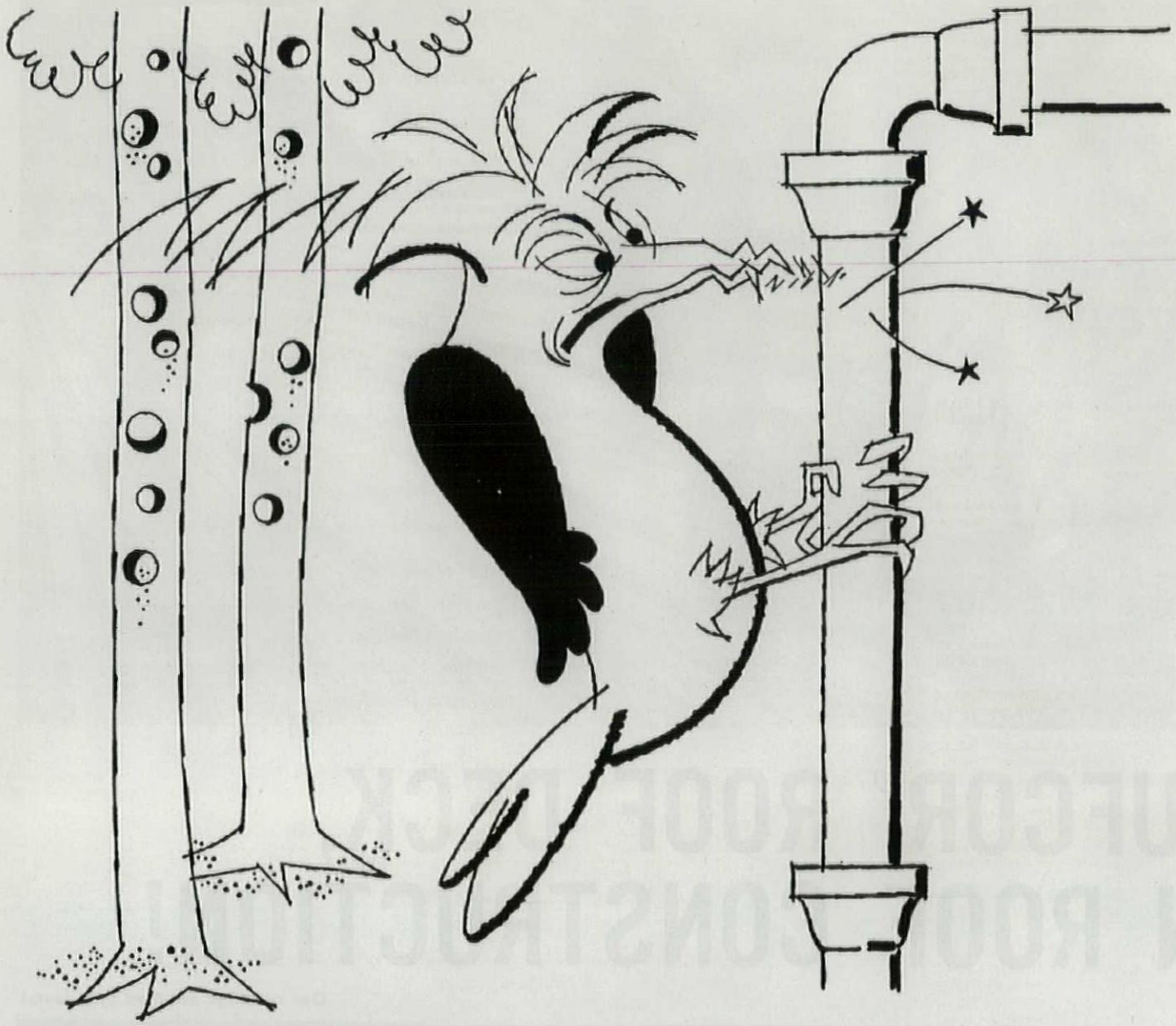

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PROGRESSIVE ARCHITECTURE

May 1958

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It's the Law by Bernard Tomson

P/A Office Practice *article further discussing the architect's potential liability in damages for injuries sustained in his buildings.*

Whatever the law in other states, it is now the settled law of New York that an Architect may be held liable for injury to third persons resulting from a hidden or latent defect in a structure caused by improper design or planning. The New York Court of Appeals in *Inman* v. *Binghamton Housing Authority*, 3 N.Y. (2d) 137, has ruled that an Architect will be liable for such defects, even if the owner has accepted the building. The Court, however, overruled a lower Court decision which had held the Architect liable even where the defect in question was apparent. This column reported on the lower Court decision in JANUARY 1957 P/A.

In the *Inman* case, six years after the completion of construction, a two-year-old child fell off the stoop located at the rear entranceway to his apartment. Suit was instituted against the Architect, the Builder, and against the public housing authority which owned and operated the property.

The complaint against the Architect alleged that the infant had sustained severe injury because the Architect, in designing the apartment building, had created "hazardous and extremely dangerous conditions" in the stoop area, "well-knowing" that it would be used by infant children. The complaint further alleged that the Architect furnished improper designs and plans because of the absence of a "protective railing, guard, or any device whatever to protect the occupants" and other persons from falling off the stoop; in designing a rear door which opens outwards to the porch in such a manner that anyone on the porch is "required to back precariously close to the edge"; and finally that the "step leading from the porch or stoop to the sidewalk" was "grossly inadequate" because it was located in the center of the porch and did not extend its entire length.

The Architect contended that, since the accident occurred many years after the Owner had accepted the building, he was not liable for injuries sustained by third persons with whom he had no contractual relationship. Both the appellate division (the lower court) and the Court of Appeals of New York ruled that an Architect could be held liable for injury to third persons despite the lack of contractual relationship or "privity" between them. The Court of Appeals, however, in reversing the decision of the lower Court further ruled that the Architect could only be held liable for improper designs or plans after the acceptance by the Owner if the hazardous or dangerous condition which he created was latent or concealed.

In considering the liability of an Architect or Builder to third persons, the Court considered prior precedents which enunciated the rule that a manufacturer of something inherently dangerous is liable for injuries to remote users. The Court said:

"The cases establish that the manufacturer of a machine or other article, 'dangerous because of the way in which it functions, and patently so, owes to . . . [remote users] a duty merely to make it free from latent defects and concealed dangers.' (*Campo* v. *Scofield*, 301 N.Y. 468, 471, 95 N.E. 2d 802, 803.) 'We have not yet reached the state,' we wrote in the Campo case, supra, 301 N.Y. at pages 472-473, 95 N.E. 2d at page 804, 'where a manufacturer is under the duty of making a machine accident proof or foolproof'. . . . Suffice it to note that, in cases dealing with a manufacturer's liability for injuries to remote users, the stress has always been upon the duty of guarding against *hidden* defects and of giving notice of *concealed* dangers. (*Cases cited.*) In point of fact, several of the cases actually declare that a duty is owed, a liability is imposed, *only if* the defect or danger be not 'known' or 'patent' or discoverable 'by a reasonable inspection.' And, since the presence of a latent defect or a danger not generally known is precedent to the manufacturers' liability, the absence of such a recital in the complaint is fatal to the existence of a cause of action.

"Examination of the pleading before us discloses its invalidity. It contains no allegation of any latent defect or concealed danger. It simply complains of (1) the absence of 'a protective railing, guard or any device,' (2) the arc made by the door when opened, and (3) the fact that the step did not extend full length of the stoop, all patently obvious defects, if, indeed, they are defects at all. From none of these recitals may it be said that the architects or the builder violated a duty owed to users of the stoop. Entirely lacking, to paraphrase what we said in the Campo case, supra, 301 N.Y. 468, 471, 95 N.E. 2d 802, is any suggestion that the structure possessed a latent defect or an unknown danger and, in the very nature of things, entirely lacking is any recital that the absence of a railing or other device was unknown or undiscoverable. As we have already indicated, such omissions are fatal."

The Court further compared the type of defects considered in the decisions in which a remote user had recovered against a manufacturer to the facts of the case before it:

The Court stated:

"Analysis of the decisions in which a remote user has recovered in tort, be it from a manufacturer, supplier or contractor, amply demonstrates how different the instant case is. Here, we have nothing like the sudden collapse of an imperfectly constructed scaffold, a defective automobile wheel or a faultily erected concrete ceiling (*Devlin* v. *Smith*, 89 N.Y. 470; *MacPherson* v. *Buick Motor Co.*, supra, 217 N.Y. 382, 111 N.E. 1050, L.R.A. 1916F, 696; *Adams* v. *White Construction Co.*, supra, 299 N.Y. 641, 87 N.E. 2d 52); nothing like the breaking of a poorly made handle on a coffee urn (*Hoenig* v. *Central Stamping Co.*, 273, N.Y. 485, 6 N.E. 2d 415); nothing like the explosion of a defectively manufactured soda bottle, aerated water bottle or coffee urn (*Smith* v. *Peerless Glass Co.*, 259, N.Y. 292, 181 N.E. 576; *Torgesen* v. *Schultz*, 192 N.Y. 156, 84 N.E. 956, 18 L.R.A., N.S., 726; *Statler* v. *George A. Ray Mfg. Co.*, 195 N.Y. 478, 88 N.E. 1063); nothing like the explosion of an electric transformer, improperly packed (*Rosebrock* v. *General Electric Co.*, 236 N.Y. 227, 140 N.E. 571). In short, in the present case, we have nothing that it related to, or stems from, the existence of a latent fault or hidden danger in either design or construction. The complaint reveals a one-step stoop, two steps high along a part of its length, with no railing or other protective device around it, from which an apparently unattended child fell. Whatever the defect, it may not be said to have been latent, and, whatever the danger, it certainly was not hidden. That being so, it is evident that the requirements of the MacPherson-Buick rule have not been met; the complaint of the Inmans against the architects and the builder is without legal basis and was properly dismissed at Special Term."

In considering the liability of the Architect and the Contractor, the Court in the *Inman* case applied the same standards and rules and thus dismissed the action against the Contractor as well as the Architect. The liability, however, of a Contractor is not always identical with that of an Architect and to treat their legal position identically can lead to confusion. For example, in certain situations a Contractor may be deemed to be free of responsibility because he has relied upon the plans and specifications of the Architect. (See 13 *American Law Reports* 2d, 195.) Each factual situation must be separately considered. The conclusion to be drawn from the case discussed is that an Architect may be held liable for latent defects in a building long after it was concluded. If at all possible his insurance should cover this contingency.

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Mechanical Engineering Critique by William J. McGuinness

P/A Office Practice *column on mechanical and electrical design and equipment, devoted this month to official approval of residential electrical systems.*

In October, 1957, a new house in Hickory, North Carolina, was awarded a gold medallion by the local Duke Power Company. The award signified acceptance of the house as well planned and equipped for electrical living, with service of proper size for present and future needs, and interior wiring in accordance with standards for that region. The house, designed by Architect Bemmer Harrell, was the first to receive the award which may be given to 120,000 houses throughout the nation in 1958. They will be known as Medallion Homes and will be honored as part of a movement which has been gaining impetus for the past year. Power companies, aided by equipment manufacturers, are setting up standards, varying a bit in different regions, by which to judge these houses. In each case, the planner has complied with the local requirements and has applied for the approval.

The seal of the National Board of Fire Underwriters has always been a sign of a safe electrical installation and it will continue to have this meaning. It is no measure of the adequacy of planning nor a guarantee that the system will not be overloaded in future. The new movement aims to formalize the approval of houses that are well planned and well built for the maximum of electrical use. Reflecting a trend that seems to be a logical one, it will urge the inclusion of heating and domestic hot-water generation by electricity. In the interest of efficiency, it would appear that ultimately any major equipment that requires servicing should be under control of the power company at its central station. Thus, combustion for heating could be eliminated in the home and delegated as a function of the utility company. The power generated there will be transmitted for producing heat and hot water. At present, this is economically feasible only in some parts of the country. It is urged in Louisiana, for instance, where power is offered for heating at one cent per kwh. For the present, it will flourish where the winter-heating load is light or where hydroelectric or other inexpensive power generation is common. One of two Medallions is obtainable—a gold one for the most complete installations, and a bronze one for similar quality but where heat and hot water are not produced by electricity. The medallion is located inconspicuously in the masonry of a walk or foundation after inspection of plans and installation. For those who might not employ an electrical engineer to aid in the design of a system, the local power company may stand ready to advise the electrician about adequacy and to inspect as well as approve his work.

The following requirements are typical of the specifications for an installation that will qualify for the gold medallion.

General purpose circuits: One 20 amp circuit for each 500 sq ft of floor area.

Appliance circuits: Two 20 amp circuits for convenience outlets in kitchen, breakfast room, dining room, and laundry.

Equipment circuits:

Item	*Amps*	*No. of Wires*	*Volts*
Range	50	3	120/240
Separate oven	25	3	120/240
Surface unit	35	3	120/240
Clothes dryer	30	3	120/240
Water heater	20	2	240
Cooling	(to be calculated)		
Heating	(to be calculated)		
Dishwasher	20	2	120
Washing machine	20	2	120

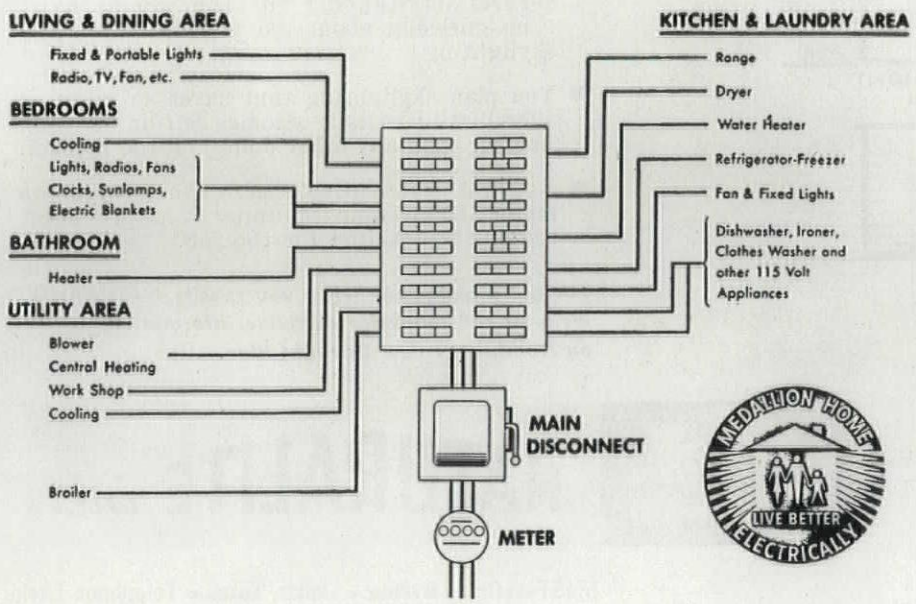
Possible additional circuits:

Bathroom heater	20	2	120 or 240
Food freezer	20	2	120
Ironer	20	2	120
Room air conditioner (1½ hp)	30	3	240
Work shop	20	2	120
Water pump			(consult utility)

Other general requirements:

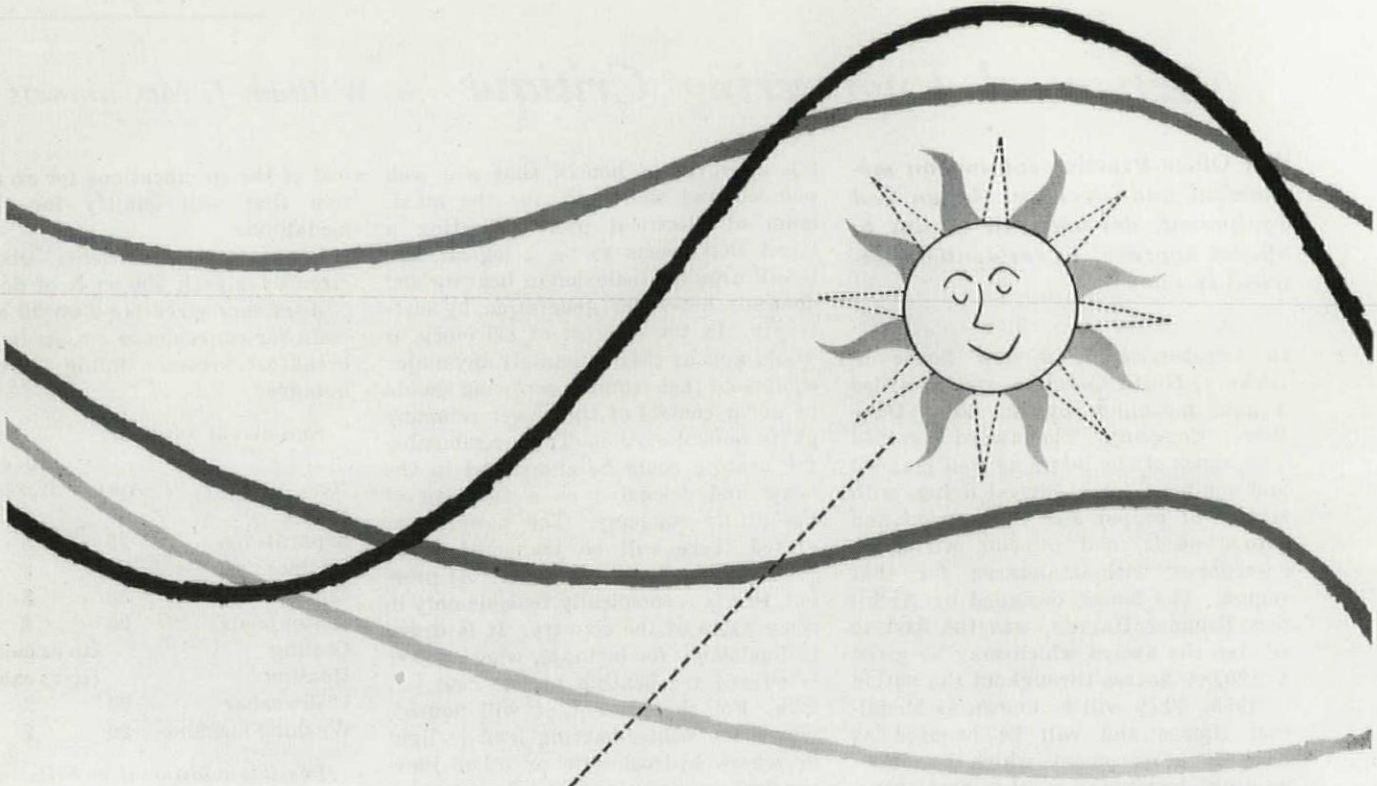
Wire sizes, No. 6 through No. 12
Minimum wire size, No. 12
Spare circuits, 2
Lighting, general—15 lumens per sq ft
Lighting, kitchen—50 lumens per sq ft
Minimum house service—100 amp.
wire size—No. 1
Larger service if required.
Wiring must conform to local or national codes.

The Medallion of Approval and the kind of planning that it endorses.



A number of companies, including Indiana & Michigan Electric Company, and Dayton Power & Light Company, have established individual requirements similar to the above and modified to meet local conditions. Associations of utility companies also have formulated their regional requirements. Examples of these are the Southwest Louisiana Electric Membership Corporation and also a group of eight companies in Southern California which met recently at the offices of the Southern California Edison Company. The program has been heavily advertised in many media, including General Electric's *G.E. Theater* on television.

Aimed largely at the development builder of houses for sale, this guidance and endorsement can be of great value to the individual owner, architect, and builder. Its final scope is expected to be nationwide and permanent.



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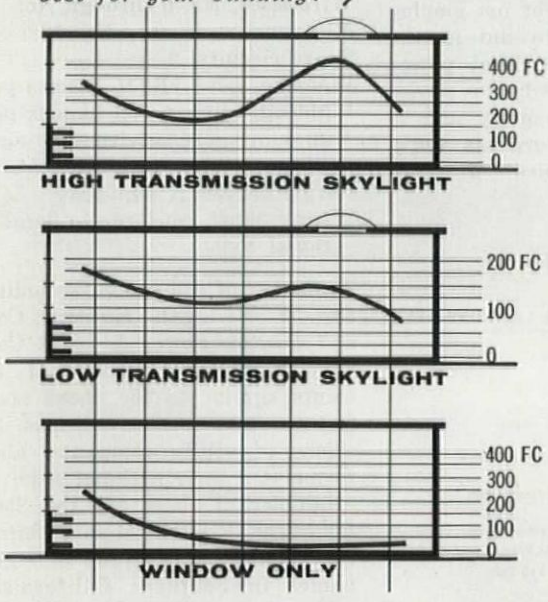

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The Architect's Education in Mechanical and Electrical Services of Buildings

*by Louis Axelbank**

P/A Out of School ***article raising the question: how much should an architect learn about mechanical and electrical services of buildings —and where should he learn it? Axelbank prefers the long title for his subject rather than the more usual "Environmental Control" or "Architectural Mechanics," since it corresponds to work of these trades in the building industry.***

A conference was held at Princeton University in December, 1953, on the subject, "Architecture and the University"[1] with men prominent in architectural practice and education participating. The points of view expressed at this conference were far from being unanimous as to how much of what subjects should be crammed into the undergraduate years of college training for architects. A thought expressed by one of the architects, about which there appeared to be no dissent, was that the schools should give only a smattering of what the architect can easily acquire later in his practice, and should concentrate on what is hardest for him to attain during his practice. What these areas of learning are was not spelled out in detail, but a number of the participants did refer to the need for more emphasis at school on the subjects having to do with the mechanical and electrical services of buildings.

The schools of architecture have not provided the requisite courses for this training, nor have they agreed on the minimum amount of time to be devoted to it, as a random check of some school catalogs indicates. The assigned time ranges from the University of Michigan's three semesters with an average of two hours per week, to Cornell University's one semester with three hours per week. During this limited time—judging by the listing of subjects to be covered—the student is expected to learn about: water-supply and drainage systems; heating, ventilating and air conditioning; elevators and escalators; acoustics and thermal insulation; including (in some schools) theory, special problems, design layouts, cost analyses, and field trips. Cornell's one semester even includes the writing of specifications!

This unrealistic attitude of assigning so little time to cover so much ground, is obviously a carry-over from the early days of architectural training, when the "Franklin stove" was the heating system and the well and cesspool constituted the plumbing and sanitary system. The schools have not kept pace in giving the architect the fundamental knowledge he requires in order to cope with the phenomenal progress made in providing for man's comforts and conveniences in the home, office, factory, and school.

If a large number of architects were asked for an opinion as to which branch of engineering they know least about, the majority, I believe, would pick the mechanical and electrical subjects. They would also, probably, concede that they are the most difficult to learn out of school. Why that is so can be explained by the fact that there is no one in the architect's office qualified to train the newcomer in these subjects. Generally the staff does not include a mechanical or electrical engineer, and where there is one he is not likely to have the time or inclination to train the young architect in his specialty. On the other hand, the older architect is himself handicapped by a lack of basic and co-ordinated information on the mechanical and electrical services. He cannot, therefore, even with best intentions, impart the required information to the trainee in his office.

If we grant, then, that the foundation for a basic knowledge of these subjects has to be laid in school, and that more time is required in the curriculum for these subjects, the obvious question arises: where is the additional time to be found? It would seem that some time could be spared from the group of subjects taught to architects under the heading of architectural or structural engineering. The amount of time devoted to this, compared with the mechanical and electrical engineering subjects, is out of all proportion to their relative importance and usefulness to the practicing architect of today.

Assuming that additional time will be made available for teaching this course during the undergraduate years, there is need to formulate a uniform program; to determine the content, the time required, and the manner of teaching the various subjects. The Association of Collegiate Schools of Architecture or the National Architectural Accrediting Board could undertake this task.

As an aid in the preparation of such a program, a discussion is suggested to examine the objectives in teaching this course. There is general agreement that the number of subjects an architect must learn has multiplied to such an extent that he cannot function except as co-ordinator of a team; whatever detailed information he lacks must be supplied by other members of the team. That applies particularly to the mechanical and electrical services, in which he has to rely to a great extent on the engineer's advice. What is important, then, is to arrive at a consensus on how much an architect needs to know in order to work effectively with the mechanical and electrical engineers (without them, when necessary) and how much of that knowledge must be attained at school. In order to arrive at such an agreement, specific proposals have to be made as a basis for discussion.

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The following are specific recommendations for the contents and the method of presenting this course. The contents are divided into general categories, with illustrative examples for each.

1. **Terminology.** The most important phase of the course should aim at the student's acquiring the terminology prevalent in the mechanical and electrical trades: not simply verbal definitions, but the concept implied by a name or an expression in the design or construction of a building. For example, it is not sufficient to say, "provide mechanical ventilation"; one has to specify exhaust, supply, or both. The difference between a unit ventilator and a unit heater, or a radiator and a convector should be understood; the refrigeration cycle, water chiller, and unit cooler should have specific meanings.

2. **Choice of Systems and Materials.** The choice of systems or types of installations should be another important phase of the course. The student should learn to visualize what each system means in terms of space utilization, have an idea of approximate differences in first cost and cost of operation and maintenance, and know some comparative advantages and disadvantages. As in the case of space heating: the choice of forced warm air; forced hot water; and steam, vapor, Metro, or vacuum systems.

The choice of materials and types of finish that go into the mechanical and electrical services should be presented

(Continued on page 13)

* *M.E., P.E. Axelbank is co-author of* Streamlined Specification Standards: Mechanical and Electrical, *published by Reinhold.*

[1] *The proceedings of this conference were published under this heading by Princeton University in 1954.*

(Continued from page 11)

in terms of comparative costs of the materials against the claims made for their durability, the costs of their installation, as well as other pertinent factors. Examples are: black and galvanized steel or wrought iron, and brass or copper for piping; various insulating materials and their finish for ducts and piping.

3. **Basic Theory and Units of Measurement.** A minimum amount of basic theory and simple explanations of the natural phenomena and the processes which are involved in the building services should be introduced with each subject. Examples would be: the theory underlying pump suction; venting as applied to plumbing; causes of water hammer; and sound absorption and reflection in noise-control problems.

The accepted units of measurement in the mechanical and electrical trades should be used repeatedly and related to each other, until they become as familiar to the student as the inch or the pound. For example: Btu and degree-day, relative humidity and ton of refrigeration, foot-candle and lumen.

4. **Machinery, Devices, Controls.** The student should derive from the course a familiarity with the main pieces of equipment, their types, and where they fit into the building services, such as: pumps—condensate, vacuum, jet, submerged; air filters—dry, viscous, electrostatic; traps, as applied to plumbing and to steam heating; safety and comfort control devices, like the pressurestat, aquastat, hygrostat.

5. **Codes, Rules, Regulations.** This course should impart an understanding of the principles and reasons upon which various codes, rules, and regulations are based. The student should be made aware of the extravagances and limitations of some city codes and regulations, in comparison with the minimum requirements of national codes, like the American Standard Safety Code for Mechanical Refrigeration, and the American Standard National Plumbing Code. With such a critical approach he will not be likely later in his practice to apply rules and regulations blindly, when they are not applicable or enforceable.

6. **References, Guides, Standards.** There is a particular need for the student to learn which are the authoritative references from the multitude of guides and standards available in this field. The most reliable sources of information should be explained and used during the course. For example, applicable sections of American Society of Heating and Air-Conditioning Engineers' *Guide* should be pointed out and their usefulness and limitations for various services discussed. Portions of the *National Electrical Code*, and National Board of Fire Underwriters' *Pamphlets* should be referred to as dependable sources for minimum requirements in plumbing, fire protection, refrigeration, and electrical services. Technical bulletins published by governmental agencies, such as Housing and Home Finance Agency, should be brought to the student's attention. He should learn about the existence of *Simplified Practice Recommendations* and *Commercial Standards*, published by National Bureau of Standards.

The student should be cautioned about pitfalls inherent in the uncritical use of engineering information and "architect's specifications" contained in manufacturers' catalogs. On the other hand, he should be encouraged to depend on certain technical information to be found in specific bulletins published by reputable firms like General Electric Company on lighting design, or by Acoustical Materials Association (composed of a number of manufacturers) on sound absorption and noise reduction.

7. **Solution of Problems and Design of Systems.** One important area—left to the end because it is controversial in nature and requires clarification—is the solution of design problems and the layout of systems. Judging from some descriptions of this course in school catalogs, emphasis is laid on the practical problems-and-design method of teaching it. One must question the effectiveness of this method under the circumstances. There just is not enough time to present both the basic training and the solution of problems; one or the other will suffer. Since the basic studies must come first, the emphasis should be on that.

However, an attempt should be made to demonstrate the methods or the steps that go into the solution of some typical design problems, the factors to be considered, and the sources of information to consult for aid in their solutions. For example, in space heating "design," the procedure in figuring heat losses, with an understanding of the air-change method, and the simplest possible problem, such as a two-room cabin, would suffice.

The solution of actual design problems independently or co-operatively, can only be done profitably after the basic studies have been completed, which means during the graduate years, when it should be made an integral part of the specific building design problem given in the architectural design and working drawings course.

8. **Lesser Important Areas.** Current mechanical and electrical developments about which the student will be reading in architectural journals in the coming years should be introduced in this course, mentioning only the scientific concepts on which they are based, and the trends and the limitation to their future practical application in the building services. For example: the heat-pump method of heating and cooling, solar-heating systems, high-temperature hot-water distribution, and luminous ceilings.

A smattering of specifications writing for the building services should be given, with such subjects as what constitutes the skeleton of such specifications, the difference in approach between the build-up of the architectural and the mechanical and electrical specifications, and the importance of coordinating the various trades' requirements.

Visits to jobs, engineers' offices, and plants would of course be very helpful to the student, and should be planned whenever time and circumstances permit.

•

This course should be taught by one or more competent practicing engineers with years of experience in the mechanical and electrical services of buildings. To quote Architect Max Abramovitz, who was one of the participants in the Princeton conference mentioned at the outset: "I think you need this expert, and should find one who would give part of his time. You should enthuse the student about the particular specialty and provide information from the best sources . . . it's best to have the engineers teaching engineering to architects."

The student in architecture should not be expected to learn heating, ventilation, air conditioning, water supply and sanitation, and some of the electrical subjects, by taking parts of these courses intended for engineers: first, because they have not the prerequisites which the engineers have; and, second, because they cannot afford the time required to cover such full courses. Comments by a large number of readers on any phase of the problems discussed in this article would no doubt serve to clarify a muddled situation. Architects in making comments could be most helpful in arriving at some practical conclusions, if they would include, in one form or another, direct or indirect answers to the following questions:

How did I learn what I know about the mechanical and electrical services of buildings?

How confident am I of the soundness of my knowledge on these subjects?

How much of what I know can I definitely trace to school, undergraduate, or graduate?

How difficult was it to obtain the remainder during the job-training period and later in practice?

What additional knowledge in this field should have been acquired at school?

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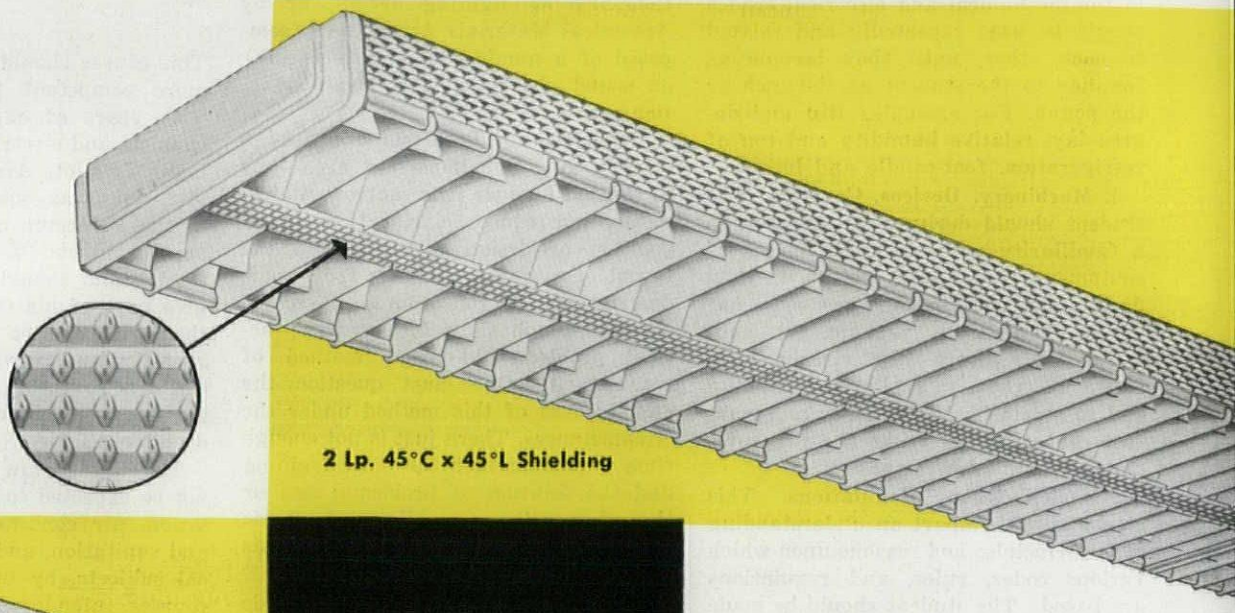

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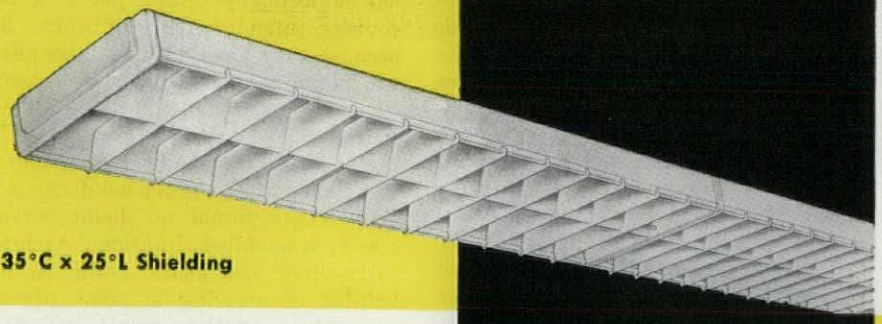

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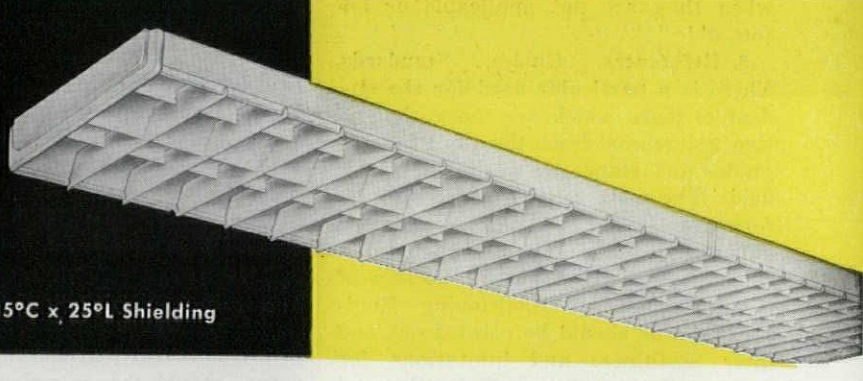

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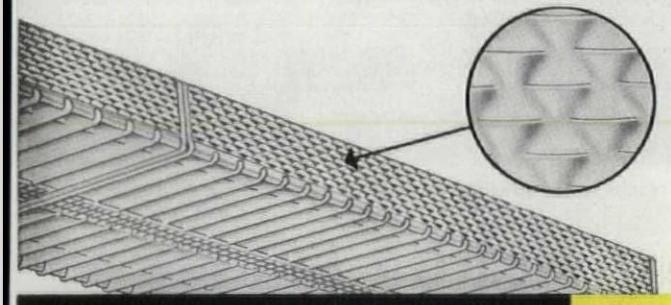

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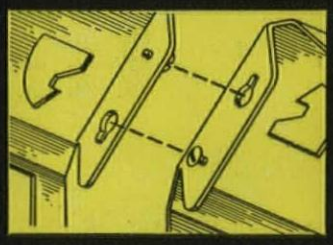

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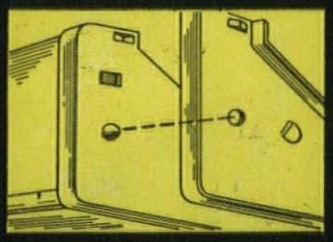
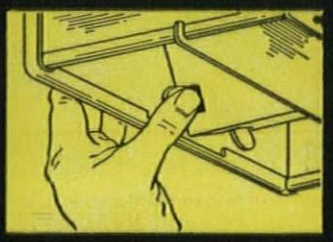


AUTOMATIC ALIGNER CLIPS . . . assure fast, accurate alignment of shielding assemblies. No adjustments needed. Bump on spring steel clip attached to each end plate lines up with hole in adjoining end plate.



"TWIN" THUMB LATCHES . . . at each end provide easy accessibility from either side of fixture. Slight finger pressure on latch releases shielding assembly on support chain at either end. Reattachment is quick and easy, too—spring loaded latches automatically engage rugged support arms on socket brackets to hold shielding assembly securely in place.

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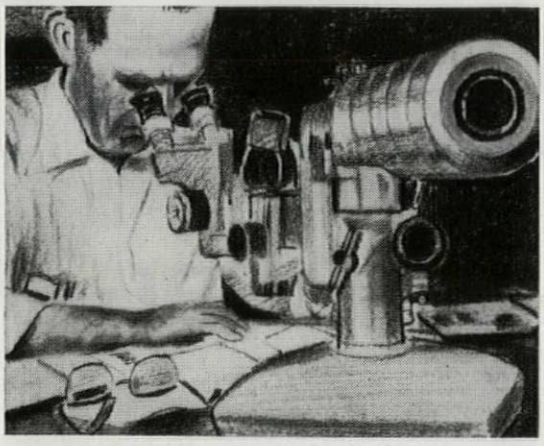

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Not so however, with new 4-D Wrought Iron. Byers field service engineers can present research facts which confirm the increased corrosion-resistance of this new product.

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Indexed in Art Index, Architectural Index.

REINHOLD

plea is heeded

Dear Editor: Edgardo Contini's article, "Design and Structure" (FEBRUARY 1958 P/A), was lucid and succinct—a superb summary of the weakness of much of modern architecture. I was very much impressed with the author's call for designs and structures appropriate to purpose; I was struck by his plea for a richer *and* more meaningful architecture. As a fifth-year architecture student, I'll try to keep in mind these excellent thoughts from Contini's beautifully written article.

STEPHEN RAY AUERBACH
Brooklyn, N. Y.

constructive criticism

Dear Editor: I had a growing feeling that American and other architects were using the structural engineers rather in the way a trainer uses his performing seals. They do their trick, receive a fish, and vanish from the scene while the trainer bows to the applause.

It was with great relief that I came to the very intelligent, constructive criticism by Edgardo Contini ("Design and Structure," FEBRUARY 1958 P/A), which should strike home to architects and engineers not just in the U.S.A. but everywhere. The architect inherits art and it is with him from the start of his training. The structural engineer does not inherit art (not yet), his training does not relate to art, but through his understanding of his work and mastery of technique he can reach a stage where structural engineering is art. At this point, when the condition governing the choice of structure can be stated simply and precisely is the meeting ground for engineer and architect.

I cannot agree with the latter portion of Contini's article. How can the American automobile be at once an example of an American tendency "toward expression of greater dimensions and imaginative potentials" and its fin tails a warning of what is to be avoided in the future. Take the fin tails and similar unnecessary ornamentation off the American automobile and what do you have? A European automobile.

The automobile is the refined product of "the habit of induced obsolescence" and if you accept that habit as a basis for lavish planning you will inevitably produce the quagmire of banana splits which Contini fears. The engineer and architect are not free from social responsibility, and we have reached the stage when the permanent building designed to last over 1000 years is a practical possibility. This is the challenge, not the lavish, impermanent structures which, however well executed, leave nothing but rubbish and photographs (only from the right angle of course) to posterity.

Do not scorn economy as a factor in design. A lot of Nervi's work was done for competitive design tenders. In general, economy tends to lead to subtlety of design, lavishness to the solution of problems by brute force.

D. E. KEY
Port of Spain
Trinidad, B.W.I.

proper approach

Dear Editor: Edgardo Contini's article in FEBRUARY P/A had a refreshing viewpoint on the subject of present-day design. If one is to take a theoretical and academic approach to design, then perhaps most of Contini's comments carried a message. However, if we take the broad or mature approach to design as was

(Continued on page 18)

DRAFTING TRENDS

At Universal Oil Products Company, Chief Draftsman M. F. Perkins checks the working qualities of Post pencil cloth with Joe Mania of the Drafting Division.

More drafting rooms use pencil cloth for ink-like lines at pencil speed

We've noticed that more and more drafting rooms are using pencil cloth for important originals. (We're particularly interested because POST was the first U. S. manufacturer of pencil cloth.)

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p/a views

(Continued from page 17)

suggested in the article, not all of us can arrive at the same conclusion.

Should we criticize the building examples that appear in the architectural magazines because they may be too expressive or perhaps not in scale with some viewers? Or, should we turn our attentions to the edifices that line Main Street, U.S.A.?

When I view such structures as the MIT Auditorium I am pleased to know that someone had the courage to keep the wheels of progress turning, whether or not mistakes occurred in the process. When an architect develops a design based on his desire for structural novelty, I feel sorry for him, yet I can tolerate his effort. But my objections do not lie with these designers; they do lie with the nondescript individual who is either lifting something from the past, or is developing pseudo designs for a false front and allowing the remainder of the structure to live a horrible existence. Let's look about us: do we see domes or paraboloids, or space frames with too much structural expression, or do we see structures of the types that were so aptly expressed in Mencken's essay, "A Libido for the Ugly." Should our critical sensitivity be confined to the building, or should we reach for broader values that include planning and landscape?

We need a critical evaluation of building projects that have no parking facilities, gardens, or pleasing walkways. In other words, we should not waste our efforts in evaluating an exceptionally well done project that was only 99 percent valid. Rather, we should turn our energies toward the complete design failures that vastly outnumber the successful ones.

RICHARD M. GENSERT
Gensert, Williams & Associates
Cleveland, Ohio

honor the pioneer

Dear Editor: John Johansen's "Plastic Proposals" (JANUARY 1958 P/A)

(Continued on page 20)

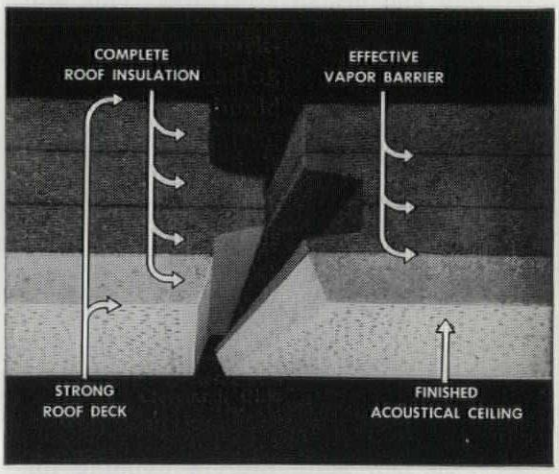
Here's a new, low-cost way to sound-condition light commercial structures. No suspended ceiling is required. No further acoustical installation is necessary.

This new Armstrong Cushiontone Roof Deck sound-conditions open beam interiors

New Armstrong Cushiontone Roof Deck is a 4-in-1 material that provides roof deck, insulation, multiple vapor barriers, and finished acoustical ceiling in one fast, simple application. It needs only beams to support it and built-up roofing to weatherproof it.

New Armstrong Cushiontone Roof Deck is made up of ½″ layers of asphalt-impregnated fiberboard. The interior surface is prefinished with two coats of washable white paint. Perforated in the popular Full Random design, it absorbs more than half the noise that strikes the ceiling surface. Cushiontone Roof Deck is available in easy-to-handle 2′ x 8′ panels, 2″ or 3″ thick, with sturdy T & G joints on all four sides.

Send for free twenty-four-page booklet, "How to build with Temlok Roof Deck." It shows you how you can add the beauty of open beam interiors to motels, gift shops, restaurants, and other types of light commercial buildings. Write to Armstrong Cork Company, 3905 Watson Street, Lancaster, Pennsylvania.



A 4-in-1 material, Armstrong Cushiontone Roof Deck provides a sturdy roof deck, multiple vapor barriers, roof insulation, and a prefinished acoustical ceiling.

Armstrong BUILDING MATERIALS

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(Continued from page 18)

are interesting and provocative. The church in particular shows promise of developing into an outstanding architectural contribution.

The reason expressed by the Jury for withholding a Citation, namely concern as to where this sculptural approach to design might lead in less talented hands, is the neatest bit of specious criticism I've encountered in this age of "Architectural enlightenment."

We've all seen the poor results of less talented hands trying to emulate literally the work of Frank Lloyd Wright. Nevertheless this did not preclude our giving Wright his just deserts.

HOWARD H. JUSTER
New York, N. Y.

plastic expression

Dear Editor: Let's have more of architect John MacL. Johansen and his plastic expression (NEWS SURVEY, JANUARY 1958 P/A) in this age of the box.

RICHARD Q. HYDE
Hazel Park, Mich.

engineer's anguish

Dear Editor: Reference is made to the letter from Donald J. D'Avanzo and reply by McGuinness in JANUARY 1958 P/A.

By all means make the stuff simple so that architects can jump right in and design structures. This will make plenty of work for engineers investigating collapses or estimating savings through good design, and incidentally, keep the lawyers and doctors busy, too.

Now how about a do-it-yourself monument kit?

JOHN K. BRIGHT, Project Engineer
Seelye, Stevenson, Value & Knecht
New York, N. Y.

client's approval

Dear Editor: We were greatly interested in the architects' critique of the new Main Library building for New Orleans (OCTOBER 1957 P/A), and we are of course pleased that this design has met with so much approval by various members of the architectural profession. We realize that this building represents what some of your readers may feel are new concepts of public library objectives, and we thought that they might be interested in a few words of further interpretation from the library staff, supplementary to those so ably presented by Arthur Davis and Nathaniel Curtis.

First, with regard to basic design, we requested the architects to give top priority to providing the largest possible uninterrupted area for the three largest service departments, with the further request that this area be located on the ground floor.

The first portion of this request had two major purposes: to assure the greatest flexibility of use, depending upon future developments, and to assure maximum public serv-

(Continued on page 22)

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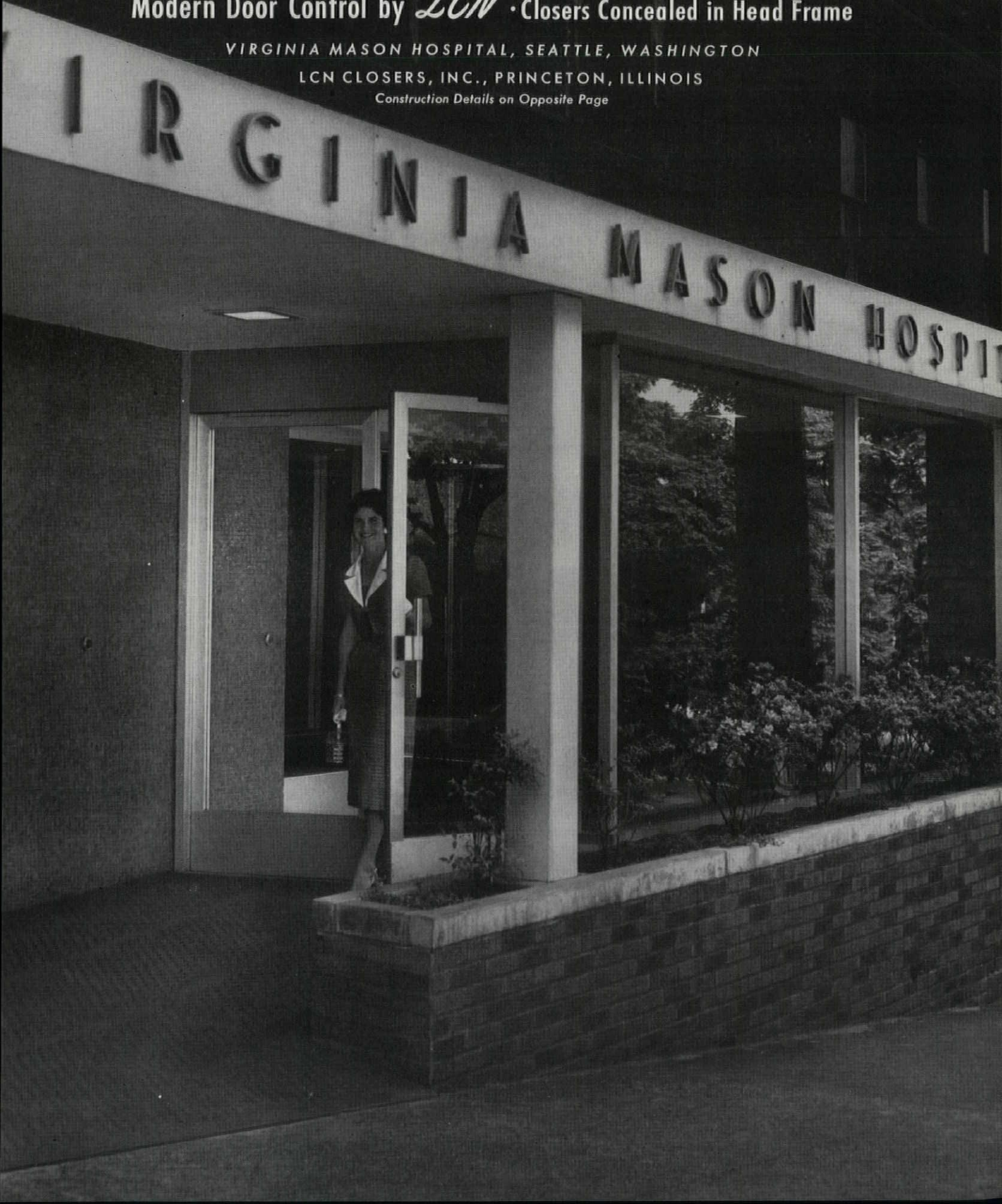
Construction Details on Opposite Page



ice with minimum staff. With patterns of public-library service drastically changing, here and throughout the nation, we required a building without the internal barriers which would tend to perpetuate the status quo; and with adequate personnel a major problem of the fewest possible points.

The stipulation that this large area should be placed on the main floor, rather than on a "quieter" upper level, also had several purposes: to make these major book-collection and study areas conveniently available, without the physical and psychological barriers of elevators of serious adult patrons.

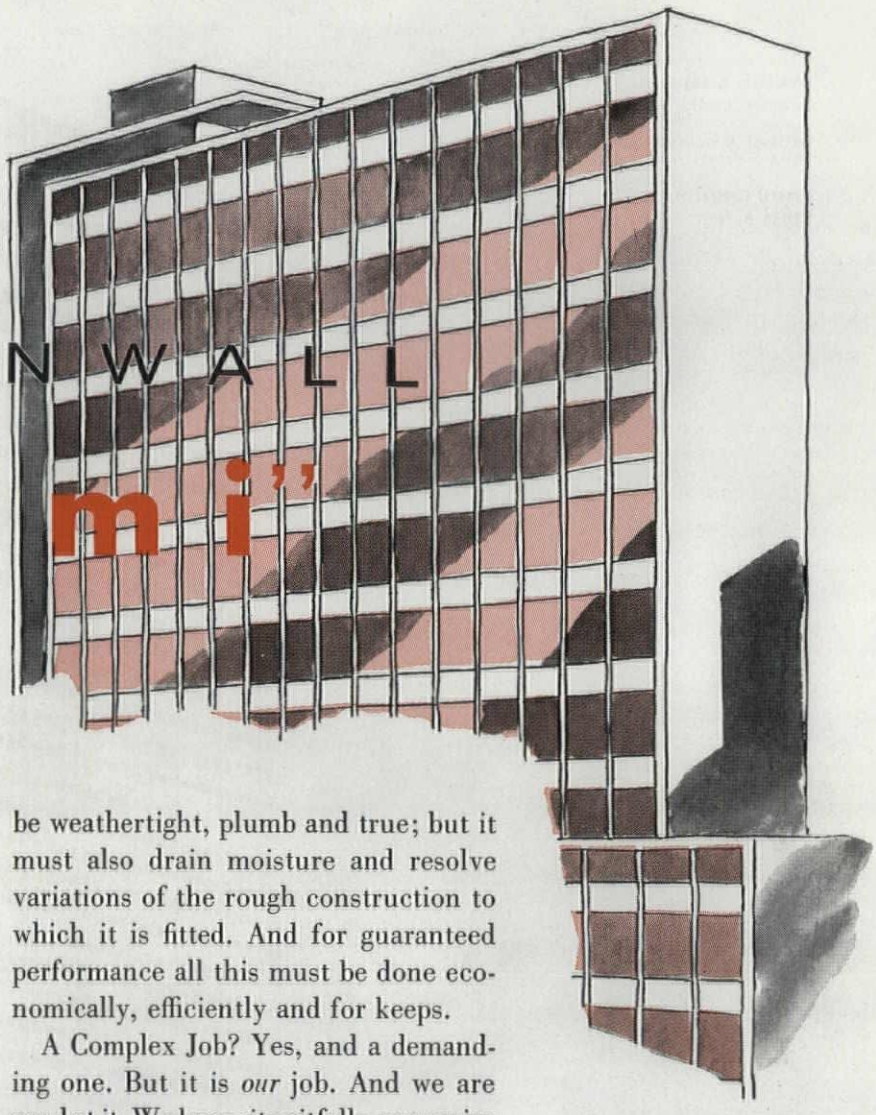
We believe our architects have been highly ingenious in implementing these two basic library objectives. As a result, patrons—actual and potential—will see at grade level the types of services which many earlier buildings provide only at the end of a bewildering labyrinth of corridors, elevators, and stairways. At the same time, traffic control will be established at the front entrance of the building, by its outer edge rather than at the more usual inner core, assuring a minimum of transit noise and interruption and this is further carried out through the glass-enclosed mezzanine with its "bridge" across to the entrance lobby. Here, as well as on the upper level, will be the services attracting smaller numbers of people and requiring less professional staff assistance and supervision.

Most of the other unusual library features of this building result from the contemporary philosophy of librarianship, which recognizes an obligation to promote patronage from the widest possible segment of its population. Today's public librarian is a salesman, and while his commodities—books, ideas, information—are different from those of the merchant, many of his techniques for attracting clientele are exactly the same. We no longer isolate ourselves, our collections, and our services behind stone walls and monumental stairways, since we know that they impose psychological and physical barriers. Instead, we designate sites in the market place, where we may conveniently offer our commodities to the man in the street. Today's librarian then hopes that his architects will provide him with a building of maximum utility, convenience, and beauty.

In New Orleans, we feel that we have been singularly fortunate in obtaining these objectives, through the zealous efforts of members of your great profession.

JOHN HALL JACOBS, Librarian
New Orleans Public Library
New Orleans, La.

CURTAIN WALL BY "miami"



It Means Experience —from Engineering to Installation

Curtain wall construction is achieving near-miracles of economy, structural efficiency and erection; every one is evidence that solutions to many problems have been found. Every successful curtain wall installation points up the fact that performance which can be guaranteed doesn't come by accident.

Such performance is the polished result of engineering a design so that every detail of its fabrication measures up precisely to carefully calculated standards of quality and use.

A curtain wall must insulate and protect, as well as provide a finished surface for the building of which it is a part. It must be anchored positively; but it also must be designed to allow movement under force of air pressures or temperature changes. Installation must be weathertight, plumb and true; but it must also drain moisture and resolve variations of the rough construction to which it is fitted. And for guaranteed performance all this must be done economically, efficiently and for keeps.

A Complex Job? Yes, and a demanding one. But it is *our* job. And we are good at it. We know its pitfalls, recognize its possibilities, are busy developing its potentials.

Because of these facts we can help you engineer a design. We can fabricate that design to your most exacting specifications. And we can install the resulting curtain wall with the combination of skill, experience and service needed to provide the guaranteed performance you and your client have a right to expect.

NO. 1 OF A SERIES

These advertisements have been developed as suggestive guides to more economical and efficient contemporary construction. Others will deal with special design and structural factors of curtain walls. Please call us for answers to any technical questions on curtain wall construction or for any engineering data you might find helpful on any aspect of curtain wall design.

REMEMBER:

It's the quality of skill, knowledge and experience behind any product that's the measure of its satisfactory performance. For Curtain Walls, Awning Windows, Projected Sash — in any type of building, anywhere — your specification can't be better than Miami Window . . .

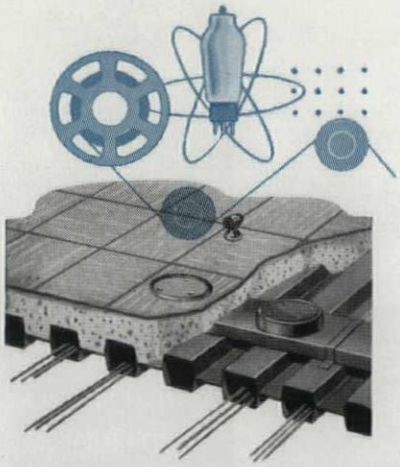
miami window corporation

P.O. BOX 877, INTERNATIONAL AIRPORT BRANCH, MIAMI 48, FLORIDA

Architects & Engineers:
Skidmore, Owings & Merrill

Weiskopf & Pickworth, structural consultants
Sepka & Hennessy, mechanical, electrical

General Contractor:
George A. Fuller Co.



Anticipating tomorrow's electrical load in New York's newest skyscraper

52-story Union Carbide Building will STAY modern with Milcor Celluflor — 900,000 square feet of it!

Today, offices use three times as much electricity as they did only 10 years ago. With the growing trend toward electronic office equipment, they're bound to use even more in the years ahead. That's why architects of the Union Carbide Building specified Milcor Celluflor.

It provides for complete electrification of floor areas. Cells spaced six inches o.c. serve as raceways to handle complex cable systems for power and communications. Outlets can be installed anywhere on the floor. They can be relocated or new ones added—or circuits can be changed—without costly alterations.

Electrical flexibility is just one advantage of Celluflor. Others include savings of steel, footings, construction time, and overhead. See Sweet's, section 2a/In — or write for catalog 270.

MILCOR® Celluflor

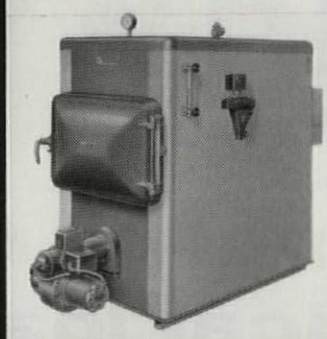
It pays . . . in many ways . . . to specify Milcor Steel Building Products

MILCOR ROOF DECK	MILCOR RIBFORM	MILCOR WALL PANELS	MILCOR CONVECTOR ENCLOSURE WALL UNITS	MILCOR METAL TRIM
Sweet's, section 2f/InL	Sweet's, section 2h/In	Sweet's, section 3b/In	Sweet's, section 30h/In	Sweet's, section 12b/In

INLAND STEEL PRODUCTS COMPANY Member of the INLAND Steel Family

DEPT. H, 4069 WEST BURNHAM STREET • MILWAUKEE 1, WISCONSIN ATLANTA • BALTIMORE • BUFFALO • CHICAGO CINCINNATI • CLEVELAND • DALLAS • DENVER • DETROIT • KANSAS CITY • LOS ANGELES • MILWAUKEE • MINNEAPOLIS NEW ORLEANS • NEW YORK • ST. LOUIS.

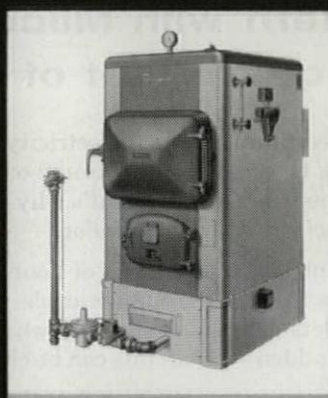
C-8



Oil-fired units are equipped with a Kewanee pressure atomizing burner for No. 1 or No. 2 oil. Firing rate is matched to boiler capacity. Burner and controls are shipped in separate, protective cartons, ready for wiring. Insulated metal jacket shown is optional.

new packages!

15 lb steam or 30 lb water
216,000 to 1,800,000 Btuh



Gas-fired units feature Kewanee's atmospheric type drilled port gas burner for natural, mixed, manufactured or L.P. gases. Firing is automatic . . . matched to boiler capacity. Burner and controls are shipped in separate, protective cartons . . . installation is easy.

KEWANEE® SQUARE-HEAT TYPE "R" BOILER-BURNER UNITS

All 12 sizes of one of the best-known, best-*proven* boilers for domestic and commercial heating are now available with matching burners for gas or oil.

Ideal for service in small to medium buildings and larger homes, Kewanee Square-Heat Type "R" Units are quiet, efficient and dependable. Their record is established, you *know* what to expect from them.

Even the largest sizes take little floor space and fit easily under an 8-foot or even a 7-foot ceiling. All the famous Kewanee features are there: 3" fire tubes expanded into tube sheet holes with ends beaded . . . large firebox for complete combustion . . . cast iron flue door, machine ground and refractory insulated . . . widely spaced tubes, large disengaging area and ample steam space.

See your Kewanee Man for further facts . . . or send coupon at right to: AMERICAN-STANDARD, KEWANEE BOILER DIVISION, 107 Franklin Street, Kewanee, Illinois.

American-Standard
Kewanee Boiler Division
107 Franklin Street, Kewanee, Ill.

KEWANEE 1958 90th year 1868

Please send descriptive literature and catalog sheets on the new Kewanee Square-Heat Type "R" packaged units.

Name_____

Firm_____

Street_____

City_____ Zone____ State_____

AMERICAN-Standard
KEWANEE BOILER DIVISION

Exercise on it!

and Feel the Cushioned Flex of KREOLITE Gym Floors

Whatever the action . . . running, jumping, or calisthenics . . . Kreolite gym floors are kinder to the feet.

This lessening of fatigue is a result of Kreolite Flexible Strip End Grain Wood Flooring's cushioned flex and high *resiliency*.

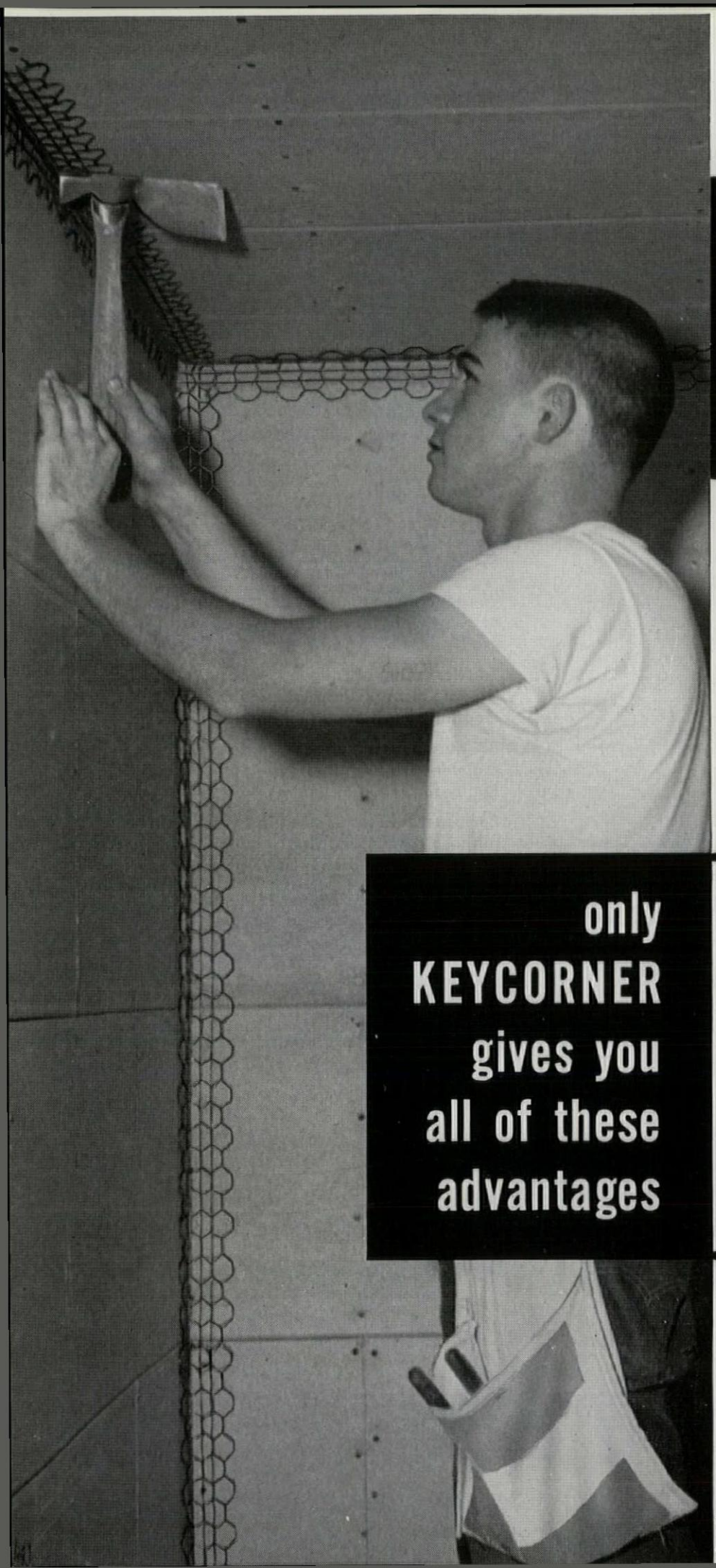
For durable beauty, ease, and economy of maintenance Kreolite flooring has proved its ability to outlast ordinary floors.

For better *resilient* flooring in gyms, multi-purpose rooms, and shops, get all the facts on Kreolite's many money-saving advantages.

Write today for installation data and specifications.

KREOLITE FLEXIBLE STRIP **END GRAIN FLOORING**

THE JENNISON-WRIGHT CORPORATION
TOLEDO 9, OHIO



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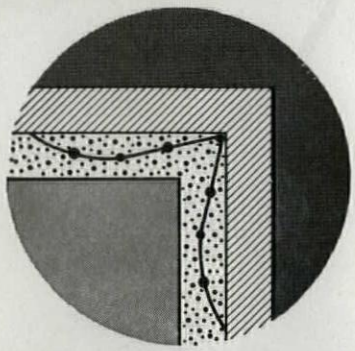
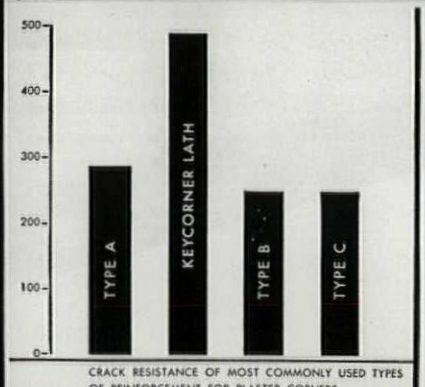
...at a new, attractive price

only KEYCORNER gives you all of these advantages



Self-furring—fully embedded— Flanges of Keycorner are shaped to assure full embedment with effective reinforcement. Snug grip of edges with lath makes it easy to plaster corners.



CRACK RESISTANCE OF MOST COMMONLY USED TYPES OF REINFORCEMENT FOR PLASTER CORNERS

the GREAT NEW

CORNER

GALVANIZED CORNER LATH

Exclusive new features of Keycorner give far greater crack resistance in plaster corners than any other type of reinforcement.

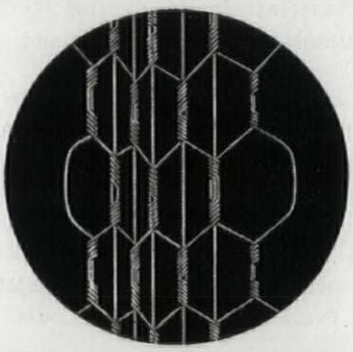
What's more, lathers and plasterers both like it. Lathers like the 4 ft. lengths. The precision fit. The smooth, pliable wire that doesn't cut or tear the hands. The ease with which they can do a craftsman-like job. They like the way it's bundled and packaged for convenient handling and storing.

Plasterers like Keycorner because it's so easy to plaster over; also because they can take pride in the workman-like corners that are strong, and crack resistant.

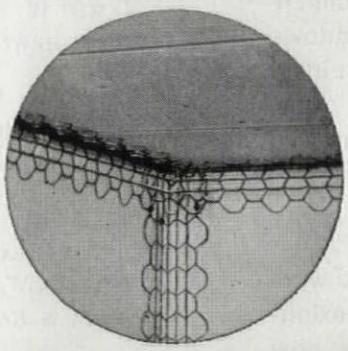
Builders like it because they get the highest quality job at a saving.

There are many attractive features about the NEW KEYCORNER. It costs you *nothing* to get the facts. Send for complete information about this new product. Write Keystone Steel & Wire Company, Peoria 7, Illinois.

It will pay to specify the new Keycorner for all your plastering jobs.



Designed to give maximum resistance to cracking—Spacing of longitudinal wires plus self-furring design adds exceptional crack resistance where needed most; keys plaster if open spaces occur behind Keycorner.



Precision formed—Every piece springs snugly into place. Fits accurately and exactly in corners, giving a truly craftsman-like appearance to the finished job.

plus all of these extra advantages

- Galvanized to prevent rust streaks
- Can be nailed or stapled
- Easy to plaster over
- Smooth wire does not cut or tear hands
- Little cutting required
- Packed in 4′-0″ lengths
- Delivered in cartons (65½ lb.) of 1,000 ft.
- Easy-to-handle; easy-to-store

Be sure to specify the new KEYCORNER for your jobs. Available at leading building material dealers.

Comparison Test Reveals New KEYCORNER Almost Doubles Crack Resistance

A series of tests on crack resistance of plaster corners was recently completed by Edwin L. Saxer, Professor and Chairman, Civil Engineering Department, Research Foundation, University of Toledo. The chart at left records the results of KEYCORNER, plus those of the other commonly used types of reinforcement tested by Saxer. The results speak for themselves.

You can receive the complete test report by just filling in the coupon.

Department PA-58
KEYSTONE STEEL & WIRE COMPANY
Peoria 7, Illinois

☐ Please send me FREE test report by Research Foundation, University of Toledo.
☐ Give me the name of the nearest Keystone salesman.

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notices

new government office

JOHN BLAKE MURPHY, County Architect, County Office Building, Rockville, Md., directs activities of Montgomery County Department of Buildings and Grounds.

name change

NATIONAL SOCIETY OF INTERIOR DESIGNERS, INC., 50 E. 57 St., New York 22, N. Y., formerly New York Chapter, American Institute of Decorators, Inc.

GIFFELS & ROSSETTI, Architects-Engineers, Marquette Building, Detroit, Mich., with offices in New York and Houston. Commitments of GIFFELS & VALLET, INC.—L. ROSSETTI, will continue unchanged.

showcase for renderings

1958 Mars "Outstanding Design" Contest offers $100 prizes for renderings of technical designs accepted for publication in MARS pencil advertisements. Designs may be submitted during 1958—first awards will be made in Spring. Information from: J. S. Staedtler, Inc., 25 Dicarolis Ct., Hackensack, N. J.

new partners, associates

DANIEL C. JENSEN, Associate in the Office of CROW, LEWIS & WICK, Architects-Engineers, New York, N. Y.

JAMES W. JAMISON, Associate in the firm of HAYSLIP, TUFT, HEWLETT & JAMISON, Architects, Portland, Ore.

LAURANCE W. HITT, RALPH P. LOVELOCK, IRWIN W. FRITZ, JAMES A. GRINNAN, HERBERT L. CLARK, Associates in the firm of JAS. GAMBLE ROGERS, LOVELOCK & FRITZ, Architects-Engineers, Winter Park, Fla.

J. TOM BEAR, ROLF E. MUENTER, CHESTER E. ROEMER, WILLIAM W. RUPE, Associates in the firm of HELLMUTH, OBATA & KASSABAUM, INC., Architects, St. Louis, Mo.

S. ROBERT GREENSTEIN, Associate in the firm of KELLY & GRUZEN, Architects-Engineers, New York, Boston, and Newark.

TORE GRAM, Interior Designer, in the firm of KEN WHITE ASSOCIATES, Industrial Designers, Westwood, N. J.

LEIF E. OLSEN, JR. and DONAL A. OLSEN, Partners in the firm of OLSEN, URBAIN & SANDSTROM, Architects-Engineers, Chicago, Ill.

General Partners WALTER PROKOSCH and BARNETT SILVESTON; Associate Partners EUGENE E. HALMOS and WILSON V. BINGER in the firm of TIPPETTS-ABBETT-MCCARTHY-STRATTON, Engineers, New York, N. Y.

E. TODD WHEELER as hospital, health, and medical-education Consultant rejoining PERKINS & WILL, Architects-Engineers, Chicago and White Plains, N. Y.

Dr. J. C. R. LICKLIDER and Dr. KARL D. KRYTER joining the firm of BOLT, BERANEK & NEWMAN, INC., Cambridge, Mass.

ROLAND K. KUECHLE, Chief Architect with the firm of ROSENER ENGINEERING INCORPORATED, Architects-Engineers, San Francisco, Calif.

WALLACE V. CUNEEN, JR., named on executive staff of the firm of WELTON BECKET & ASSOCIATES, Architects-Engineers, San Francisco, Calif.

MARION FRANCIS ASH, Research and Production Chief; WILLIAM S. ASH, Market Research and Management; KLARA FARKAS, Photographer for Industrial Photography; JEAN RYDER, Public Relations; in the firm of PLAN INTERNATIONAL LTD., Industrial Design and Interior Planning Unit, Coral Gables, Fla., announces GEORGE FARKAS, Industrial and Interior Designer.

LEO KORNBLATH, GEORGE O'MARA, HAROLD M. LIEBMAN, Associates in the firm of MORRIS LAPIDUS, KORNBLATH, HARLE & O'MARA, Architect-Designers, New York, N. Y., and Miami Beach, Fla.

ALBERT SIGAL, JR. and MILTON F. JOHNSON, Partners in the firm of SIGAL & JOHNSON, Architects, Stanford Professional Center, 800 Welch Rd., Palo Alto, Calif.

JAMES W. KIDENEY, Senior Partner; GEORGE D. SMITH, JR., Partner; THOMAS W. FITZGERALD, Partner; THEODORE G. HOEPFINGER and ALFRED H. BROSE, Associates; in the firm of KIDENEY, SMITH & FITZGERALD, Architects-Engineers, 220 Delaware Ave., Buffalo 2, N. Y.

FRANCIS X. GINA and D'ANSON ISELY in the firm of FRANCIS X. GINA & ASSOCIATES, Architects, 219 E. 44 St., New York 17, N. Y.

ROBERT P. TORKELSON, Architect-Engineer, in charge of architectural work, in the firm of MEAD & HUNT, INC.

EDWIN A. DOIG, Hospital Specialist, in the firm of SMITH, HINCHMAN & GRYLLS ASSOCIATES, INC., Detroit, Mich.

MORRIS KETCHUM, JR., J. STANLEY SHARP, Partners, and ROBERT MACKINNON, JR., Associate, in the firm of KETCHUM & SHARP, Architects, 227 E. 44 St., New York 17, N. Y.

TOKENEKE ELEMENTARY SCHOOL • JOB DATA **Exterior Walls:** *Brick, with concrete block in service area, cypress siding for playroom.*
Interior Walls: *Plastic coated coverings in classrooms, Common Room and halls.*
Heating: *Hot water radiant panel system, zoned and thermostatically controlled.*
Ventilation: *Exhaust fans in classrooms, toilet rooms and kitchen. Tempered air supply units in Common Room.*
Lighting: *Semi-indirect fluorescent fixtures.*
Floors: *Vinyl asbestos tiles on concrete slab over insulated concrete fill and moisture barrier.*
Roof Surface: *Translucent corrugated panels over playroom and covered walks. Built-up tar and felt with white graveled surface over remainder of building.*

Architects: O'Connor and Kilham, New York City • General Contractor: George L. Hickey, Inc., Stamford, Conn.

PHOTO
Typical classroom showing exposed timber beams and decking. School is built around a paved court yard, and contains fourteen classrooms, Common Room, library, kindergarten wing of two rooms, administrative quarters and covered play area which is sketched above.

BEAUTY BY THE ROOM
AND 31% LESS COST PER PUPIL

Tokeneke Elementary School, Darien, Connecticut, is a typical case history in engineered timber construction in which the natural beauty of the glulam timber structural framing adds obvious charm to each room. Less apparent but equally important is the economy of construction which resulted in a per-pupil cost of 31% less than the state average. This saving was made without sacrifice of permanence, mechanical equipment or facilities for teaching.

Glulam beams were spaced at 7'-9" over classroom sections and covered with heavy timber decking which remains exposed in natural finish as ceilings.

All timber members were produced under rigid quality controls, precision fabricated to full size pattern, and delivered ready for fast assembly and erection. Average cost per square foot is $14.40. Per-pupil cost is $760, compared to a state average of $1105.

A new brochure, "Timber Framing for Modern Schools", illustrates outstanding school applications of engineered timbers and gives preliminary design data. Get your copy from the nearest Timber Structures representative, or write us directly.

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Offices in Ramsey, N.J.; New York City; Boston; Philadelphia; West Hartford; Cleveland; Charlotte; Chicago; Centerline, Mich.; Kansas City; St. Louis; Minneapolis; Des Moines; Wichita; Memphis; Dallas; Houston; Birmingham; Beverly Hills, California; Seattle; Spokane; Denver.
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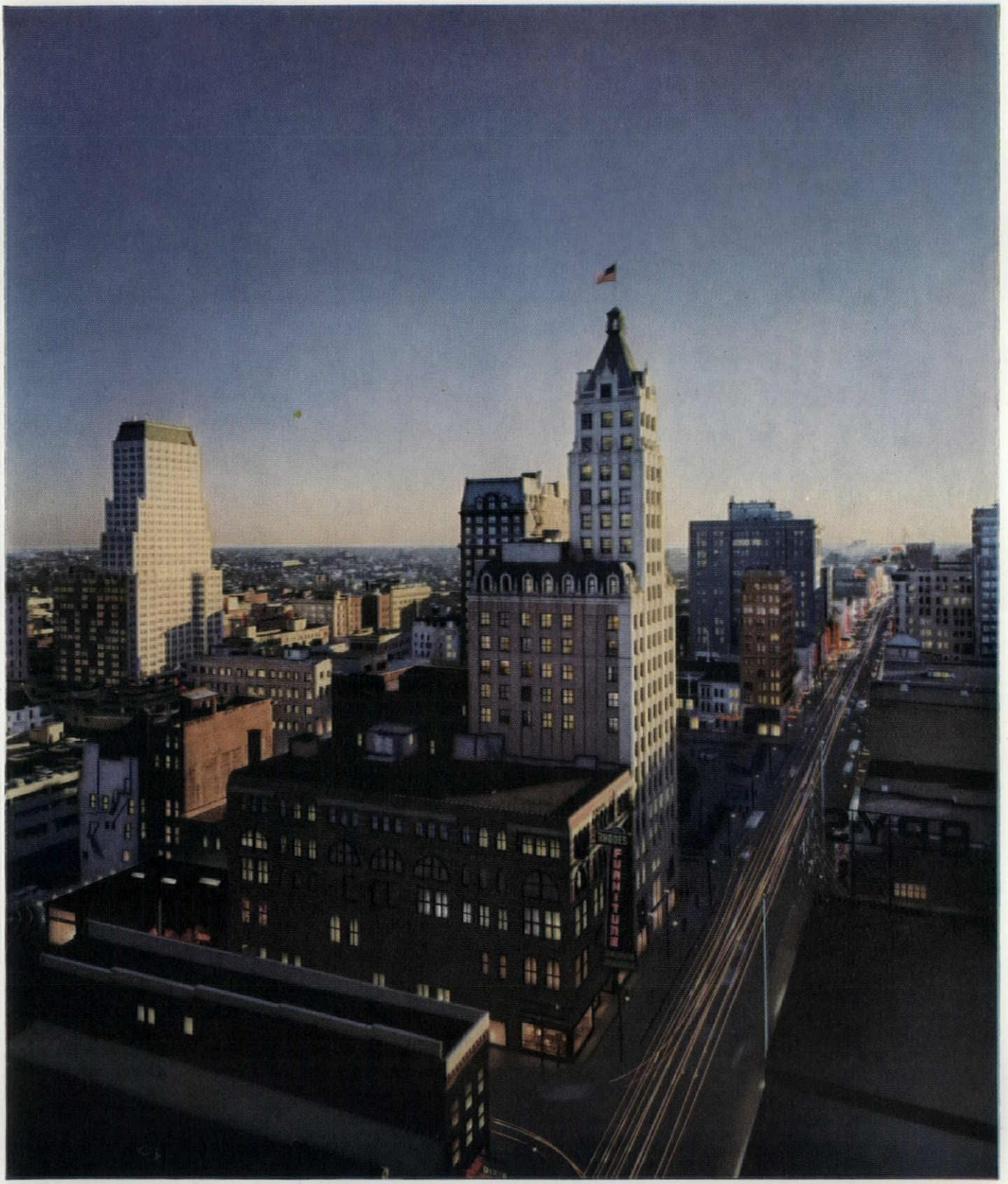

MEMPHIS *on the Mississippi can be characterized as a "first" city. It is first among the world's markets for hardwood, spot cotton and cottonseed products. It is the world's largest cotton warehousing center. It has the world's largest artesian water supply. It is the South's largest distributor of drugs and chemicals. Memphis, Tennessee is a pre-eminent center of river and rail, highway and air, bus and motor transportation that is in the midst of another first—the greatest building boom in its history. Memphis also rates an outstanding "first" for building service. This time for elevatoring. Over 60% of its elevators are the world's finest. They're by OTIS.*

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NEW YORK CITY COLISEUM

JUNE 9-12

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PRESENTS

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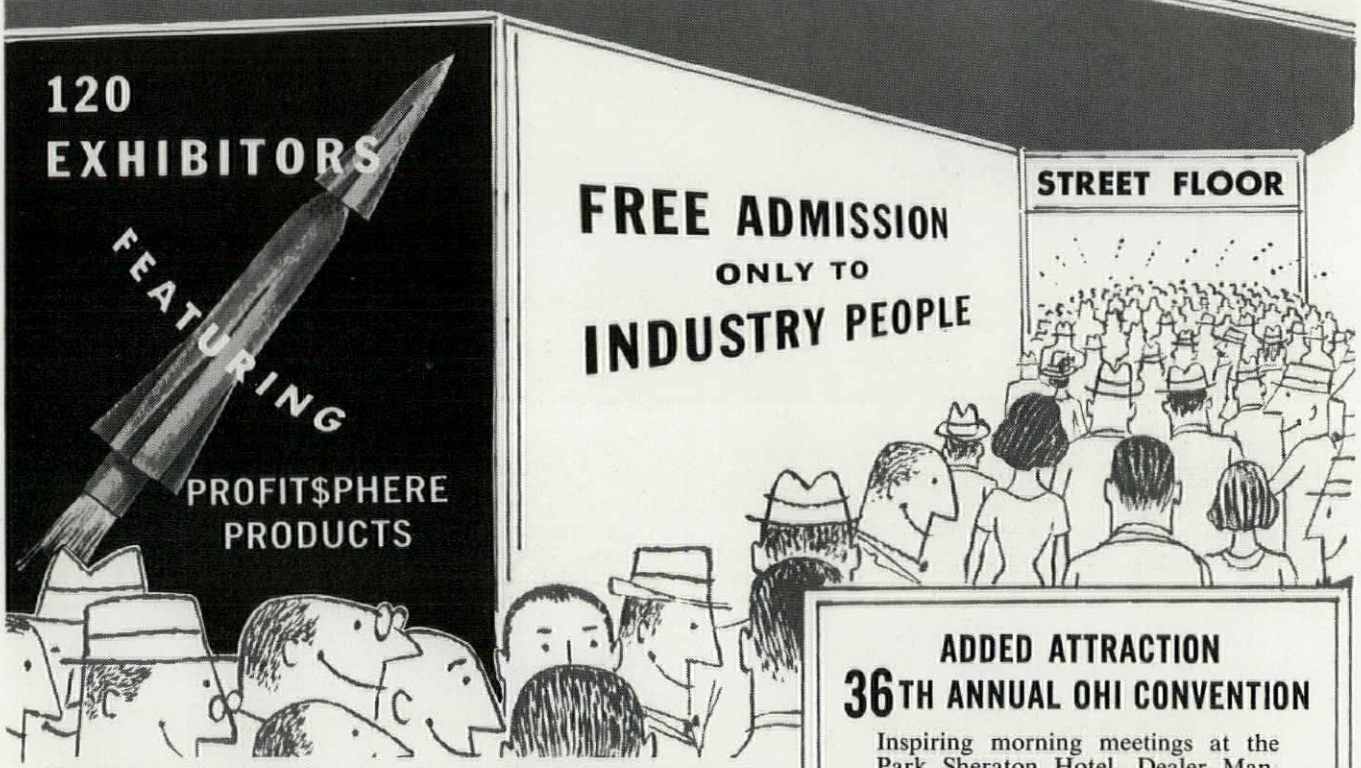

Your exposition is designed to get you into a better economic area. So come! *Be an explorer in the profitsphere*. See how new products and new ideas for air conditioning, oil heating and heating oil delivery can pay off in profits in 1958. Manufacturers will demonstrate new methods and systems to simplify installations and service and save time, material and money. Ask about their sales, advertising, merchandising and training plans. Remember that one good idea, taken home and put into use, may pay for your trip to your exposition many times over. You can't afford to miss this big opportunity in 1958 – The Turning Point.

MANUFACTURERS

If you haven't ordered your space, phone or wire Oil-Heat Institute of America, Inc. for reservations. A few choice booths still available.

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Write now to OHI Housing Bureau, 90 East 42nd Street, New York 17, N. Y. State time of arrival and departure and kind of accommodations wanted.

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Save time. Write Oil-Heat Institute of America today. Convention registration fee $4 per person. Enclose check. Badges will be ready at Advance Registration Desk, Park Sheraton Hotel. Badge also admits you to the Exposition without further registration.

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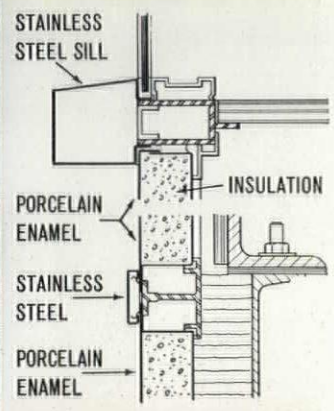
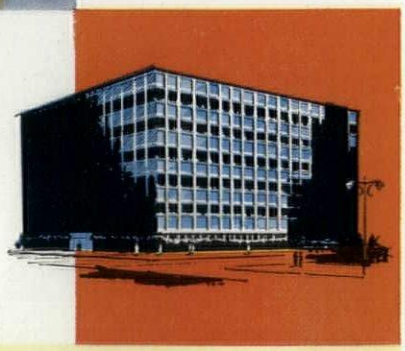
Contractor: **A. L. Jackson Co.**
Curtain Walls: **General Bronze Corporation**
Porcelain Enamel: **Ingram-Richardson Mfg. Co.**



COLORFUL PORCELAIN ENAMEL CURTAIN WALLS GIVE CHICAGO BUILDING

Distinctive Individuality



Demonstrate design freedom offered by combination of porcelain enamel panels and stainless steel mullions.

The new Mutual Trust Life Insurance Building in Chicago presents a striking example of how porcelain enamel and stainless steel create a wider horizon of architectural expression. The richness of color, the contrasting luster of stainless, and variety of shape and form are skillfully blended to produce not only a handsome structure but one that is uniquely distinctive.

These curtain wall materials were specified not only because they enhanced design opportunities but also for their lasting durability and low maintenance. Porcelain enamel panels will retain their true colors; stainless mullions and trim won't gray or discolor. And both materials, cleaned by rain, assure age-defying beauty with practically no maintenance.

In planning your curtain wall buildings, why not take advantage of the design freedoms offered by Armco Stainless Steel and porcelain enamel on Armco Enameling Iron.

For more information on porcelain enamel and stainless steel for curtain wall construction refer to Sweet's, File $\frac{3b}{Ar}$ or write to Armco Steel Corporation, 1888 Curtis Street, Middletown, Ohio.

ARMCO STEELS
for Architecture

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Enameling Iron
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ZINCGRIP® PAINTGRIP®
ALUMINIZED STEEL

Barclite is getting the big build-up everywhere! It's the reinforced fiber glass panel of exceptional design versatility. Inside... build dramatic room dividers, movable walls, partitions and dropped ceilings in homes, showrooms, offices, restaurants, hotels, motels, stores and beauty parlors. Outside... use it for roofing, siding, glazing, fences and hundreds of other applications! Specifying Barclite makes sense. Why? **Economical**... lightweight, easier to handle, faster installations, easier to maintain. **Translucent**... diffuses light yet assures desired privacy. **Shatterproof**... 14 colors, new decorative panels, too. Write for free samples and consultation services for your specific needs today.

BARCLITE CORPORATION OF AMERICA* Dept. PA-5, Barclay Building, New York 51

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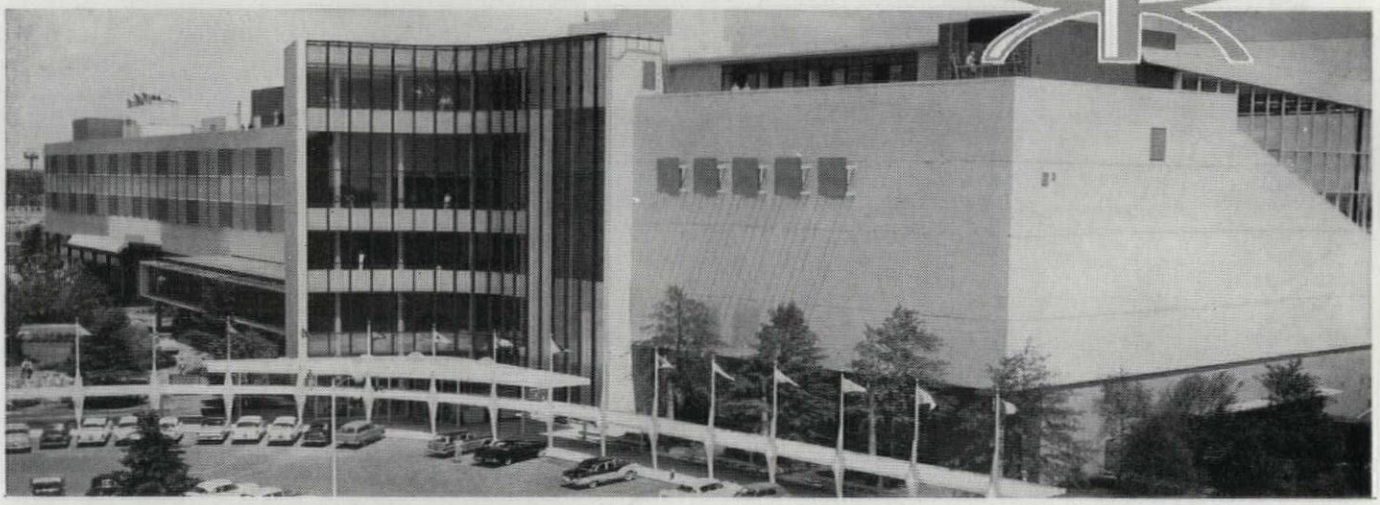
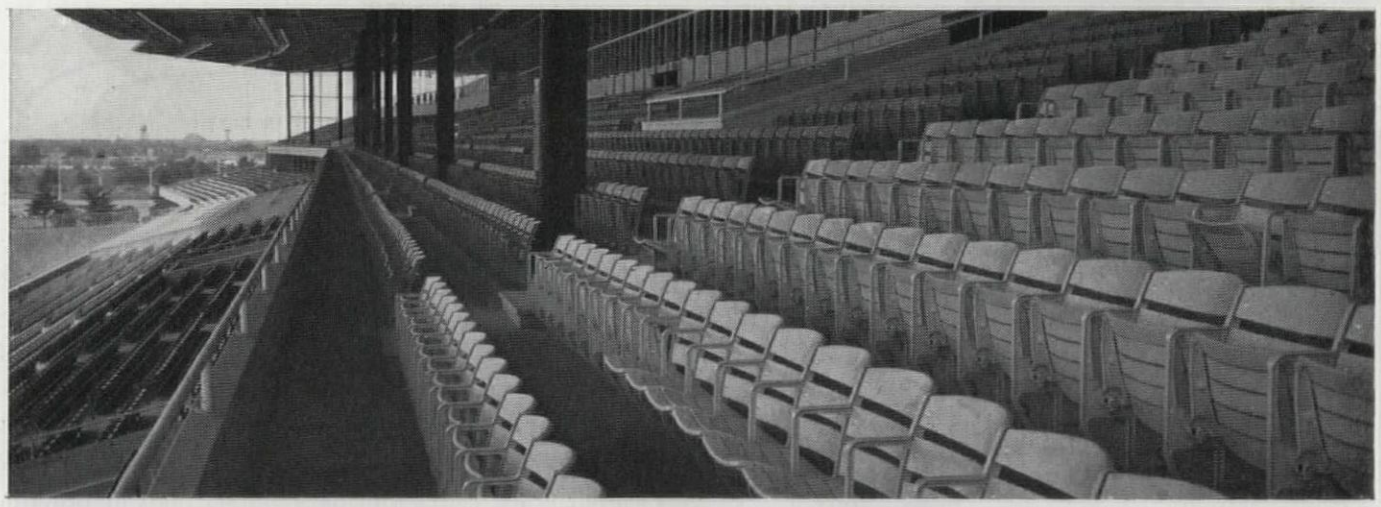
No other standard fiber glass panel has earned all these seals!

A "DAILY DOUBLE" that pays off consistently at the fabulous.. Roosevelt Raceway



LAPIDOLITH and SONNOMAR

(Chemical Concrete Floor Hardener) (Epoxy Resin Concrete Floor Finish)



At this new "Dream Track" in Westbury, Long Island, N. Y., from the day of completion, economy and easy maintenance of concrete floors, aisles and stairways have been achieved. The thousands of square feet of concrete floor surface are protected, hardened and decorated with a combination that's hard to beat . . . LAPIDOLITH and SONNOMAR.

LAPIDOLITH* was first applied to the concrete flooring, making it many times harder than ordinary concrete, and dustproof;—followed by a coating of SONNOMAR, Light Gray, to give the concrete floors beauty and utility. The tough, smooth, sealed surface is not only easy to keep clean, but has also resisted the constant scuffing of almost 2,500,000 pairs of feet last year.

SONNOMAR's tough protective film reinforces LAPIDOLITH's effectiveness in depth—for double protection! MAIL THE COUPON NOW for full story.

*LAPIDOLITH, the original patented concrete hardener-in-depth is backed by a Bonded Guarantee, when applied according to specifications.

Products of Sonneborn Research

Since 1903 manufacturers of quality building products.

L. SONNEBORN SONS, INC.
Building Products Division—Dept. PA 58
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Gentlemen:

- ☐ We are interested in more facts on LAPIDOLITH and SONNOMAR.
- ☐ Also include *free* copy of your 128-page Building Construction and Maintenance Handbook.
- ☐ Please send field representative for *free* inspection and recommendations for concrete floor treatment.

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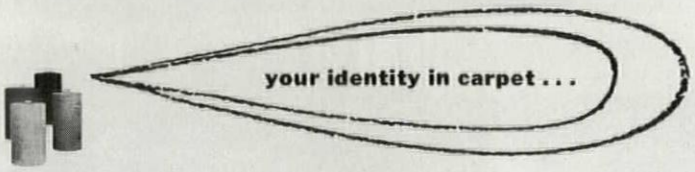
Archibald Holmes & Son

Exchange Bank & Trust Co., Dallas. Architect, Lane & Gamble.



Money may seem cold, but the problems surrounding it are extremely human. That is why progressive banks—in order to establish closer communication with their customers—are seeking more warm-hearted interiors. Carpet is such an integral part of this planning, it should be considered on the very first blueprint. If you are designing a new bank or remodeling an established one, consult at the outset with the Contract Staff of Beautiful Holmes. They are skilled at interpreting ideas speedily, knowingly and at prices that are competitive without sacrifice of quality. You can prescribe your own custom carpet design or choose from a library of distinctive patterns. For your nearest Beautiful Holmes contractor, write or call Archibald Holmes & Son, Erie Ave., and K St., Philadelphia 24, Pa. *Now in our second century of fine carpet weaving.*

Deep and rich, Beautiful Holmes carpet (quality 71, color 3303, warm beige) in the conference area at the Exchange Bank & Trust Co., Dallas, sets the mood of relaxed and home-like surroundings, and insures quiet for easy conversation. Beauty and simplicity in decoration reflect the good taste of the bank. Interior designer: Gale Arthurs, Dallas.

Beautiful Holmes

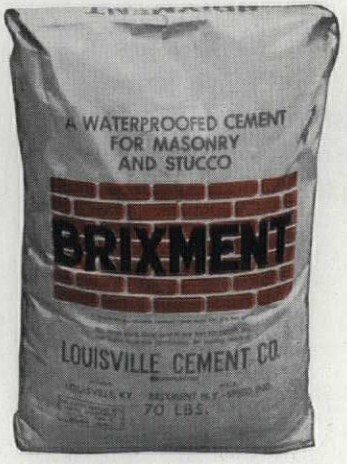
CONTRACT CARPETS

BRIXMENT

Better Mortar for Blocks

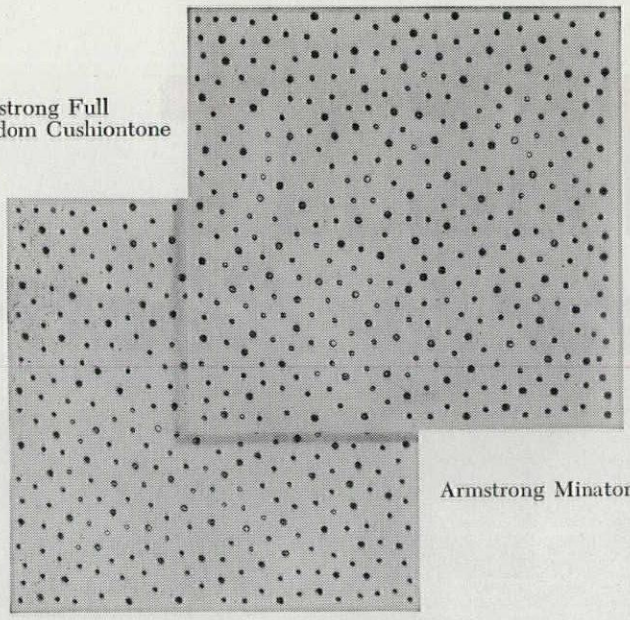
WHY IS GOOD MORTAR IMPORTANT?

Because of their size and weight, concrete blocks require mortar with "body", plasticity and water-retaining capacity. Brixment meets all these requirements. It has the *body* necessary to support the weight of the unit and hold it up to the line. It has the *plasticity* necessary to prevent the mortar from falling off the long head joint, while the block is being placed in the wall. It has high *water-retaining capacity*, which gives the bricklayer more time to shift and adjust the block to its final position before the mortar stiffens.



It is the combination of these characteristics that makes Brixment the leading masonry cement for concrete block as well as for brick.

Louisville Cement Company . . . Louisville 2, Kentucky



Armstrong Full Random Cushiontone

Armstrong Minatone

How to meet ceiling fire-safety requirements more economically

Substantial savings can be made by using two Armstrong acoustical materials with the same design to treat different areas of the same building. Armstrong Minatone and Armstrong Full Random Cushiontone look exactly alike—both have the same attractive full random design.

Mineral-fiber Minatone (Class A under Federal Specifications SS-A-118b) can be installed where an incombustible material is required. Low-cost, wood-fiber Cushiontone can be used where fire-safety requirements are less rigid. Therefore, you can specify uniform ceiling appearance throughout a building without having to spend extra money where incombustibility is not required.

For additional information and samples, call your Armstrong Acoustical Contractor (consult the Yellow Pages), call your nearest Armstrong District Office, or write directly to the Armstrong Cork Company, 4205 Watson Street, Lancaster, Pennsylvania.

Armstrong

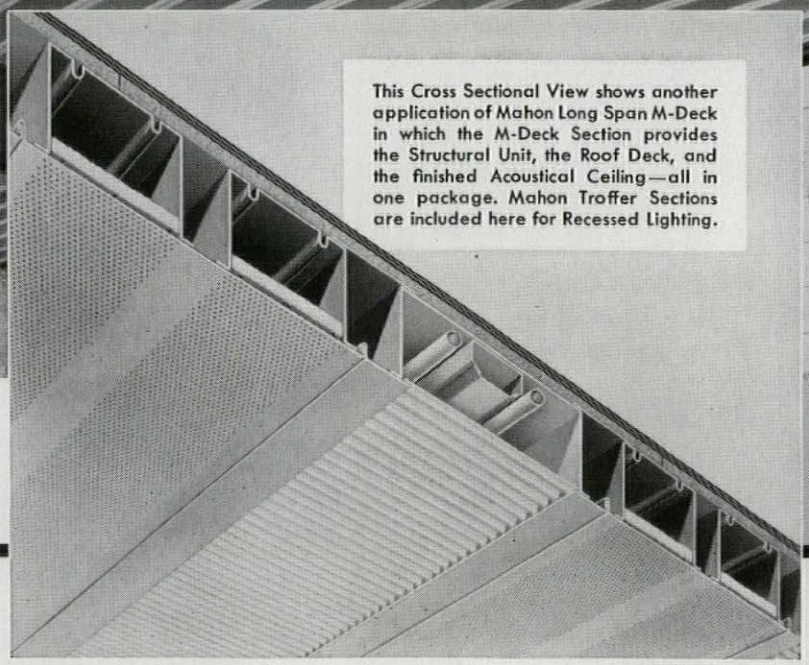
ACOUSTICAL CEILINGS

Travertone Crestone Custom Minaboard Cushiontone
Minatone Arrestone Corkoustic

Moore Institute of Arts & Sciences, Philadelphia. Acoustical Contractor: Berger Acoustical Company ▶

M-DECKS Span from

In a 24 Room Addition to the Reeths-Puffer High School, Muskegon, Michigan, Mahon Long Span M-Deck Section M1-OB was used exclusively for the Roof. A Perforated Metal Acoustical Ceiling was attached directly to the bottom flanges of the Open Beam M-Deck Sections. R. S. Gerganoff Architect. Muskegon Construction Company, General Contractors.



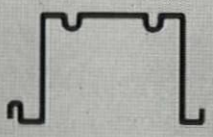
This Cross Sectional View shows another application of Mahon Long Span M-Deck in which the M-Deck Section provides the Structural Unit, the Roof Deck, and the finished Acoustical Ceiling—all in one package. Mahon Troffer Sections are included here for Recessed Lighting.

Serving the Construction Industry Through Fabrication of Structural Steel, Steel Plate Components, and Building Products

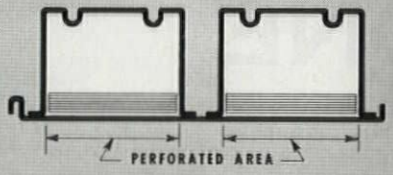
Wall to Wall or from Truss to Truss . . . Eliminate Roof Beams and Purlins!

A Mahon Product with Broad Application in Roof and Combined Roof-Ceiling Construction

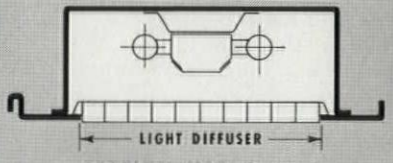
MAHON
Long Span
M-DECK SECTIONS



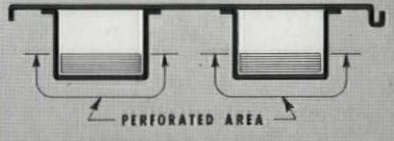
SECTION M1-OB
OPEN BEAM DEPTH 3", 4½", 6" or 7½"



SECTION M2SR (Acoustical)
CEL-BEAM DEPTH 3", 4½", 6" or 7½"



SECTION M1T (Troffer)
DEPTH 6" or 7½"



SECTION M2 (Acoustical)
CEL-BEAM DEPTH 1½", 3", 4½", 6 or 7½"

☆ OTHER MAHON BUILDING PRODUCTS and SERVICES:

- M-Floors (Electrified Cellular Steel Sub-Floors)
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- Rolling Steel Doors (Standard or Underwriters' Labeled)
- Steel Roof Deck
- Permanent Concrete Floor Forms
- Acoustical and Troffer Forms
- Acoustical Metal Walls and Partitions
- Acoustical Metal Ceilings
- Structural Steel—Fabrication and Erection
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☆ *For INFORMATION See SWEET'S FILES or Write for Catalogues*

THE R. C. MAHON COMPANY • Detroit 34, Michigan
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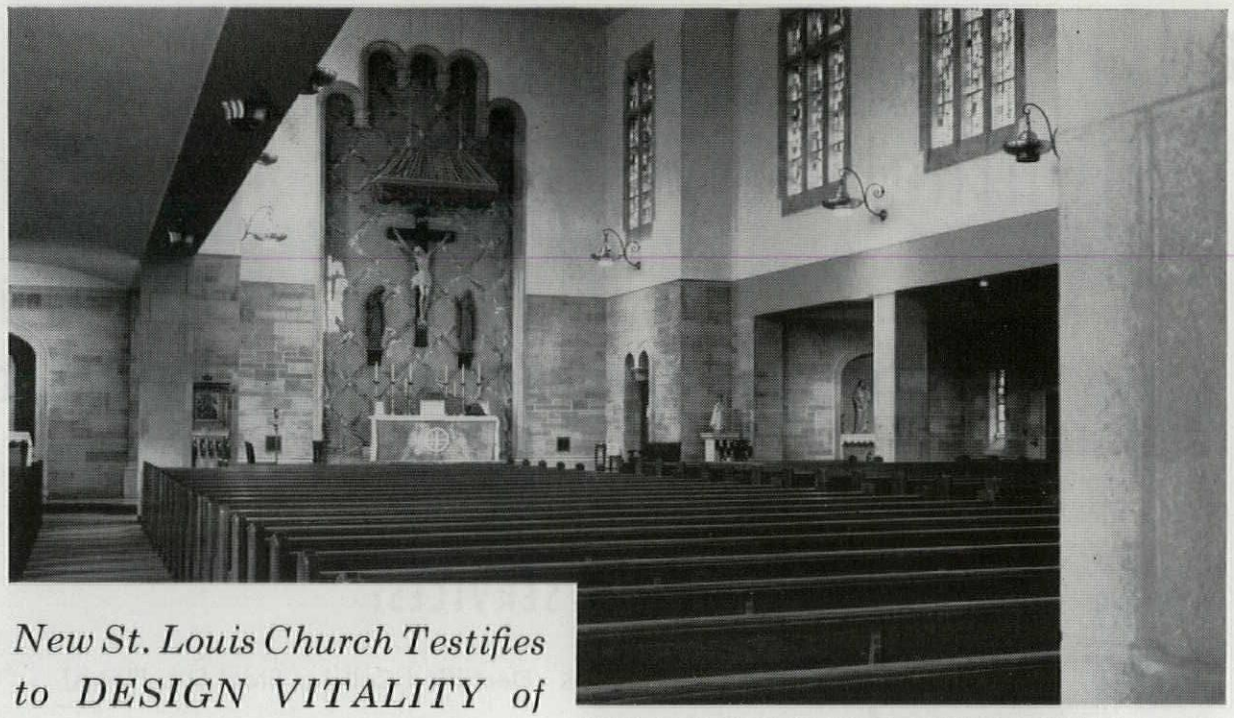
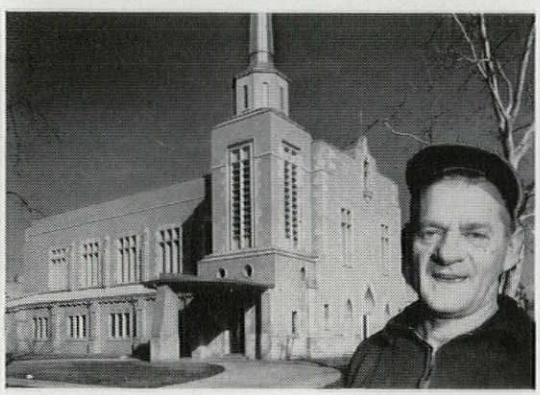


HOLY INNOCENT CHURCH, ST. LOUIS, MO., HARRY IHMSEN HELLMUTH, ARCHITECT

New St. Louis Church Testifies to DESIGN VITALITY of

INDIANA LIMESTONE

Rabbeted sills, mullions and lintels for art glass windows which require no metal frames, precision-cut moldings and door jambs, and an interior of random Indiana Limestone veneer demonstrate the wide and effective use which architect Harry Ihmsen Hellmuth makes of this time-proven material in designing St. Louis' new Holy Innocent church. "During the 50 years that we have been designing religious structures and other buildings throughout the United States, Indiana Limestone has proven its versatility, its economy and maintenance-free quality to such a degree that we rarely consider other materials for use upon institutional structures."



Myron Oudin, Construction Superintendent, Alberici Construction Company, St. Louis, Missouri: "Accurately cut, each piece individually keyed to the specific stone blueprint by the supplier, the Indiana Limestone provided for this job, enabled us to greatly streamline our construction procedures with substantial savings in time resulting."

"We find that the use of Indiana Limestone because of its variety of shades and textures, not only relieves monotony, but at the same time, effects that calm, ordered attitude desired in churches and institutional buildings . . . a unique duality of interest and conservatism."

SERVICES TO ARCHITECTS, BUILDERS

Field Representatives of the Indiana Limestone Institute, trained in the application of Indiana Limestone to all building types and informed on the new products and processes developed by I.L.I. members, are ready to call and discuss your specific building plans. Write, outlining details, or mail coupon today.

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Dormitory doors at the lowest installed cost!

A door has to be hardy to take dormitory living. Concealed within the sleek seamless beauty of this new Fenestra® Hollow Metal Flush Door is a rigid, rugged, welded structure that gives the door the strength to withstand years of abuse. It's Fenestra's exclusive multi-rib reinforcement!

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3. You have a complete selection of door types (1⅜" and 1¾") of distinctive designs and features—*all mass produced.* Custom quality at stock door prices!

Ask your Fenestra representative (listed in the Yellow Pages) to help you in your selection and specification of doors, frames and hardware. Or, write to Fenestra Incorporated, Dept. PA-5, 3409 Griffin Street, Detroit 11, Michigan.

Let the man  *from Fenestra be your "door man"*

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Fenestra
SCHOOL DESIGN
NEWS

LOOK WHAT FENESTRA WINDOWS DO FOR MODERN SCHOOL DESIGNS!

Fenestra® Intermediate Steel Windows are selected by architects and school officials for many of the finest and best-looking schools in America. The reason is not appearance alone.

They provide *more and better daylight* for school classrooms. Their slim, but strong, steel sections give you *more glass area* and *clear-vision view* per window opening. Fenestra Windows are engineered and precision built to be rigid and rugged without excess bulk.

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You *save on maintenance.* Sturdy hardware and steel-strong window members assure years of trouble-free service. Cleaning and screening are done safely and economically *from the inside!*

New Fenestra FENLITE Finish

Fenestra Intermediate Windows are now available with the New FENLITE Finish that gives longer window life *without painting* plus a distinctive new window beauty. The FENLITE process is an exclusive Fenestra development based on years of experience and research with corrosion-resistant finishes for steel windows. It saves you the cost of maintenance painting year after year.

Inside and out, Fenestra Intermediate Steel Windows give your schools modern window beauty, more daylighting and better ventilation. Specify them for your new school buildings. Mail the coupon, today, for complete information or call your local Fenestra representative — listed in the Yellow Pages of your telephone directory.

Sam Houston Elementary School, Port Arthur, Texas, features Fenestra Intermediate Steel Windows. This outstanding school demonstrates the functional beauty of their slim, modern design and the pleasant classroom atmosphere created by their better daylighting and ventilation. **Associated Architects:** Caudill, Rowlett, Scott & Associates, Bryan, Texas; Oklahoma City, and J. Earle Neff, Port Arthur, Texas. **Contractor:** Schneider Construction Co., Houston, Texas.

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STEEL WINDOWS

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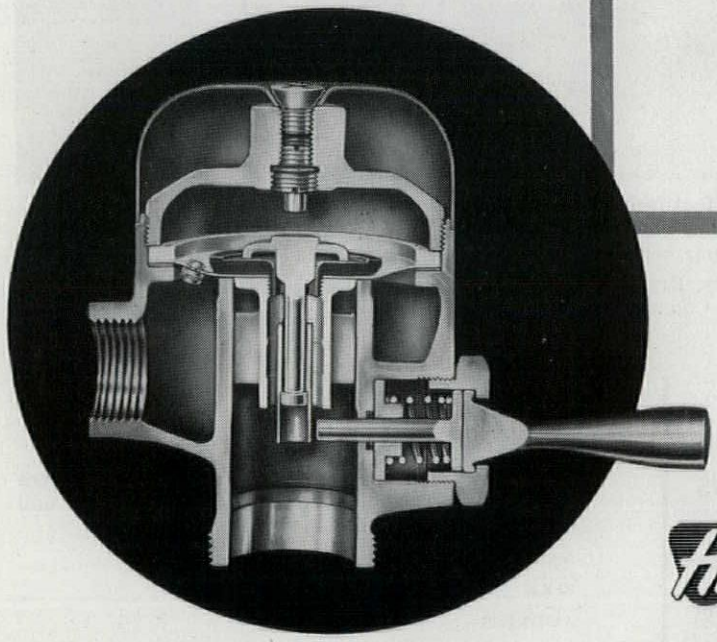

TO LEARN MORE about the latest diaphragm flush valve in the industry...write for the *new 20-page catalog* and name of your nearest HAWS-KRAMER Representative.

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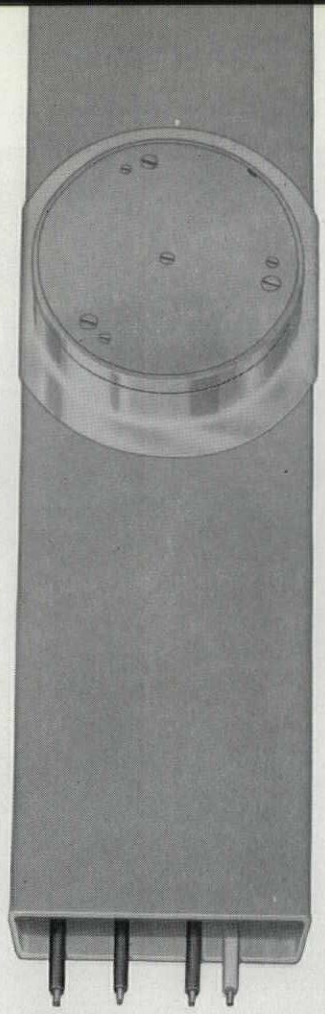
NATIONAL ELECTRIC HEADERDUCT APPROVED FOR ALL CELLULAR STEEL FLOORS

Electrified Cellular Steel Floors energized with a National Electric Headerduct Raceway system give the owner complete electrical service throughout the floor area by utilizing the large area ducts of the cellular building unit.

If you're planning for any type of cellular steel floor construction, make sure the building never grows old electrically . . . specify a National Electric Headerduct underfloor raceway system.



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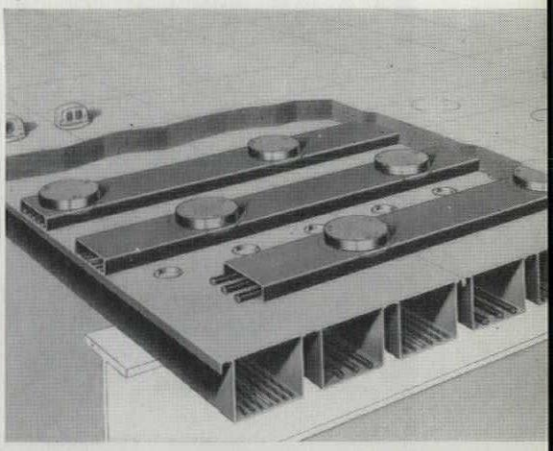
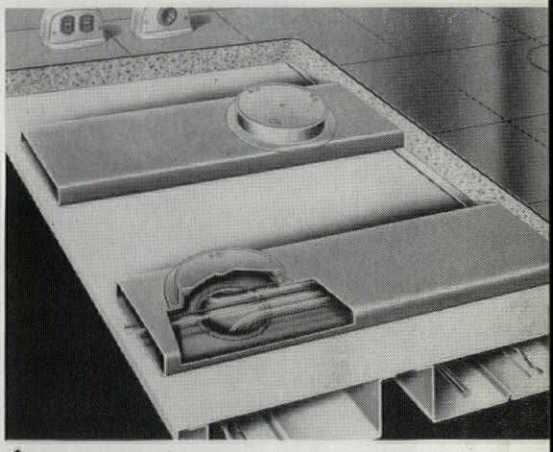
4 Plants • 12 Warehouses • 41 Sales Offices

In Canada, Nepco of Canada, Ltd.

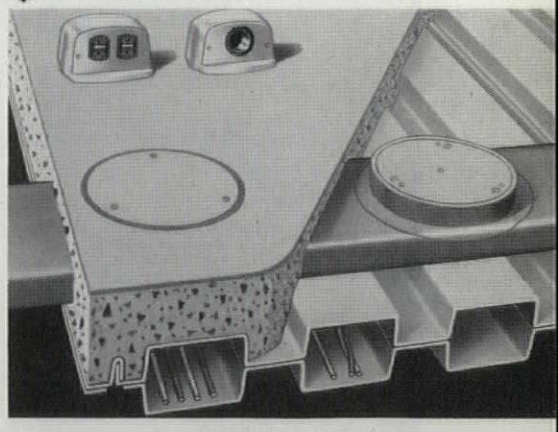
R. C. Mahon Company's M-Floor electrified by Nepco Headerduct.

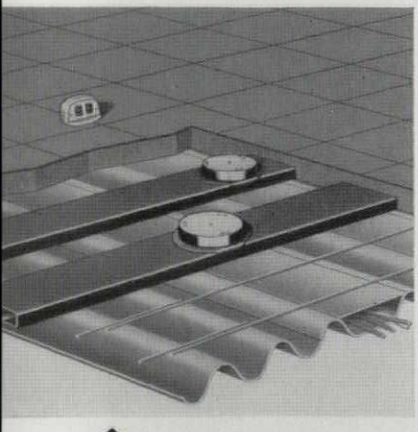




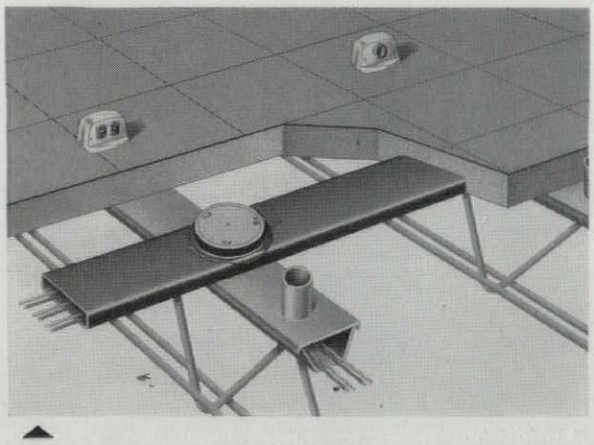
Nepco Headerduct installed on Fenestra Incorporated Electrifloor.

Headerduct used with Inland Steel Products Company's Milcor Cellufloor.



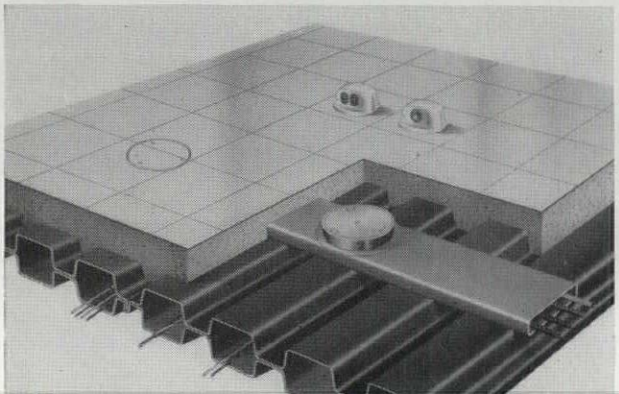


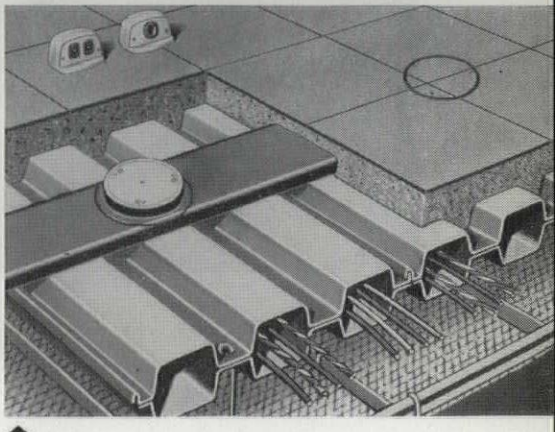
Nepco Headerduct and Granco Steel Products Company's Cofar reinforced concrete slabs.



Ceco Steel Products Corporation's open web steel joist floors electrified with Nepco Headerduct.

Nepco Headerduct provides easy access to large ducts in H. H. Robertson's "Q" Floor.





Headerduct used to energize American Steel Band Company's cellular sub-flooring.

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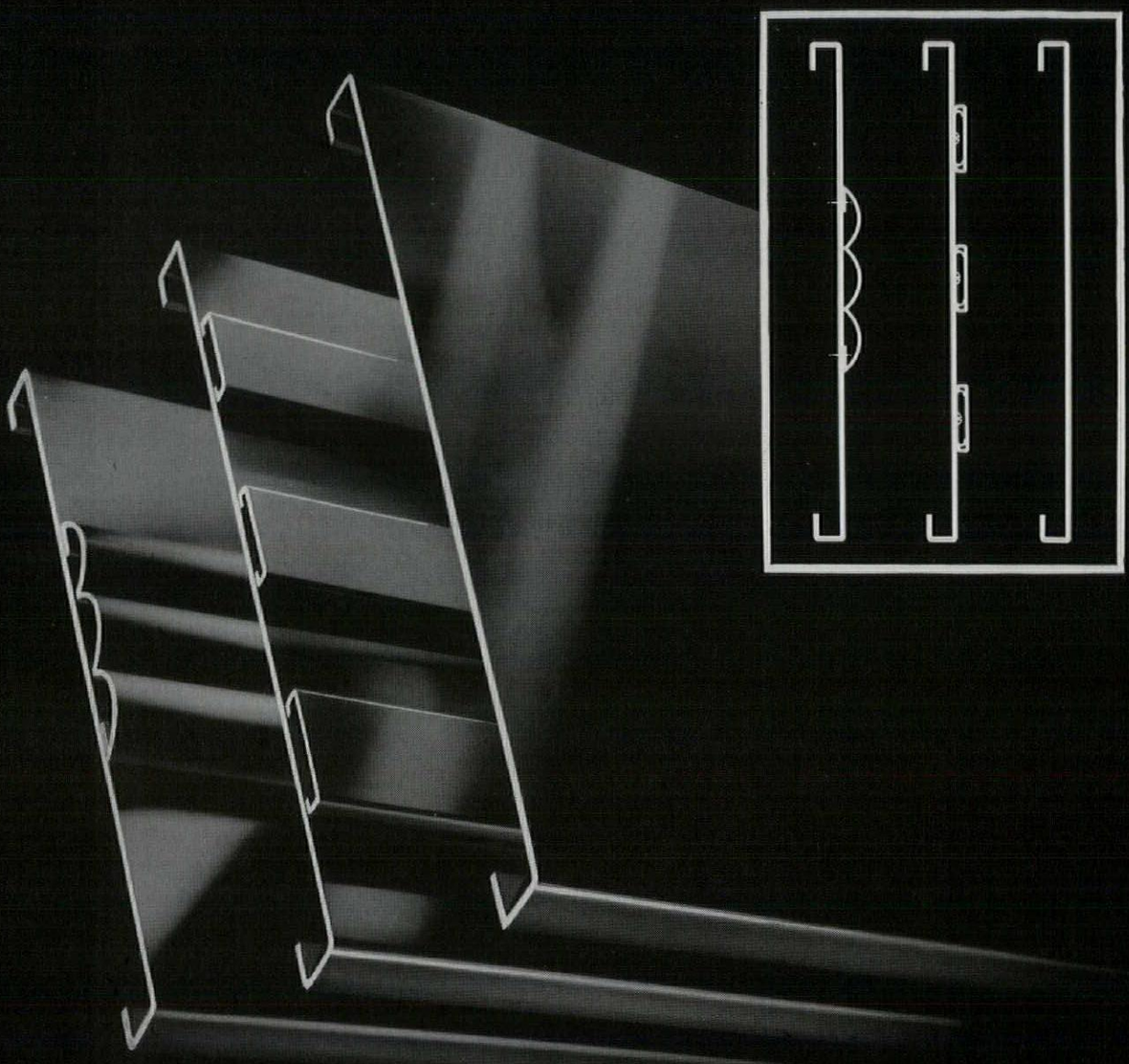

. . . offers you three handsome styles to choose from: No. 91, with its clean, unbroken surface . . . No. 91-A, with its distinctive reeded feature strip . . . No. 91-B, with its evenly spaced flutes. These bars embody the grace, beauty and durability found in all PITTCO members. For information on the complete line of PITTCO Metal Products, contact your PITTCO Store Front Representative or refer to Sweet's Architectural File—Section 21.

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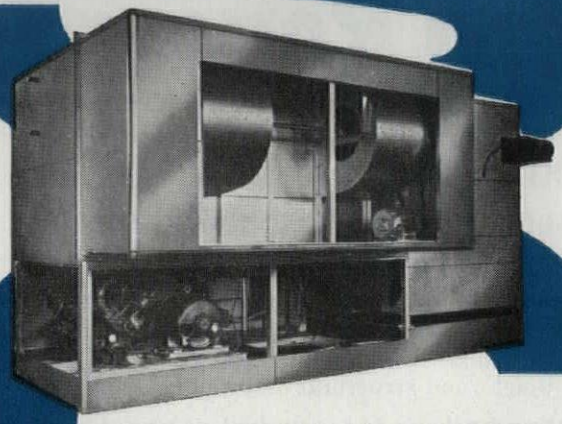

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- EITHER 4 ROW, 5 ROW OR 6 ROW COILS
- TWO INDEPENDENT REFRIGERANT CYCLES, IF REQUIRED
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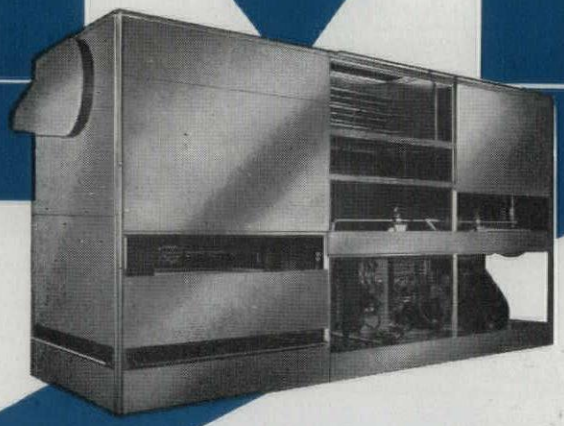
The new SCMZ is designed for complete flexibility . . . provides the desired latitude necessary to meet the exacting requirements and unusual space limitations not available in the majority of today's mass produced, unalterable packaged conditioners.

Governair's "Satisfabricated" Self Contained Units have all the basic components of a complete air conditioning system, conditioner section, compressor section, and evaporative condenser section. In these units all refrigerant piping and electrical connections are completed internally by factory-trained craftsman, and carefully supervised to assure proper operation on the job. Simple connection of duct work, electrical, make-up water and drain provide fast and economical installation.



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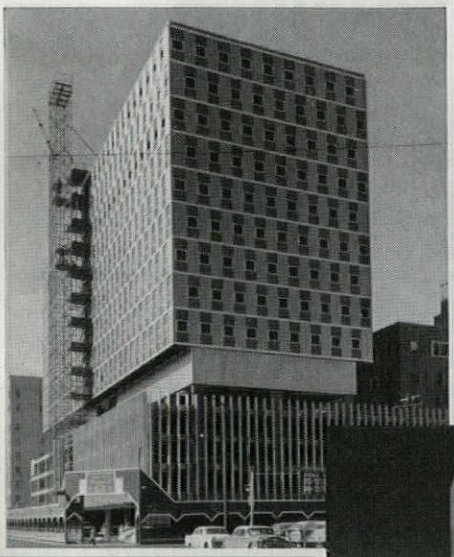
"ORIGINATORS OF COMPLETELY PACKAGED AIR CONDITIONERS"

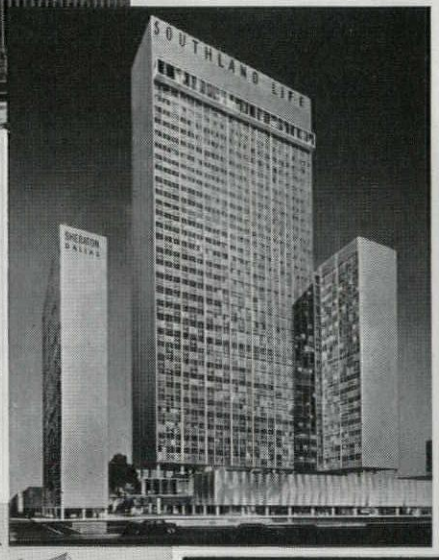
Here...there and everywhere...and now particularly

Here's How Architects Brought and provided "*Extra Rewards*"



MEDICAL & PROFESSIONAL BUILDING FOR MEMORIAL HOSPITAL, Houston. Architect: Wirtz, Calhoun, Tungate & Jackson. General Contractor: Manhattan Construction Co. of Texas. Plastering Contractor: Price Plastering Co. Zonolite Portland Cement Plaster for insulating spandrel wall back-up; Zonolite Plaster Fireproofing of beams, columns, floors.

SOUTHLAND CENTER, Dallas. Architect: Welton Becket & Associates, Los Angeles and Dallas. Associate Architect: Mark Lemmon, Dallas. General Contractor: J. W. Bateson Co., Inc. Plastering Contractor: Huntley & Blazier, St. Louis. 42-story Tower and Sheraton Hotel: Zonolite Direct-to-Steel-Floor Fire-proofing; Zonolite Plaster Fire-proofing of beams, columns.

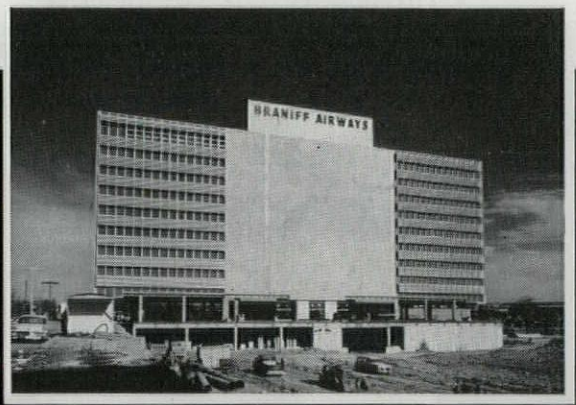


ZONOLITE Vermiculite products always do something *PLUS* something else

...As machine-applied direct-to-steel fireproofing Zonolite fireproof plastic achieves top ratings—*PLUS* a big saving in application time, sound-conditioning, a 7-inch gain in ceiling height per floor, with savings in dead weight and structural material costs.

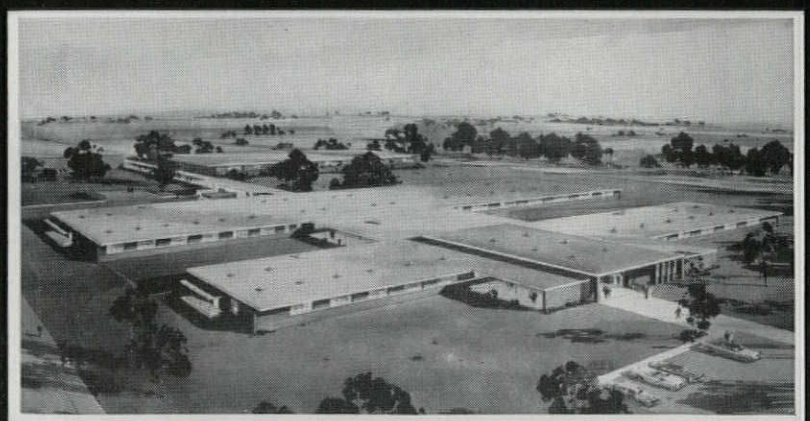
...As an insulating back-up for spandrel or panel walls Zonolite portland cement plaster provides fire protection—*PLUS* light weight, and wind-resistance.

...As a plaster fireproofing Zonolite plaster provides incombustibility—*PLUS* light weight and speedy application by modern plaster machines.



BRANIFF AIRWAYS BUILDING, Dallas. Architect: Lane-Gamble & Associates General Contractor: Robert E. McKee. Plastering Contractor: L. S. Goldman. Zonolite Direct-to-Steel Fireproofing.

MERCANTILE DALLAS, Dallas. Architect: Broad and Nelson. General Contractor: Robert E. McKee. Plastering Contractor: Storbeck, Gregory, and Dillard. Zonolite Plaster base coat for ceiling fireproofing. (Adjoins the Mercantile Bank Building, first lightweight Zonolite fireproofing job, constructed in 1944).



WARD BUILDING FOR MEXIA STATE SCHOOL, Mexia, Texas. Architect-Engineers: Thomas, Jameson & Merrill, Dallas. General Contractor: Eitze-Kitchen Construction Co., Dallas. Roof Applicator: Rodco Roofing Co., Waco. Zonolite Concrete over corrugated metal deck.

presenting new structures in Texas

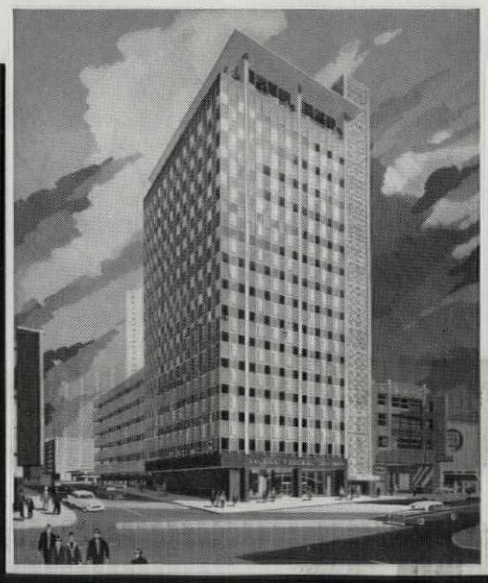
Down the Cost of Fireproofing for Owners with ZONOLITE®

The result is savings in construction time and cost, and betterments in design

...As a roof deck Zonolite concrete is monolithic, fire safe, and quickly poured or pumped—*PLUS* light weight and insulating.

Zonolite "plusses" add up to better construction and time-saving, cost-saving benefits. It makes sense to specify Zonolite for roofs, fireproofing, or acoustical treatments, as these Texas architects and engineers have done.

While planning your next project, have complete Zonolite data handy. Mail the coupon now!

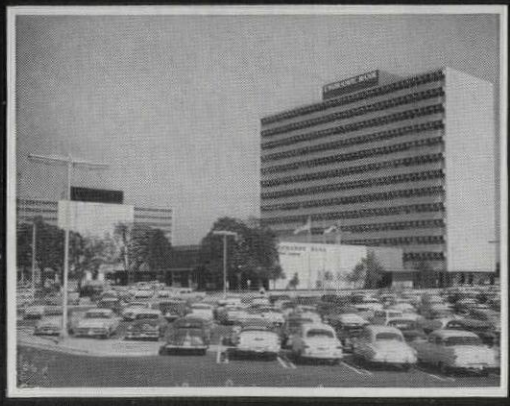


DALLAS FEDERAL SAVINGS & LOAN, Dallas. Architect & Engineer: George L. Dahl. General Contractor: Robert E. McKee. Plastering Contractor: Storbeck, Gregory, and Dillard. Zonolite Direct-to-Steel Fireproofing.

LOVE FIELD TERMINAL, Dallas. Architect: Broad & Nelson and Jack Corgan. General Contractor: T. C. Bateson Construction Co. Plastering Contractor: E. E. La Roche, Grand Prairie, Tex. Roof Applicators: Estes & Stout; Macatee, Inc. Zonolite Concrete over corrugated metal roof decking; Zonolite Plaster Fireproofing; Zonolite Acoustical Plastic ceilings for sound-conditioning.

BANK OF THE SOUTHWEST, Houston. Architect: Kenneth Franzheim. General Contractor: W. S. Bellows Construction Co. Plastering Contractor: A. A. Greer, Inc. Zonolite Plaster on metal lath for fireproofing suspended ceilings and columns.

EXCHANGE PARK BANK BUILDING, Dallas. Architect: Lane-Gamble & Associates. General Contractor: Robert E. McKee. Plastering Contractor: E. E. La Roche. Zonolite Direct-to-Steel Fireproofing.



ZONOLITE COMPANY, Dept. PA-58
135 S. LaSalle St., Chicago 3, Ill.

Send me booklets I have checked:

- ☐ PA-41, "Plaster and Acoustical Systems"
- ☐ PA-35, "Data Sheet, Direct-to-Steel Fireproofing"
- ☐ CA-42, "Roof Deck Specifications"

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CENTRAL BREVARD NATIONAL BANK
COCOA, FLORIDA
Stevens and Sipple—*Architects*
Ceramic Veneer units 24" x 24" x 2" were specified for exterior facing. Color is mottled emerald green.

FIRST FEDERAL BANK
TOLEDO, OHIO
Hahn & Hayes—*Architects*
For the facade, Ceramic Veneer was specified in mottled sandlewood. For the base it is mottled royal blue. Coping color is mottled russet.

What's the right color for bank facades?

With your creative imagination restricted only by demands of function and environment, you can select any desired color or texture when you specify Ceramic Veneer for exteriors and interiors. Whether you design plain surfaces, decorative panels or sculpture, Ceramic Veneer always combines impressively with other building materials. Every unit, large or small is custom-made to your specifications by Federal Seaboard craftsmen. Besides its remarkable versatility of form, color and texture, Ceramic Veneer provides the advantages of quality, permanence, price and minimum maintenance. Without charge, we will gladly furnish construction detail, data, color samples, and advice on preliminary sketches involving use of Ceramic Veneer. Write us today.

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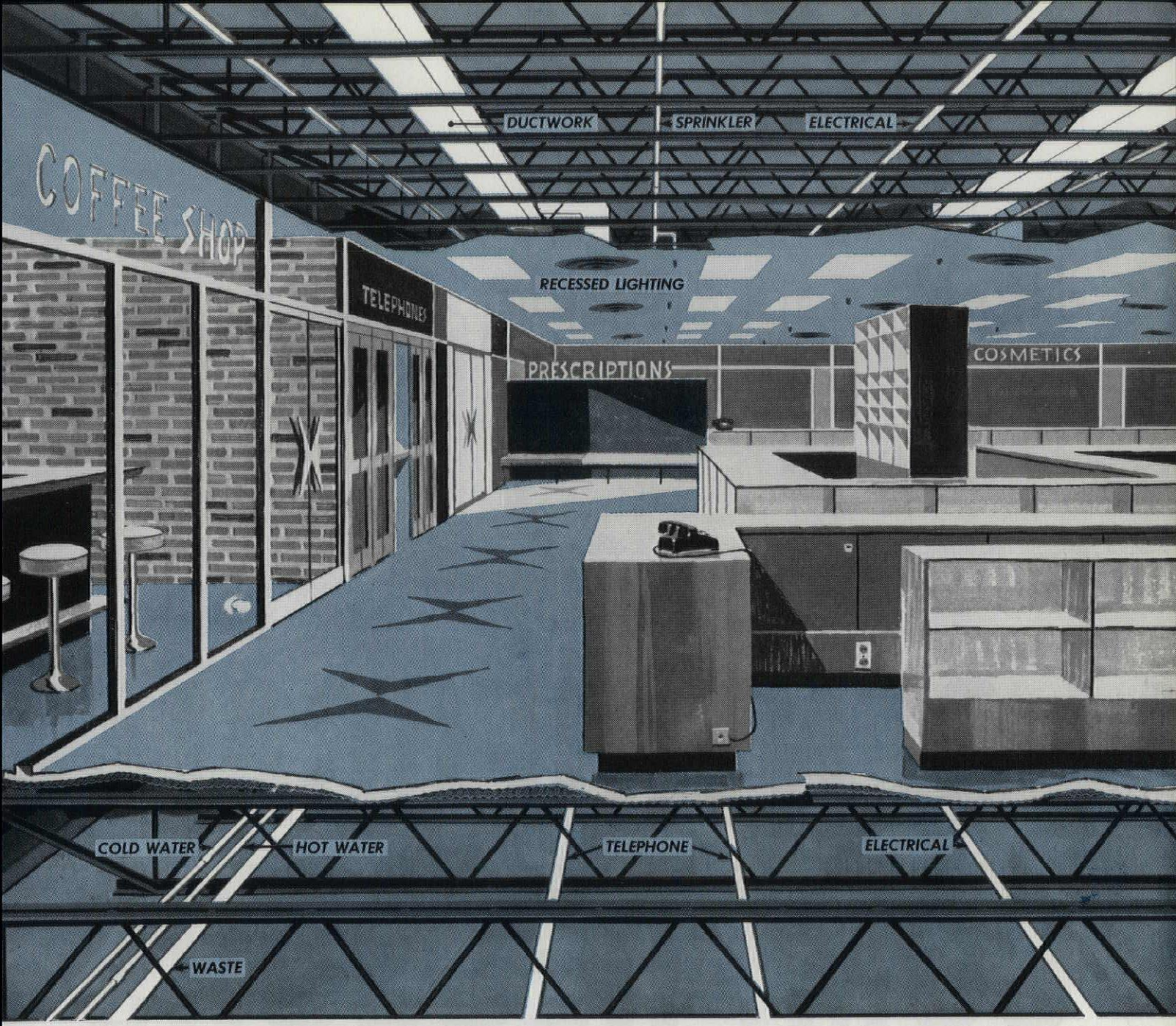

HOW TO SIMPLIFY INSTALLATION OF PIPE AND CONDUIT

One of the many advantages you get when you design with Bethlehem Open-Web Steel Joists is the ease with which you can install pipe and conduit. As shown above, the open-webs allow for the passage of pipe, wires, conduit—even heating lines—*in any direction*. And what's more, steel joists are fire-resistant and can't warp or sag.

The open-webs also greatly simplify the installation of conduit and wiring for recessed lighting fixtures.

For multi-story buildings such as apartments and hospitals, construction with Bethlehem Steel joists also provides a maximum of sound-resistance. Used with concrete floor and plaster ceilings, the joists provide both a minimum of contact between floor and ceiling, and a dead air space which effectively dampens the transmission of sound in both directions.

Bethlehem joists are described in Sweet's architectural file, and our nearest sales office will be glad to send you our joist catalog.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by
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BETHLEHEM STEEL

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Now, the big-tonnage refrigeration requirements for many large air conditioning and industrial processing applications can be handled economically with a single Carrier Centrifugal Compressor. These multi-stage, heavy-duty centrifugals are designed and built to the same high-quality standards that have earned Carrier the reputation for around-the-clock dependability on thousands of applications.

With unit capacities up to 3000 tons, these Carrier Centrifugal Compressors provide many installation and operating advantages. To mention a few:

Extreme flexibility of arrangement with coolers and condensers. Four of many combinations are illustrated.

High lift or wide temperature range in two, three or four stages.

Side loading for split load requirements.

Variable inlet guide vanes for capacity control.

Suitable for all types of drives.

Versatile use with any high-pressure refrigerant.

Whatever your requirements, the Carrier specialist in your area can make an impartial recommendation. For information about these big-tonnage Carrier Centrifugals and specific application to your requirements, call your nearest Carrier office, or write

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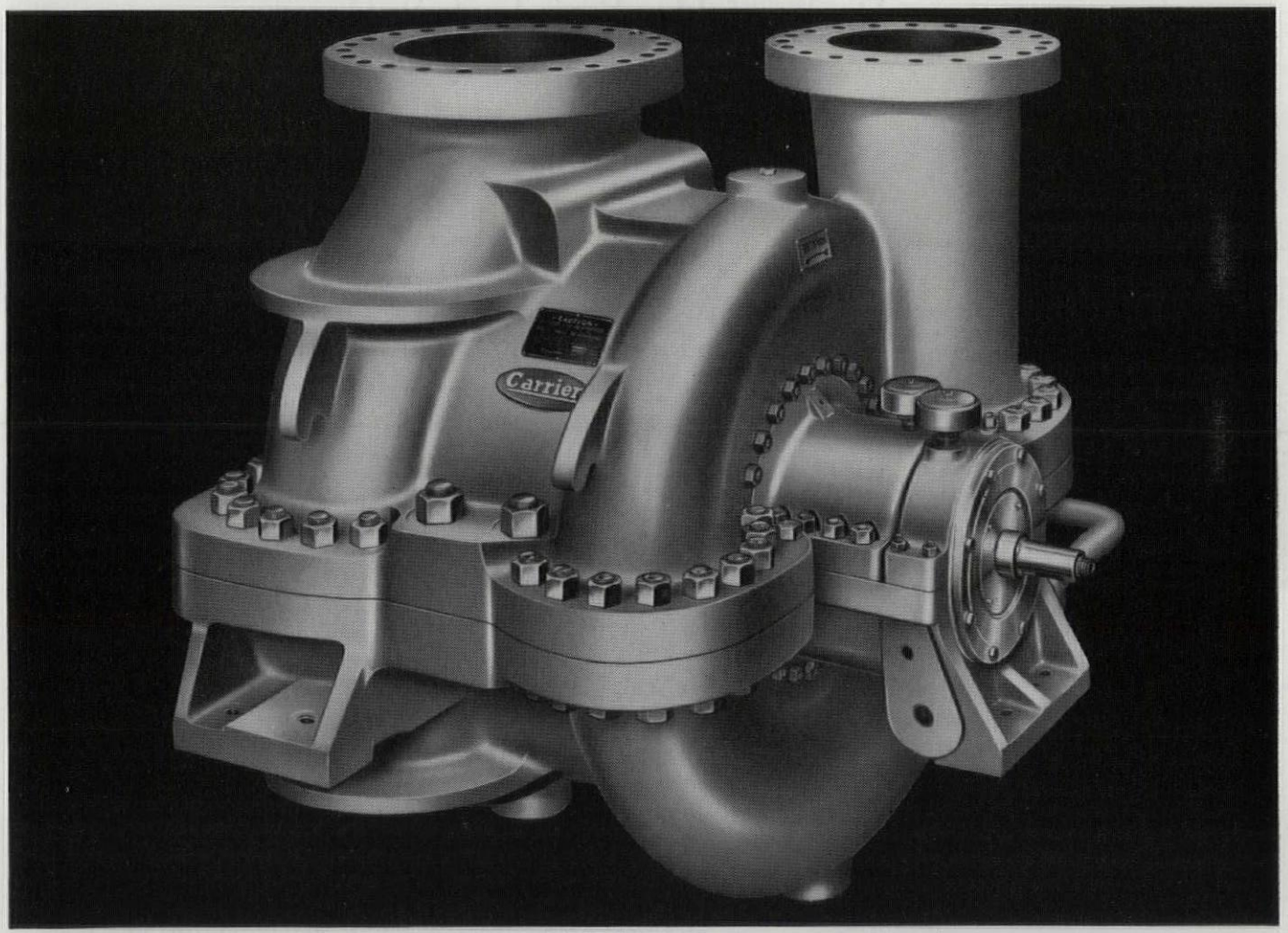

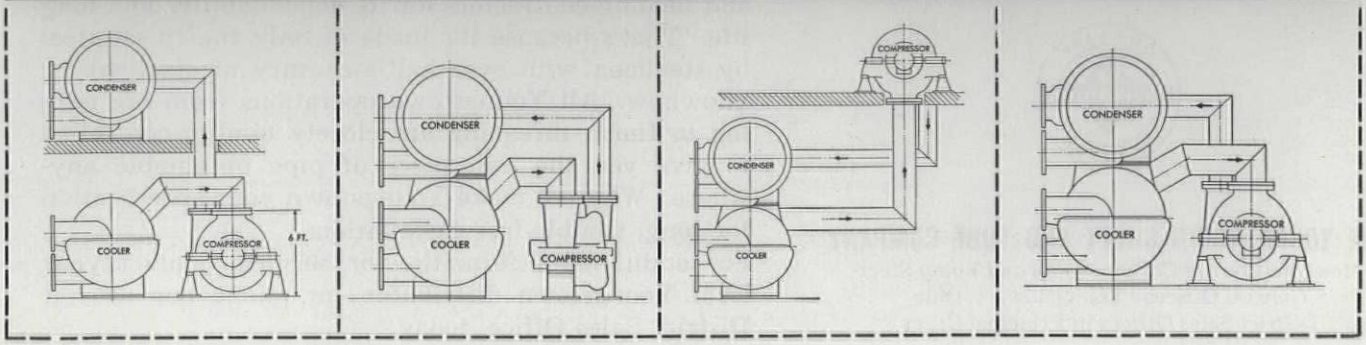

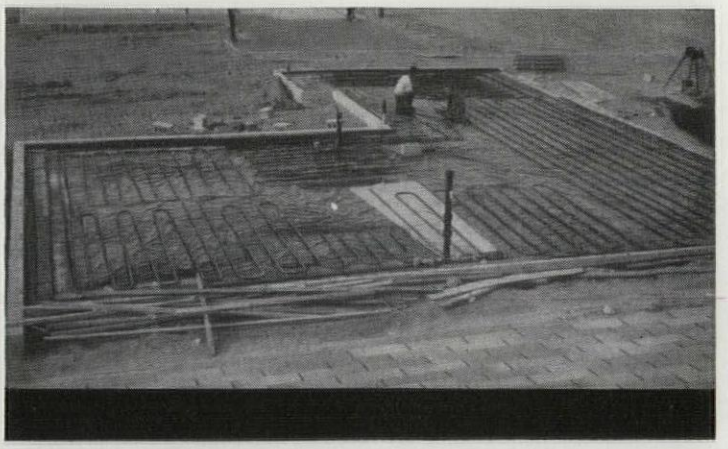

Youngstown steel pipe

. . . Gives Long, Maintenance-Free Life to Radiant Heating Installations

Youngstown Steel Pipe was installed by National Heating Co. in this 60-unit development of Modern Builders, Inc., both of Cincinnati, Ohio.

Specify Youngstown and secure these 7 Points of uniform goodness

uniform ductility
uniform lengths
uniform threading
uniform weldability
uniform wall thickness and size
uniform strength and toughness
uniform roundness and straightness

Modern residential developments—like this 60-unit project off Cincinnati's Winton Road—demand only the most modern heating facilities. So, to afford these new homeowners warm, draft-free rooms of equalized temperatures, invisible radiant heating systems utilizing Youngstown Steel Pipe were installed.

For years Youngstown Steel Pipe has been specified by leading architects as well as progressive plumbing and heating contractors for its dependability and long life. That's because it's made of only the finest steel by steelmen with over half-a-century of steelmaking knowhow. All Youngstown operations from ore mining to finish threading are closely quality-controlled to give you the best piece of pipe obtainable anywhere. Why not make Youngstown your specification for long, trouble-free installations?

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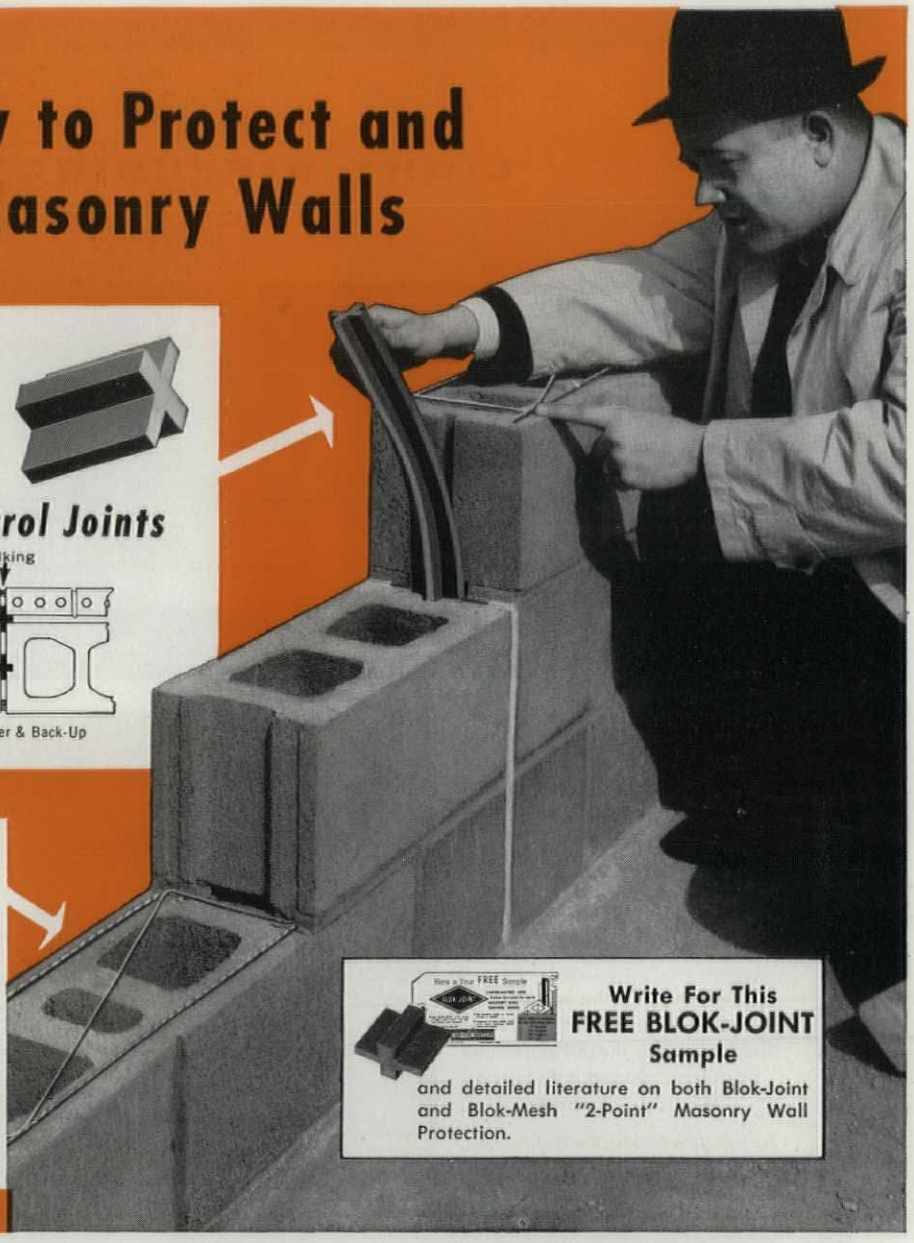
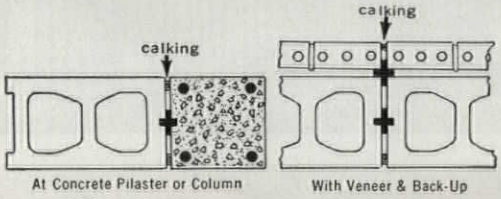


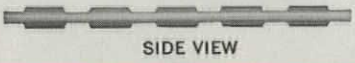
BLOK-JOINT
Pat. Pend.

For Control Joints



BLOK-MESH

Deep Swedged Reinforcing



SIDE VIEW

Write For This FREE BLOK-JOINT Sample

and detailed literature on both Blok-Joint and Blok-Mesh "2-Point" Masonry Wall Protection.

BLOK-JOINT Permits Contraction AND Expansion In Control Joints

BLOK-MESH Reinforcing Has Deep Swedges For Better Mortar Bond

Today's accepted method of building masonry walls includes reinforcing and control joints. Control joints relieve stresses and strains and reinforcing adds strength and resistance to cracking. Use both to provide maximum strength and protection.

BLOK-JOINT is a cross shaped rubber extrusion for making fast, effective control joints in masonry walls. It is used with ordinary metal sash blocks. No special blocks or building paper and mortar fill is needed. Blok-Joint forms a secure interlock for lateral stability —allows *both* contraction and expansion. It can be used in single walls, block walls faced with other masonry, cavity walls and at pilasters or columns. Molded of "100-year life" rubber, Blok-Joint meets ASTM and Federal specifications.

BLOK-MESH is the masonry reinforcing with the exclusive deep swedged deforming. The well-defined, squared notches give more gripability with the mortar than conventional reinforcing with superficial nicks or burrs. Blok-Mesh provides effective dovetailing—yet requires no more area in the joint than other types.

For Further Information See

4h/Car Architectural File

3c/Car Industrial Construction File

CONSTRUCTION MATERIALS
CARTER-WATERS
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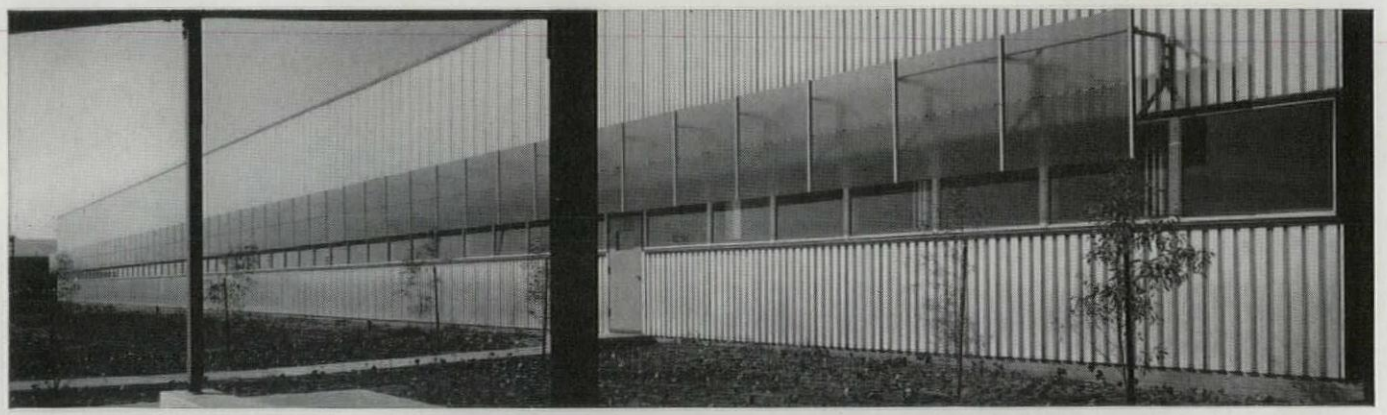
Blok-Joint and Blok-Mesh are products of The Carter-Waters Corp., 2440 Pennway, Kansas City 8, Missouri. DEPT. PA

Available in the U. S. through Concrete Block Manufacturers and Building Material Dealers.

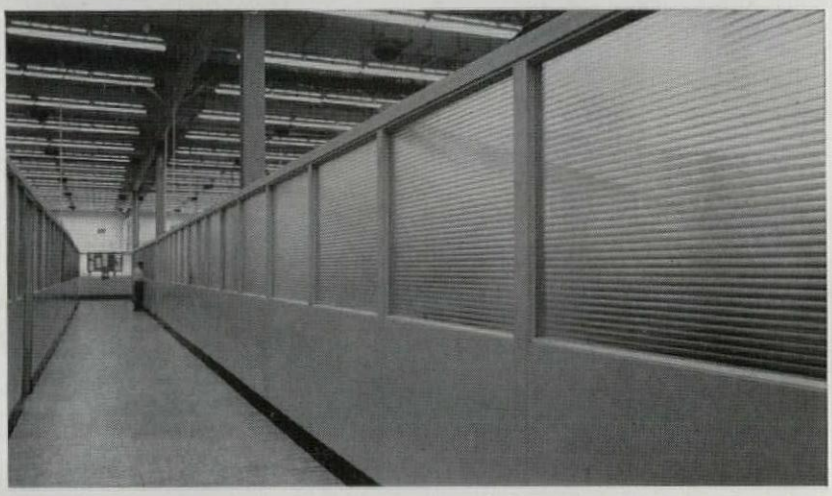
Blok-Joint is distributed in the Canadian Provinces of Alberta, Saskatchewan and British Columbia by CONSOLIDATED CONCRETE INDUSTRIES, Ltd., 9th Ave. & 24th St. East, Calgary, Alberta, Canada.

LIGHT DIFFUSING GLASS MAKES...



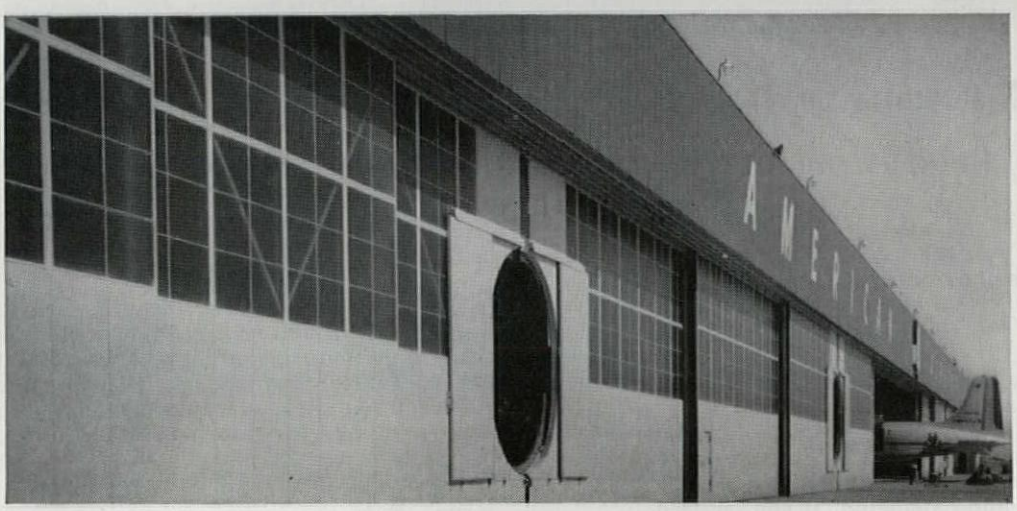
Architects: Marcel Breuer and Associates
Supervision: Craig Ellwood

A point of special architectural interest in the new Torrington Manufacturing Co. plant at Van Nuys, California is the sunshade of Coolite heat absorbing wire glass that spans the western elevation.



Complementing the spectacular new IBM offices in San Jose, California are these Hauserman partitions, glazed with lustrous Mississippi Broadlite glass.

Architect: John S. Bolles, San Francisco, Calif.
Partitions by: E. F. Hauserman Co., Cleveland, Ohio



1260 lights of ¼" Coolite Wire Glass provide better daylight with protection, while absorbing excess solar heat in expansive American Airlines Hangar at Los Angeles International Airport.

Architect: Quinton Engineers Ltd., Los Angeles, California
Glazing by: W. P. Fuller and Company, Los Angeles, California

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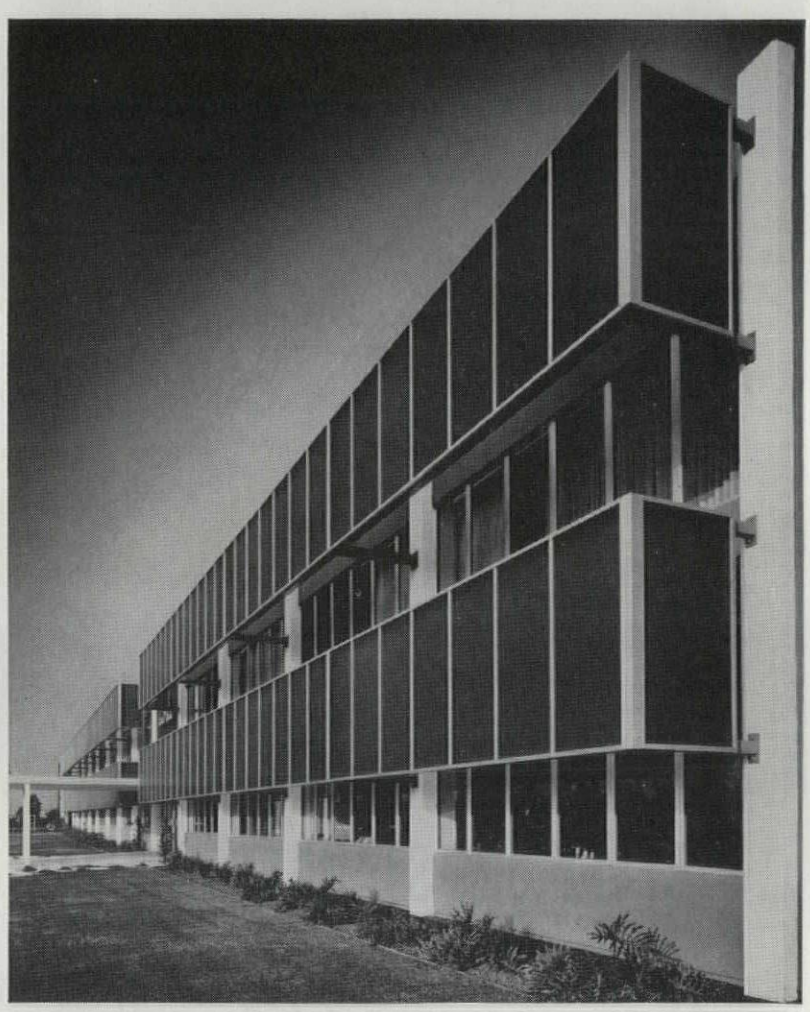
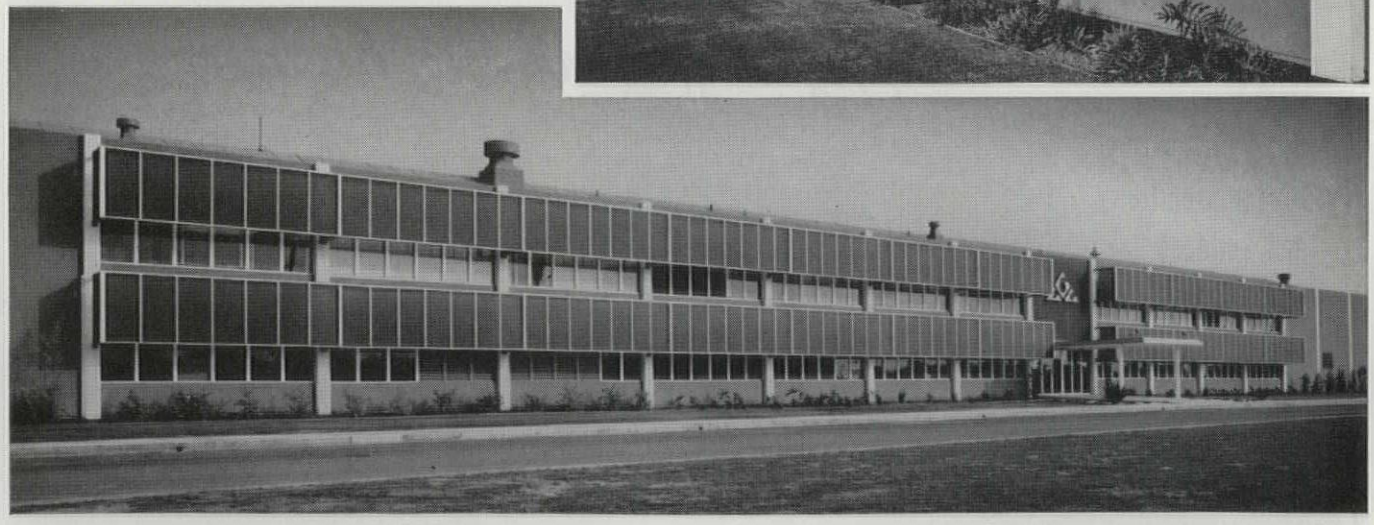
A place in the sun is especially desirable when heat absorbing blue-green Coolite Glass is there to help employees see better, feel better, work more comfortably. A brand new concept in "extended screen" glazing technique that combines beauty and utility.

Growers Container Corporation, Fullerton, Calif. Architect: Falk and Booth, San Francisco, Calif.





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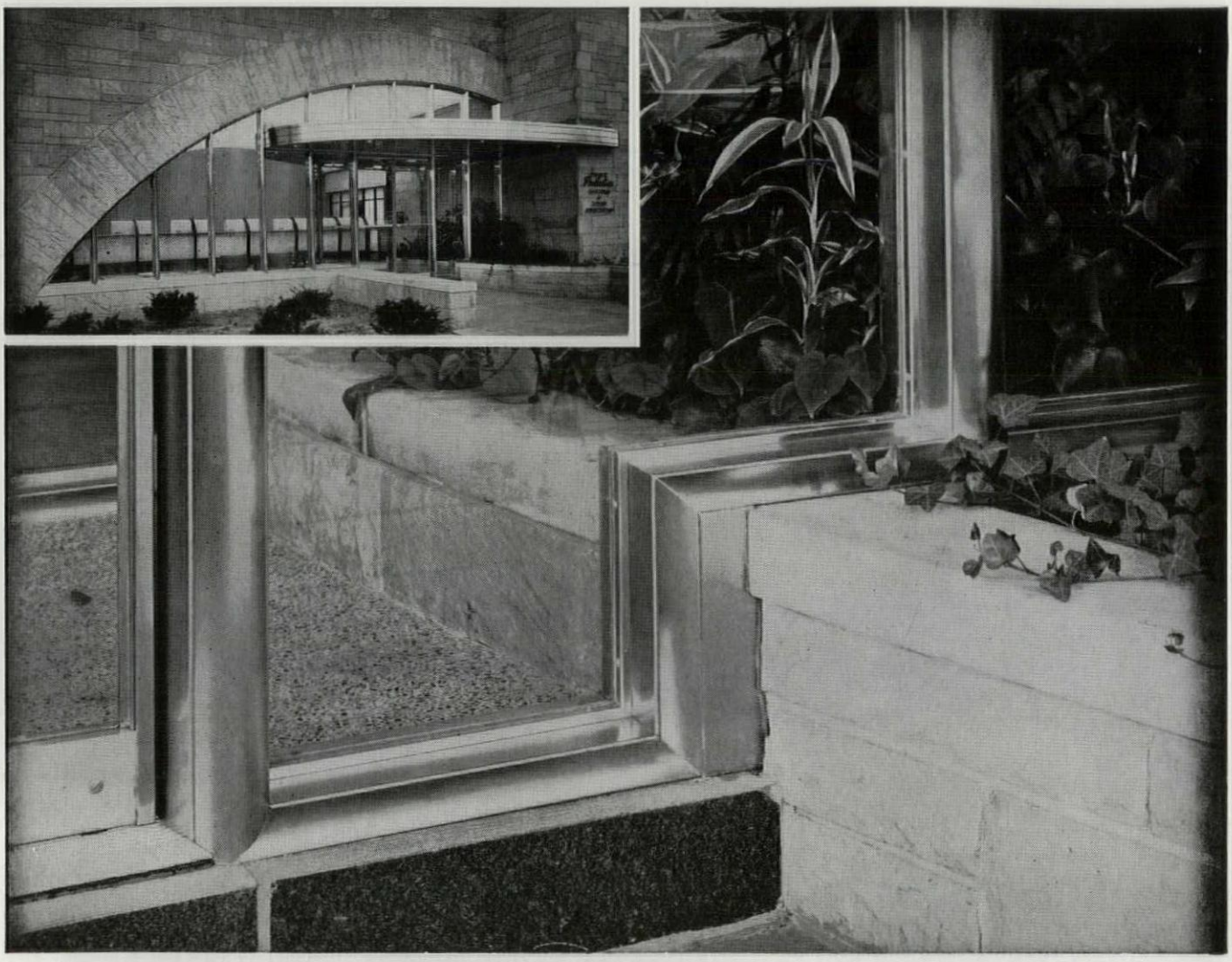

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Keep it in mind, too, that A-L Stainless Steel is versatile—you can employ it in your structures in everything from building hardware to an entire curtain wall design. • If we can help you with any data or engineering assistance, call on us. ***Allegheny Ludlum Steel Corporation, Oliver Building, Pittsburgh 22, Pa.***

"INFO" for Architects and Builders

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2. "Stainless Steels for Store Fronts and Building Entrances"—40 pages of valuable data on examples and details. AIA File No. 26D.
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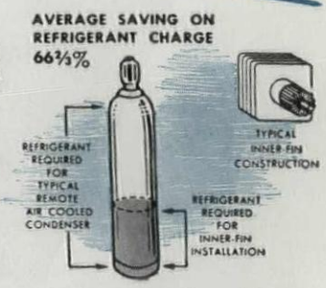
AL STAINLESS STEEL

What's NEW in Remote Air Cooled Condensers? This

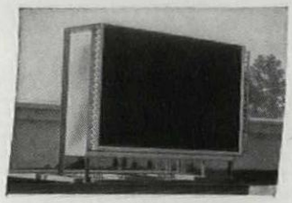
A REMOTE AIR COOLED CONDENSER THAT REQUIRES ONLY 1/3 OF THE REFRIGERANT CHARGE USED BY COMPETITIVE MODELS



A RECENT 300 TON JOB SHOWED SAVINGS OF 1800 LBS. OF REFRIGERANT THROUGH USE OF THESE UNITS.

Yes, the Dunham-Bush 'BC' Remote Air Cooled Condensers with famous Inner-Fin construction mean savings of 67% in refrigerant charge. Additionally, they mean smaller receivers and minimum loss if the system charge is lost. In these expertly planned units, the exclusive Inner-Fin construction diminishes the internal volume of the coil while increasing the heat transfer coefficient. And higher heat transfer factors permit design of more compact units, saving valuable space in installation.

AS MUCH AS 53.5 TON CAPACITY IN ONE UNIT



The Dunham-Bush line of 'BC' Remote Air Cooled Condensers includes models in 13 sizes with capacities ranging from 2.2 tons to 53.5 tons, making possible use of a single unit for practically any job !

FOR ALL 'ROUND PROTECTION

Plastic vinyl paint is applied to all ferrous parts of unit casing and structure in three stages:

PRIMER—a polyvinyl plastic combined with zinc chromate.

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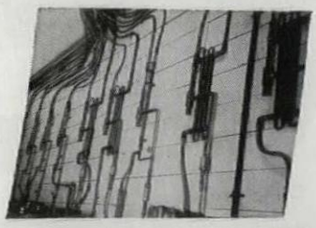
FINISH—hard grey, all weather resistant plastic vinyl.

All interior surfaces of the unit casing are given an extra finish coat of plastic vinyl.

AND FOR MAINTAINING SATISFACTORY HEAD PRESSURES



at all ambients, Dunham-Bush engineers offer the 'PS' Pressure Stabilizer.

'PS' units can be mounted indoors near the compressor, facilitating the making of necessary adjustments. They are thoroughly factory tested and assembled, and require connection only to the refrigerant liquid and discharge lines. No extra piping or special loops required. Regulating valve gives smooth pressure control and eliminates wide pressure fluctuations inherent in other head control systems.

The name Dunham-Bush is synonymous with efficient, satisfactory service for all types of pressure and temperature conditions. For technical assistance, our engineering staff is at your service. For more information, contact us.

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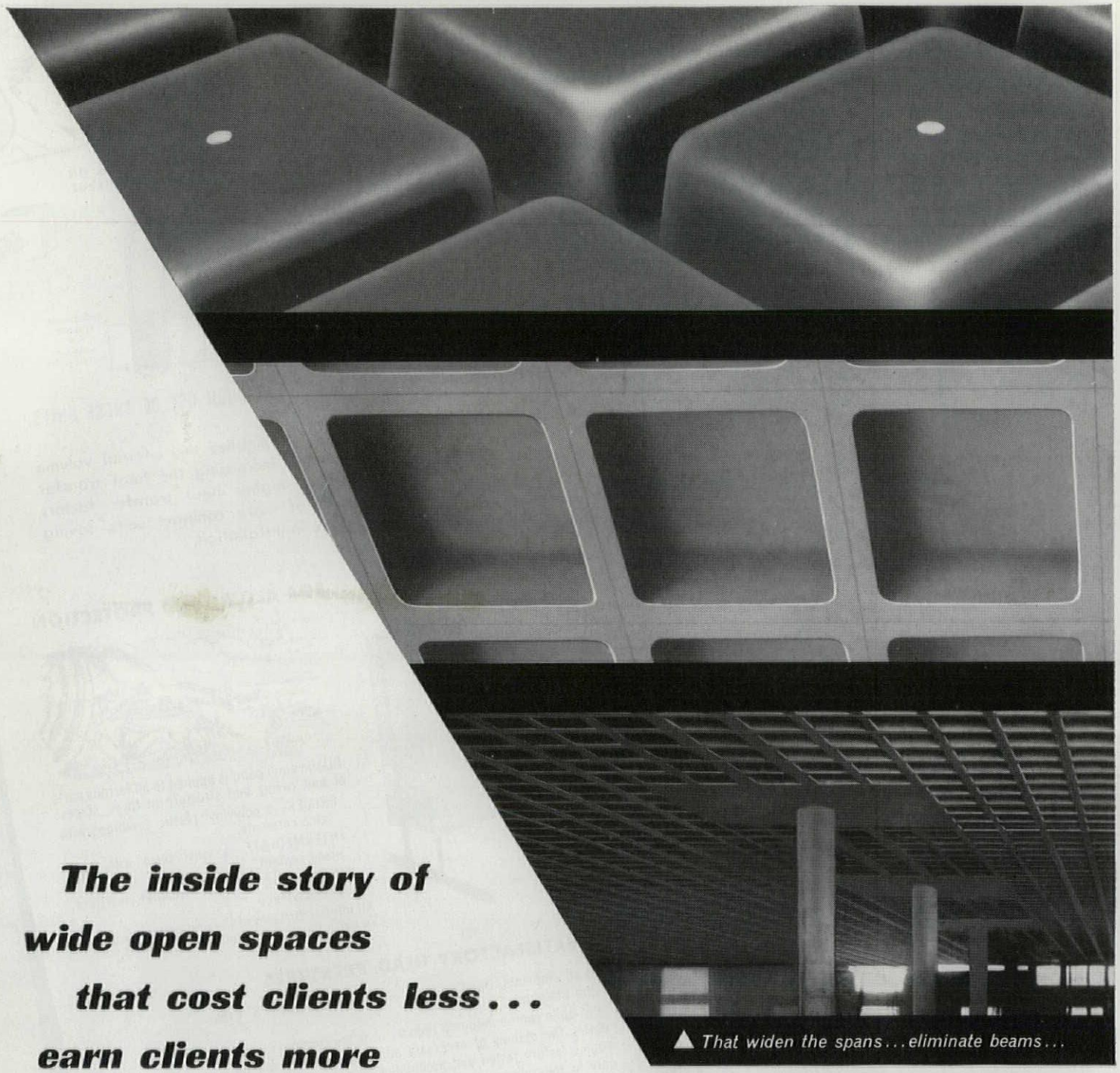
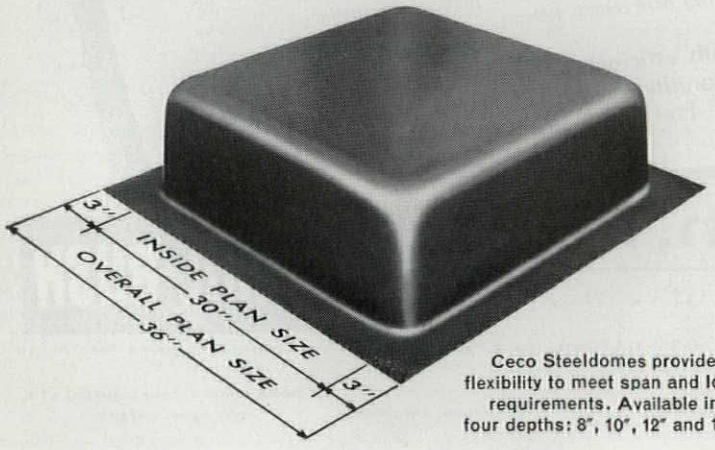


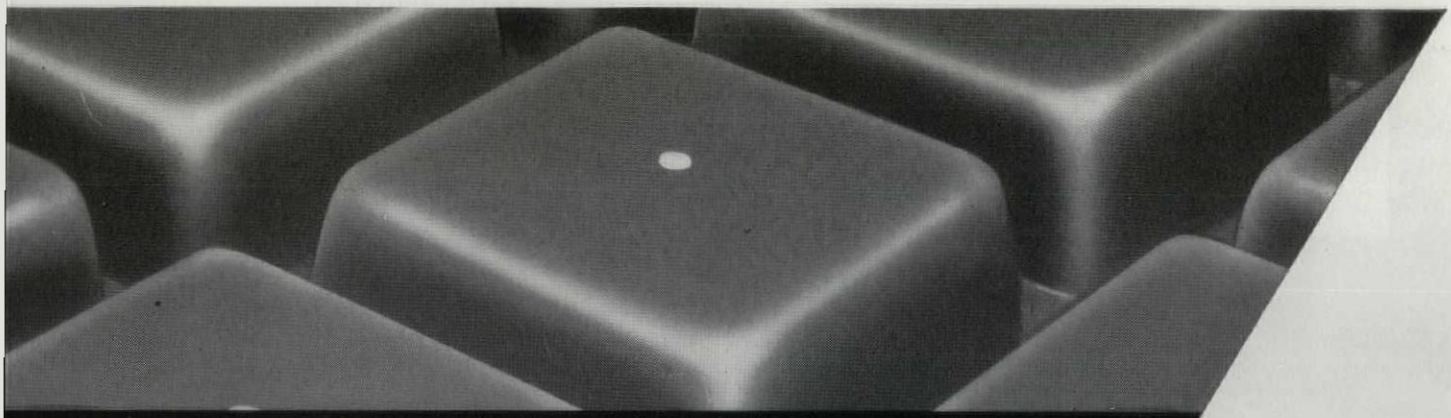
▲ *That widen the spans... eliminate beams...*

The inside story of wide open spaces that cost clients less... earn clients more

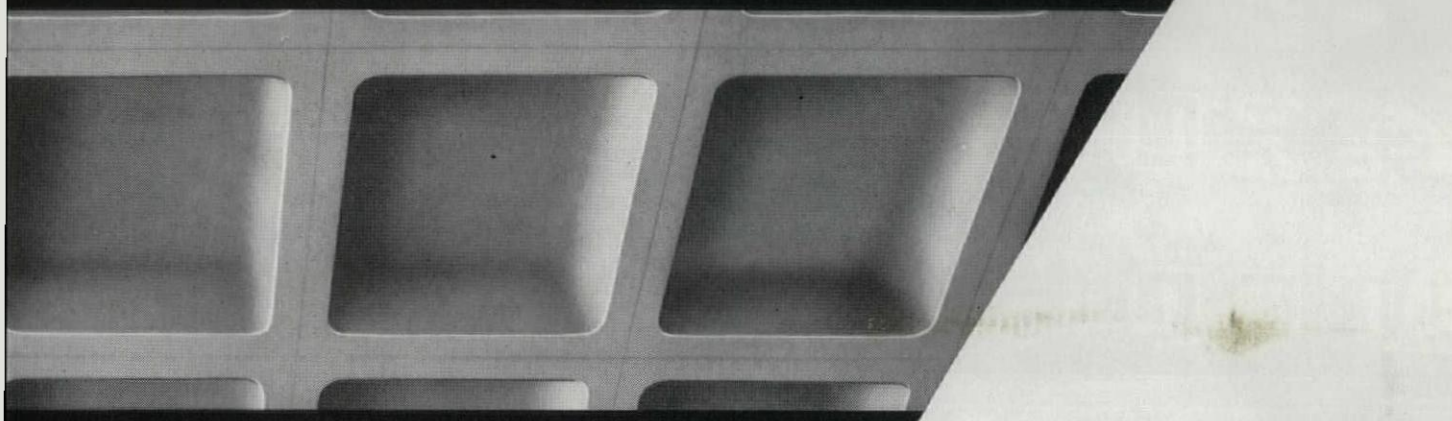


Ceco Steeldomes provide flexibility to meet span and load requirements. Available in four depths: 8", 10", 12" and 14".

CECO'S ONE-PIECE STEELDOMES TELL THE TALE . . . Architects and engineers are always seeking ways to span wider areas at lower costs . . . to design buildings that offer the highest return to the client. Ceco offers a solution: Two-way dome construction, using one-piece Steeldomes. Result: Fewer columns . . . uniform ceiling heights . . . no flared heads . . . no drop panels . . . more unobstructed areas for owners to use. The spans are expansive—but not expensive.



▲ *These are the forms that shape the floors...*



▲ *That lighten the system with waffle design...*

and keep the building costs in line.

expansive? yes!

expensive? no!

Savings in material and time are assured by the two-way design. And there is no higher quality concrete finish than provided by Ceco Steeldomes removed by compressed air. Ceco Steel Products Corporation. Sales offices, warehouses and fabricating plants in principal cities. General offices: 5601 West 26th Street, Chicago 50, Illinois.

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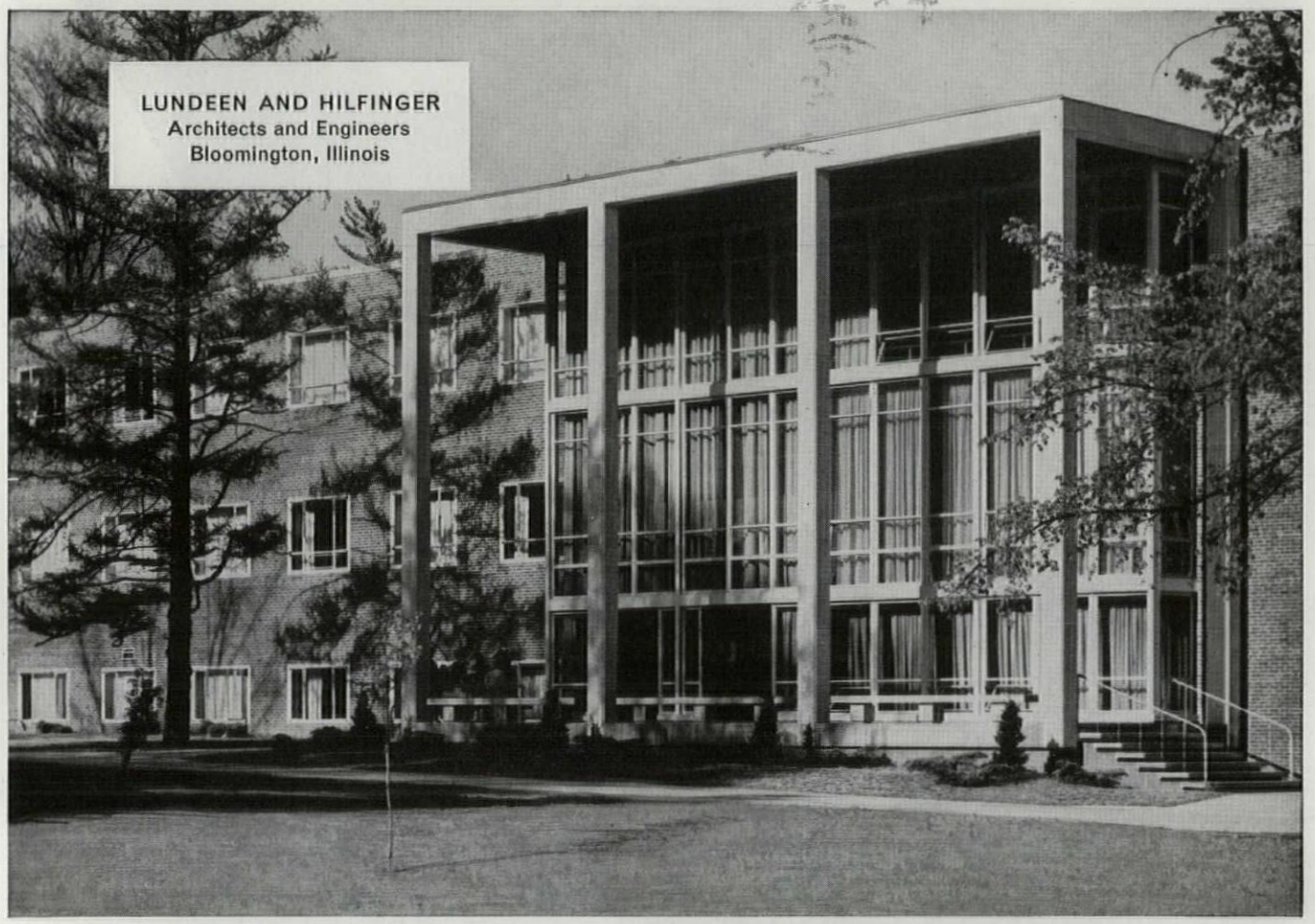

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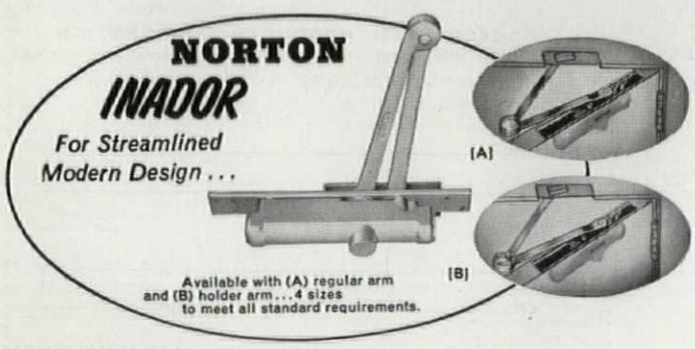
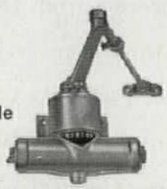
ILLINOIS STATE NORMAL UNIVERSITY, NORMAL, ILLINOIS

To be functional, modern education requires modern functional facilities. Illinois State Normal University at Normal, Illinois is no exception! Every detail of design—down to the streamlined Norton Door Closers—was planned for maximum efficiency and the utmost in modern simplicity.

Both Norton INADOR® and surface-mounted closers were extensively used, the latter on doors where concealment was not considered essential. Both are true liquid type closers with all the reliability, low maintenance and precision workmanship which the name NORTON always implies. For complete data on these and other Norton models, consult the current catalog. Write for it today if you don't already have one.



A complete line of Norton Surface-type Closers is available for installations where concealment is not essential.



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DOOR CLOSERS
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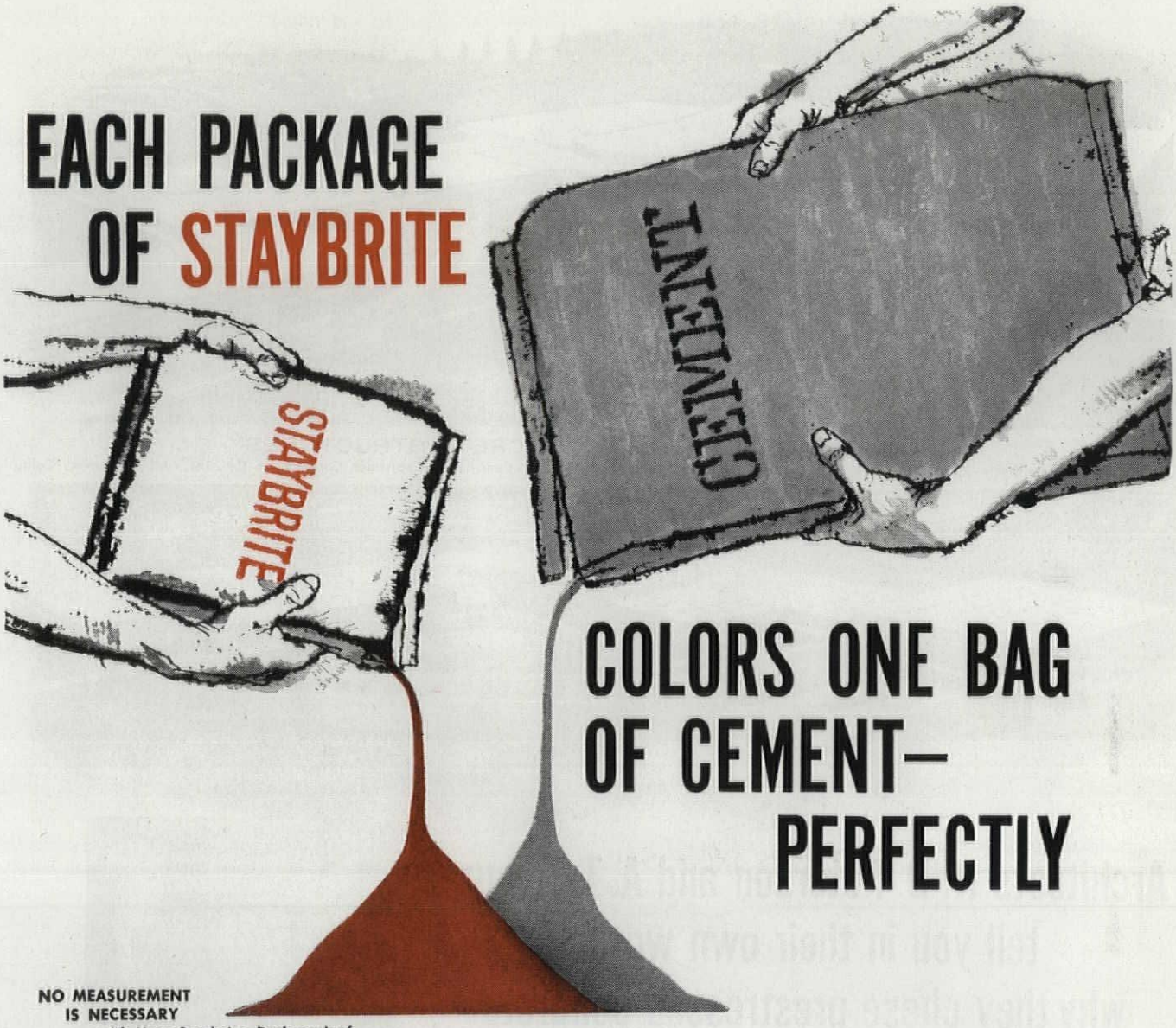
EACH PACKAGE OF STAYBRITE



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NO MEASUREMENT IS NECESSARY with Horn Staybrite. Each pack of this Integral Color for concrete or mortar colors one bag of cement.

Cement colored integrally with Horn Staybrite is certain to be *uniformly colored* because every pack of Staybrite puts exactly the right amount of color into one bag of cement. Each Staybrite pack is carefully measured and sealed at the factory, eliminating spilling and waste—to guarantee that all batches of cement will be exactly the same color.

Uniform coloring is only one Staybrite advantage. For example, a comparatively small amount of Staybrite gives you a strong, true color. Staybrite is *concentrated* color, made only of pure, high-grade metallic oxides with high coloring power. You don't weaken cement by adding Staybrite, because it contains a minimum of inert and organic impurities. And Staybrite won't fade—it resists sunlight, and it's alkali-resistant, so it minimizes unsightly discoloration because of alkali salts in the cement.

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TWO MORE PRESTRESSED CONCRETE STRUCTURES

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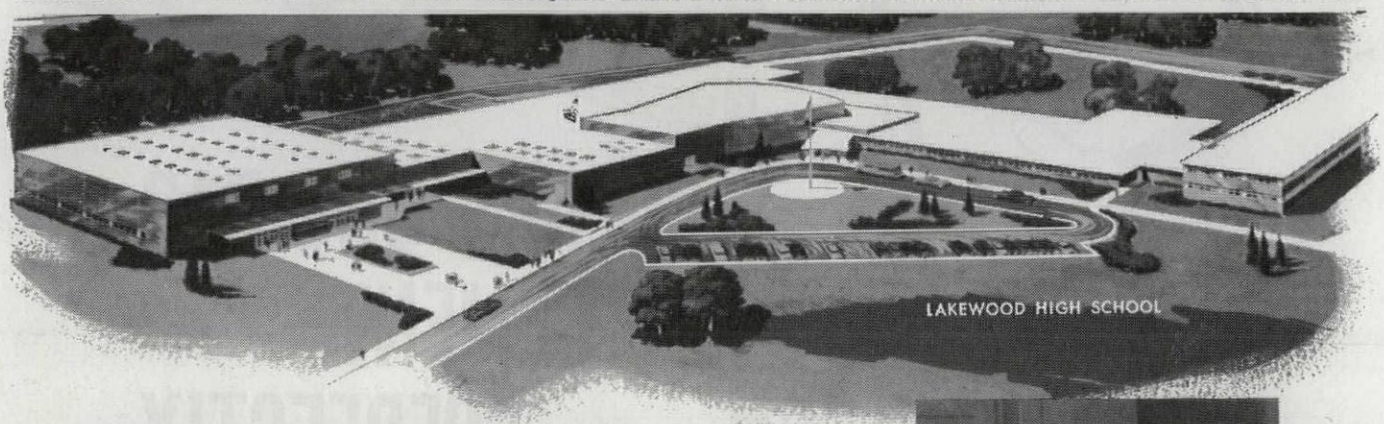

Architects R. D. Peterson and A. T. Auburn tell you in their own words why they chose prestressed concrete for two schools

"In designing the new Lakewood and Wheat Ridge High Schools, in Jefferson County, Colorado, each with approximately 125,000 square feet of floor area, we were faced with a limited budget for the size and facilities required. After careful analysis with our structural engineers, we selected prestressed concrete as the structural system.

"The use of prestressed concrete has resulted in a fire-resistant building at a much lower cost than comparable buildings of the same size and facilities in this area. The completed buildings, including all the built-in equipment under the general construction contract, the cost of land, furniture, site improvements, fees... are within a $2,000,000 budget for each school.

"The successful bidder, with a combined bid for the two projects, decided to set up their own casting bed on the Wheat Ridge site for the double-tee slabs for both projects. The double-tee slabs are being used for all roofs and floors above grade, and are left exposed with a sprayed-on acoustical plastic finish, except where suspended ceilings are provided to conceal piping in rooms above. This results in an attractive appearance at much less expense than suspended ceilings. The auditorium and gymnasium prestressed beams were post-tensioned. This allowed a reduction in over-all height with a consequent savings in cubage and construction cost. The use of pretensioned, prestressed slabs permitted us to design a 40'-0" wide clear span library room with a minimum structural depth. This method was also applied in other areas requiring clear spans with no columns."

Here, again, is a collection of qualities that clearly points out the advantages of prestressed concrete as a construction method.

It is but one example in a growing list of applications all over the country. Roebling's role in the prestressed field goes back to the introduction of the method in this country. We invite inquiries of any nature on the subject of prestressed concrete. We have at hand literature, experience and the *desire* to bring the many benefits of prestressed concrete to your attention. An inquiry to Construction Materials Division, John A. Roebling's Sons Corporation, Trenton 2, New Jersey, will bring a prompt reply.

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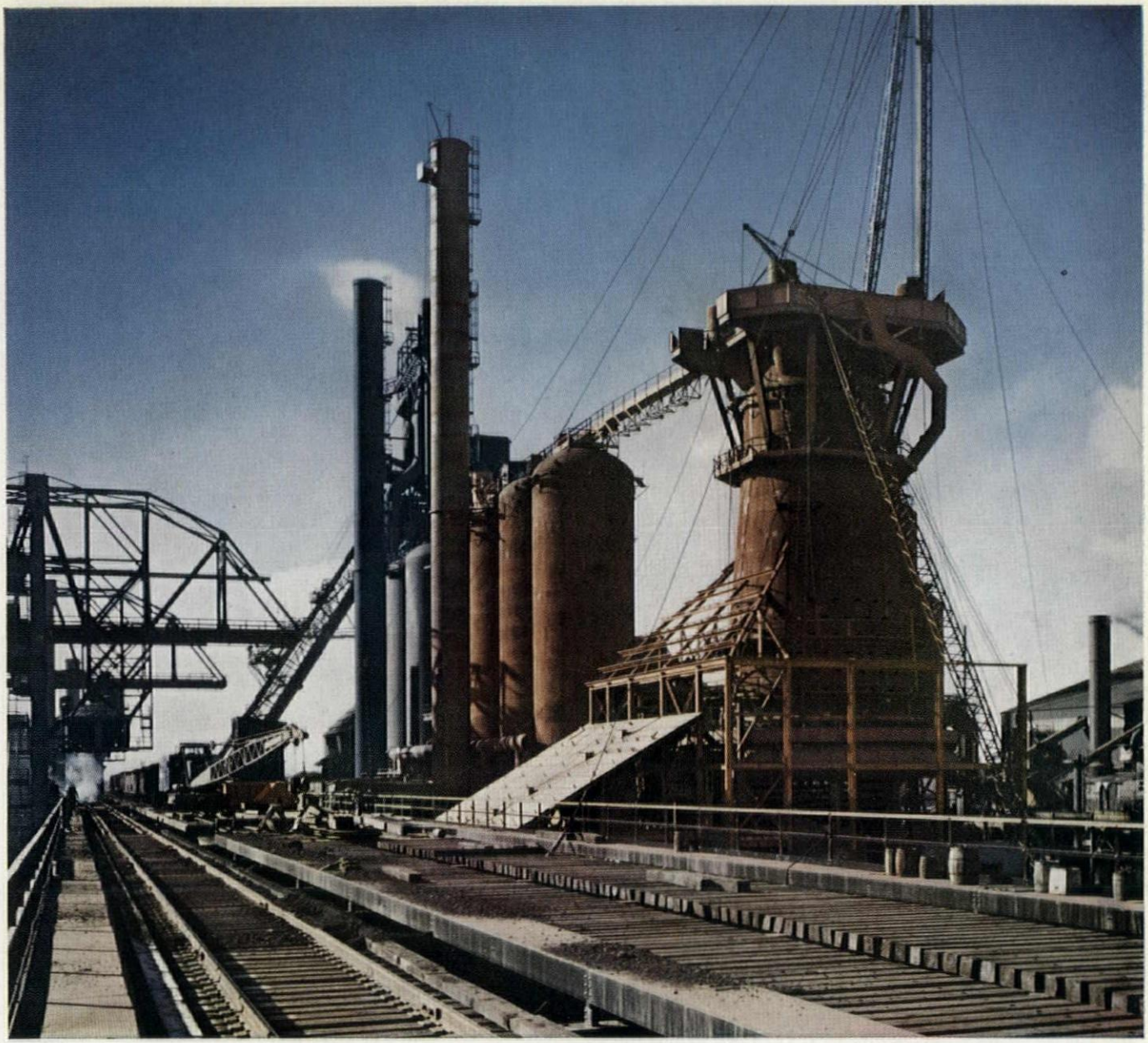

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We are again adding to our facilities to bring you better steels for the product you make today . . . and the product you plan for tomorrow.

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Against Heat, Cold, and Vapor in Building Spaces

The surfaces of ordinary IRON have about 4 times the reflectivity against heat rays that the surfaces of asbestos, asphalt, paper, brick, plaster, wood and other ordinary building materials have. Brass, gold, silver and ALUMINUM surfaces have about TEN TIMES the reflectivity against heat rays that non-metallic materials have. Aluminum surfaces, for example, have a 97% reflectivity for RADIATION, whereas the surfaces of most building materials have a reflectivity of only 10%.

RADIATION (heat rays) is responsible for 65% to 80% of all heat flow sideways in building spaces; 55% to 75% upwards; 93% down.

Air space has low density, therefore heat flow by CONDUCTION through the **spaces** inside building walls, roofs, attics or floors is slight. CONVECTION accounts for 15% to 30% of the heat flow sideways in such spaces, and up to 45% upwards. There is NO convection down.

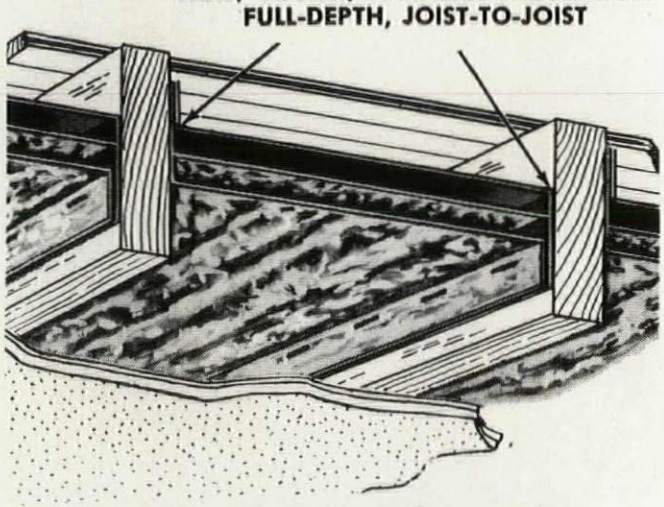
AN EXCELLENT HEAT AND VAPOR BARRIER

Multiple layers of metal, spaced apart, make an excellent barrier to heat and vapor flow in any direction. Prefabricated Multiple Aluminum is installed in one simple operation. Tough metallic sheets are automatically expanded so as to form alternating layers of aluminum, fiber and low density reflective air spaces. The fibrous and metallic sheets retard inner and outer convection.

Its continuous metal layers, up to 750 feet long, have almost zero permeability to vapor. Infiltration under flat stapled flanges is slight. Condensation formation on or within this type of insulation is minimized by its scientific construction. More than 400 million sq. ft. are in use today, a large part of it re-orders.

To obtain MAXIMUM, **uniform-depth** protection against heat loss and condensation

NEW, TOUGH, PARALLEL INSULATION
FULL-DEPTH, JOIST-TO-JOIST



formation, it is necessary to use the new **edge-to-edge** multiple aluminum, **each** sheet of which stretches from joist to joist.

You'll enjoy, as well as profit from reading Alexander Schwartz's recently published manual: "Heat Flow by Radiation in Buildings, Simplified Physics." The scientific background of heat flow, specific information on how to control it, data on the various types of multiple aluminum insulation, ratings of insulation performance, and installation techniques under many conditions are interestingly discussed in this liberally illustrated 48 page manual. A FREE copy is yours for the asking.

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TYPE 5	C .081=4"	C .034=9½"	9¢ sq. ft.
TYPE 6	C .068=4⅘"	C .034=9¾"	10¢ sq. ft.
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*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.
‡Approximate cost, material and labor, new construction between wood joists.

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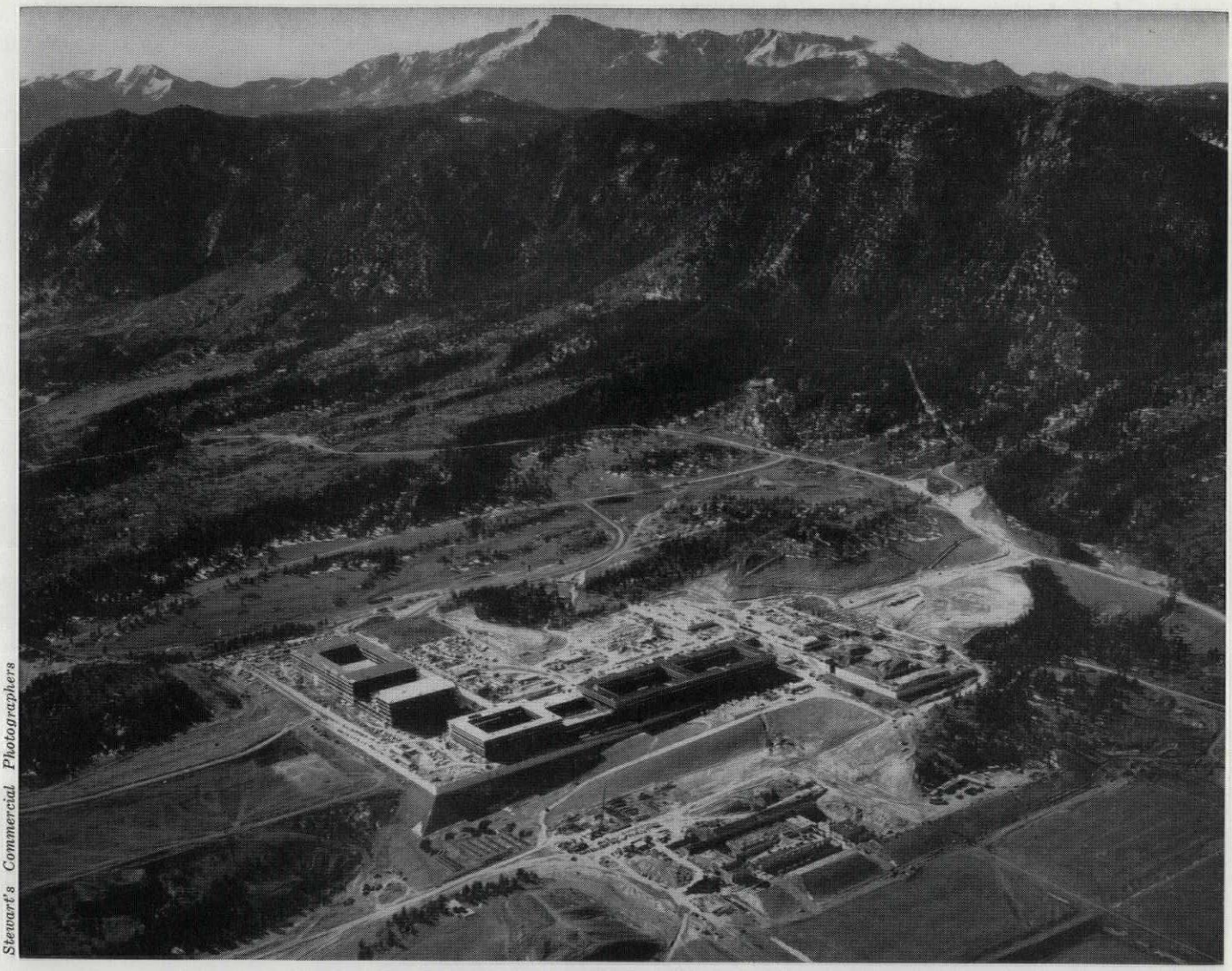
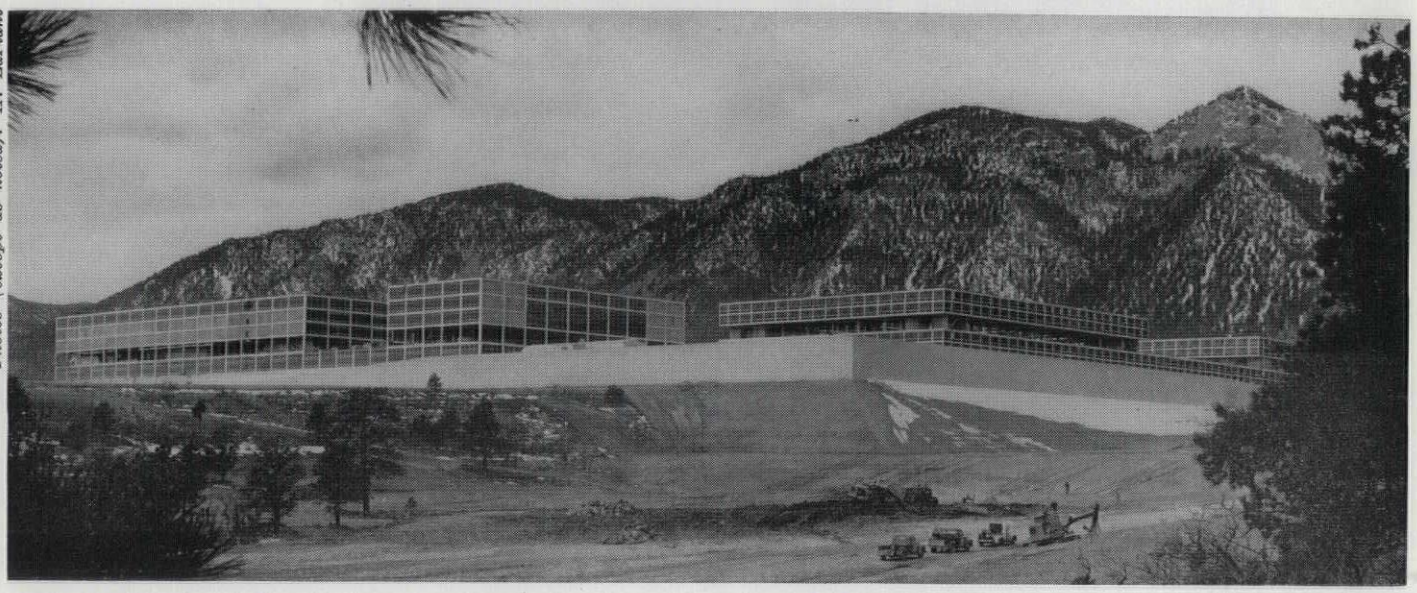


Stewart's Commercial Photographers

THE AIR FORCE ACADEMY — UP TO NOW

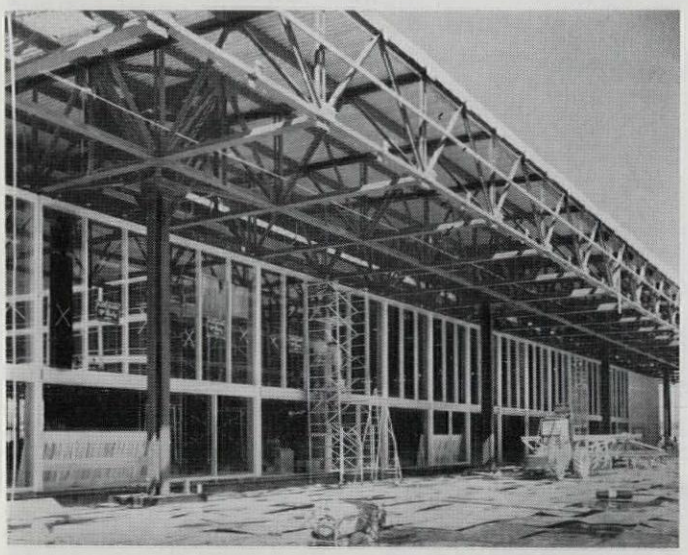


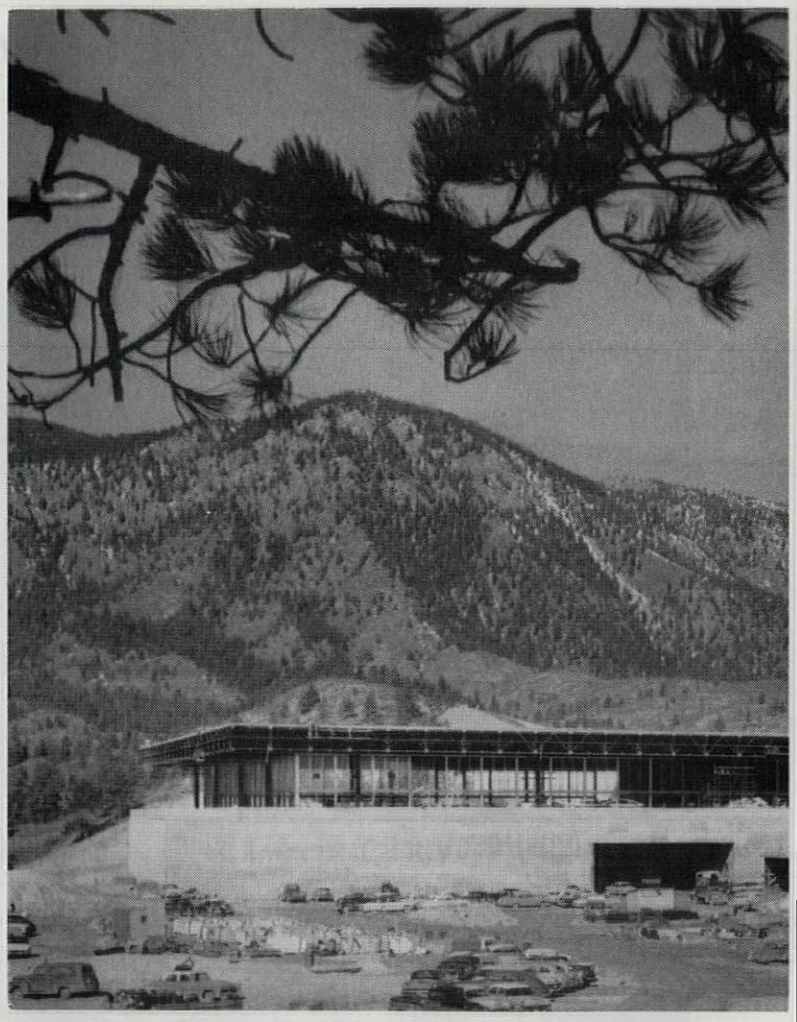
Photos (except as noted): H. LaPlant

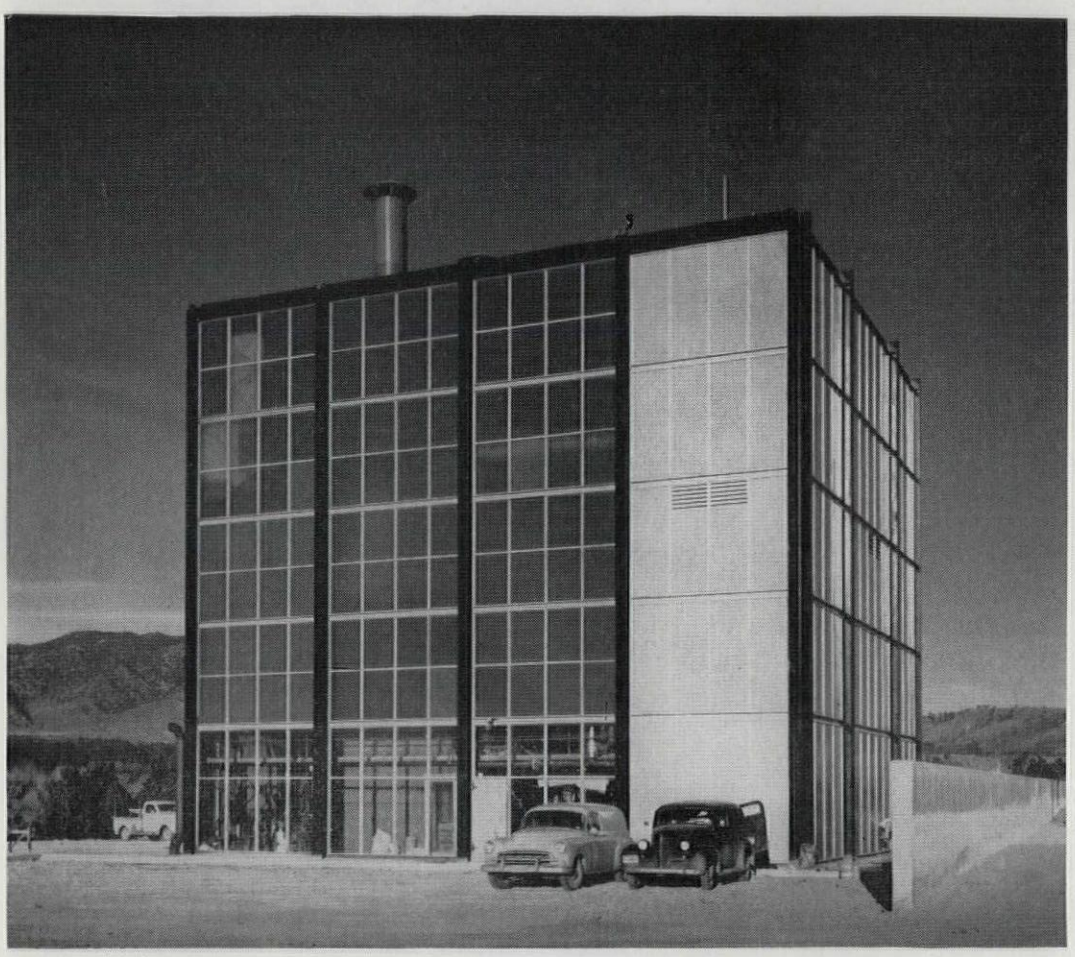
Academic Complex, including Library

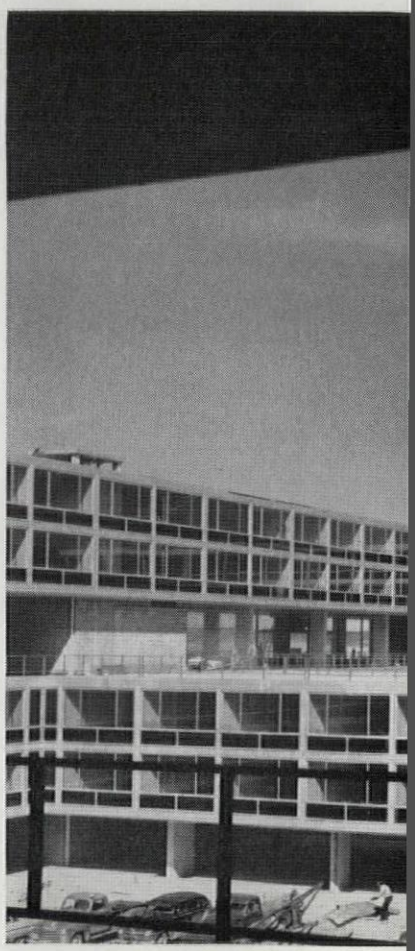
Cadet Quarters

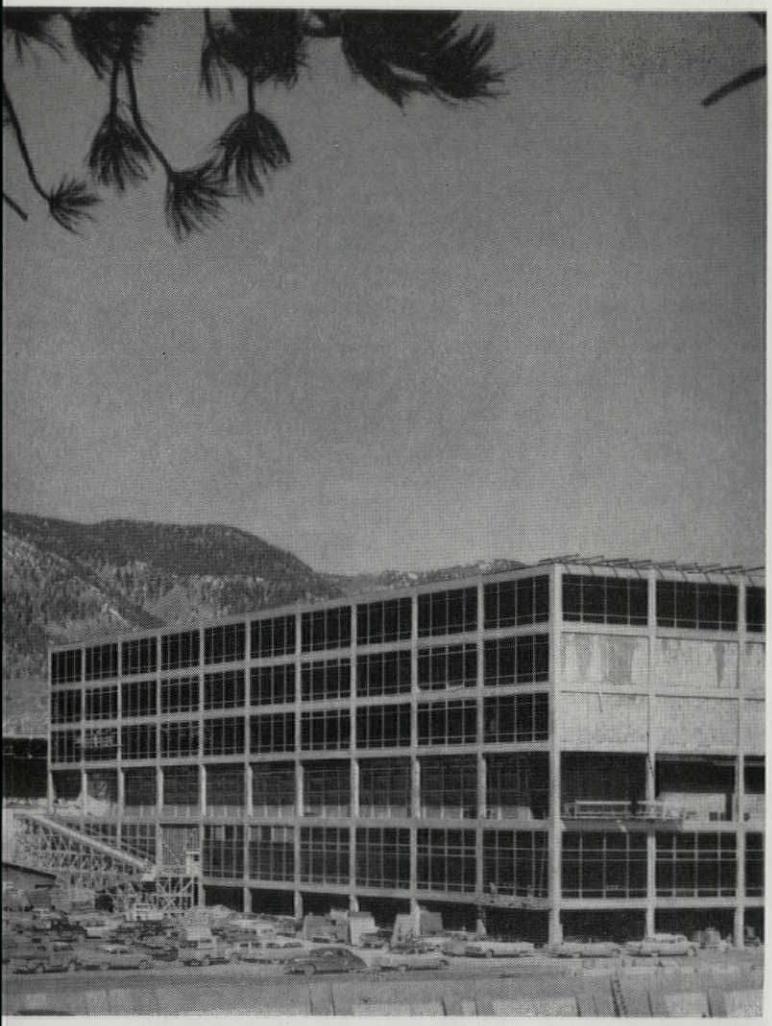
The Air Force Academy, fast taking shape on its 17,500-acre site at the foot of the Rampart Range north of Colorado Springs, Colorado, will open with 1200 students (50% of eventual enrollment) in September, 1958; Skidmore, Owings & Merrill, Architects (Utilities Associates: Robert & Company; Syska & Hennessy, Inc.; Moran, Proctor, Mueser & Rutledge). Status of a few major units: Dining Hall (below, and left of photo, right); exterior surfacing, except fascia, complete; Academic Complex (right of photo, right): plastering and partitioning 50% complete; Cadet Quarters (below right): 60% of rooms complete. The Academy Chapel is in working drawings; the Service and Supply area (Central Heating Plant, bottom) is in use.



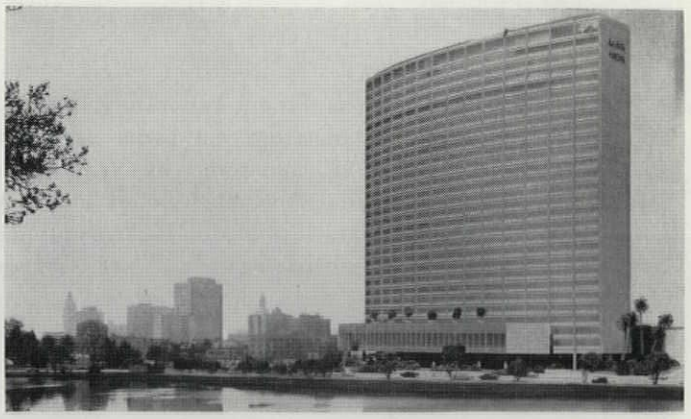




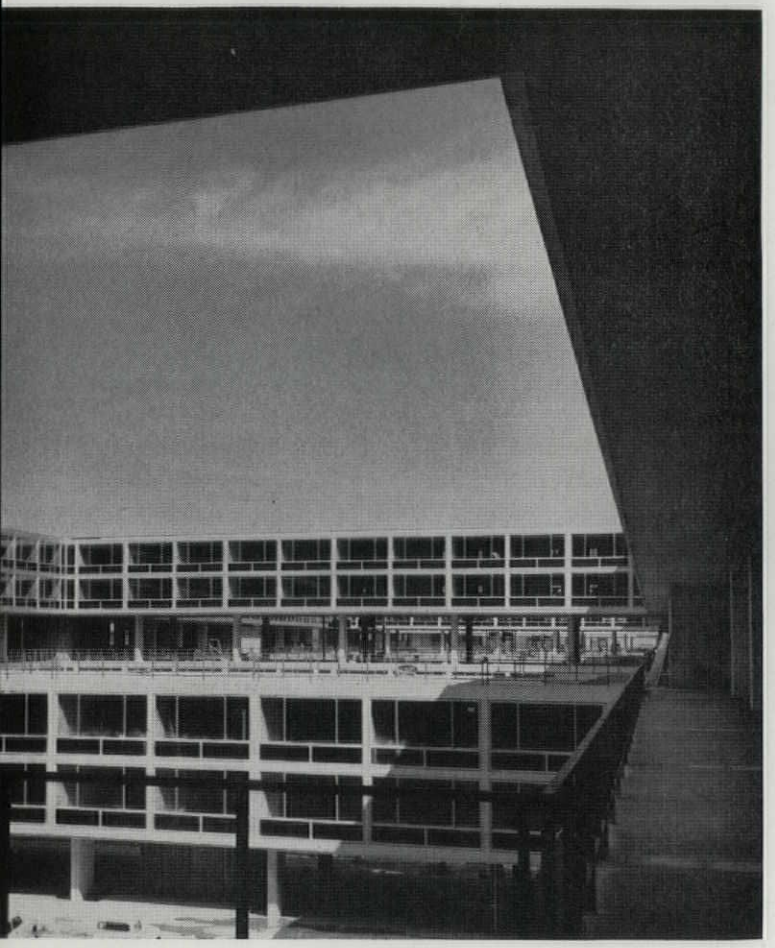




Kaiser Center Announced



The Center, to be erected on a 7-acre site on the shore of Lake Merritt in downtown Oakland, is scheduled for completion in 1959. Main element of the architectural complex will be a 28-story office building which is to serve as executive headquarters for some of the major divisions and affiliated Kaiser companies. At its base, a broad horizontal block will be devoted to a shopping center and parking spaces for 1200 cars. Roofs of this structure as well as the office building—a total of 4 acres—are to be developed into gardens. Welton Becket & Associates are Architects-Engineers for the Center; Dudley Deane & Associates, Mechanical-Electrical Engineers; Murray Erick Associates, Structural Engineers.



New Metal Coloring Process Perfected

There has been a good deal of scuttlebutt about the type of stainless-steel finish planned for Union Carbide's new 52-story skyscraper now going up in New York. Last month the secret came out when Electro Metallurgical Company (Division of Union Carbide) announced that its new metal coloring process, called Permyron, would be used. To complement the use of natural stainless steel on the new building, Architects Skidmore, Owings & Merrill called for a black-mat finish for various components of the stainless-steel curtain wall. Known methods of obtaining such a finish were considered incapable of producing a long-life, non-streaking, truly black-mat surface. Based on patents originally held by Oscar Bach (artist-inventor who used the method on the Airlines Building opposite Grand Central about 20 years ago), the Permyron process involves applying the proper pigment in a suitable vehicle to specially prepared surfaces by spray or roller coating, and processing under controlled conditions of temperature and atmosphere. The resultant finish is unique in that parts can be formed after coloring without impairing their surfaces. Although only black is produced commercially at present, the process shows promise for coloring of aluminum, plain carbon steels, and other metals. The process will be licensed to the trade on an exclusive basis.

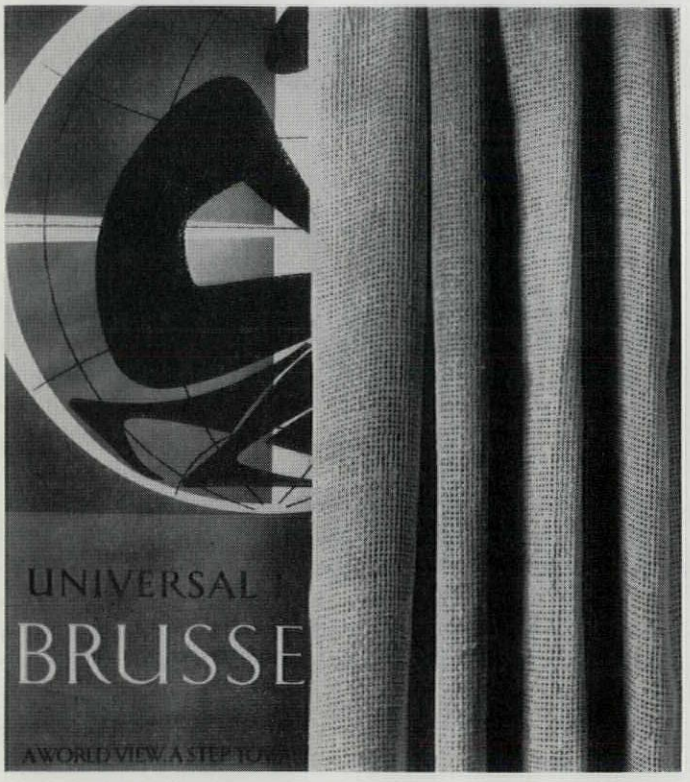
p/a news bulletins

• Washington State Regional School Laboratory, planned by Architect Robert P. Darlington, will begin operation during summer session, 1958. Sponsored by Washington State College School of Education, Division of Industrial Research of Washington State Institute of Technology, and Department of Architectural Engineering, State College of Washington, building has been constructed for purpose of studying effects of environment on classroom activities. Two-classroom structure utilizes numerous types of materials, lighting, color, heating, equipment, and visual aids; Unistrut framing system allows partial or total redesign if desired.

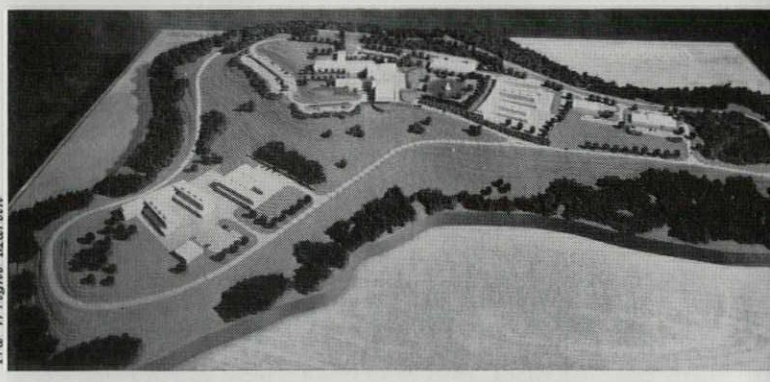
• Information Service, United Nations, reports that increase in house building has reached peak in Western Europe, except in Italy, where residential construction is expanding.

• Paul F. Damaz has been awarded 1958 Arnold W. Brunner Scholarship by Architectural League of New York. Grant will be used for travel in Latin America to pursue "The Integration of the Arts in Latin American Architecture."

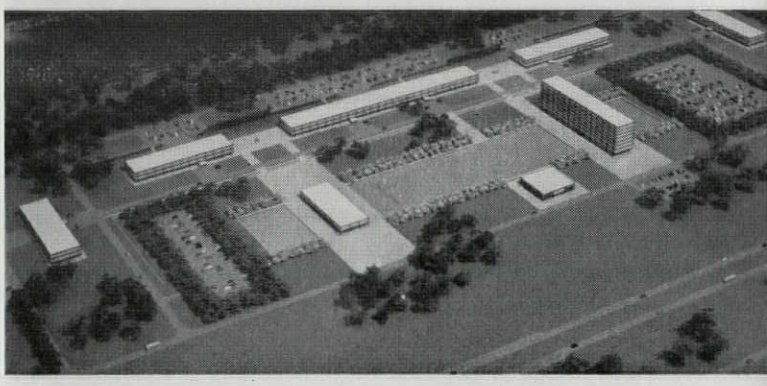
• Designed by Dorothy Liebes, fabric (below) was specially created to cover the window-glass area of American Pavilion at Brussels Fair. Mesh is combination of white duPont Ondule and Nylon yarns interwoven with silver-and-gold multicolor Lurex yarn manufactured by The Dobeckmun Co. Pavilion area required 2500 yd of the "World's Fair Casement" pattern, featured fabric in Kandell Inc. June line.



• New research facilities (below) for Bethlehem Steel Company will be constructed on a campuslike 1000-acre site on South Mountain, Bethlehem, Pa. Architects Voorhees, Walker, Smith & Smith, New York, have planned building complex to include administration building—housing auditorium, cafeteria, and observation tower—plus structures for photographic and research laboratories, pilot plant machine shops. Construction materials will include exposed structural steel shapes, steel plate and tubular sections. Future addition of ceramics building, pilot plants for mechanical engineering, chemistry, chemical engineering, will localize all Bethlehem research activities, now conducted at 14 separate stations.

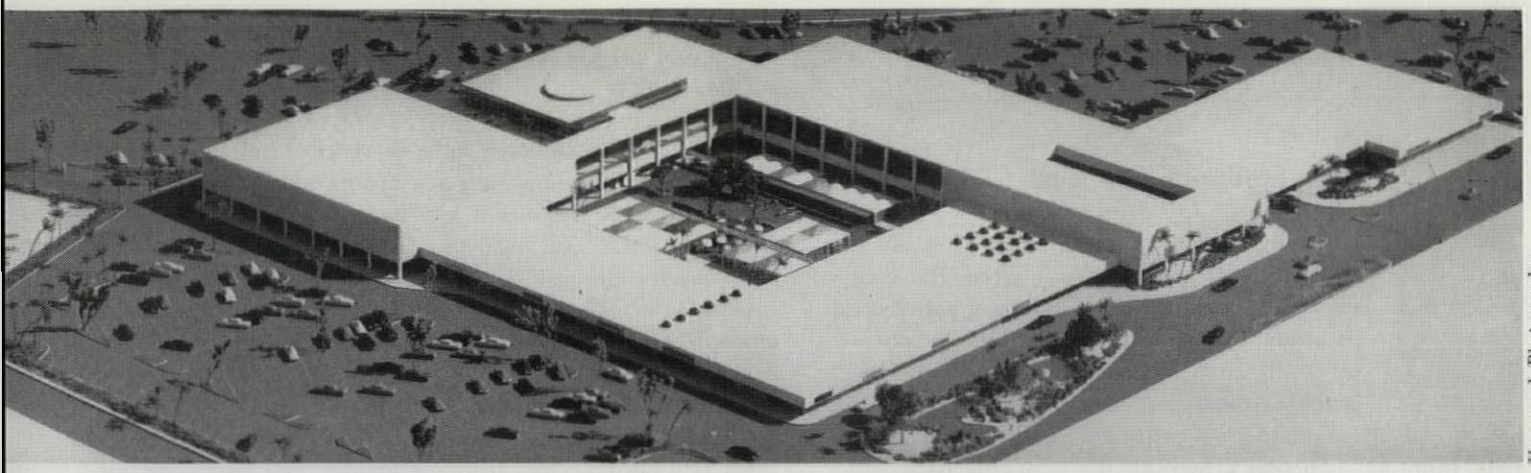


Ira Wright Martin



• Plans for new research and industrial park (above), to be constructed near Evansville, Ind., over 5 to 15 yr period, have been announced by Mead Johnson & Co. Skidmore, Owings & Merrill, Architects-Engineers, New York, have designed eight major buildings, in addition to manufacturing and warehouse structures, for 650-acre park site. First group to be constructed will include seven-story office building, organic research and nutritional research laboratories, housing for Institute for employe development and training, two-story cafeteria/reception center. Additional buildings will be added as needed. Glass walls with metal supporting members and inset ground floors, providing covered walkways around building perimeters, are features of construction.

• Two new programs of study have been established at University of Virginia School of Architecture. A four-year curriculum leading to degree of Bachelor of Architectural History—first course of this kind—will be open to students beginning Sept. 1958. Five-year curriculum for Bachelor of City Planning degree will also be started.



Vanguard Photography

• Bal Harbour Shops will be the name of new downtown project located in residential area north of Miami, Fla., announced financier Stanley F. Whitman. Area will house 70 shops and restaurants in two-level structure surrounding central garden court. Use of natural stones, marbles, woods, and brick is planned for store fronts; roof tops will be decoratively treated; tile and brick will pave canopied walkways. Seven-million dollar project was designed by Welton Becket & Associates, Los Angeles, Calif., with Weed, Russell & Johnson, Miami, co-operating architects; traffic planning by Harland Bartholomew, St. Louis, Mo., who created original plan for Bal Harbour.

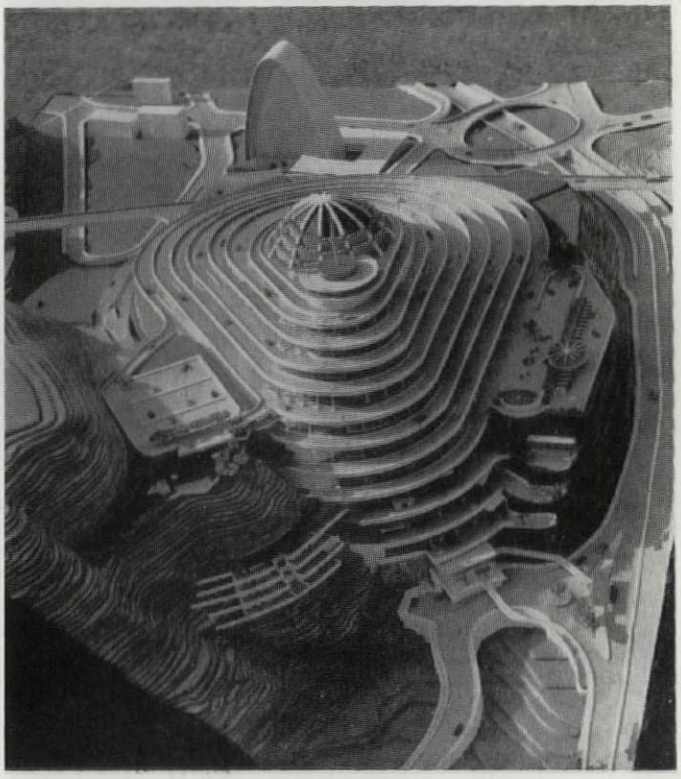
• August Heckscher, noted editor and author, has been elected Chairman of the Board of International Council of Museum of Modern Art, New York, announced Mrs. Bliss Parkinson, President of the Council.

• Boston, Mass., will be host to American Institute of Decorators conference, May 19-21. . . . American Society of Planning Officials will meet in Washington, D.C., May 18-22.

• Newly elected president of Architectural League of New York is Morris Ketchum, Jr., of New York architectural firm Ketchum & Sharp. . . . "The Negro in American Architecture—Progress and Potential," exhibition presented at Architectural League of New York, Apr. 21-May 2, was sponsored by New York Chapter, AIA, New York Society of Architects, Council for Advancement of Negro in Architecture, and Architectural League to "acquaint the profession and the lay public with the accomplishments of Negroes in architecture and . . . encourage Negro youth to enter the field. . . ." Show comprised designs from ten states and Haiti, including work of Paul Williams, Los Angeles, Calif., and Hillyard Robinson, Washington, D.C.

• Special Summer Program entitled "The Dwelling House: An Emerging Technology," will be presented at Massachusetts Institute of Technology, June 23-July 2, by joint efforts of Department of Architecture, and Course in Building Engineering and Construction of Department of Civil and Sanitary Engineering. Write: J. M. Austin, Director of Summer Session, MIT, Cambridge 39, Mass.

World Wide Photos



• Gigantic earth-moving operations (above) are under way in Caracas, Venezuela, toward construction of a shopping/business center (right). Stores, offices, showrooms, exhibition hall, television center, and club with hotel are to line the spiraling roads—one ascending, the other descending. Planners: Oficina de Arquitectura y Urbanismo.

Washington report

by Frederick Gutheim

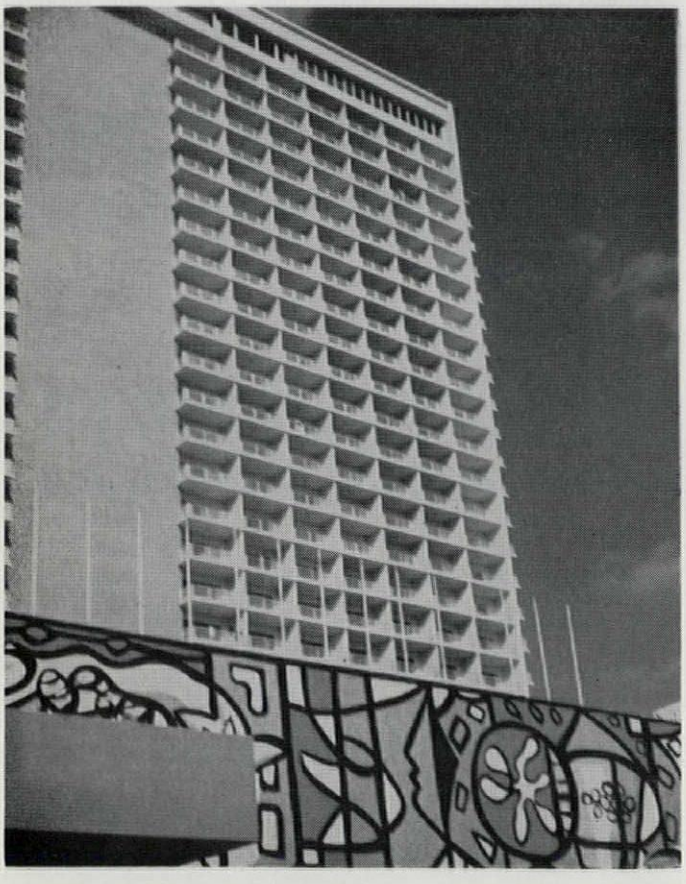
It's not the economic slump but the unemployment that bothers Washington. The capital can take statistics of business activity in its stride. Business will get better. But unemployment hurts people here and now. Here is the cardinal fact in an election year. This has turned attention to stop-gap measures to relieve hardship. More fundamental attack on the economy itself—including public-works activity on any large scale—has been suspended, partly because few people believe the slump will last, and partly because it has been so localized to particular sections of the country and to special sectors of the economy, notably manufacturing. (A writer in the London Observer, I note, does not hesitate to say the recession "to an important extent has been the result of a buyers' strike against the new American motor-car models.") To sum up, Washington is playing it by ear, and on a day-to-day basis. Some modest activity in housing, rivers and harbors improvements, the highway program, and other construction are being stimulated, but this is neither large nor likely to have much immediate effect. The post offices lease-purchase program, for example, will take months to get rolling.

• A new committee has been appointed to tackle the unsolved problem of building a stadium in Washington. It is headed by George F. Shea.

• Is urban redevelopment here to stay? After listening to two days of discussion during a program jointly sponsored by ACTION and National Housing Center, I am inclined to answer, "Not yet!" And to agree with James H. Scheuer that until the program moves from its present experimental gesture to a mass builders program it is unlikely to acquire either the status or the continuity of the FHA or of public housing. Scheuer stressed that there were not enough operators in the field—really only the same four or five, carpet-bagging it from city to city. The average builder isn't attracted because the program obliges him to tie up his capital for years after the completion of the project; to be an investor as well as a builder, in short. He also pointed to the relatively small amount of land coming in under the program thus far, to the cumbersome procedures in effect, and to the "peril and risk" to the builder. The latter note was also struck by homebuilder Richard G. Hughes, who complained that the "aura of the Capehart investigation" still frightened builders away from redevelopment jobs.

• As the second fastest growing metropolitan area among cities with populations of over one million, Washington continues to attract large-scale real-estate operators. Ground was broken last month for Stevens and Scheuer's big redevelopment housing project, designed by Satterlee & Smith. Adjoining this, the firm of Webb & Knapp is making

HABANA HILTON OPENED



Business executives; publishers; editors; columnists; labor leaders; stars of stage, screen, and TV—more than 300 of us—were whisked down to Havana March 19 as guests of Conrad N. Hilton and the Directors of Hilton Hotels International, Inc., to participate in festivities surrounding the launching of the glamorous Habana Hilton (Architects: Welton Becket & Associates of Los Angeles, in collaboration with Nicolas Arroyo* and Gabriela Menendez of Havana). The reinforced-concrete, fully air-conditioned hotel occupies a hilltop block in the booming Vedado section of the city, two blocks from the Malecon, oceanfront boulevard. There are 25 floors above grade and four lower levels—parking decks and service areas. General organization of the hotel consists of a three-story base, of public-use areas—lobbies, dining rooms, bars, the casino, function rooms, swimming pool and cabanas—above which rises a tower, with 588 individual guest rooms and 42 deluxe suites. On the top floor is a function room and the window-walled "Sugar Bar," with outdoor dancing deck.

The windowless area at the center of the tower mass, surfaced with blue-green glass mosaic, marks the service core within the building. Over the main entrance is a "9-ton" abstract mosaic mural by Cuban artist Amelia Pelaez. Throughout the hotel, the related arts, all work of Cuban artists, are used with effect and restraint. While

*The new Ambassador of Cuba to the United States.

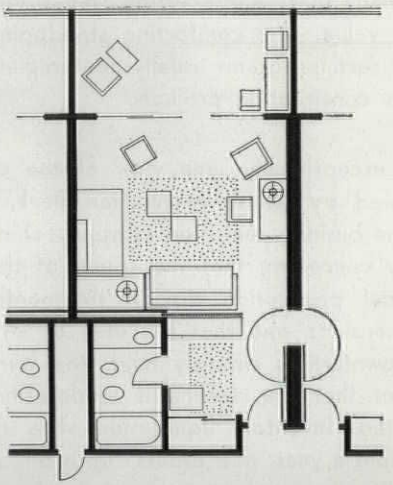
steady progress on its separate and larger redevelopment plan. Some hard blows were dealt the prospects for four large lease-purchase government office buildings in this area when Congress took the position that such building should be concentrated in areas with more unemployment. Over the long run they will probably go ahead. Jumbo-sized developments in the outskirts are led by William Levitt's 2600 unit housing development at Belair, Md., now about six months behind its originally announced schedule. South of the city an 8000 acre tract has just changed hands with the new buyers—Desser and Garfield of Los Angeles—talking of a free-standing new town of 40,000 population. Decentralizing influences continue unchecked in such fundamental areas as government headquarters buildings and industrial location.

• The decision to keep the proposed Smithsonian Air Museum out of the Mall, and to devote this site to art and cultural institutions now seems to have jelled. The air museum project is now gravitating to Bolling Field, a military air field (which is to be abandoned) across the Potomac from the National Airport. But since this site has superb qualifications for a badly needed industrial park, a further conflict is in sight. A dying project is the Freedom Wall, nixed by veterans groups who say the proposed site is needed to expand the Arlington National Cemetery.

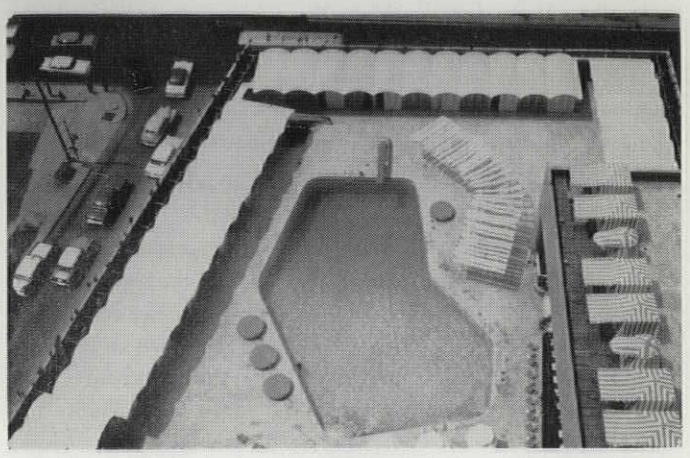
• Another Washington museum project was inaugurated last month with the appointment by the President of a Committee to consider proposals for an Armed Forces Museum, to be under general supervision of Smithsonian Institution.

• A dubious building project one wishes were dead, but which is forging ahead, is the new Executive Office building on the west side of Lafayette Square. The building, like one proposed for the site of Old State building, is to be occupied by the steadily expanding White House staff. Since the project was first broached in a management-engineering report a couple of years ago, General Services Administration has stepped up its land acquisition and now owns almost the entire block. The building would be financed as a lease-purchase project. The next step is to seek Congressional action on $1.2 millions for planning the $27.4 millions structure. The appropriation was blocked last year, and the same opponents—Congressional supporters of the National Grange, for the most part—are still active, but rumors of a deal of some sort are being heard.

• The rolling barrage of criticism of plans to extend the East Front of the Capitol shows no signs of abating. Its denunciation unanimously by the D.A.R. convention was the last blast. Indeed, as one member of Congress said of the flood of mail opposing the scheme, "We have stopped counting these letters; we weigh them." The project's immediate vulnerable point is its cost. But close behind is the growing realization, as more information has become available, that the Congressional need for space and accommodations can be satisfied without damage to the historic structure, and at far less cost, by extending the building to the west or in other ways.



the public rooms are highly successful in creating the desired "away from it all" atmosphere, to me, some of the most handsome elements are the expanses of terrazzo floorings; wall surfaces of local pink and gray marble; and the elegant, Cuban-made furniture (designed under supervision of James McQuaid and Jacques Dunham of the Becket office). The typical guest room, furnished with this specially crafted furniture, enjoys the luxury of waste space. The main body of the room, measurably extended visually through its glass walls opening to an 8-ft-deep balcony, is 14'x17' in area, and the ceiling is 10 ft high. Twin beds, arranged at right angles, provide an excellent daytime lounging area; and small, paired tables allow exceptional flexibility in room arrangement. GEORGE A. SANDERSON



p/a financial news

by William Hurd Hillyer

It is told of the late Fuller Callaway, Georgia textile and banking kingpin, that in pre-Federal Reserve days he customarily carried upon his person a supply of what was termed "incomplete currency." Printed in Washington, usually three to a sheet, this currency was furnished by the government to national banks to be signed and issued by them. In Callaway's case the engravings lacked only his signature as bank president to become perfectly good ten-dollar bills. One day in a dining car, he produced these sheets, signed a bill, tore it off, and proffered it in payment for his dinner check. Coming back with change, the colored waiter was stopped by one of his fellows and asked, "Who is that gentleman you just waited on?" "Not so loud, Sam; that is the Almighty creating money!"

This little story is indeed timely, as reflecting the function of government in its effort to bring something out of nothing. Only deity would be equal to such a task. Although such a substantial authority as James M. Kemper, President of Commerce Trust Co., St. Louis, now concedes that "we are finding it possible to have an inflation and recession at the same time," yet with the exception of tax-cut red inkeries, the only panaceas our pundits seem able to dream up are grossly inflationary and stem from the fallacy that "antirecession" measures can of themselves create value. The comforting standpoint for the architect is that such programs usually contemplate large public and private construction projects.

• An exceptionally sane view of the current economy is presented by Chase Manhattan Bank, New York, which sees the business recession as approaching its critical stage. Frankly conceding that the speed of the decline—a 10% industrial production dip in six months—has generated apprehensions, and that the idea of an "inevitable" post-war downturn is strongly held, the bank lists "a number of signs that the decline is moderating." Four of these are cited: inventory liquidation at a rate of more than $8 billions a year; new orders "up a bit"; increasing Federal expenditures; consumer and retail sales more than holding their own. These forces, thinks the Chase, could "check the decline in over-all production and employment." Nevertheless, the bank does not see a speedy end to the depression, nor do their economists mount into what U.S. Steel Chairman Blough deplores as the semantic stratosphere of "differential heteropoly" and "atomic polypoly."

• Building activities in the industrially sensitive Middle West are showing a trend contrary to that of general business, Federal Reserve Bank of Chicago reports. That district's construction firms, says the Fed, are borrowing from the banks substantially more than they did last year. They have increased their loans by some $4 millions during March, while business loans in general were down $245 millions as compared with a year ago. Check clearings — those indices of business activity — shrank nationwide more than 10% below analogous '57 figures at 26 reporting cities last week, Dun & Bradstreet, Inc., reports.

• Suburban relocations present intriguing new problems to planners and financers of "fringe cities," particularly in connection with labor supply. A study conducted with the aid of a research grant from the Federal Reserve Bank of Boston explored such questions as: "Will a firm carry its labor force with it when it relocates? How much of the increased burden of commuting will a firm have to bear?" Findings showed great reluctance on the part of employes to follow their employers into the suburbs, largely because of social and shopping advantages offered by the city. The importance of duplicating these advantages in a suburban location is thus clearly implied, opening up fresh vistas of architectural opportunity, as well as channels of capital investment. The "company store" and barrack-like industrial housing are definitely in the past tense.

• People are beginning to save at a speeded-up tempo: The Bank of America, for example, reports a "time deposit" gain of $550 millions (mostly savings) for the first nine weeks of 1958 compared with the like '57 period; savings and loan associations throughout the country gained nearly $900 millions, the nation's 14,000 banks added $5.5 billions to their time deposit aggregate in 1957 and weekly reporting banks in key cities picked up $3.3 billions of such deposits between New Year's and March 19. This is a healthy sign for architects despite contrary views of certain opinioneers, for it marks a prerecovery stage in the present "recessional." With interest rates declining and capital accumulating, construction funds are bound to wax plentiful, independent of the nearly $2 billions presumably available through Washington to swell housing totals.

Construction costs must be cut to stimulate sales of dwellings, however, says the managing director of the insured savings associations' National League. "Massive Government pump priming alone will not do the trick," he warns. Such cost reduction is foreseeable because of cheaper raw materials and the impact of unemployment upon the more demanding segments of labor.

• A revolution in bank planning—and, by extension, the layout of all institutional structures—is forecast by Harold Vennema, editor of The Eastern Banker. He predicts that "tomorrow's banking won't be done in the bank" but in the home and office, where it's most convenient. Improved communications will make this possible—which might mean smaller lobbies and fewer "main banking rooms" for financial structures.

Building activity among big banks continues unabated: Bank of America on the West Coast is unfolding a $35 millions program embracing 100 projects; California Bank at Los Angeles plans a $13 millions, 18-story main office building; Denver's First National building nears completion; First National City of New York will erect a Park Avenue building as a center for its neighborhood activities. Financial construction continues to bolster the economy.

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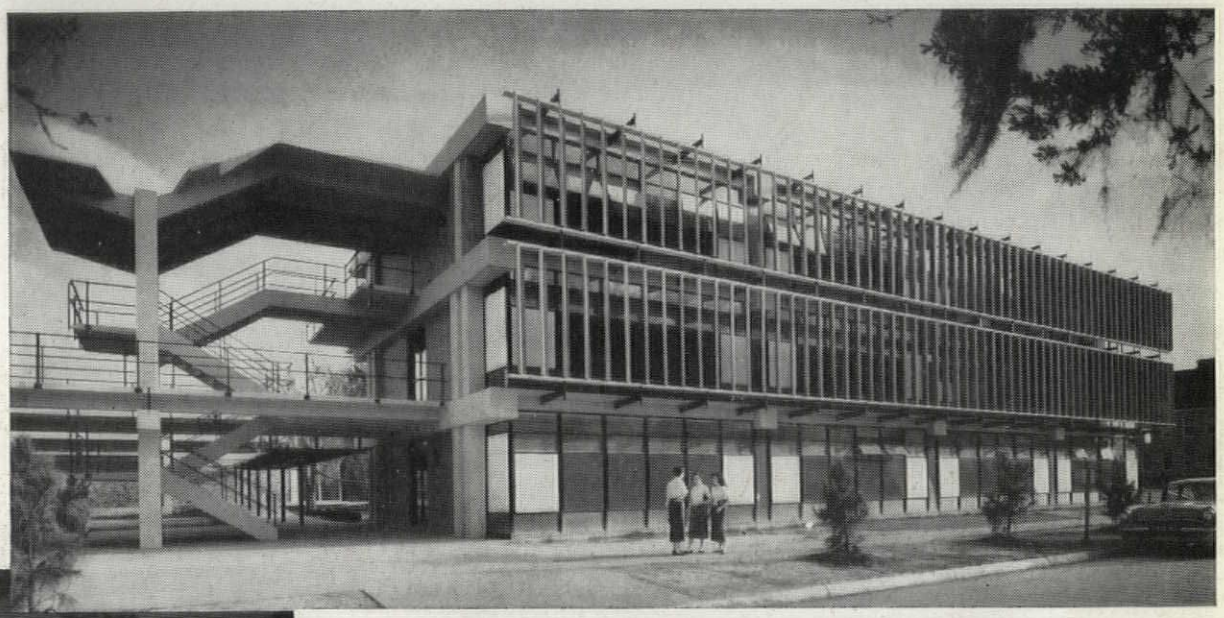

MEMORIAL STUDENT UNION
SOUTHWESTERN LOUISIANA INSTITUTE,
Lafayette, Louisiana

General Contractor:
BARKSDALE & LeBLANC,
Baton Rouge, Louisiana

Architect and Engineer:
BURK, LEBRETON & LAMANTIA,
New Orleans

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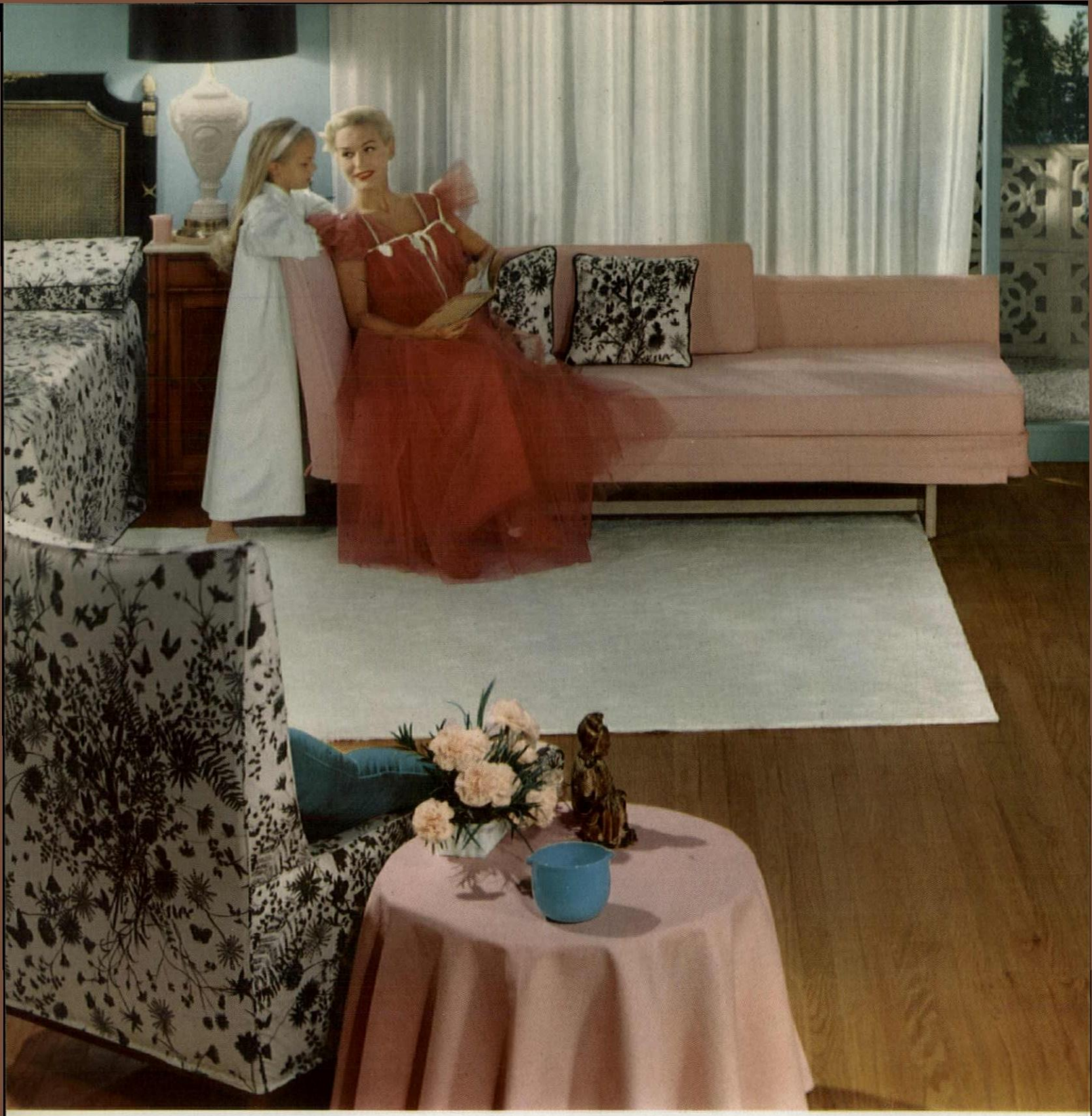

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Room design by Ving Smith, Photo by Pagano; Peignoir an Arlene Dahl creation by Saab

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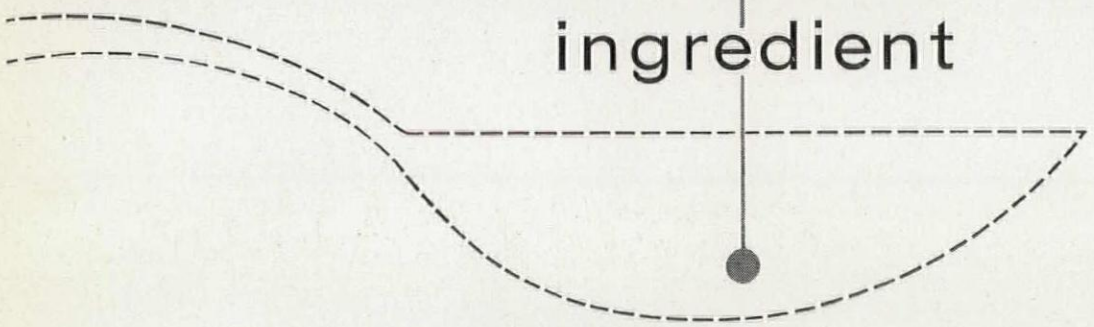

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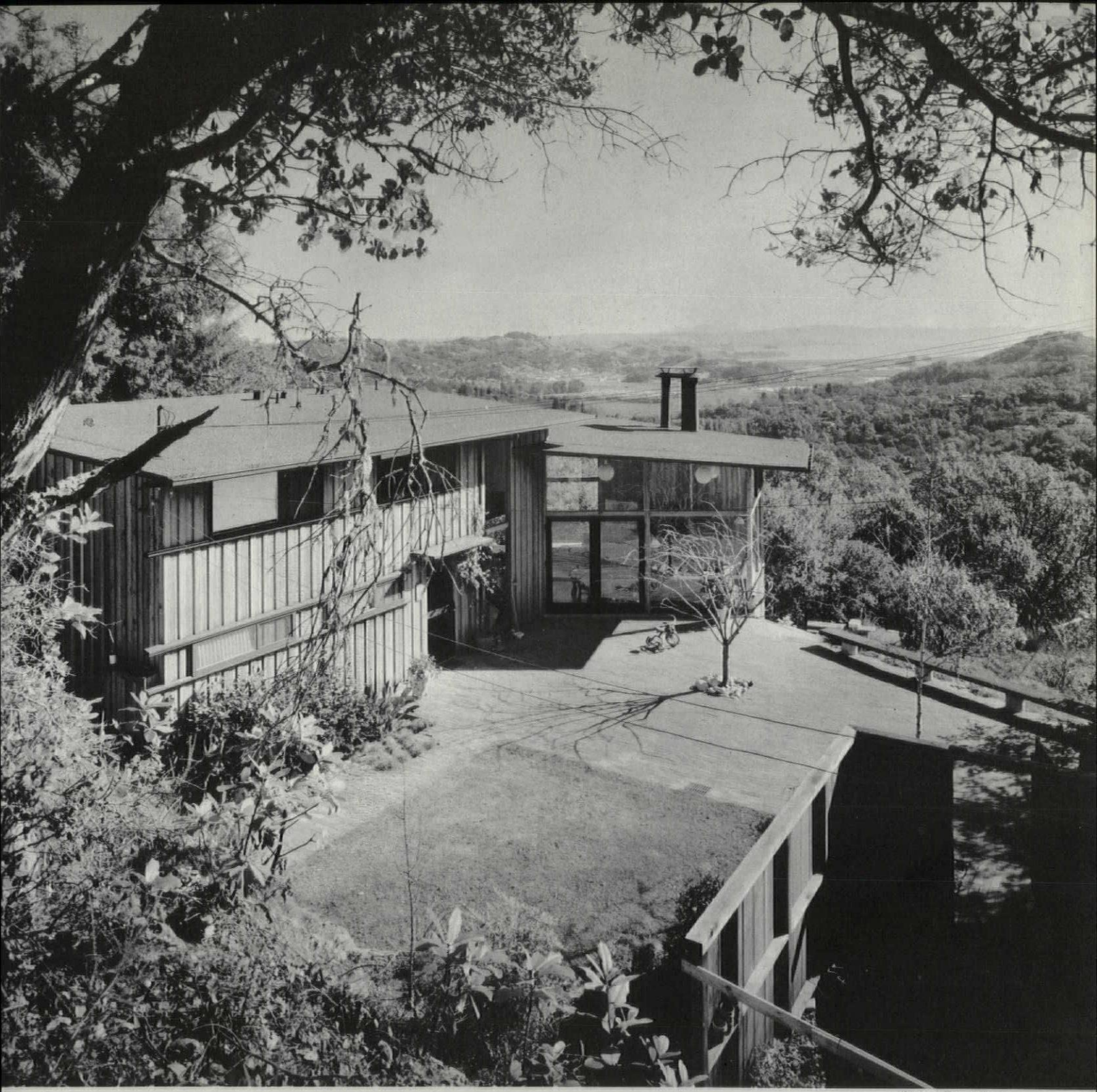


Photos: Ernest Braun

structure and garden spaces related in sequence

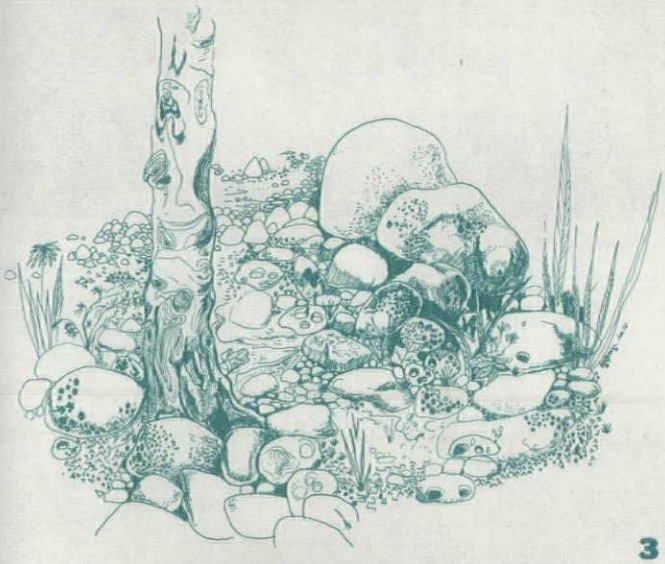
location	Kent Woodlands, California
architects	Wurster, Bernardi & Emmons
landscape architect	Lawrence Halprin

1

4

About 15 miles from San Francisco, Lawrence Halprin, Landscape Architect, has transformed a hillside into a living-environment for his wife, a well known dancer, for his two small daughters, and himself. On the following pages he describes a walk through the spaces he has created: "The site is steep and covered with madrone, redwood, bay, California live oak, and tanbark oak trees. Undergrowth is bracken fern, some sword fern, and wild blackberry. The views are south to the 3000-ft peak of Mt. Tamalpais and eastward across San Francisco bay to Berkeley **1** *(and opening page)*. We are at the end of a narrow road which has no other houses and winds down the cliff's edge to a turn-around. One parks outside a fence and, walking through the low entrance gate **2**, sees the house for the first time, ahead. This entrance garden is a space confined on three sides by walls **3**, formed by the fence at the entrance, a 25′ vertical-cut bank on the left, and the two-story element of the house **4** ahead. But the space explodes outward to the view on the downhill side—it is, in effect, an outdoor room opening across a broad expanse of treetops forming a green, almost level carpet to the view. This entrance garden is paved in red brick, and the trunks of birch form a sequence of space markers along its edge."

2



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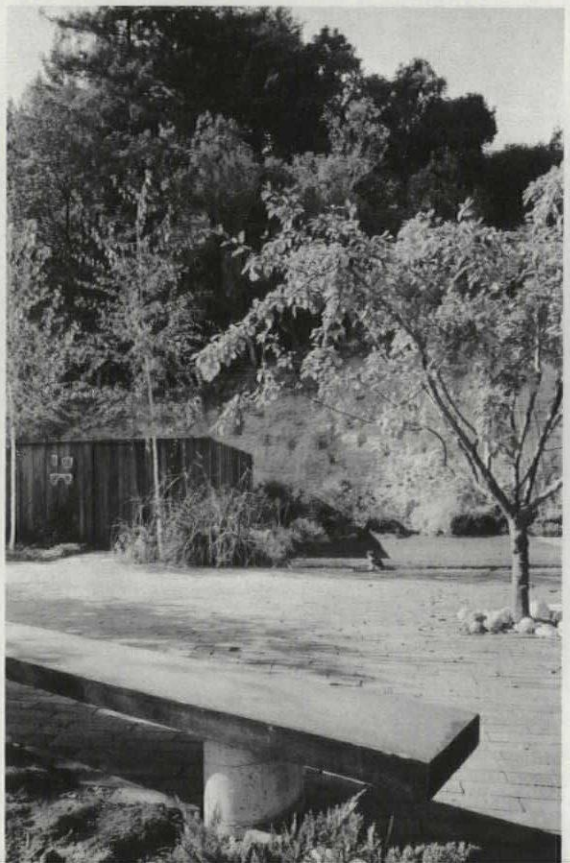
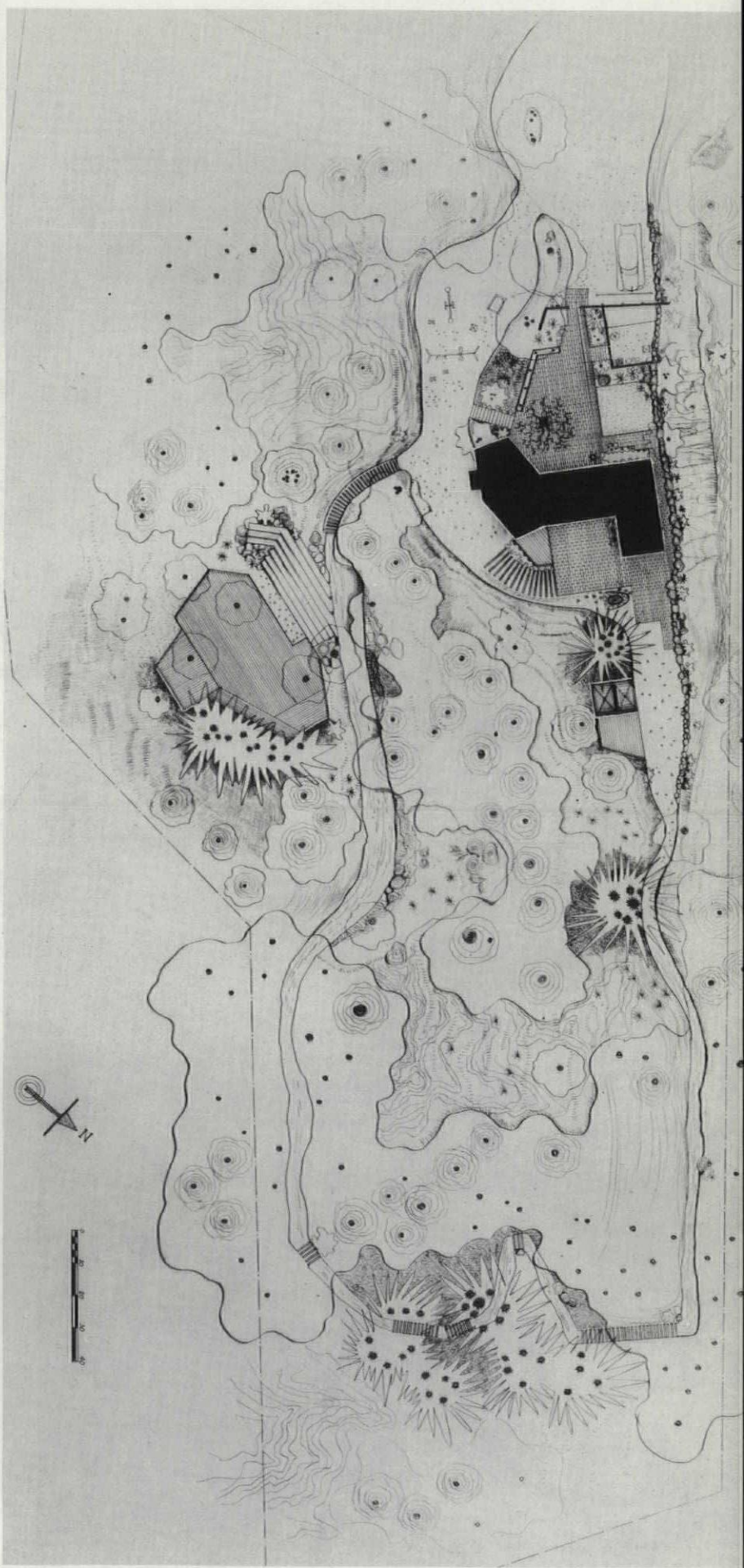
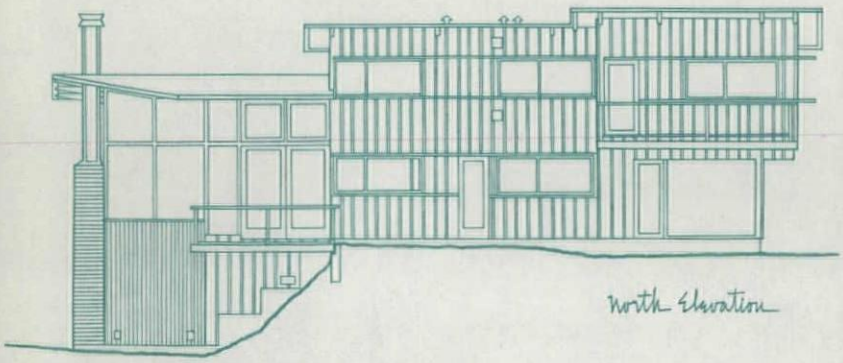


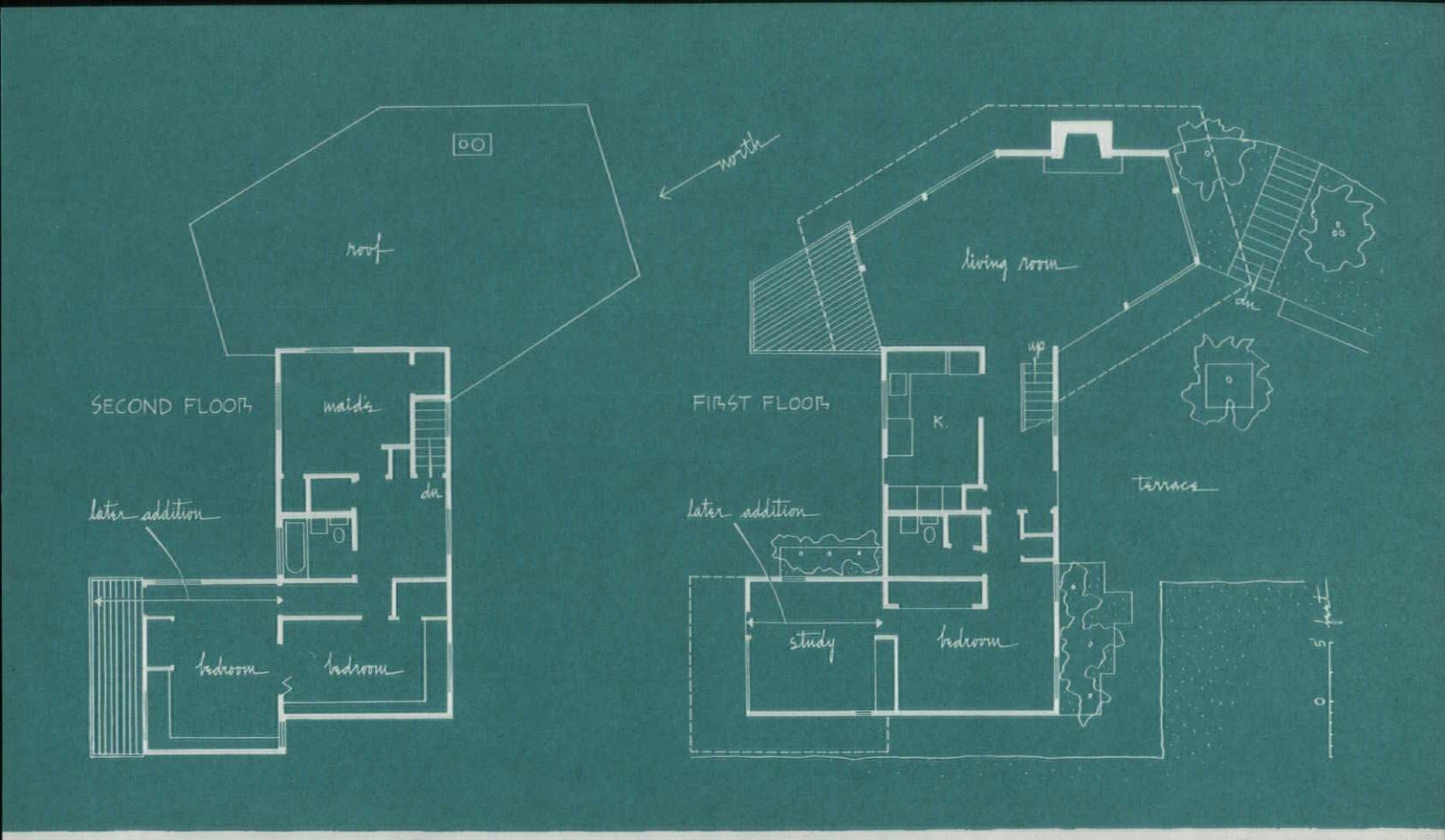




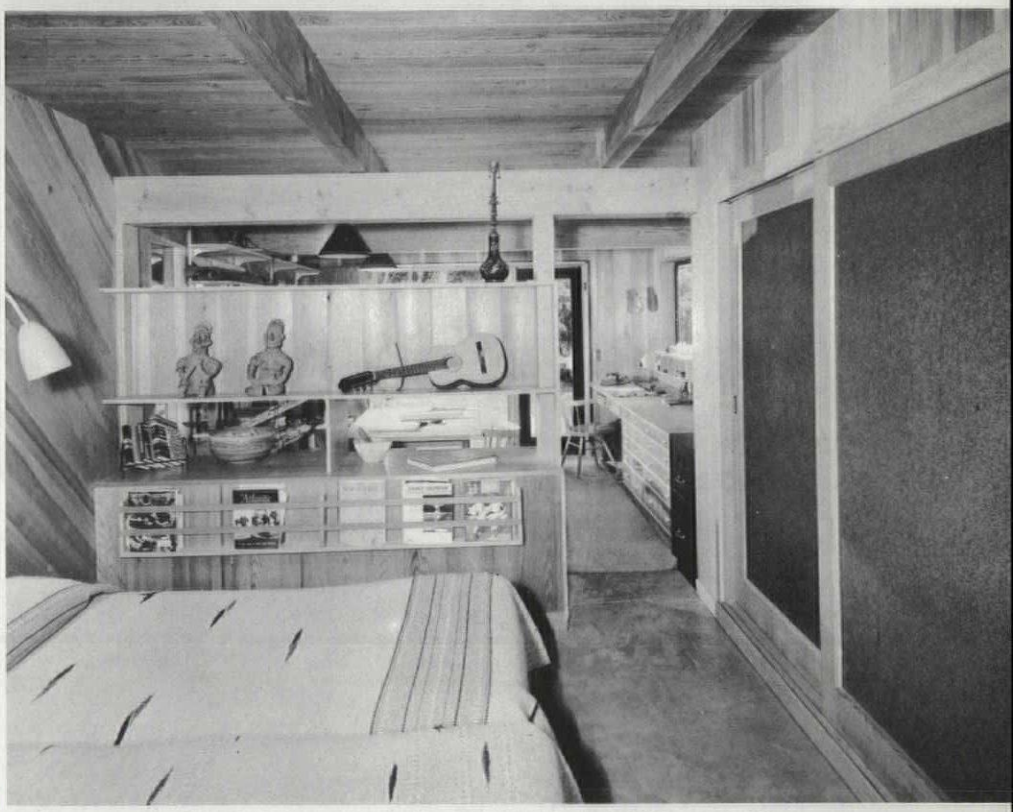
5

6

"The house too has much the same sequence of space configurations. You enter by the front door **5** into a low-ceilinged, confined entrance under the stair **6** and, to the right, the glass-enclosed living room **7** extends out into the view with a high ceiling which moves the space vertically as well."


roof
north
living room
dn
up
SECOND FLOOR
maid's
dn
later addition
bedroom
bedroom
FIRST FLOOR
K.
terrace
later addition
study
bedroom
5'
0

10

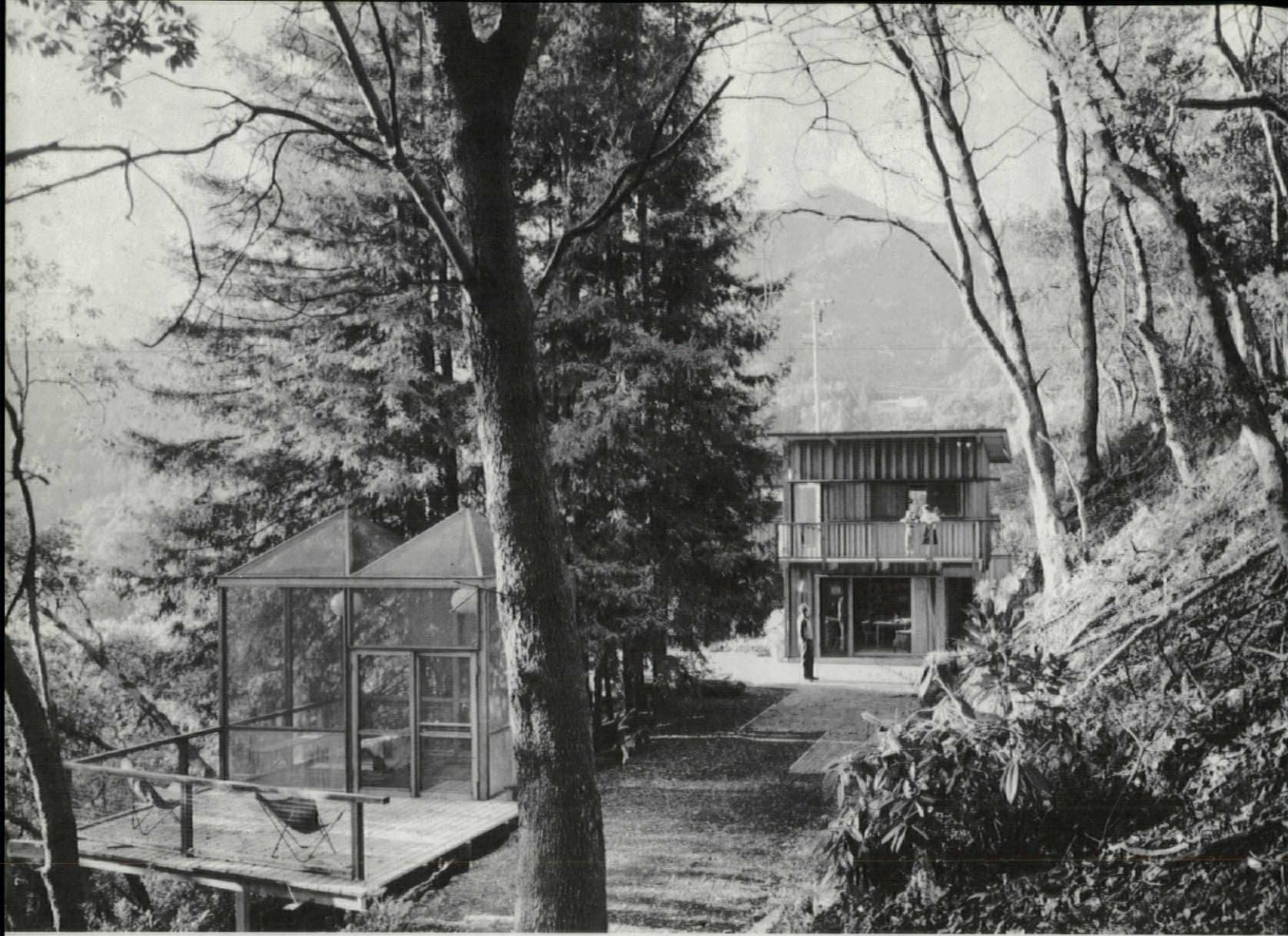


8

The house is of wood-frame construction with reinforced-concrete foundations and reinforced-concrete floor slabs at the ground level. Upstairs, beams, girders, and wood flooring have been used and left exposed on the underside to provide the finished ceiling. Vertical T&G cedar boards provide the wall surfaces on the interior in such areas as the study **8** and adjoining bedroom **9**, kitchen **10** and living room. Concrete floors in these areas have been steel troweled and integrally colored. The exterior of the house, of boards and battens, has been creosote-treated. The house is heated by hot-water radiant panels on the ground floor; warm air on the second floor. Ralph E. Murphy & Sons was General Contractor.

9

"The back garden **11**," continues Halprin, "can be reached by a path in back



13 12

of the house or through it. Along the north bank is a narrow garden passage which then opens up into the shady north terrace **12**. This area is less architecturally controlled; the space is confined more by plantings than structure. A tall group of redwoods anchors it on one side —the views are into the deep forest, and the brick terrace reaches out past the summer house to a path through the woods. The screened summer house **13** is in lieu of a porch attached to the house; it floats, on deck and stilts, above the sloping hillside and gives protection from wasps and a secluded place to work or just plain sit and contemplate.

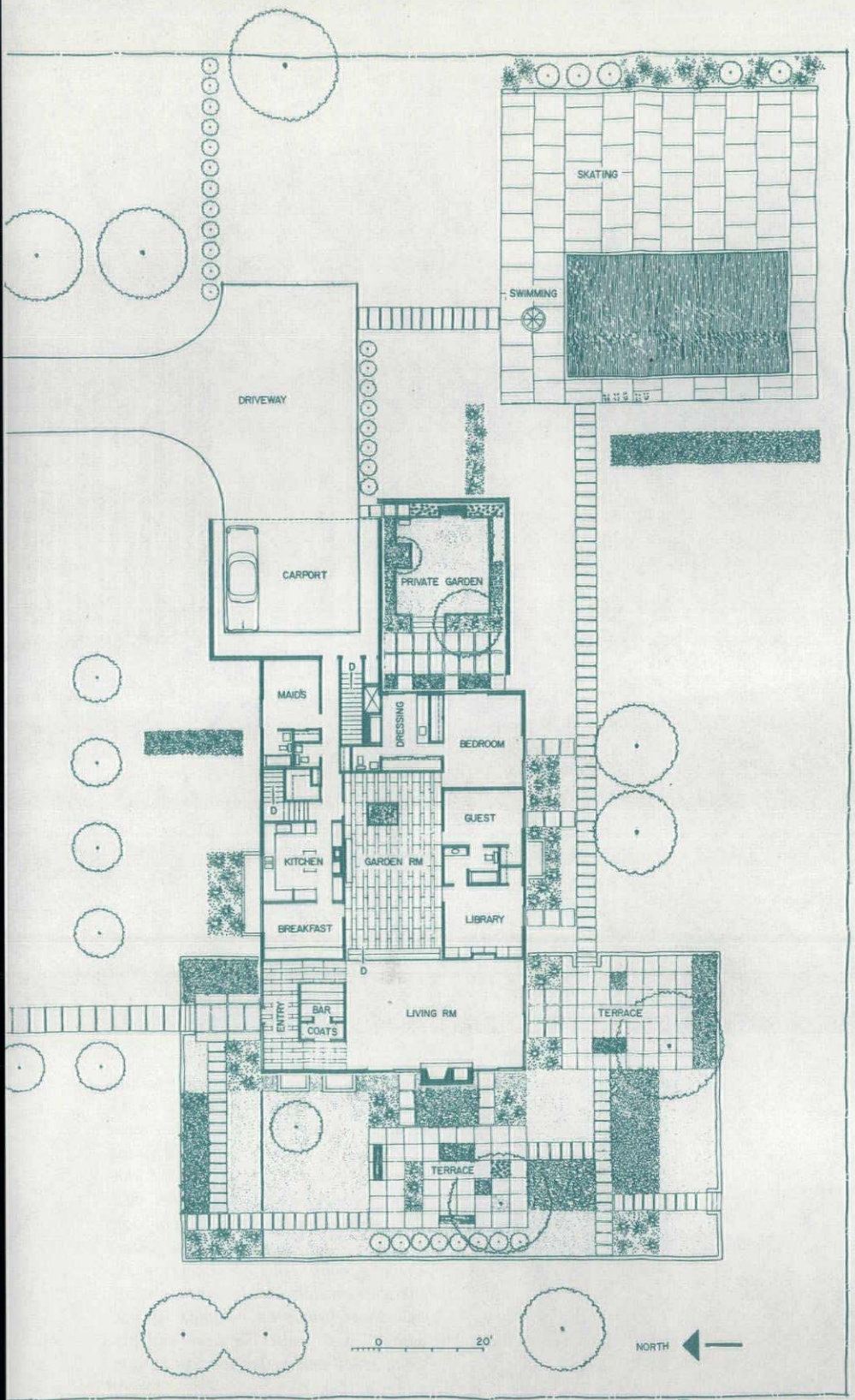
"The garden then extends from the terrace into the woods on a long needle-covered path which skirts a grove of redwoods through the dense enclosed spaces of the evergreen forest. It too has a series of spatial progressions because at the wood's beginning it is closed in by the heavily leafed and close growing red barbed madrone tree; moving into it is almost like passing through a gate. But after a while the path turns down a series of wooden plank steps through a grove of redwoods which are very tall and very thin and whose leaves form a light canopy 150 ft in the air and the forest space is much more open. Finally it leads to the dance deck **14** which creates a broad flat open plane in the forest and has, in its shape, a relationship to the glassed hexagon of the living room 50 ft above it. The deck is designed for my wife, Ann Halprin, who uses it for choreography and sometimes performances.

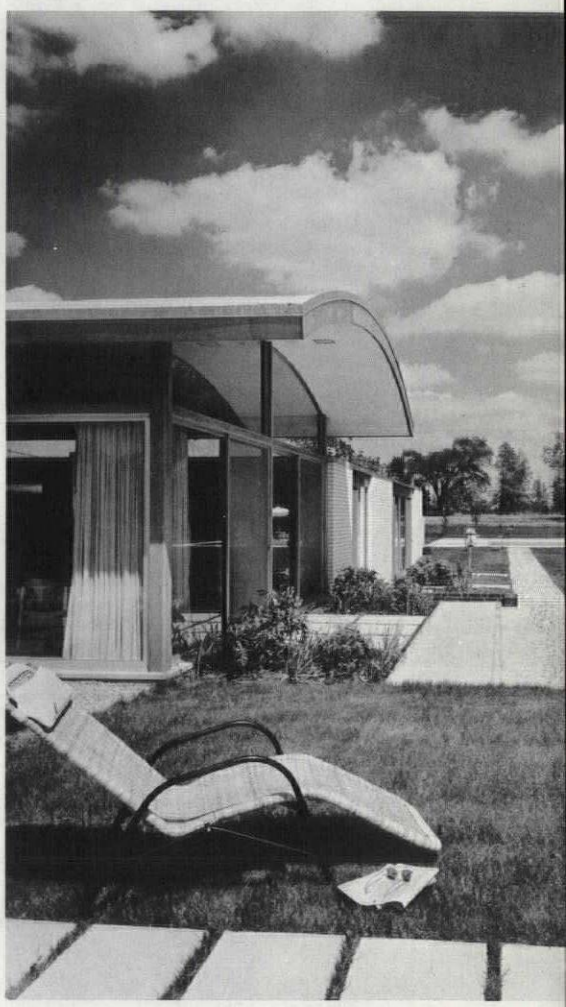
"The environment is very dominant, but it has been strongly modified by design to a variety of degrees. The entrance garden space is controlled by structure and planting with no roof; the house space is completely controlled and roofed; the north terrace is a transition to the woods. Within the garden, the summer house generates a marvellous sense of being within a small confined space which is at the same time completely open; and the movement through the woods to the deck creates a time sequence which is very pleasant. The deck has its own qualities of kinetics.

"I attempted in my design to make the most of all these relationships, these elements; to use the site to the fullest capacity; to put on the land what would enhance it, and in that way to enrich the living environment of my family."

space expanded and enclosed for use flexibility

location | Franklin Hills, Michigan
architects | Meathe, Kessler & Associates



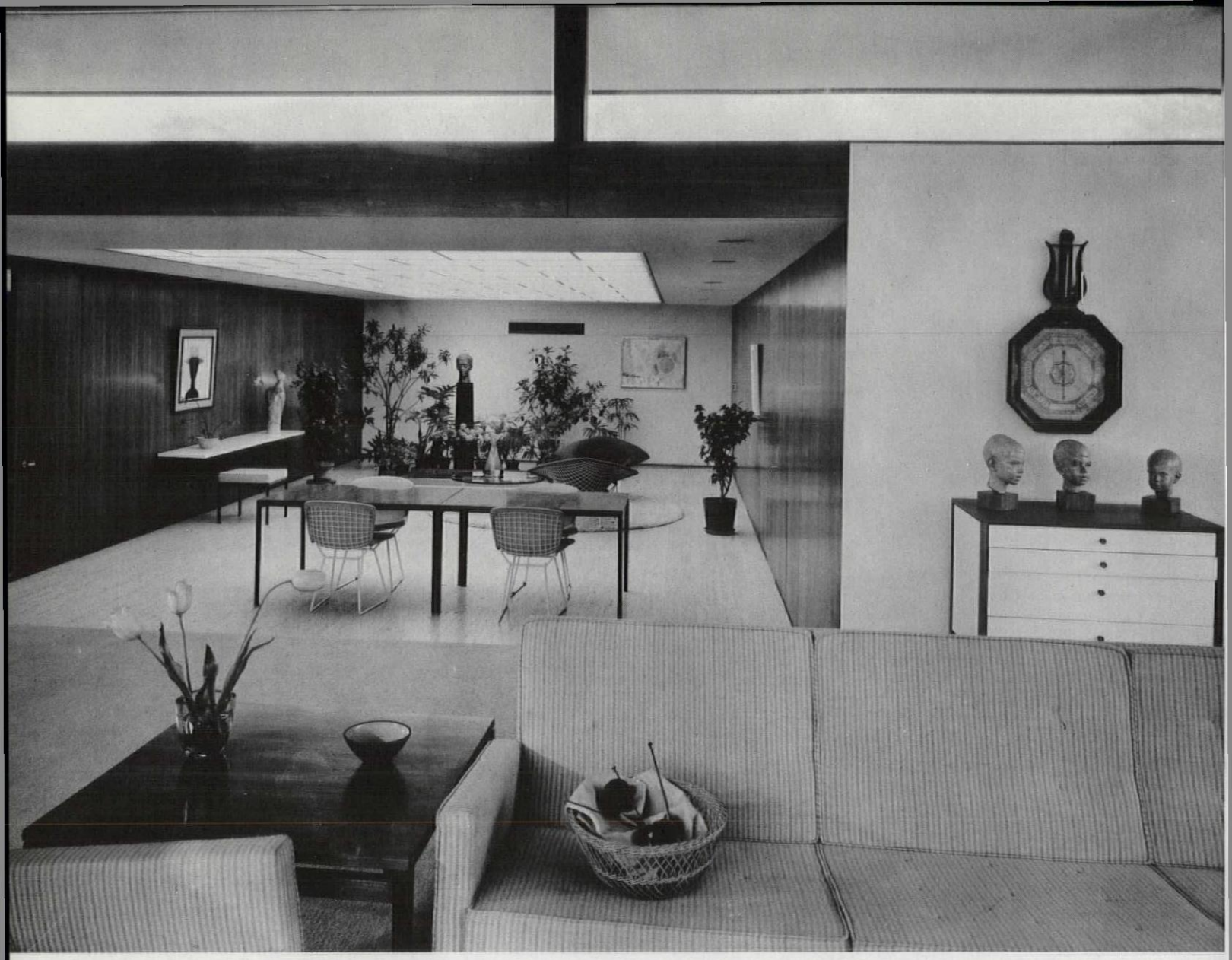


Not only does this house contain many different kinds of spaces, but also organization and interrelation provide a succession of space experiences which have an enlivening quality of the unexpected. There are small and secluded rooms, such as the library or breakfast room; there is the huge vaulted living room, with window walls that open the space to the landscaped terrace and provide unhindered outlook across the sweep of neighboring fairways; there is a surprising walled garden that gives privacy to the owners' bedroom suite and allows intimate enjoyment of nearby plants and flowers; and —perhaps most astonishing of all of the areas *(acrosspage)*—there is a large skylighted interior room that serves a multitude of purposes. Though unlike a hallway, it is, in fact, the traffic center of the house. It is also a gallery in which a collection of paintings and sculpture is displayed under controlled lighting; it further provides ideal conditions for one of the owners' most cherished hobbies—horticulture; in this instance, the growing of tropical plants. And it is used both for formal dining and as large-scale entertaining.

Working with the architects to realize the house were R. G. Caughey, Consulting Mechanical Engineer; R. H. McClurg, Associates, Structural Engineers; and Harry C. Smith, Construction Associate, working with the architects, in the capacity of Owner's Agent.

Major spaces in the fully air-conditioned house are articulated both by change in floor level—the garden room is three steps down from the living room—and in ceiling heights and contours. In contrast to the rather low, flat translucence of the garden-room ceiling, a high, opaque ceiling hovers above a continuous clerestory in the living room. The vault consists of 5" bent steel beams on columns 10' o.c., with 2" x 6" joists between and plywood glued and nailed top and bottom.

Photos: Lens-Art



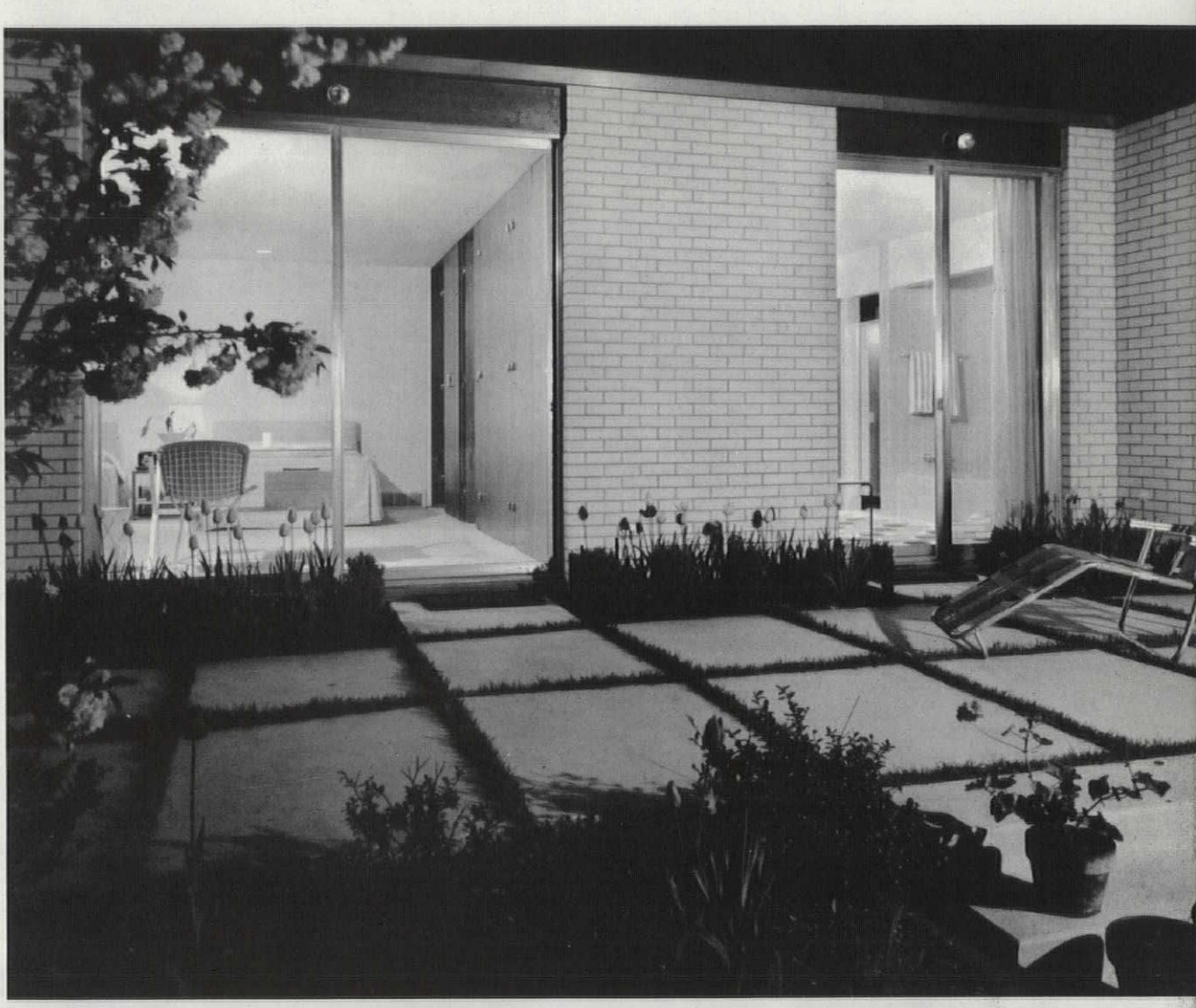
Materials and Methods

construction

Foundation: concrete footings and masonry block walls. **Structure:** frame: wood and steel — United States Steel Corporation; walls: wood studs; floors and roof: wood joist. **Wall Surfacing:** outside: brick veneer — Malvern Brick & Tile Company; inside: plaster — National Gypsum Company; ceramic tile — Mosaic Tile Company; match walnut plywood panels — United States Plywood Corporation. **Floor Surfacing:** travertine; vinyl tile — Robbins Floor Products Company; tile — Mosaic Tile Company. **Ceiling Surfacing:** plaster — National Gypsum Company. **Roof Surfacing:** built-up roof — Logan-Long Company. **Waterproofing & Dampproofing:** fabric dampproofing — Wasco Products, Incorporated. **Insulation:** thermal: glass-fiber — Owens-Corning Fiberglas Corporation. **Roof Drainage:** roof sumps — Norman Boosey Manufacturing Company. **Partitions:** interior: wood stud. **Windows:** aluminum sliding sash — Glide Windows, Incorporated; fixed glass; hip skylight — Super Steel Products Company. **Doors:** exterior: aluminum sliding doors — Glide Windows, Incorporated; interior, entrance: wood doors — United States Plywood Corporation. **Hardware:** semi-concealed lock sets—Lockwood Hardware Manufacturing Company; door closers and hinges: recessed, 4"x4" butts, olive knuckle — P. & F. Corbin Division, American Hardware Corporation, Soss Manufacturing Company, Lawrence Brothers, Incorporated, Detroit Hardware Manufacturing Company. **Paint & Stain:** lead and oil, clear varnish — Durako Paint & Color Company.

equipment

Specialized Equipment: kitchen: metal kitchen cabinets — St. Charles Manufacturing Company; intercommunication system: one master, five stations — Radio Corporation of America; built-in color television, built-in black-and-white television — Radio Corporation of America. **Lighting Fixtures:** complete building — Litecraft Manufacturing Company, Swivilier Company, Incorporated; incandescent and flourescent — Lightolier, Incorporated, Bryant Electric Company, Steber Manufacturing Company, Russell and Stoll Company, Incorporated, Gotham Lighting Corporation. **Electrical Distribution:** fusible distribution panel, circuit breaker—Bulldog Electric Products Company; mercury wiring devices — General Electric Company. **Plumbing & Sanitary:** floor-mounted water closets — W. A. Case & Son Manufacturing Company; countertop fixtures, tubs and lavatories — Crane Company; toilet seat — C. F. Church Manufacturing Company; indirect-type water heater — Bell & Gossett Company; hopper-fed incinerator — American Incinerator Corporation; copper pipe—Chase Brass & Copper Company, Incorporated; multihead shower controls — Speakman Company; medicine cabinets — Charles Parker Company; water supply system: submersible well pump — Fairbanks Morse & Company; iron filter and softener — Brunner Manufacturing Company. **Heating:** multizone a.c. unit, hot water boiler — Pacific Steel Boiler Division, National U. S. Radiator Corporation; fuel: oil; piping: galvanized steel; multizone blower — Kennard Corporation; electric controls — Barber-Colman Company; oil burner — Mount Hawley Manufacturing Company. **Air Conditioning:** refrigerant: freon; compressor and condenser — Copeland Refrigeration Corporation; grills — Hart and Cooley Manufacturing Company; filters — American Air Filter Company, Incorporated; cooling coils — Kennard Corporation; ventilators — The Trane Company; electric controls — Barber-Colman Company.

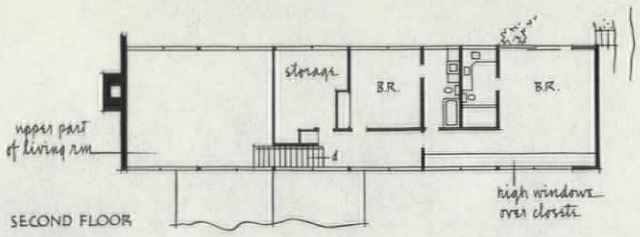


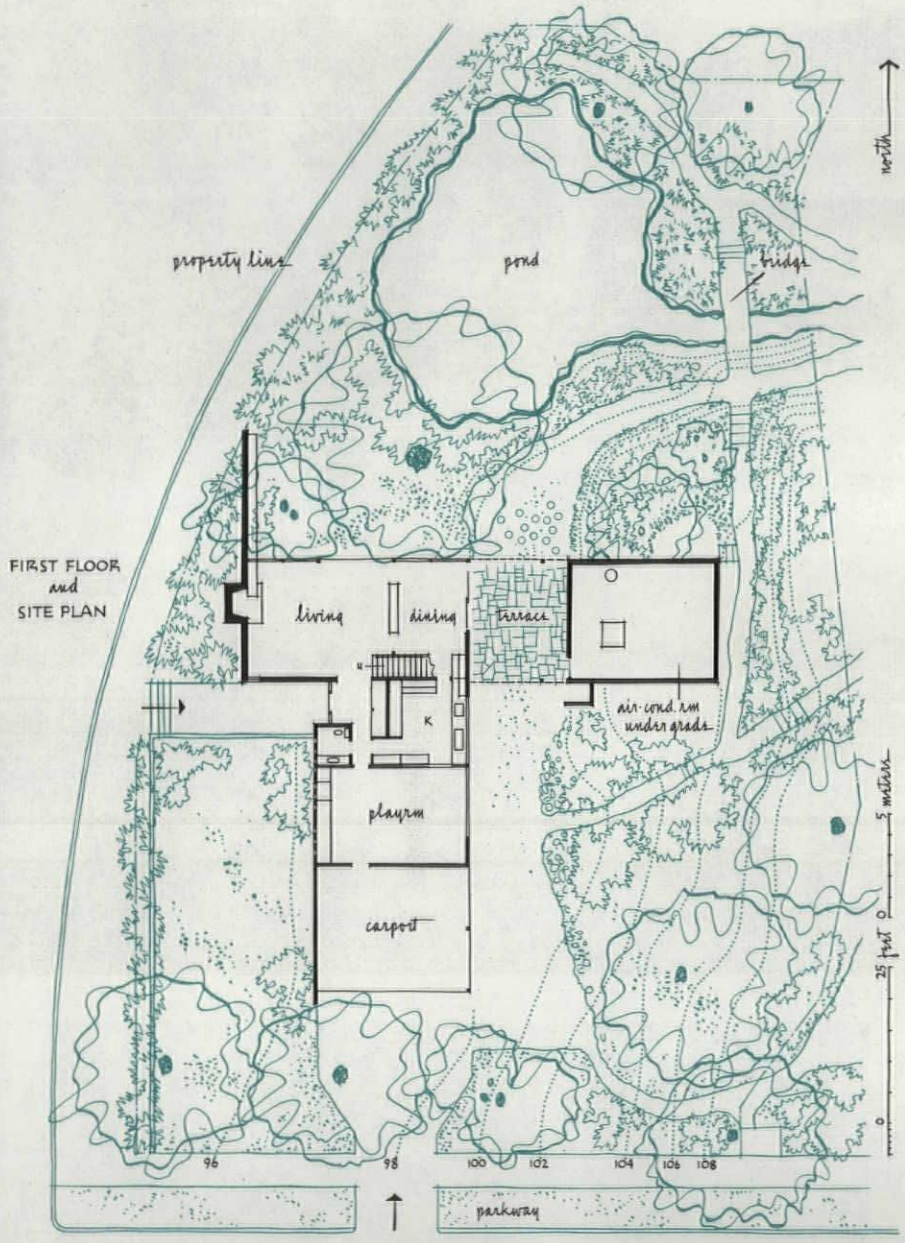
Garden-room floor is of precast-concrete plank, surfaced with travertine marble; ceiling is of aluminum extrusions, with angles and tees supporting glass-fiber plastic panels.

Photos on this page document the master bedroom suite, with its adjoining, private, walled garden.

interpenetration of house by site

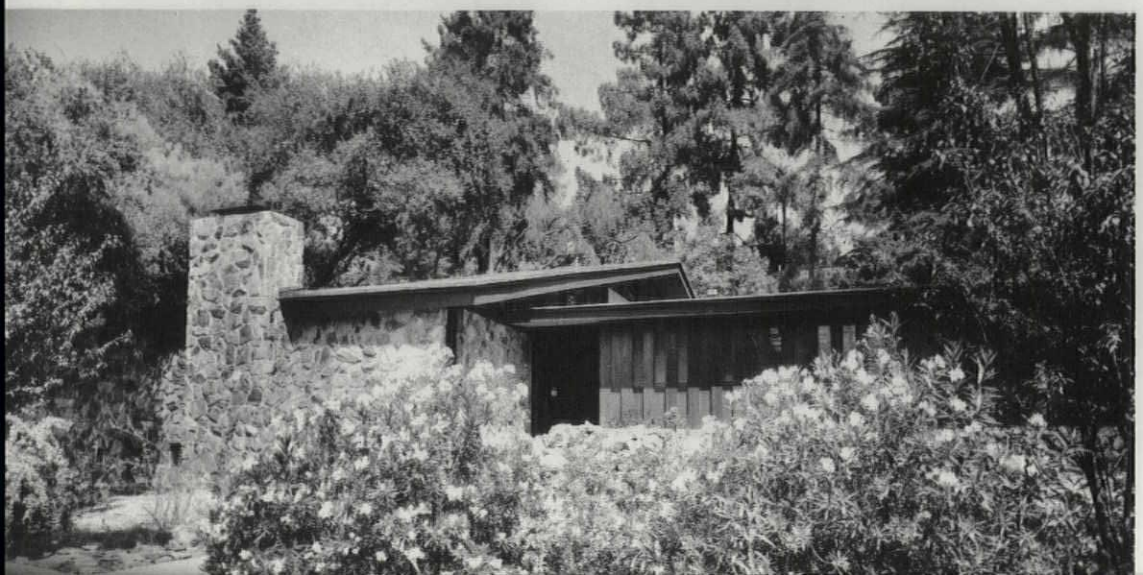
location | Pasadena, California
architect | Carl Maston



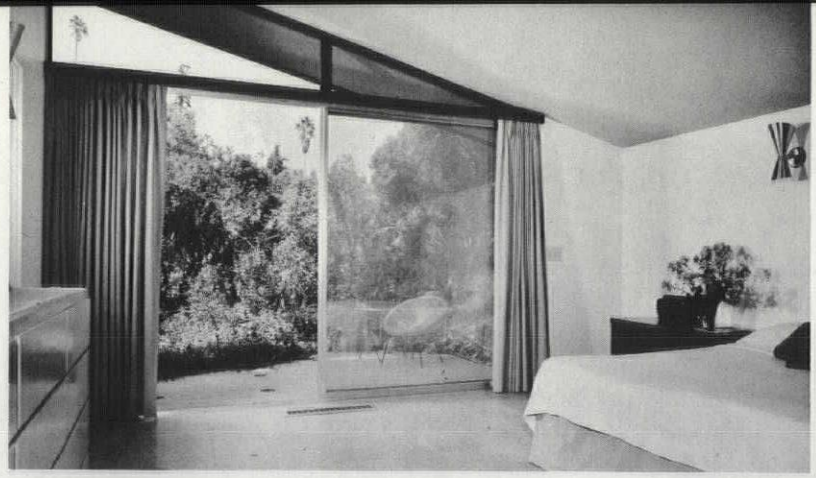


A portion of a Pasadena estate was selected as the site for this house. Existing trees and plants, and a picturesque mill pond at one end of the property, made preservation of the lovely setting a fundamental design objective. To achieve this goal, the architect designed a second-story wing which bridges over part of the ground floor. This not only provides a pleasant covered terrace off the dining room, but also effectively permits the landscaping to flow through and beyond the building. Having higher elevation, the bedrooms command an excellent view of surrounding hills and the pond below. On the ground floor, extensive glass walls in the living/dining room make the landscape a dominant part of the interior. Structurally the building is of wood, using post-and-lintel framing. The exterior wall surfacing is 2″x12″ redwood planking, laid staggered; or painted wood panels made up of 1″x6″ T&G Douglas Fir. Inside, walnut plywood provides a good part of the interior finish. The house is fully air conditioned.

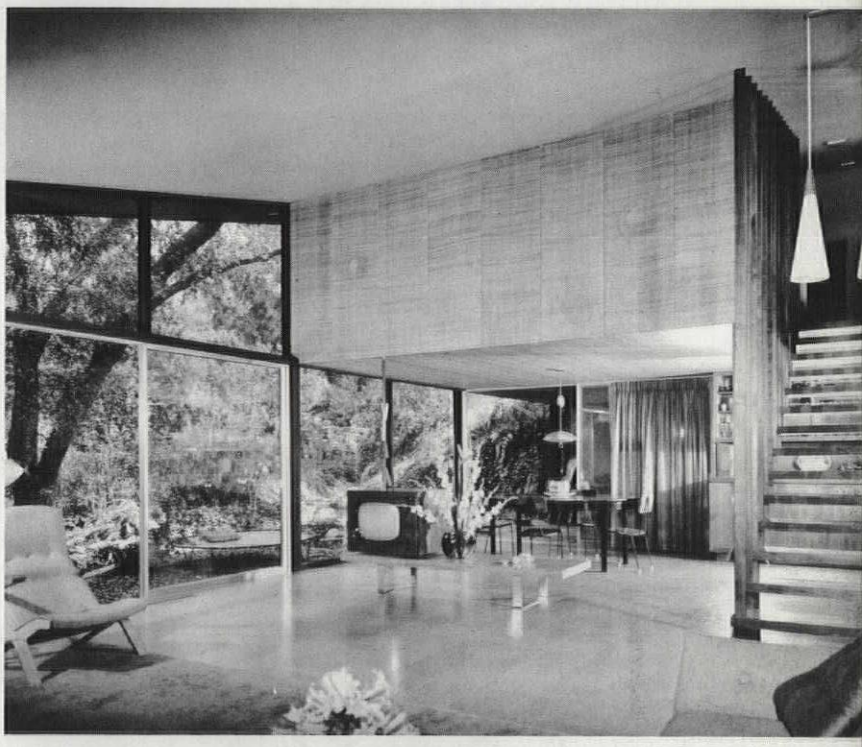
In January 1956 this building won a P/A Design Award in the residential category. Construction was by the owner, who is a general contractor, and the finished product reflects the fine craftsmanship of his organization.



North elevation of house (above) *is composed of fixed-glass panels; white-painted wood panels of 1"x6" T&G Douglas Fir; the thin-metal frames of doors and windows; and the structural wood members. Kitchen* (right), *in the south wing of the building, is located centrally between dining area, playroom, and entrance hall.* Photos: Julius Shulman



Aluminum-framed glass walls slide back in the master bedroom to open toward a small terrace overlooking the pond below. Sliding glass walls in the living/dining room (right *and* below) *afford direct access to terrace at ground level and to the garden. Floors in living and sleeping areas are surfaced with cork tiles; ceilings are treated with acoustical plaster.*



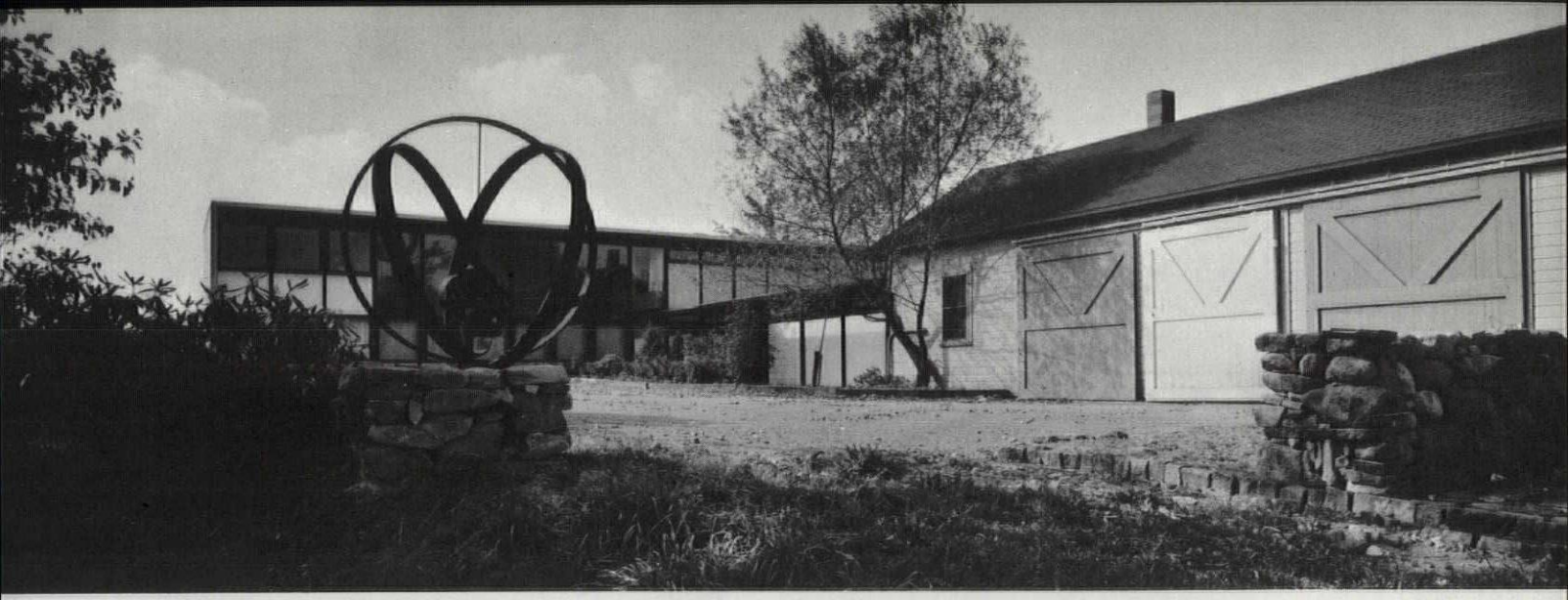
three dimensions interwoven for living and working

Commenting on the design of this unusual combined home/studio structure, joined to an existing barn by a covered passage, the Architect says that "the architectural forms used are really just three-dimensional tracings of the motions and activities of the artists" who live and work here. The husband is a sculptor, and the wife is a weaver and a ceramist.

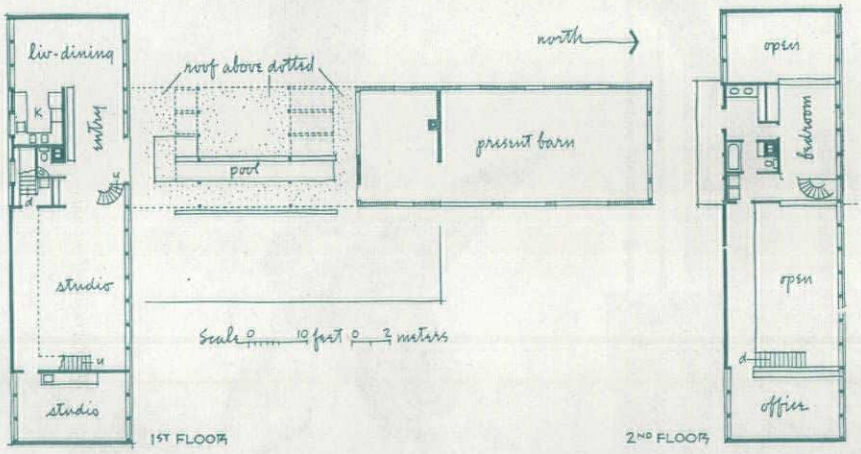
In the full-height central studio area, with a wall of north windows, work may be progressing on sculptures at ground level, or being viewed or worked on from the balcony along the south wall, or viewed at other angles from either the balconylike office at one end of the upper level, or from the bedroom loft at the other. Pottery activity is in the small studio; weaving in near end of barn.

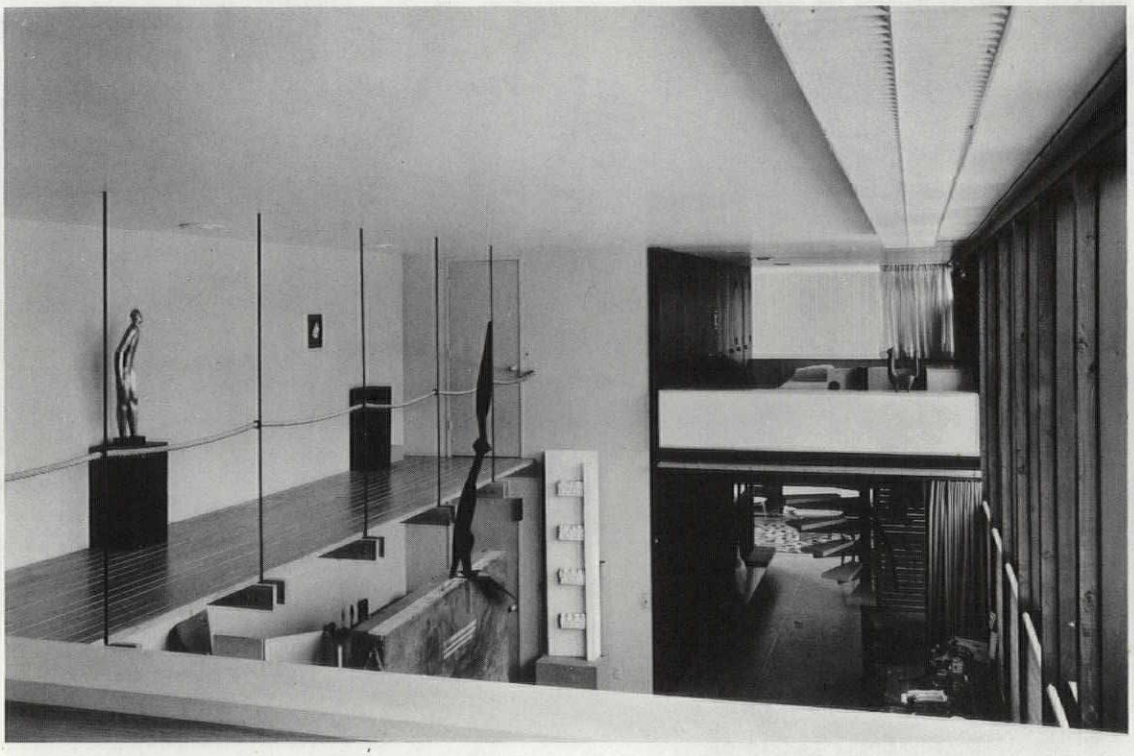
To enclose this work-and-live space—a P/A Design Citation winner in January 1955—the simple cube is provided. "Within the cube," the architect explains, "various planes and platforms subdivide the space for different uses and degrees of privacy."

James P. Stecklow was Heating Consultant; Mehnert & Reid, Electrical Engineer; Herbert W. Shepherd, General Contractor.



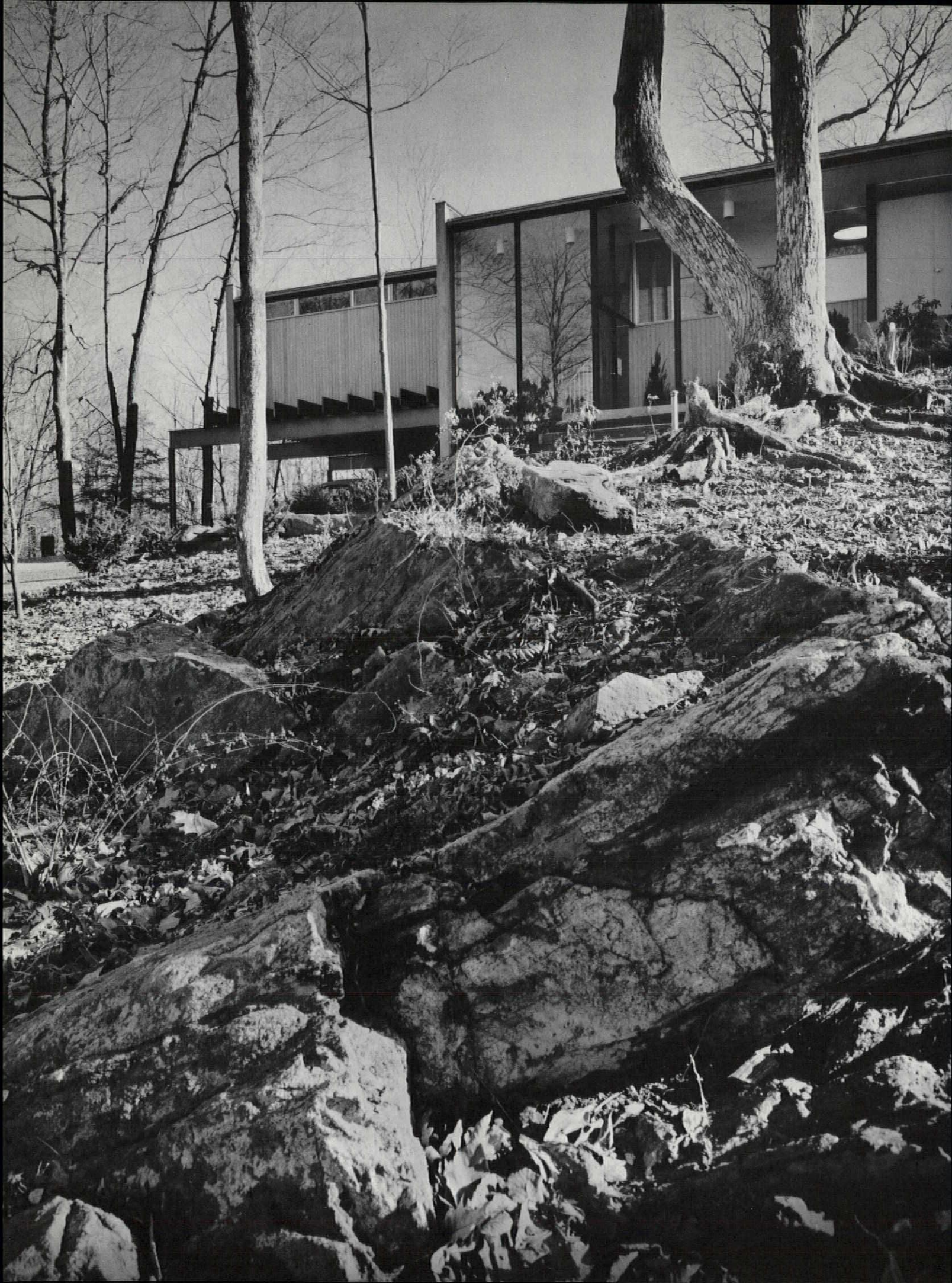
location	Cleveland, Ohio
architects	Robert A. Little & Associates
associates	Edward M. Hodgman, Chalmer Grimm, Jr.





Outside the south wall (acrosspage) *is a birds-in-flight sculpture by William McVey, the house/studio owner. Work by his wife, Leza McVey, includes ceramic pieces and a multicolor rag rug in the two-story living room* (below right). *Downstairs floor is terrazzo on slab; fir is the floor surface upstairs (bedroom view,* above right). *Structure of north and south walls consists of 4" x 6" posts, 4' o.c., surfaced with glass or laminated panels. East and west walls are studs on 16" centers, finished inside and out with vertical T&G redwood. An oil-burning furnace serves a hot-water heating system.*

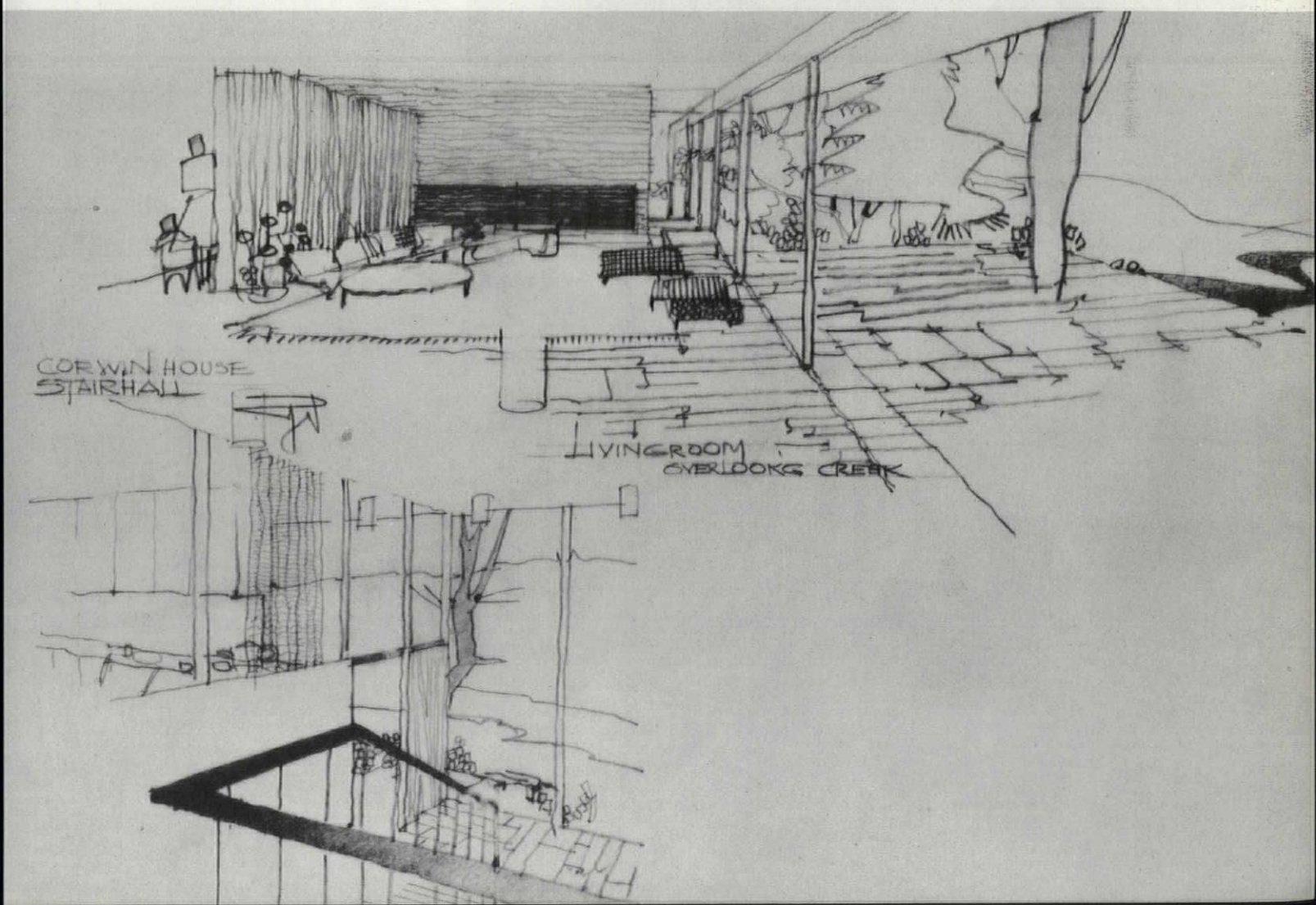
Photos: C. W. Ackerman

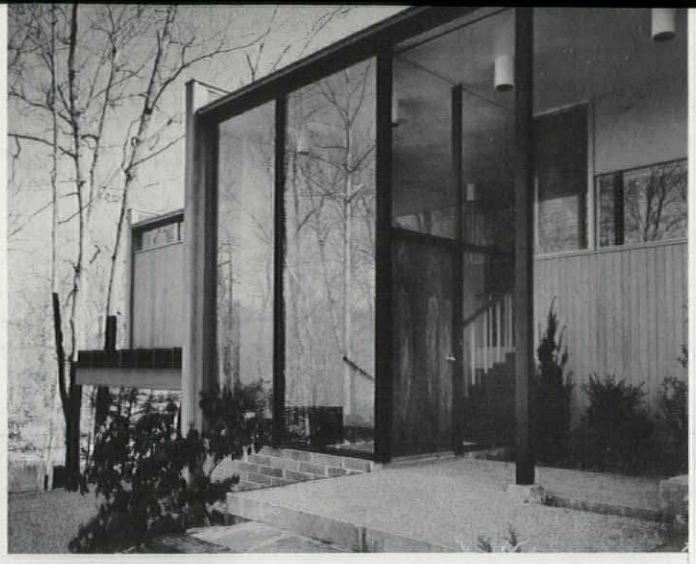


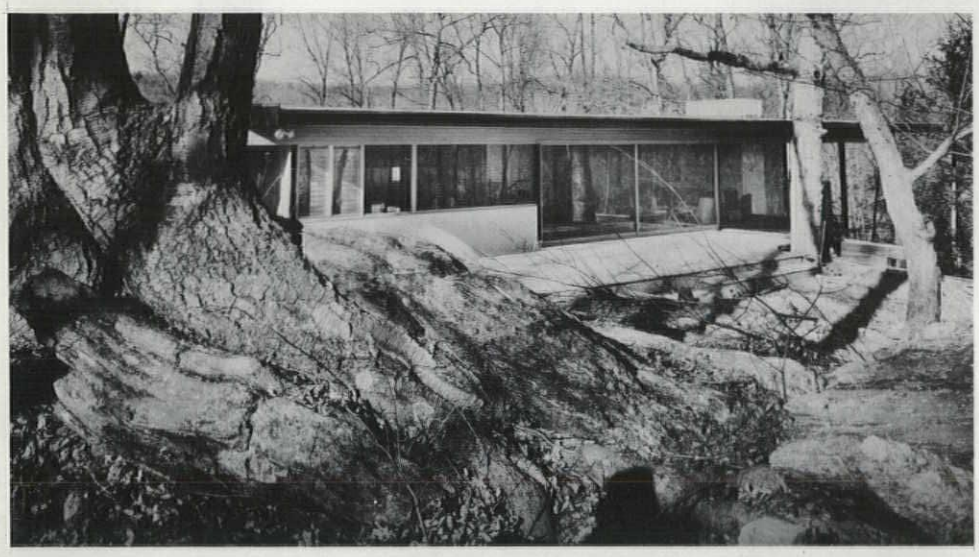
interior space ordered for exterior vistas

location	Westport, Connecticut
architect	Richard J. Neutra
associates	Benno Fisher, Serge Koschin, John Blanton
landscape architect	James C. Rose

The property is on a fairly steep slope and overlooks a creek which widens into a pond. Living areas for the family of five are all on one level and the major rooms are oriented toward this view. The house is of interest in two respects: first, it is one of the few non-California houses designed by Neutra; second, it is an excellent example of the fusion of site into the architectural scheme—the spatial plan of the house. To this end, the main floor of the house was set to coincide with the natural grade level at the south side. A terrace forms the extension of the living room so that, visually *(sketch below)*, this room is bounded by an irregular semicircle of trees. Slate is the floor surfacing of both living room and terrace, and, to further heighten the effect of uninterrupted space, glass walls can be rolled aside during warm weather. Opposite, on the entrance side, a tall, glazed stair hall *(sketch bottom)* provides the link with the view to the northwest. From the outside, a rising path *(acrosspage)* leads up to the stair hall. For inclement weather an interior passage connects the open carport, under the master-bedroom suite, with the stair hall. Access is also provided to a heater and storage room on the lower level. Foundations are of poured concrete and concrete block; the superstructure employs steel girders and posts, wood joists, and rafters. F. Clifford Wenzel was General Contractor.







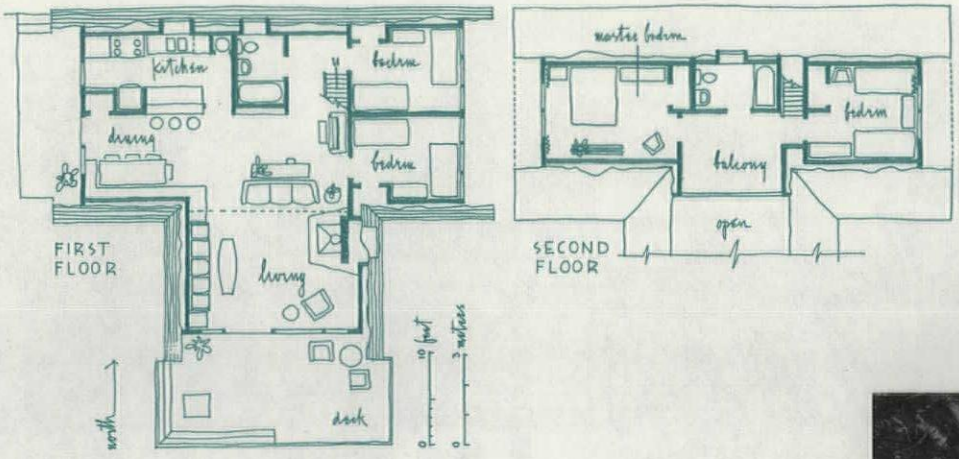
Chief aids in visually extending the interior space are: the two-story stair hall (above) *and the garden terrace* (left *and* below).

T&G board and batten siding, plywood, and hardboard are the exterior wall materials. Inside, plywood, plaster, and wood provide the major wall surfaces. Floors are of slate, plastic tile, or cork. Fenestration is metal-framed. Skydomes have been located above kitchen and bedroom hall. Heating is by hot-water radiant system.

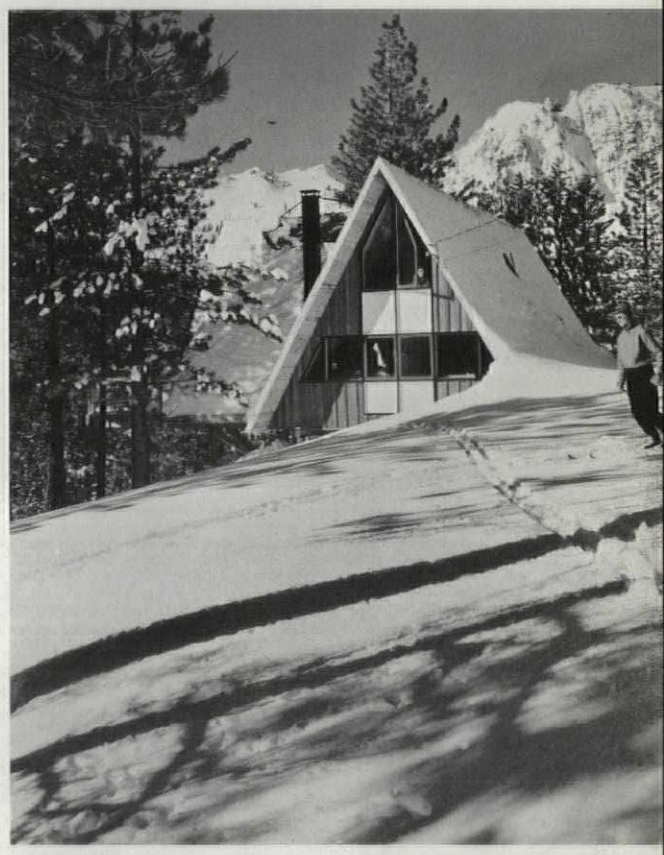
Photos: Julius Shulman


BATH #2
MAID
BATH #3
SERVICE
KITCHEN
UP
BATH #1
DRESSING RM.
BEDROOM #3
BEDROOM #2
FAMILY RM.
DINING AREA
LIVING RM
MASTER BEDROOM
TERRACE
SAUGATUCK RIVER

space extended upward and outward



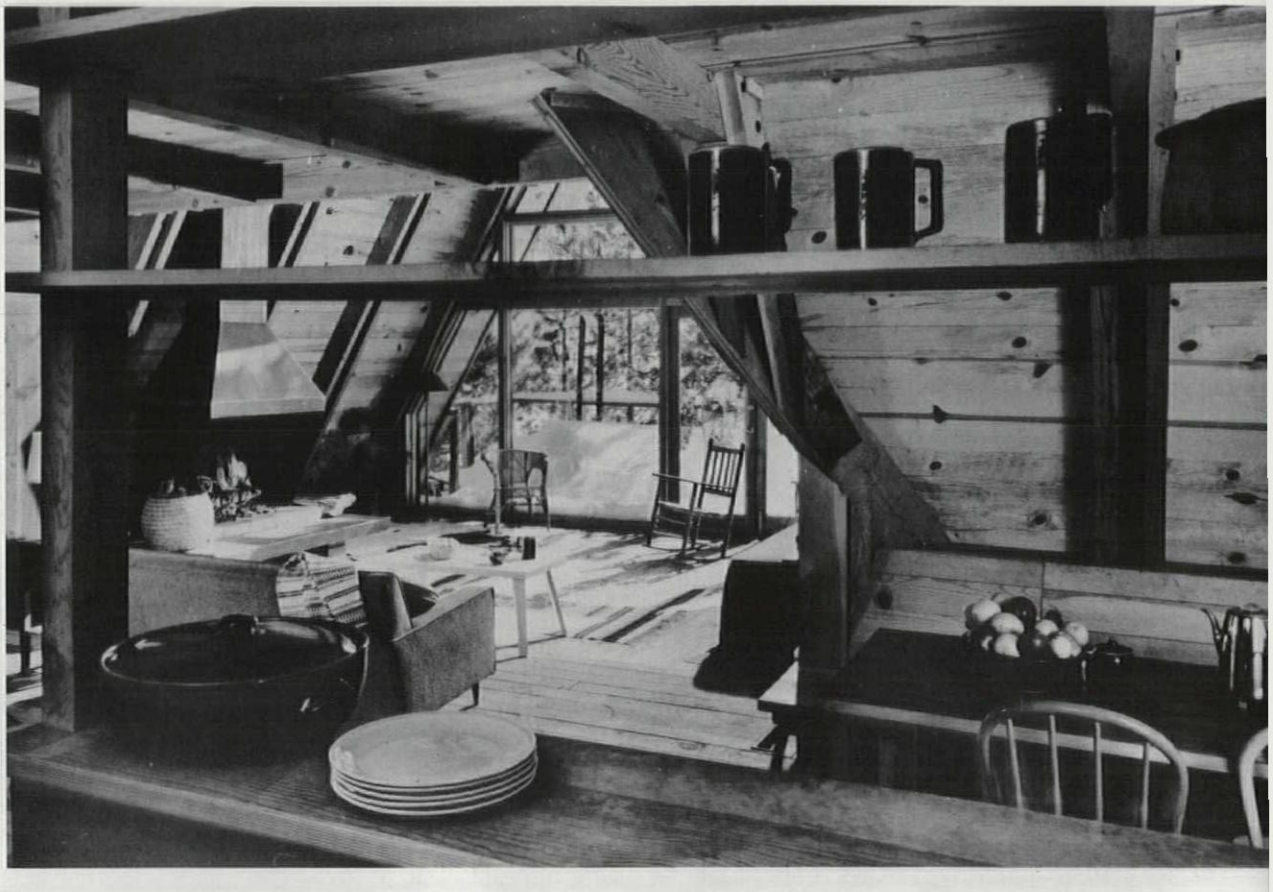
location | Squaw Valley, California
architect | George T. Rockrise



This year-round vacation home—a P/A Design Citation winner in January 1956—possesses remarkable space-extension qualities. Chief source of these was from a practical decision made in initial design stages. Squaw Valley, in the High Sierras and scene of the 1960 Winter Olympics, is subject to extremely heavy snowfall, and a steep-pitched roof—"the steeper the pitch, the better," Rockrise comments—was early adopted as a device for keeping snow away from major windows, decks, and entrances. Once this decision was made, it was not difficult to move on to the A-frame concept, completely eliminating side walls and facing the gable ends east, west, and south to make the most of the grandiose valley and mountain views. The frames, spaced 4′ o.c., consist of inclined, paired 3″x8″'s, bolted to 4″x12″ floor beams, forming equilateral triangles. Both flooring and roof decking are 2″x6″ T&G. The roof surface is ½″ x 24″ cedar shingles laid 7½″ to the weather over 1″ rigid insulation or stripping. Interior walls are knotty cedar, and exterior walls, either glass or cedar boards and battens. Heating is a forced-hot-air system, with perimeter heating in every room.

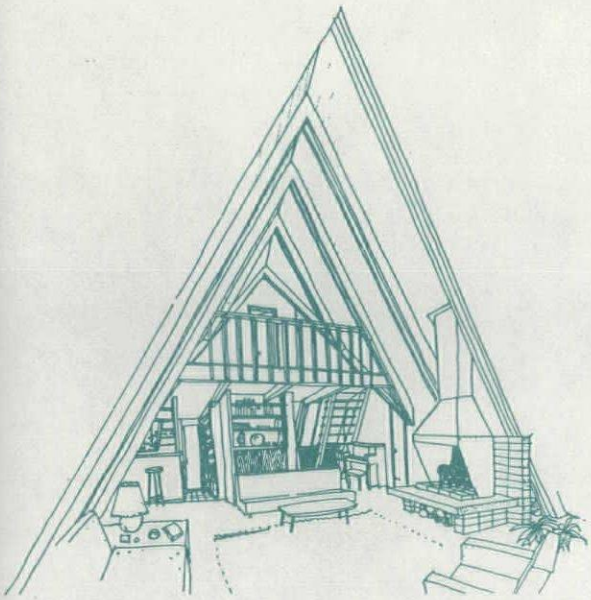
Some of the means by which the exceptional space enhancement is furthered are glazing of the full, 21′ height of the south gable end of the living room, creating a striking soaring effect; continuation of this space outdoors to a 12′ x 25′ balcony perched high above grade on posts; and opening of the upstairs to the main living room with an open balcony. The architect comments on his thinking regarding the space relationships: "I have always felt that too many projects of this type become overly 'compartmented,'" says Rockrise, "probably due to pressure of economics. I wanted all the spaces to be as contiguous and continuous as possible, with bedrooms and baths the only exceptions. . . . Additionally, in the mountains, vagaries of weather often dictate that all members of the household and their guests stay indoors. Thus, as much 'lebensraum' as possible seems necessary."

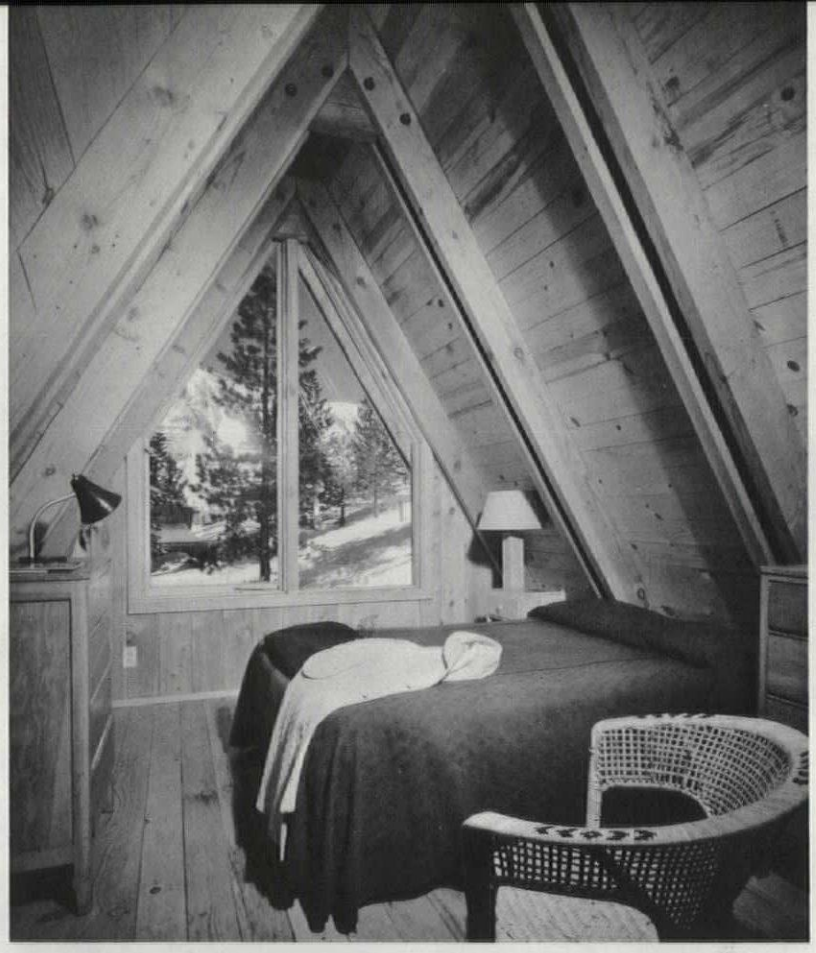
The house was planned for parents and three small children, who occasionally like to have other parents and their children visit. When this happens, the two downstairs bedrooms, equipped with bunk beds and a cot, are used as boys' and girls' dormitories, and the parents take to the upper floor. William B. Gilbert was Structural Engineer; Lee Van Wetter, General Contractor.



Part of the planning accomplishment is in the resourceful use of difficult spaces under lower slopes of the frame and roof—for storage units, tables, and other elements not requiring full head height.

Photos: Ernest Braun





A steep staircase, not unlike a ship's ladder, leads to the balcony level, with its two bedrooms and private bath. Windows in these rooms, which are usually used by parents, extend to the peak.

Overpage is a view of the living area looking back to the balconied end of the room.

Since relatively few practicing architects are actually familiar with the principles governing the calculations of cooling loads for houses, the author of this article thought the subject important enough to include it in his new book—*The Weather Conditioned House*—to be released by Reinhold this month. Here, in briefer form, the methods established by the Air Conditioning and Refrigeration Institute are used as the basis for discussion.

calculation of residential cooling loads

by Groff Conklin

As recently as seven years ago Tyler Stewart Rogers wrote, in his book, *Design of Insulated Buildings for Various Climates*,[1] "To find . . . cooling loads, use the services of an expert."

But times have changed drastically: and today, with summer cooling becoming a major factor in the residential field, it has become urgent for architects to have a better grasp of the principles of cooling load calculation. As a result of the pyrotechnic growth in residential cooling, some simplified calculating methods have been developed, and it is now possible to do the job without an engineering degree.

This article outlines the method for calculating residential cooling loads that have been developed by the Air Conditioning and Refrigeration Institute (ARI) for residential use only. The method does not apply to large nonresidential buildings, particularly those with minimum roof insulation, oversize glass areas, and large indoor heat gains. For such buildings, the more complicated, but more accurate method outlined in the *Heating Ventilating Air Conditioning Guide*, American Society of Heating and Air Conditioning Engineers (1958 edition),[2] should be used.

continuous cooling

The basis of this residential cooling-load calculation method is the assumption that the compressor will operate almost continuously throughout the hot parts of the day. This is achieved by the use of slightly undersized cooling units, rather than larger ones that would constantly be going off and on, or "cycling." The use of the smaller unit results in some operating economy, reduction in maintenance costs, and increased comfort, since it keeps the indoor humidity low.

Cooling load is combined of both sensible and latent heat—and latent heat is caused by humidity. People are more uncomfortable at a temperature of 75 F and a relative humidity of 80 percent, than they are with an 80 F to 30 percent ratio. Therefore, control of both types of heat load simultaneously is important; continuous operation of the cooling unit achieves this best. Such continuous operation is feasible in residences, because of a simple phenomenon in well insulated houses known as *heat storage*.

Heat storage is described in the following quotation from the Institute of Boiler and Radiator Manufacturers' Manual C-30, *Cooling Load Calculation Guide*:[3] "The external heat gain of a residence is not constant throughout a 24-hr period. The maximum load generally occurs in mid-afternoon. However, this does not immediately affect the indoor temperature because of the heat absorption characteristics of the materials used in the construction of a residence. Several hours may elapse before the calculated heat gain for any specified time actually causes a rise in the indoor temperature.

"A fully insulated house is less costly to cool than a similar building without insulation. This is because the insulation reduces the *rate* of heat flow into the structure. . . . A sunlit wall of 4″ brick, paper, wood sheathing, studs, lath and plaster has a cooling-load factor of 6.0 when the outdoor dry bulb temperature is 100 F and the indoor design temperature is 75 F. . . . This means for the design conditions specified above, over a 24-hr period, an average of 6.0 Btu/hr will flow through each sq ft of this type of wall construction.

"The same type of wall with the addition of 3⅝ in. of (mass insulation) or equivalent has a heat gain factor of 1.4 Btu/hr under the same design conditions."

The Carrier Corporation's *Residential Air Conditioning Guide*[4] supplements this information with the following comment on the actual temperature variations in a house cooled on a 24-hr basis:

"The load estimate is made for an average indoor temperature of 75 F. To take full advantage of the storage effect, the thermostat is set, in hot weather, at 72 F. Toward the time of actual peak load, in the evening, the inside temperature may reach 78 F. This gradual daily swing in room temperature is always within the comfort zone described by the American Society of Heating and Air Conditioning Engineers."

[1] *F. W. Dodge Corp., New York, N. Y. 1951.*
[2] *The Society, 62 Worth St., New York 13, N. Y. $12*
[3] *Available from the Institute, 608 Fifth Ave., New York 20, N. Y. $1*
[4] *Syracuse, New York, 1954.*

sample cooling load calculation

Table I contains a reproduction of the ARI's *Residential Cooling Load Estimate Form*,[5] which is by far the simplest of all current methods of calculating residential-cooling loads. It is not, however, complete enough to make possible the actual sizing of the ducts or pipes, for which room-by-room calculations of heat gain are necessary to assure effective balancing of the flow of coolness.

The primary purpose of the ARI form is to enable architects and builders to find out what equipment size will be necessary for a house of given construction, not to lay out a distribution system. To prepare that, the interested reader is referred to the National Warm Air Heating and Air Conditioning Association's Manual 11, *Design and Installation of Summer Air Conditioning for New and Existing Residences*,[6] or the previously mentioned *Cooling Load Calculation Guide* of the Institute of Boiler and Radiator Manufacturers, both of which include forms for calculating heat gains on a room basis. In ordinary circumstances, room loads are calculated by the suppliers of the equipment, so this aspect is not covered here.

Referring to Table I, a space will be found for listing the outdoor design dry-bulb temperature and wet-bulb temperature, as well as one for indoor design temperature. Outdoor design temperatures should properly be obtained from local sources, for real accuracy. There are tables of these data for major cities in the United States and Canada in the publications mentioned, but more specific figures are advisable for any particular building site.

The ARI form states that "The inside design temperature and humidity for calculation of the cooling load should not be higher than 80 F dry bulb and 50 percent relative humidity. . . . In cases of relatively cool climates having design conditions below 90 F dry bulb and 70 F wet bulb, somewhat lower design inside conditions are often considered desirable, since they reflect greater comfort for these climates."

Design outdoor temperature minus design indoor gives the "Design Dry Bulb Temperature Difference," as on Table I. Once this is established, it is then possible to proceed with the cooling-load calculation, selecting the correct cooling-load factors entirely on the basis of the dry-bulb temperature difference.

Windows, Gain from Sun. Unlike, almost every other cooling-load form, the ARI's very sensibly separates the sun heat gain from convective-conductive heat gain derived from the outdoor air. The reason is logical: Convective heat gain is equal and constant on all four sides of a house; but radiant heat gain varies both in intensity and time from wall to wall as the sun moves. In view of this fact, the ARI form includes radiant heat gain *only from the windows having the largest heat gain.*

Joe H. Bergheim, Technical Secretary of the ARI, states: "It is unusual that a house have large glass areas in two exposures. Our reasoning in using only the exposure with the largest load for the sun effect through glass is based on the fact that, as the sun moves across the sky, the major load will fall only on one side of the house at a time. Therefore, if the equipment is capable of handling the largest sun load through glass, it will certainly handle the smaller loads as they occur."[7]

Should an area partly shaded by an overhang also be completely shaded by an outside awning, simply take the area unshaded by the overhang and multiply it by the factor for "outside awnings." Such a situation will be rare in new construction.

Windows, Heat Gain. The ARI Standard states: "Multiply the total square feet of window area on all sides . . . by the factor given for the applicable type of glass and design dry-bulb temperature difference. *Include both shaded and unshaded areas here*"—because, as said above, all windows whether shaded or not transmit heat inwards from the air in an amount directly proportional to the outside temperature.

It will be noted that heat-absorbing glass is not included among glass types. If this type of glass is used, the factor for calculating *radiant* heat gain through the unshaded portion should probably be the same as that for glass block. For reliable data on this aspect, consult the literature of the manufacturers of heat-absorbing glass. Convective heat gain through this glass will be the same as regular glass, since heat-absorbing glass has no effect on the over-all U-factor of the material.

Walls. The ARI states: "To obtain the estimated heat gain through walls in Btu per hour, multiply the sq ft of *net wall area* (total area minus glass) by the factor given for the type of construction most nearly describing the walls . . . and the applicable dry-bulb temperature difference."

[5] *From* Application Engineering Standard for Year-Round Residential Air-Conditioning. *Standard 230, available from the Institute, 1346 Connecticut Ave., N.W., Washington 6, D. C.*

[6] *Available from the Association, 640 Engineers Building, Cleveland 14, Ohio. $1*

[7] *Private communication.*

RESIDENTIAL COOLING LOAD ESTIMATE FORM

Customer ..... Address .....
Buyer ..... Installation by .....
Estimate Number ..... Estimate by ..... Date .....
Equipment Selected: Manufacturer ..... ; Model ..... ; Size .....
Direction House Faces ..... ; Gross Floor Area ..... sq ft; Gross Inside Volume ..... cu ft

Design Conditions:

	Dry-Bulb Temperature (F)	Wet-Bulb Temperature (F)
Outside	.....	.....
Inside		
Difference (Use this value to determine applicable factors.)	.....	

ITEM	AREA (sq ft)	FACTOR (Circle the factors applicable.)				BTU/HR (Area x Factor)
1. (a) WINDOWS, Gain from Sun (Figure all windows for each exposure, but use only the exposure with the largest load.)		For glass block, reduce factors by 50%; for storm windows or double-glass, reduce factors by 15%.				
		No Shading	Inside Shades	Outside Awnings	Load for Each Exposure (Area x Factor)	
Northeast	.....	60	25	20	.....	
East	.....	100	40	25	..... Use	
Southeast	.....	75	30	20	..... only	
South	.....	75	35	20	..... the	.....
Southwest	.....	110	45	30	..... largest	
West	.....	150	65	45	..... load.	
Northwest	.....	120	50	35	.....	

For calculating gain from sun through windows under overhanging roofs, see example given in Instructions.

		DESIGN DRY-BULB TEMPERATURE DIFFERENCE (as computed at top of form)									
		10F	12F	15F	17F	20F	22F	25F	30F	35F	
(b) WINDOWS, Heat Gain (Total of all windows)											
Single-glass	.....	13	15	19	22	25	27	30	36	42	.....
Double-glass or glass block	.....	7	8	9	10	11	12	13	16	19	.....
2. WALLS											
No insulation (brick veneer, frame, stucco, etc.)	.....	4	4	5	6	6	7	8	9	10	.....
1 in. insulation or 25/32 in. insulation sheathing	.....	3	3	4	4	5	5	6	7	9	.....
2 in. or more insulation	.....	2	2	2	2	3	3	3	4	4	.....
3. PARTITIONS (Between conditioned and unconditioned space)	.....	2	2	3	3	4	4	5	6	7	.....
4. ROOFS											
(a) Pitched or flat with vented air space, and:											
No insulation	.....	18	18	19	20	21	21	22	24	25	.....
No insulation, with attic fan	.....	9	11	12	14	16	17	19	22	25	.....
2 in. insulation	.....	5	5	5	5	6	6	6	7	7	.....
4 in. insulation	.....	3	3	4	4	4	4	4	5	5	.....
(b) Flat with no air space, and:											
No insulation	.....	28	29	30	31	33	34	35	38	40	.....
1 in. or 25/32 in. insulation	.....	14	14	15	16	16	17	18	19	20	.....
1½ in. insulation	.....	8	9	9	9	10	10	11	11	12	.....
3 in. insulation	.....	6	6	6	6	7	7	7	8	8	.....
5. CEILING (Under unconditioned rooms only)	.....	3	3	4	4	5	5	6	7	8	.....
6. FLOORS (Omit if over basement, enclosed crawl space, or slab.)											
Over unconditioned room	.....	2	2	2	3	3	4	4	5	6	.....
Over open crawl space	.....	3	3	4	5	5	6	7	8	9	.....
7. OUTSIDE AIR Total sq ft of floor area	.....	2	2	2	2	3	3	4	4	5	.....
8. PEOPLE (Use minimum of 5 people)		..... (number of people) x 200									.....
9. SUB-TOTAL											.....
10. LATENT HEAT ALLOWANCE		30 per cent of Item 9									.....
11. TOTAL		Sum of Items 9 and 10									.....

9

Table I

It will be noted that this form does not take into account any reduction in heat gain due to light-colored walls, or for walls in shade. As for the first item Bergheim states, "The difference between light- and dark-colored walls was considered, but the industry engineers agreed not to make such a differentiation . . . because they could not assure that the exterior finishes could be considered similar for different types of paint and weathering condition."[8]

It is true that a white wall will reduce operating costs to some degree, but it should not, except under unusual circumstances (as for example in hot, dry regions), be considered in calculating cooling load for equipment selection.

For sunlit and shaded walls, practice has shown that not crediting a shaded wall with a lower heat gain does not make the cooling load too large, probably because only one wall is irradiated at a time. It should also be remembered that cooling loads should not be pared to the minimum, particularly considering people's living habits, which often increase cooling loads in ways that cannot be foreseen.

Note also that *all* of the net wall is included in the area figure, even those parts on the north side or those shaded by a porch and never touched by the sun. This is because convective heat gain through the walls is, as it is with windows, the same whether the wall is exposed to the sun or not. Here, a point can be made that maximum insulation in the walls will slow down the entry of heat to such a degree that there will be almost no noticeable effect of peak-loading late in the afternoon. This will hold true regardless of whether the wall is light or dark colored, in the sun or in the shade. There will be some gain, of course, but it will be minor.

Solid wood doors should be calculated along with the walls, while glass doors should be classed with windows. There will be a slightly greater heat gain through a wood door than through a wall, but the area is so small that the gain will make no important difference in cooling loads and in equipment selection.

Partitions. "If there are partitions between the space to be conditioned and an unconditioned space (garages, extra rooms, etc.) multiply the sq ft of the partition area by the factor given. . . ." Of course, the wall next to an open carport is an outside wall and should be so figured.

Roofs. "To obtain the estimated heat gain through the roof . . . multiply the sq ft of the ceiling under the roof by the factor given for the type of construction most nearly describing the roof . . . and the applicable dry-bulb temperature."

The roof constructions given in the ARI form do not include special types more and more frequently found in modern houses. For example, a roof with 6 in. of mass insulation between the joists plus a sheet of reflective foil across the inner faces of the rafters—excellent design for hot-weather cooling efficiencies—has an over-all U-factor of 0.031. It will keep so much more heat out than a roof with only 4 in. of insulation, U equals 0.076, that one can reduce the cooling load factor in Section 4 (a) to 2 instead of 3 for a temperature difference of 10 F, 3 instead of 4 for a 20 F difference, and 4 instead of 5 for a 35 F difference.

Whether powered ventilation in the sealed attic of a mechanically cooled house reduces cooling load to any great degree is still a matter of controversy. Evidence continues to mount that it does not, unless the fan is so powerful as to constitute a noise hazard and entail considerable equipment and power costs. It is therefore ignored on the ARI form.

Reductions in cooling load caused by a water-cooled roof are sizable. However, as such roofs are not often found in houses, they are not included in the ARI form. Those who want to find the savings such a roof may effect should refer to data in the *HVAC Guide*, where the rather complicated calculations for cooling-load reductions due to water-cooled roofs may be found. It is true that a water-cooled roof may cut the required size of a cooling unit by several thousand Btu, and is therefore a technique calling for real consideration in the design of a new house.

Shaded roofs are not considered in most short-form cooling-load calculations, although the *HVAC Guide* does take them into account. In particular, it is unwise to reduce cooling loads due to tree shade because a tree is not a permanent structure, and, once blown down or destroyed by disease, it cannot be replaced easily. Furthermore, many people prefer to have trees close to the house removed, since they make the rooms dark and damp during unpleasant weather.

If the house has a vaulted or cathedral roof with exposed rafters and no hung ceiling, there will be no air space for ventilation. Factors for flat roofs with no air space should be used. It must be remembered to provide *under-roof ventilation* in such houses. Many dwellings with all-glass gables are having trouble with summer condensation, which arises when the very high temperature at the roof peak falls rapidly during the cool

[8] *Private correspondence.*

evening hours. The result can be a rain of condensate that may ruin paints and other wall finishes. Powered ventilation may not be needed, but large, screened louvers at the peak are a must.

Ceilings. "If there are ceilings between the space to be conditioned and an unconditioned space, multiply the sq ft of ceiling area by the factor given for the applicable dry-bulb temperature difference."

Floors. Heat gain through floors is obtained by multiplying the correct floor factor by the floor area. Some air-conditioning experts believe that the same heat gain through a closed crawl space, as through an open one, should be used unless the openings in the space, put there for winter ventilation, are actually sealed shut in the summer. However, the heat gain from such a source is probably too small to be worth considering.

Outside Air. Sensible heat load from air infiltration is calculated on the basis of one complete air change per hour, but does *not* include any outside air coming in through the cooling unit, which is expected to run on an air-recirculating basis only. Total infiltration should be considered in cooling-load calculations, unlike the situation with heat loss data, where only half of the infiltration is added to the heating load. The ARI Standard says on this point, "Although actual infiltration may be one-half change per hour, the general practice is to calculate not less than one air change per hour of incoming outdoor air"—thus compensating to some degree, for example, for open doors, and other subjective additions to load caused by the occupants of the house.

People. Heat load from people is given as a standard minimum of 100 Btu/hr, figuring 200 Btu per person and a minimum of five people, regardless of whether there are fewer than five in the house. This provides some leeway for heat load from minor sources such as lighting, that are not taken into account in this form.

Appliances are omitted in the ARI form, even though they are considered in almost all other calculations. The reason is given by the ARI as follows: "This load, which is intermittent in character, is intentionally omitted because it will not always be sufficient to affect indoor conditions. However, it should be recognized that special cases arise where some appliances, such as clothes driers and kitchen ranges, will upset air conditions. . . . Means such as hoods, vents, exhaust fans should be provided for alleviating such effects." It need not be emphasized that these fans are essential in a well designed air-conditioned house. Such a house will always have the necessary outside vents and fans in the original structure, and thus eliminate future complaints from occupants that the house always gets hottest when coolness is needed most, i.e., while preparing dinner late in the afternoon.

Ducts and Pipes are not included in the ARI form. There is some disagreement whether these sources of heat gain are or are not small enough to be disregarded. In rambling houses with lengthy duct or pipe lines, it may well be large enough to have to be taken into effect. For this reason, heat gains from such sources should be estimated with the assistance of the contractor who will install the equipment and the distribution system, and added to the load if it is large enough to warrant it. To minimize this source of heat gain, pipes and ducts should be thoroughly insulated wherever they pass through unconditioned spaces. Pipes carrying cold water should furthermore be provided with drip troughs wherever they are, and ducts in uncooled spaces should be protected by vapor barriers.

Latent Heat Allowance. Thirty percent of the total sensible heat load is the usual allowance for latent heat load, as on the ARI form. This takes into account not only air moisture entering the house through infiltration, but also the loads arising indoors from people, pets, and plants, and those sporadic loads arising from operation of equipment.

Total. From the total cooling load, the proper size of the cooling unit can be determined. Air conditioners are rated in Btu output per compressor motor horsepower; the term "ton" is no longer technically acceptable as a measure of cooling capacity because of its indefiniteness. Ratings reported by manufacturers range from a low of 9000 to a claimed high of 22,000 Btu per hp.[9]

The ARI limits the applicability of its cooling load form as follows: "Where conditions or construction features differ appreciably from those described in the 'Cooling Load Estimate Form,' or where a more detailed analysis of the cooling load is desired, it is recommended that the tables and methods in the *Heating Ventilating Air Conditioning Guide* of the American Society of Heating and Air Conditioning Engineers be used." If a particular job seems to warrant such an action, it will probably be on a scale that will make Tyler Rogers' 1951 statement still valid. "Call in an expert" to make the more detailed analysis.

[9] *Detailed technical descriptions of most if not all air-conditioning units can be found in the annual "Specifications Section" of the* Air Conditioning and Refrigeration News, *published in the spring of each year and available from the* News *at 450 West Fort St., Detroit 26, Mich. $1*

These specifications appeared originally in The Change Order, *monthly newsletter of the Construction Specifications Institute's Chicago Chapter and also, in part, in Summer 1957* The Construction Specifier. *The author, a Landscape Architect of Wilmette, Illinois, is an active member of CSI, Chicago Chapter.*

specifications for lawns and planting

by Lee Circle

SECTION 1. SCOPE

a. *The Work* covered by this specification consists in furnishing all plants, labor, equipment, appliances, and materials, and in performing all operations in connection with landscape work complete for lawns and planting, and other miscellaneous related work, in strict accordance with this specification and the applicable drawings, and subject to the terms and conditions of the Contract, and as indicated on the landscape plan accompanying and made a part of these specifications.

SECTION 2. MATERIALS

a. *Samples* of materials listed below shall be submitted to the Landscape Architect for inspection and approval. Samples of one (1) cubic yard of mushroom manure, one (1) cubic yard of cattle manure, one (1) yard of burlap, one (1) pound of grass seed mixtures specified, and one (1) cubic yard of top soil from each source of supply to be used shall be submitted prior to the beginning of operations under this Contract.
   (1) In order to obtain adequate tests, sample of grass mixtures specified shall be submitted at least 40 days prior to anticipated delivery of the approved material.
   (2) Delivery of materials may begin only after samples have been approved. All materials furnished for the work shall conform in every respect to the approved sample.

b. *Top Soil* for lawns and planting operations included in this Contract shall be fertile, friable, natural loam containing a liberal amount of humus, and shall be capable of sustaining vigorous plant growth. It shall be free of admixture of subsoil and shall be reasonably free of stone, lumps, clods of hard earth, plants or their roots, sticks, and other extraneous matter. It shall not be used for planting operations while in a frozen or muddy condition.
   (1) Top soil shall be subject to inspection and approval at the sources of supply or upon delivery. Before any top soil is delivered, the Contractor shall furnish to the Landcape Architect a written statement giving:
      (a) Location of all properties from which the top soil is to be obtained and approximate quantity available from each.
      (b) The names and addresses of the owners of the various properties.
      (c) The depth to which the soil is to be taken.
      (d) The crops grown on the soil during the past few years.

c. *Sludge Fertilizer* shall be an organic-activated sludge fertilizer and shall contain the following percentage by weight:
   5% minimum of nitrogen
   3% phosphoric acid
   Other nutritious basic elements
   The sludge fertilizer shall be delivered as specified in standard-size bags, showing weight, analysis, and name of processor, and shall be stored in a weatherproof storage place in such a manner that it will be kept dry and its effectiveness will not be impaired.

d. *Manure*
   (1) Mushroom manure shall be decomposed horse manure, a standard waste product of the mushroom-growing industry.
   (2) Cattle manure shall be well rotted unleached cattle manure, free from harmful chemicals and other injurious substances, and shall be free of sawdust, shavings, and refuse of any kind, and shall not contain more than 25% of straw, leaves, or other material acceptable for planting use.

e. *Commercial Fertilizer* shall be a complete fertilizer, part of the elements of which are derived from organic sources. It shall contain the following percentages by weight:
   10% of nitrogen
   8% of phosphoric acid
   6% of potash
   Fertilizer shall be delivered mixed as specified in standard-size bags, showing weight, analysis, and name of manufacturer, and shall be stored in a weatherproof storage place in such a manner that it will be kept dry and its effectiveness will not be impaired.

f. *Staking and Wrapping Material*
   (1) Stakes for supporting trees shall be of sound wood of uniform size, free of knots and holes, creosoted half their length, and capable of standing in the ground at least two years. They shall be nominal 2"x2" square. Stakes shall not be less than 9 ft in length.
   (2) Wire for tree bracing and guying shall be pliable No. 10 gage galvanized-steel wire.
   (3) Hose for covering wire shall be new or used black or red two-ply fibre-bearing garden hose, not less than ½" inside diameter. Seconds rejected by factory are acceptable. Seconds and used hose must be approved by the Landscape Architect.
   (4) Wrapping material for tree trunks shall be new, clean, plain burlap, first quality, at least 8 oz in weight and not less than 6 in. wide. It shall be free of breaks and tears.

g. *Lawn Materials*
   (1) Grass seed shall be fresh, clean, and new crop seed composed of the following varieties mixed in the proportions by weight, as shown, and testing the minimum percentage of purity and germination indicated.

Scientific name and common name	Proportion by weight	Purity %	Germination %
Grass seed mix			
Poa pratensis Kentucky blue grass	60%	85%	80%
Agrostis alba Red Top	20%	92%	90%
Festica alba var. arundiacea Alta fescue	20%	97%	80%

(2) Seed shall be mixed by dealer. The Contractor shall furnish dealer's guaranteed statement of composition of mixture and percentage of purity and germination of each variety.

(3) Grass seed shall not be delivered to the site until samples have been approved in writing by the Landscape Architect. Approval of sample, however, shall not affect the Landscape Architect's right to reject seed upon or after delivery.

h. *Plant Materials*

(1) All plants shall be nursery grown except flowering trees. Flowering trees (specimen) may be collected from open fields.

(a) Nursery-grown plants shall have been grown in accordance with good horticultural practice.

(b) Collected plants shall be in good vigorous condition and shall have been grown in favorable locations where sub-grade prevents the formation of tap roots, and encourages the development of fiberous roots.

(c) All plants shall have been grown under climatic conditions similar to those in the locality of the Project for at least two years. Plants shall have been transplanted or root pruned at least once in the three years.

(d) All plants shall be freshly dug. No heeled-in plants nor plants from cold storage will be accepted. All plants shall be typical of their species, or variety, and shall have a normal habit of growth. They shall be sound, healthy and vigorous, well branched and densely foliated when in leaf. They shall be free of disease, insect pests, their eggs or larvae. They shall have healthy, well developed root systems.

(e) Trees shall have straight trunks and all old abrasions and cuts shall be completely callused over.

(2) Measurements: All trees and shrubs shall be measured when their branches are in their normal position. Height and spread dimensions specified refer to the main body of the plant and not from branch or root tip to tip. The lower branches of a tree need not be the height specified for height of branching, if they are such a height that the required branching height may be obtained by pruning after delivery without affecting the shape and form of the trees, or causing large, unsightly scars. Caliper of trees up to 4 in. shall be taken 6 in. above the ground level and shall be the determining measurement for trees. Trees over 4 in. shall be calipered one ft above the ground level. Number of canes specified for shrubs shall be the minimum acceptable. A cane shall be considered a primary stem which starts from or close to the ground, or at a point not higher than one-fourth the height of the plant. No trees which have had their leaders cut, or so damaged that cutting is necessary, will be accepted.

(3) Size: All plants shall conform to the measurements specified in the plant list shown on the drawings. Exceptions are as follows:

(a) Plants larger than specified in the plant list may be used if approved by the Landscape Architect, but use of such plants shall not increase the contract price. If the use of larger plants is approved, the spread of roots or ball of earth shall be increased in proportion to the size of the plant. Bare root plants furnished in sizes greater than specified shall be balled and burlapped when required by the Landscape Architect.

(b) Up to 10 percent of undersize plants in any one variety or grade may be used, provided that there are sufficient plants above size to make the average equal to or above specified grade, and provided that undersize plants are larger than the average size of the next smaller grade.

(4) Pruning: Plants shall not be pruned prior to delivery, except upon special approval of the Landscape Architect.

(5) Inspection: Plants shall be subject to inspection and approval at place of growth, or upon delivery for conformity to specification requirements as to quality, size, and variety. Such approval shall not impair the right of inspection and rejection upon delivery at the site or during the progress of the work, for size and condition of balls or roots, diseases, insects, and latent defects or injuries. Rejected plants shall be removed immediately from the site.

(a) All trees selected shall be inspected, approved, and sealed by the Landscape Architect at their place of growth before they are dug.

(b) Typical samples, three of each, of all other varieties and sizes of plants shall be submitted for approval at the site. These samples, if approved, shall be planted and maintained as standards for comparison with plants furnished.

(c) Certificates of inspection of plant materials shall be furnished as may be required by federal, state, or other authorities to accompany shipments.

(6) Digging and Handling: No plants, other than the required samples, shall be dug or delivered to the site until the required inspections have been made, and the plants or samples approved.

(a) Dig bare rooted plants (br) with a spread of roots not less than the diameter specified, and of sufficient depth to insure full recovery and development of the plants. Roots of these plants shall be covered with a uniformly thick coating of mud being puddled immediately after they are dug.

(b) Dig balled and burlapped (BB) plants with firm, natural balls of earth, of diameter not less than that specified and of sufficient depth to include all the fibrous and feeding roots. No plant moved with a ball will be accepted if the ball is cracked or broken before or during planting operations, except on special approval.

(c) Roots or balls of all plants shall be adequately protected at all times from sun and/or drying winds.

(d) All balled and burlapped plants which cannot be planted immediately on delivery shall be set on the ground and shall be well protected with soil, wet moss or other acceptable material. Bare rooted plants, which cannot be planted immediately shall be planted or heeled-in in trenches immediately upon delivery. No material heeled-in more than one

week may be used. Bundles of plants shall be opened and the plants separated before the roots are covered. Care shall be taken to prevent air pockets among the roots. During planting operations, bare roots shall be covered with canvas, hay or other suitable material.

(e) No plant shall be bound with wire or rope at any time so as to damage the bark or break branches.

(7) Substitutions will not be permitted. If proof is submitted that any plant specified is not obtainable, a proposal will be considered for use of nearest equivalent size or variety with an equitable adjustment of contract price. Such proof shall be submitted in writing and substantiated by the Landscape Architect.

(8) Plant List: The Contractor shall furnish and plant all plants shown on the Drawings, as specified and in quantities as shown. The quantities are included for the convenience of the Contractor only and the Contractor shall be required to furnish all individual plants in quantities actually located on the drawing.

SECTION 3. INSTALLATION

a. *Time of Planting* shall be as follows:

(1) The spring season for planting of trees, shrubs, and vines shall be from as soon as the ground can be worked to not later than May 15, and the fall season for such planting shall be from October 1 to December 15. Only upon written approval of the Landscape Architect may planting begin earlier or continue later than the dates specified.

(2) The spring season for planting lawns shall be from the time the ground can be worked to May 15, and in the fall from August 15 to November 15. Only upon written approval of the Landscape Architect may the Contractor begin earlier or continue later than the dates specified.

b. *Plant Pits* shall be excavated with vertical sides in accordance with the following outline for sizes:

(1) Tree pits shall be at least 3 ft greater in diameter than the specified diameter of ball or spread of roots, and at least six in. below depth of ball.

(2) Shrubs shall be planted in pits or holes of top soil 18 in. deep, below finished grade, or as much deeper as necessary to properly set the plant at finished grade. Shrubs with balls shall be planted in pits with at least 12 in. greater diameter of ball, and to a depth at least 6 in. deeper than bottom of ball.

(3) Pits for vines shall be 24 in. below finished grade and 12 in. greater diameter of ball which in some instances may require removal of subsoil over total area of a particular planting bed.
At least one bushel of cattle manure shall be apportioned to each planting space and mixed thoroughly with the backfill topsoil.

(4) All pits shall be circular in outline, except for ground cover, and have vertical sides. Excavated material of a subsoil classification or containing extraneous matter shall be removed, and may not be disposed of on the premises unless approval in writing has been obtained from the Landscape Architect.

(5) When topsoil is placed in pits around roots or balls, it shall be thoroughly mixed with organ-activated sludge fertilizer as specified, or equal, in the following proportions: Two lb in shrub pits, and five lb in all tree pits. The depth of planting beds and pits shall be adjusted as necessary to permit a minimum of six in. of topsoil under balls or roots of all plants.

c. *Obstructions Below Ground*

(1) In the event that rock or underground construction work or obstructions are encountered in the excavation of plant pits, alternate locations shall be selected by Landscape Architect. Moving of tree to alternate locations shall not entail additional costs to the Owner.

d. *Planting Operations*

(1) Stake tree locations, shrubs, and vine pits, and secure approval of the Landscape Architect before starting excavation of same, making any adjustments necessary. Locate no trees or shrubs closer than 72 in. to pavement or structures. Ground covers may be planted up to structures or curbs.

(2) Plant pits shall not be backfilled with topsoil until they have been approved by the Landscape Architect. If pits are prepared and backfilled with topsoil to grade prior to planting, they shall be so marked and recorded on the plans, that when planting proceeds, they can be readily located.

(3) Set plants in center of pits, plumb, and straight, and at such a level that after settlement, the crown of the plant will be at the finished grade.

(a) When balled and burlapped trees are set, compact topsoil around base of ball to fill all voids. All burlap, ropes, or wires shall be removed from the sides and tops of balls.

(b) Roots of bare root plants shall be properly spread out and topsoil carefully worked in among them. Cut off, with a clean cut, all broken or frayed roots.

(4) Topsoil around roots or ball shall be thoroughly compacted and watered. Immediately after plant pit is backfilled, a shallow basin slightly larger than the pit shall be formed with a ridge of soil to facilitate watering. Where curbing occurs around plant pits, the basin shall be omitted. After planting, cultivate the soil in the shrub beds between shrubs, rake smooth and neatly outline.

e. *Staking and Wrapping*

(1) Staking and wrapping of trees shall be done immediately after they are planted. Plants shall stand plumb after staking, which shall be done as shown on Landscape Plan.

(a) All balled and burlapped specimen tree-like shrubs will not be staked.

(2) The trunks of all trees except tree-like shrubs shall be wrapped spirally from bottom to top with burlap as specified, and shall be securely tied with suitable cord at top and bottom and at two-ft intervals along the trunk. The wrapping shall overlay and entirely cover the trunk from the ground to the height of the second branches, and shall be neat and snug. Overlap of burlap shall be approximately 2 in. Trees shall be inspected for injury to trunks, evidence of insect infestation, and improper pruning before wrapping.

f. *Pruning and Mulching*

(1) Each tree and shrub shall be pruned in accordance with standard horticultural practice to preserve the natural character of the plant and in the manner fitting its use in the landscape design, as approved by the Landscape Architect.

(a) All dead wood or suckers and all broken or badly bruised branches shall be removed by thinning out and shortening branches.

(b) Pruning shall be done with clean, sharp tools.

(c) Cuts over 3/4 in. diameter shall be painted with an

approved tree paint. Paint shall cover all exposed cambium as well as other living tissue. Paint shall be waterproof, adhesive and elastic, antiseptic, free from kerosene, coal-tar, creosote, or any other material injurious to the life of the tree, and shall be approved before it is used.

(2) Immediately after planting operations are completed, all tree and shrub pits shall be covered with a layer of mushroom manure 2 in. deep. The limit of this mulch for trees shall be the diameter of the tree hole, and shrubs in beds—the entire area of the shrub bed.

g. *Grades*

(1) Finished grades shall be the proposed final grades shown on the architectural site grading plans furnished on request by the Owner. Lawns shall be finish graded to meet walks and adjoining surfaces after settling in a uniform way so no water pockets or ridges will be left.

h. *Lawns*

(1) Plant grass seed in all areas indicated on the plans.

(2) In all lawn areas, the topsoil shall be loosened to a depth of 4 in. and all stones over 1½ in. in any dimension, sticks, roots, rubbish, and other extraneous matter removed. Grade the surface so that, when settled, the surface is free of depressions, ridges, and conforms to the required finished grade.

(3) On all lawn areas use a fertilizer combination mixed proportionally at the rate of three (3) parts (by weight) sludge to one (1) part (by weight) commercial fertilizer, and apply at the rate of 40 lb per 1000 sq ft and work into the top 2 in. of soil at least 2 days before sowing grass seed.

(4) The surface shall be smooth and loose and of uniformly fine texture immediately before seeding. Prepare only enough ground that can be seeded within 24 hrs thereafter.

(5) On lawn areas sow seed at the rate of 5 lb to 1000 sq ft of area. Equal quantities of seed shall be sown in two directions at right angles to each other to produce an even distribution of seed over the entire area.

(a) No seeding shall be done when wind velocities exceed 5 mph.

(b) No seeding shall be done after a rain, or if the surface has become compacted, without first loosening the surface of the ground.

(6) Rake the seed lightly into the ground, roll with a 200-lb roller, and water thoroughly with a fine spray.

i. *Protection of Work:* Occupancy

(1) Occupancy of the project shall not relieve the Contractor of any of the obligations outlined in these specifications.

(2) The Contractor shall provide adequate protection, including the installation of approved temporary fences, at all times for all planted and seeded areas against trespassing and damage, including erosion.

j. *Maintenance*

(1) Maintenance shall begin immediately after each plant and each portion of lawn is planted, and shall continue in accordance with the following requirements:

(a) Lawns planted during the spring planting season shall be maintained for at least 60 days from end of planting season, and as much longer as necessary to establish over the entire lawn a close stand of grass of the varieties specified, free of weeds and undesirable coarse, native grasses.

(b) Lawns planted during the fall planting season shall be maintained in the same manner as for spring planting, but shall not be acceptable until the following June first, provided a lawn of a close stand of grass of varieties specified, free of weeds and undesirable coarse native grasses, is established.

(c) Plants shall be maintained until lawns are accepted, or if installed subsequent to lawn operations or lawn maintenance, until all planting operations, including mulching, are accomplished and approved.

(2) Maintain lawns by watering, weeding, reseeding, rolling, mowing, trimming, and other operations necessary.

(a) Mowing shall begin as soon as the grass has reached a height of 2 in. Grass shall be mowed at least once a week while lawns are under Contractor's maintenance.

(b) Lawns shall be kept watered with sprinklers or other approved methods during dry weather or whenever necessary for proper growth.

(c) Seed used in reseeding shall be the same as mixture specified.

(3) Maintain plants in a vigorous, thriving condition by watering, cultivating, weeding, pruning, spraying, and other operations necessary. No trees or shrubs will be accepted unless they are healthy and show satisfactory foliage conditions.

(a) Maintenance shall include, in addition to the above, cleaning, edging, repairs to stakes, wire and wrappings, repair of erosion, and all other necesssary work of maintenance.

(b) The Contractor may at his own option use an acceptable weed killer in lawn areas, such as 2, 4-D, but no additional cost shall be added to the Contract price.

(4) Sidewalks and other paved areas shall be kept clean when planting and maintenance operations are in progress.

SECTION 4. FINAL INSPECTION AND GUARANTY

a. *Inspection of Work* of lawns and planting will be made at conclusion of maintenance period required.

b. *Written Notice* requesting inspection shall be submitted to the Landscape Architect at least 10 days prior to the anticipated inspection date.

c. *Acceptance*

(1) Final acceptance. The work under this Contract will be accepted for the Owner by the Landscape Architect upon the satisfactory completion of all work, including maintenance, but exclusive of the replacement of plant materials.

d. *Guarantee and Replacement*

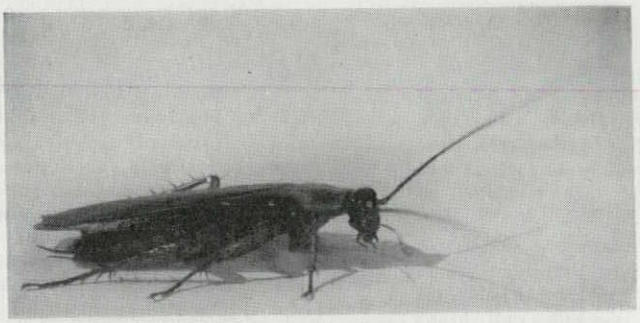
(1) When installation of plants is accomplished during the fall planting season, guarantee plants until the following June 15; when installation of plants is accompished during the spring planting season, guarantee plants until the following October 1.

(a) Any delay in the completion of any item of work in the planting operations which extends the planting into more than one planting season shall extend the guarantee period in accordance with the season of completion given above.

(2) Replace, as soon as weather conditions permit, all dead plants and all plants not in a vigorous, thriving condition noted at the end of the guaranty period.

(3) Plants used for replacement shall be of the same size and variety specified in the plant list. Plants shall be furnished, planted, staked, wrapped, and mulched as specified.

(4) Replaced plant material shall be removd from the site.



why not pest-preventive construction?

by Hubert Frings*

Very few architects or industrial designers have ever studied rats, mice, or insects. Yet all are engaged—willingly or not—in rodent and insect control—or encouragement. Too often, they unwittingly give aid and comfort to our four- and six-footed enemies.

To be sure, architects are now familiar with their role in the control of termites, and possibly rats. How many, though, realize that these aspects of structural control of pests are barely a beginning? And, so far as insects are concerned, termite control is far less important for public health than roach and fly control.

Every entomologist or professional pest-control operator could cite dozens of cases in which poor design and construction make control of pests in homes, factories, stores, restaurants, and hospitals unnecessarily difficult or even impossible. Apparently the architects or designers of equipment and furniture either lack the most elementary knowledge of the habits of pests or fail to give them due consideration. Just a few examples from my own experience will illustrate this point.

A drug store we entered looked modern and clean, but the manager said that roaches had been seen around the soda fountain. A rather routine treatment turned up a few under advertising posters and behind mirrors, as well as between the sink and cooler. It did not look bad. Then our attention was attracted to the metal edging along the counter. This was a hollow half-round piece with a space beneath it. When we forced the insecticide into the space, the roaches boiled out. Here, then, was a decoration affording shelter for thousands of disgusting and possibly dangerous pests. If that edging had been flat or solid, the roaches would not have had this retreat.

Another drug store was visited—this one, too, in response to a call with the report that some roaches had been seen around the soda fountain. As usual, some were behind decorative mirrors. Question: Why not fasten these to the walls tightly

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and keep the roaches from getting behind them? But, far and away the best roach havens in this place were the milk-shake mixer and the malted-milk dispenser, both with hollow-metal uprights. Why were they *hollow?* Could they not have been sealed at the bottom or made of solid aluminum? Have industrial designers thought of these pest-controlling features?

Another case history was reported by a pest-control operator. A tavern reported that customers were complaining of bites they received while seated in the booths. A careful investigation of the booths showed that the benches had deeply countersunk wood screws along the front edges. In these holes there were myriads of bed-bugs. Why couldn't these holes have been filled? Or why were the screws not driven flush with the surface without countersinking? No one suggests that this would eliminate all trouble, but why should designers of furniture and architects who specify equipment for restaurants invite trouble?

The remedy is so simple that it apparently is overlooked. Why don't architects and industrial designers consult with entomologists who have studied pests and their control, or with reputable pest-control operators before constructing or specifying equipment for highly decorative, streamlined pest-houses? The answer is that most designers do not see their products as the pest-control expert sees them. And, unfortunately, most entomologists seem to lack interest in this type of pest prevention.

Two weeks before the completion of a new restaurant, it had no equipment or furniture in it and the walls were being tastefully finished. On opening day, only one thing spoiled the enjoyment of the beautiful appointments, the soft music, and the fine food: the diners had to keep up a running fight with flies all through their meal. Why should this have been? After all, the situation two weeks before, when no furniture was in place, would have been ideal for the application of residual insecticides to the walls and ceilings. It would also have been simple to apply other insecticides for roaches behind the trim and similar areas.

Why was this not done? One cannot be sure, but one guess is that the designer just did not realize that it could be done. Besides having knowledge of the newest in building materials and construction methods, architects and industrial designers should be equally up-to-date on modern pest control.

In this same restaurant there are long seats against the walls of the room. Behind each of these is a small space, narrow enough to attract roaches and, yet, not closed off to keep the pests out. Any stray roach that gets into this restaurant has a perfect hiding place. A little foresight in planning would have prevented this.

Naturally, any food-handling establishment is likely to have roaches brought in. The restuarant owner usually contracts with a pest-control operator to inspect the premises periodically and to treat if necessary. Why, then, have so many dark crevices and hollow objects that a good job of inspection is difficult or even impossible? Eradication is further complicated because of the many places that must be treated. Preventive advice from an alert pest-control expert at the time of designing, constructing, or equipping a restaurant can make pest-control servicing much simpler and better.

In the library building of a large college, the document room—where irreplaceable documents are stored—is traversed along its low ceiling by a number of steam pipes. The heat from these pipes creates an ideal environment for firebrats, a heat-loving type of silverfish. When inspected, the firebrats had managed to destroy priceless files of the Congressional Record and other Government documents. Why did the architect or librarian not think of this? If the architect had planned to run the steam pipes through the center of the reading room, there would have been protests from the librarian, college board, and everyone else involved. Yet pipes in the middle of the room would simply have been unsightly. As it was, they became a source of great loss to the library.

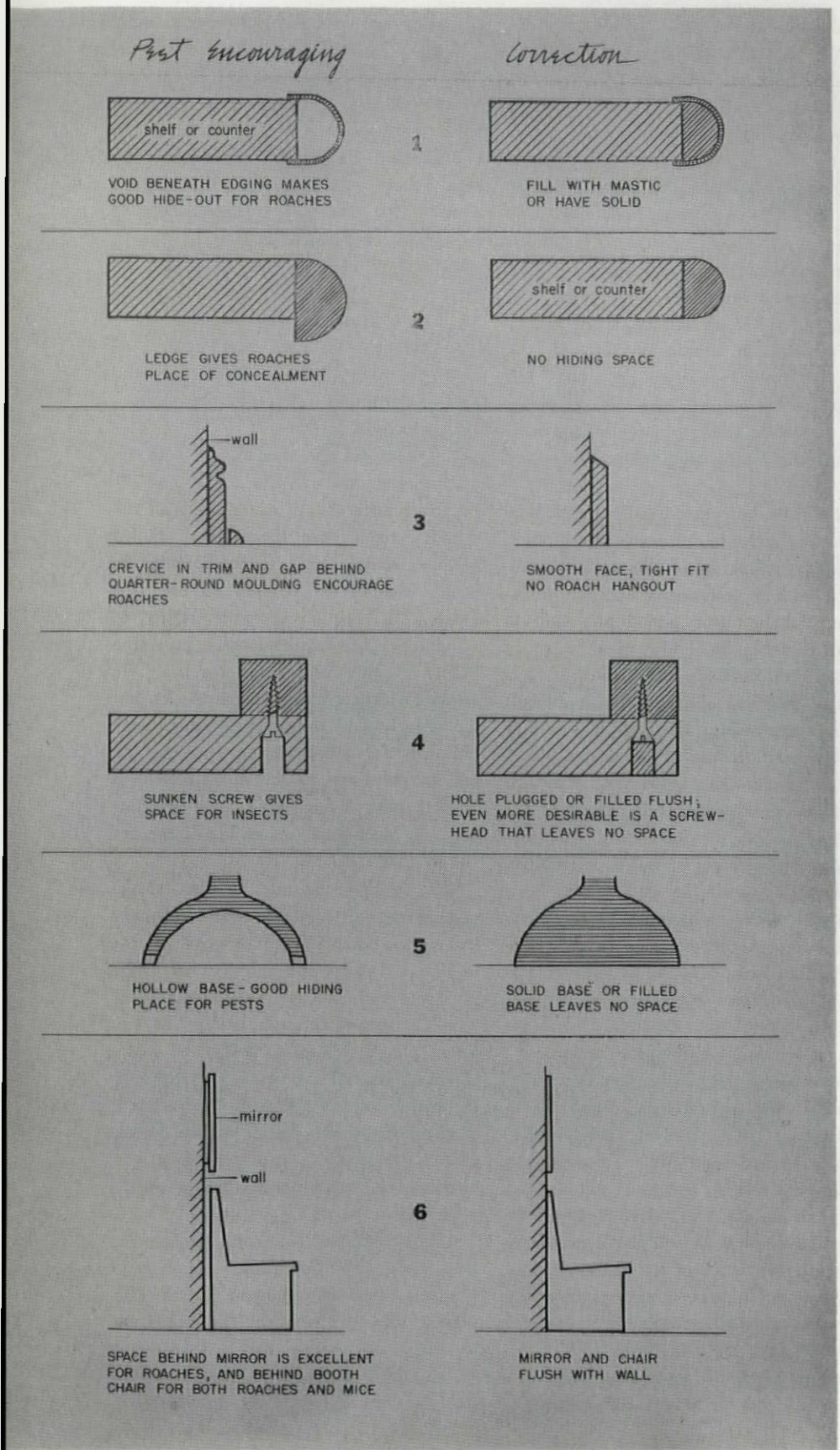
Let us consider a place where, above all others, cleanliness is valued—in the hospital. One hospital visited complained about roaches. Although they were all over, they were especially numerous in the nursery. Their principal hiding place was behind some loosely fastened trim around the doorway. That decorative woodwork could just as well have been omitted; yet, there it was harboring pests whose very presence was unthinkable. In a new wing of the hospital, where wood frames had been omitted and the doorways were finished smooth, we found far fewer roaches. They just did not have places to hide.

But how did the roaches get into the operating rooms, into the wards, into the nurses' quarters? An examination of the laundry room gave the answer. Soiled clothes were brought to the laundry in large wickers on wheels. These baskets were reinforced with strips of wood which fitted quite loosely, providing plenty of crevices for the roaches. We asked to inspect one of these trucks, but the orderly said that it was loaded with uniforms for an operation and that he had to get them to the operating room immediately. When he returned in a few minutes, we blasted thousands of roaches out of that truck!

Why is there no one on hospital-furnishing committes or in hospital-supply houses to point out those roach roosts to manufacturers and purchasers? Why is it not possible for manufacturers of laundry carts for hospitals (or for any other place, for that matter) to make these without all the cracks and crevices for vermin to infest? And why is it not possible for the hospital boards to ask advice from pest-control experts when building or contemplating the purchase of such equipment?

Another affected piece of equipment in that hospital, in the nursery again, was a special type of incubator for delicate prematurely born infants. This was fitted to supply a warm, moist atmosphere around the babies. What it was not designed to do, however, was to provide a retreat for roaches. But that is exactly

It is far more desirable to eliminate hiding places for insects in the original design of a piece of furniture or equipment, than to provide corrective measures later on. Some of the most frequently found mistakes are shown below.



what it did! We could see the roaches through its glass top. We could not, however, treat this instrument with insecticide, because the baby in it was too delicate!

It is clear that architects and industrial designers need to learn about pests, their habits, and preferences. Why should soda fountains have thousands of crevices custom-built for roaches? Why tack on fancy moldings and trimmings with spaces beneath? Why countersink screws which are concealed anyway? And a dozen other whys.

The responsibility for this education in the facts of pest life falls partly on the technical schools and colleges and partly on pest-control specialists at all levels—professional entomologists, rodent biologists, and local pest-control operators. If the architect would ask the advice of the pest-control man likely to be involved later in servicing of the building, he could undoubtedly get some help. The advice need not be highly technical, for it is obvious that the most common mistakes in construction are the easiest for the practicing pest-control man to spot.

Further, much more research is needed in the field. In this the entomologist certainly should take the lead. Unfortunately, few entomologists are interested; their interests seem to be running now almost entirely to insecticides. If urged by architects and interior designers, however, they might change their point of view.

Some defects in design and construction are obvious, even now, but many more could be found. Knowing the necessary pest-preventive construction, however, would be just a step in the research. This knowledge must then be combined with engineering skill and art in the final production. This would require co-operative research in entomology and architecture or industrial design.

True pest control should start with design, manufacture, and construction. We do not build automobiles needlessly embodying accident hazards. Let's not build and equip our homes, stores, and hospitals as pest paradises.

antidote for nail pops

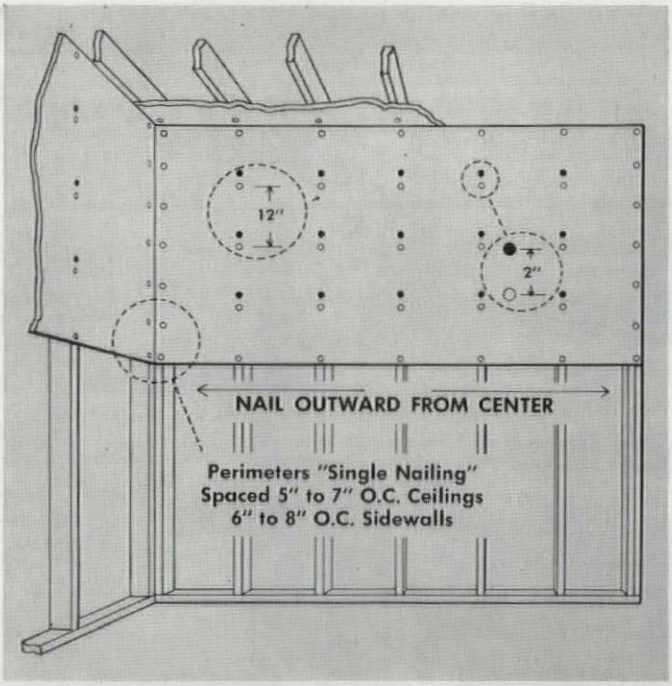
Experience has shown that even when all other safeguards have been observed—use of sufficiently dry lumber, proper nailing and framing, and correct wallboard sizes—loose holding of boards can still produce "nail popping" in drywall construction. Where such failures persist, double nailing is recommended as an effective remedy by Gypsum Association.*

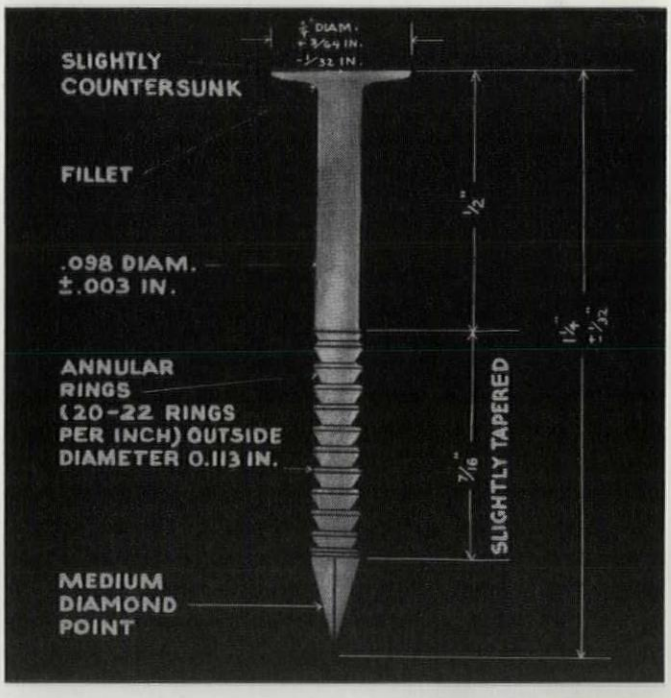
In the double-nailing system, nails are first driven into the field of the board at 12″ intervals. These are then followed by a second series of nails spaced 2″ from those already in place. As each "second nail" is driven home, the mechanic gives an insurance blow to the adjoining first nail to take up any slack developed by secondary nailing. Spacing for nails at perimeter of board should be 6″ to 8″ o.c. for sidewalls and 5″ to 7″ o.c. for ceilings.

The Association has developed and job-tested a new annular-ring nail for wallboard attachment—known as GWB-54—which meets related ASTM specifications. A shorter shank permits less wood to work on it, and subsequently the less chance of movement. The wood fibers embed themselves in the rings to increase resistance to creep, and to give the nail additional holding power.

It is recommended that the moisture content of lumber, at the time wallboard is applied, should not exceed 19 percent, or, preferably, should approximate that expected in the building after it is occupied.

** No departure from the existing "single-nailing" method—with 5″ to 7″ o.c. for ceilings and 6″ to 8″ for sidewalls—is recommended for crews already obtaining satisfactory results.*

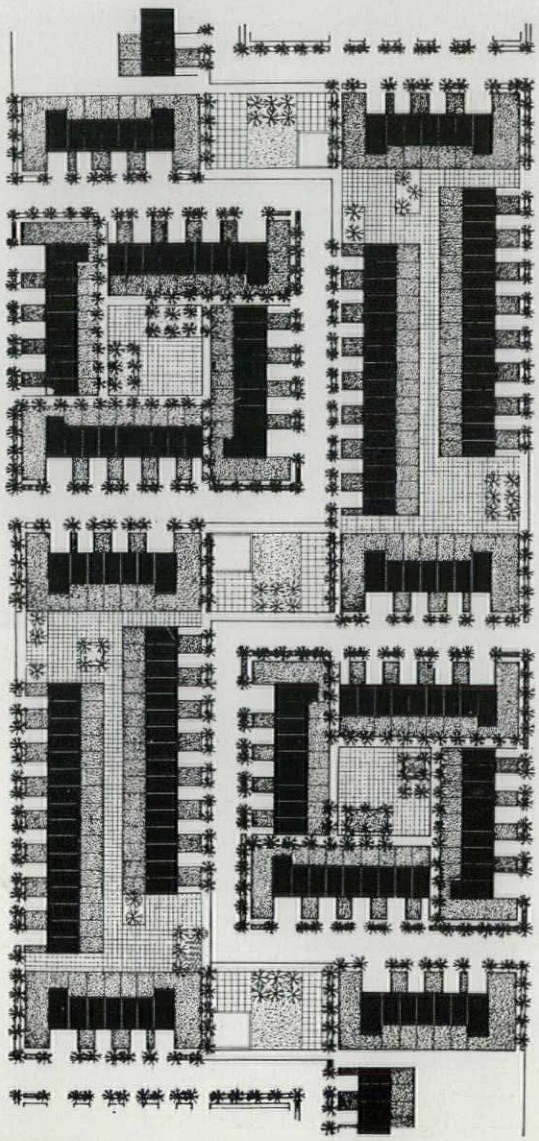


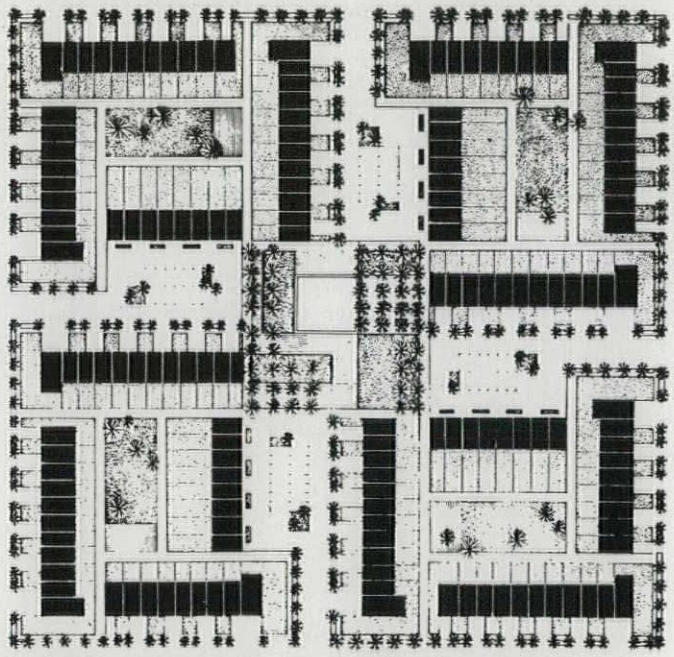


Double-nailing system for gypsum wallboard (left) *recommended when "nail pop" failures occur after other safeguards have been observed. Special annular-ring nail—GWB-54—designed for wallboard attachment* (right).

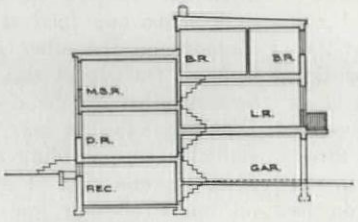
Philadelphia Housing

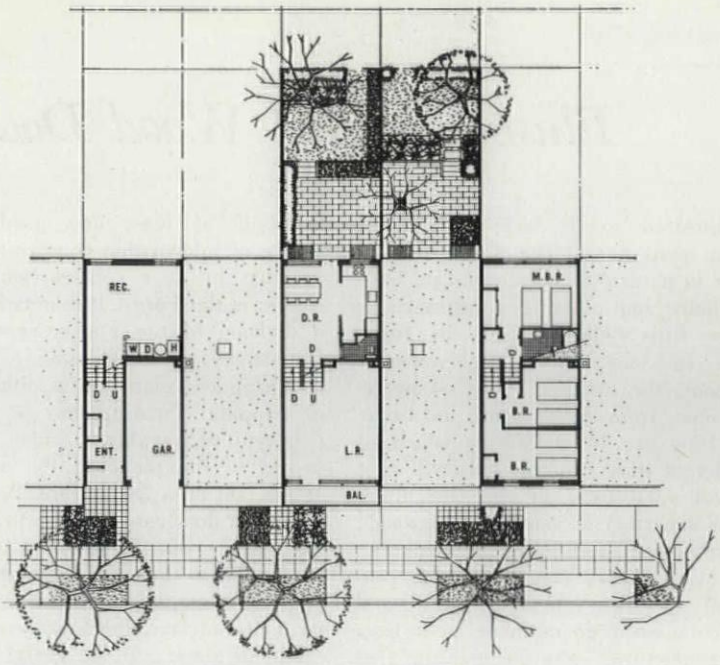
During the next ten years, four square miles of blighted and vacant land in southwest Philadelphia will be reclaimed for a new community—Eastwick. In anticipation of the large-scale undertaking, the Redevelopment Authority of Philadelphia has published the *Eastwick New House Study* (66 pp., $5). Shown are: (1) a number of house plans suitable for the urban site; (2) suggestions for the arrangement of these houses in blocks; (3) analysis of cost and construction, legal considerations, and government control. It is the aim of this book to encourage deeper study of the small family house and its site, to provide the knowledge and incentive for the developer, and to achieve a sound investment for builder, lender, and owner.



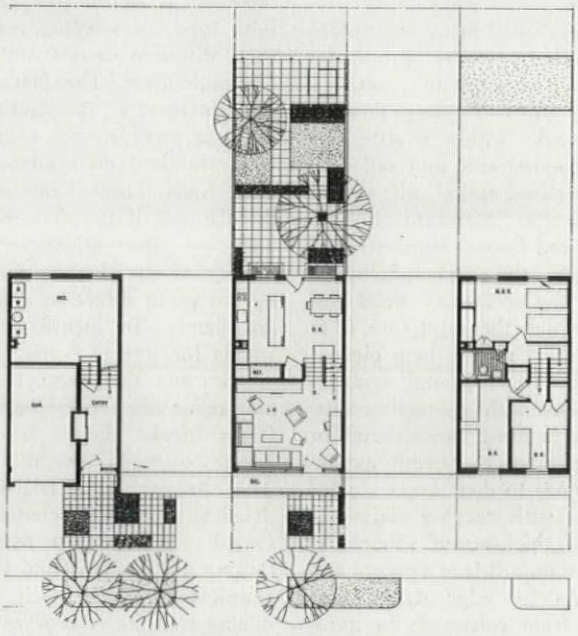


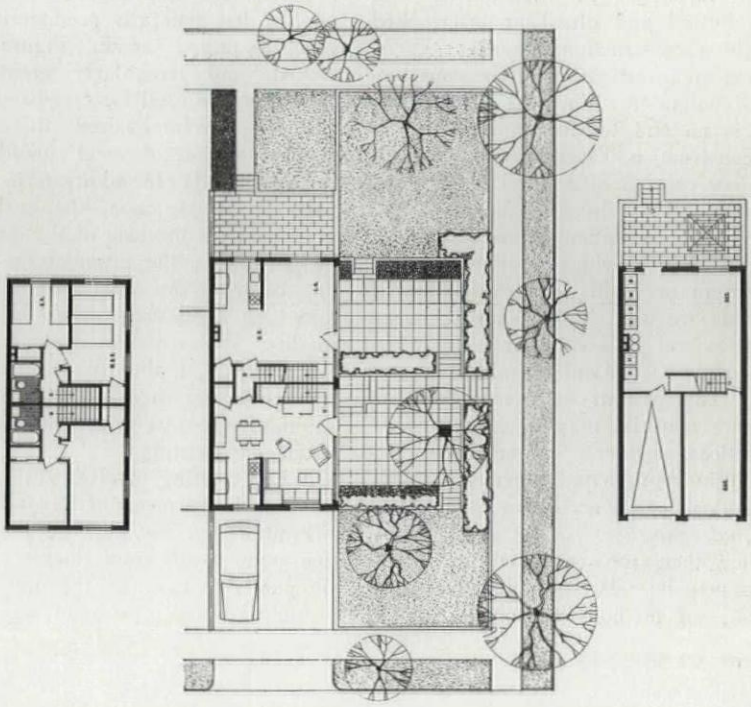
The long-range success of a residential area depends just as much on the proper planning of exterior spaces as it does on the architectural competence of the house. In the square block plan (above), *cul-de-sacs and semi-public interior commons have been combined. The plan also includes private gardens for each house and a large central public park. The rectangular block plan* (left) *employs loop streets which serve about 80% of the houses. A number of substantially sized commons are never more than 150 ft away from a dwelling, and a walkway system through the entire block offers a variety of close and distant vistas.*





Three of the many examples of house plans are shown here to illustrate the general architectural competence of the proposals. Of particular interest, we feel, is the 16-ft plan (above) *in which a remarkable degree of spaciousness and livability has been achieved. Staggering of floor levels with vertical circulation at the center of the house, and avoidance of the narrow third bedroom make this plan eminently suitable for dense urban areas. The slightly wider version* (center), *the 18-ft wide rowhouse, permits the placement of two bedrooms side by side. The two-bedroom "duplex"* (below) *is suggested for use as an owner-tenant combination at the end of a row.*





Flush-Veneered Wood Doors *by Harold J. Rosen*

Flush-veneered wood doors have been used for many years. The flush surfaces, whether in natural or painted finish, have a simplicity and pleasing appearance in harmony with today's trends in architecture. In selecting a flush-veneered wood door, the architect must of necessity choose from those being manufactured. How can he determine which of the different door constructions will best withstand warp, twist, or cup; delamination or separtion of veneer or plywood; and pronounced checking of face veneers?

For every theory concerning the construction of flush-veneered solid- and hollow-core wood doors there is at least one manufacturer who is making that door.

Solid-core doors are being manufactured and extolled by its producers whether they are constructed with a bonded core (no stiles or rails), floating core (vertical blocks within a stile and rail frame), or bonded stile and rail core (stile, rail, and panel units) all as defined in Commercial Standard 171-50, Hardwood Veneered Doors. Similarly and with equal vigor, these manufacturers will recommend the species of wood and the manner in which the solid core is to be constructed: short pieces, long pieces; vertical arrangement, horizontal arrangement; core blocks with contacting surfaces glued tight against one another or slotted and separated to permit expansion. When it comes to door faces we are again confronted with varying claims as to the virtues of thick-sawed veneers as against thin- or standard-face veneers and crossbandings. As for edge strips, they run the gamut from softwoods to hardwoods, variations in thicknesses, and either butted and glued or interlocked and glued construction.

When an investigation of the construction of hollow-core doors is undertaken, there is no end to the ramifications in core construction. Essentially the hollow-core door consists of a frame, formed by the stiles and rails, and inside of the frame a noncontinuous arrangement of material that provides support for the outerlayers or facings. Several different materials are used in the space between the stiles and rails such as wood, fiberboard, paperboard, and resin-impregnated paper. The pattern or arrangement of this core material may be in the forms of lattices, ladders, paper tube sections, resin-impregnated paper honeycomb, fluted block cores, accordion type veneer cores, *ad infinitum*.

Other than the manufacturer whose claims may be colored by the investment in his own methods of manufacturing, there is at least one good unbiased source of information concerning the best practice in door construction and that source is the Forest Products Laboratory, a division of the Forest Service, U. S. Department of Ariculture.

Warping is classified as either twisting or cupping. Twisting may be defined as that type of warping in which one corner is out of the plane of the other three. When laid on a flat surface, three corners of such a door can be made to rest on the flat surface, but the fourth will be off the surface when the other three are touching. A door is cupped or bowed, if, when laid on a flat surface, the four corners can be made to touch but the center portion of the door is raised from the flat surface. Both types of warping result from somewhat different causes, but may occur at the same time. The National Woodwork Manufacturer's Association permits a warp or twist not to exceed ¼ inch in their standard door guarantee.

In 5-ply lumber-core solid-core doors the flatness of the door is determined in part by the thickness, species, and quality of the lumber core, and in part by the grain direction and quality of the crossbands. To insure flatness, the best woods for use in cores are those of low density and shrinkage. Basswood, poplar, and cedar are representative of this type. Cores blocks should be specified as a species of wood weighing not more than 2300 lb per 1000 board ft when kiln dried to a moisture content of 6 percent. Crossbands are most essential in maintaining a door free from twist. One of the simplest and least costly methods for reducing twisting is to select for crossbands those species, like aspen, basswood, and poplar, that generally produce reasonably straight-grained stock. Figured, interlocked, and irregularly grained stock should not be used for crossbands. It cannot be overemphasized that straight-grained species of wood should be used for crossbands. In addition, to obtain a balanced construction, the grain of the crossband on one side of the door should be parallel to the grain of the opposing crossband on the other side of the door, and both crossbands should be of equal quality. It has been demonstrated experimentally in thin panels that a variation of 5 degrees in the direction of the grain of opposing crossbands has caused noticeable twisting.

While twisting involves grain direction, cupping is the result of forces of unequal magnitude on the two sides of a door. This may result from thicker crossbands on one side than on the other; use of straight-grained crossband on one side and cross-grained crossband on the other; use of partially rotten crossband on one side and sound crossband on the other; dissimilar species on either side; and by placing one face at a high-moisture content and the other at a low-moisture content. Defects of this nature can only be controlled by the door manufacturer. However, cupping may result during installation by providing a highly resistant finish on one side of a door and either no finish or one low in resistance to moisture movement on the other side.

Thickness of face veneers likewise affect the performance of a door in such matters as delamination and face checking. Previously with casein glues, thick veneers such as ¼ inch were used to retard the movement of moisture from the outer surface of the door to the nonwaterproof glue line and so reduce the danger of delamination. With the advent of durable resin glues such as phenol-resin and resorcinol-resin, the thick-face veneer is no longer essential. Laboratory tests have demonstrated that a well made panel glued with a water proof resin glue will not delaminate in average service. The face veneer is restrained from shrinking and swelling by the crossband. The thinner the face veneer, the closer the surface of the panel is to the crossband, and the more effective is the restraining or stabilizing action of the crossband. Consequently, face checking is less pronounced on panels with thin-face veneers than on panels with thick-face veneers. Studies of exposed plywood, have shown that panels faced with ⅛ inch thick veneers develop more pronounced face checks at an earlier date than panels with faces 1/16 inch thick. It follows therefor that a well made 5-ply lumber-core door having a face veneer using 1/24 or 1/28 inch standard thickness can be expected to give a performance somewhat superior to that of a similar door having a face veneer about ⅛ or ¼ inch thick. The standard door guarantee of the National Woodwork Manufacturer's Association contains the following statement: "Doors with face veneers ⅛ inch or thicker will not be guaranteed against the opening of joints or checking of face veneers."

With this information the architect and specification writer should be in a better position to evaluate the claims of door manufacturers as to the performance of their doors. If the architect is still chary of these claims he can specify those doors which now carry a lifetime guarantee such as "Golden Dowel" by Roddis Plywood, "Stay-Strate" by U. S. Plywood, or "Tee-Core" by Morgan Woodwork.

Louise Sloane

living areas

Three sharply contrasted residences—a California designer's home, a desert house in Palm Springs, a modern art collector's New York City apartment—reveal the differentiated interior design techniques used to meet each owner's special needs.

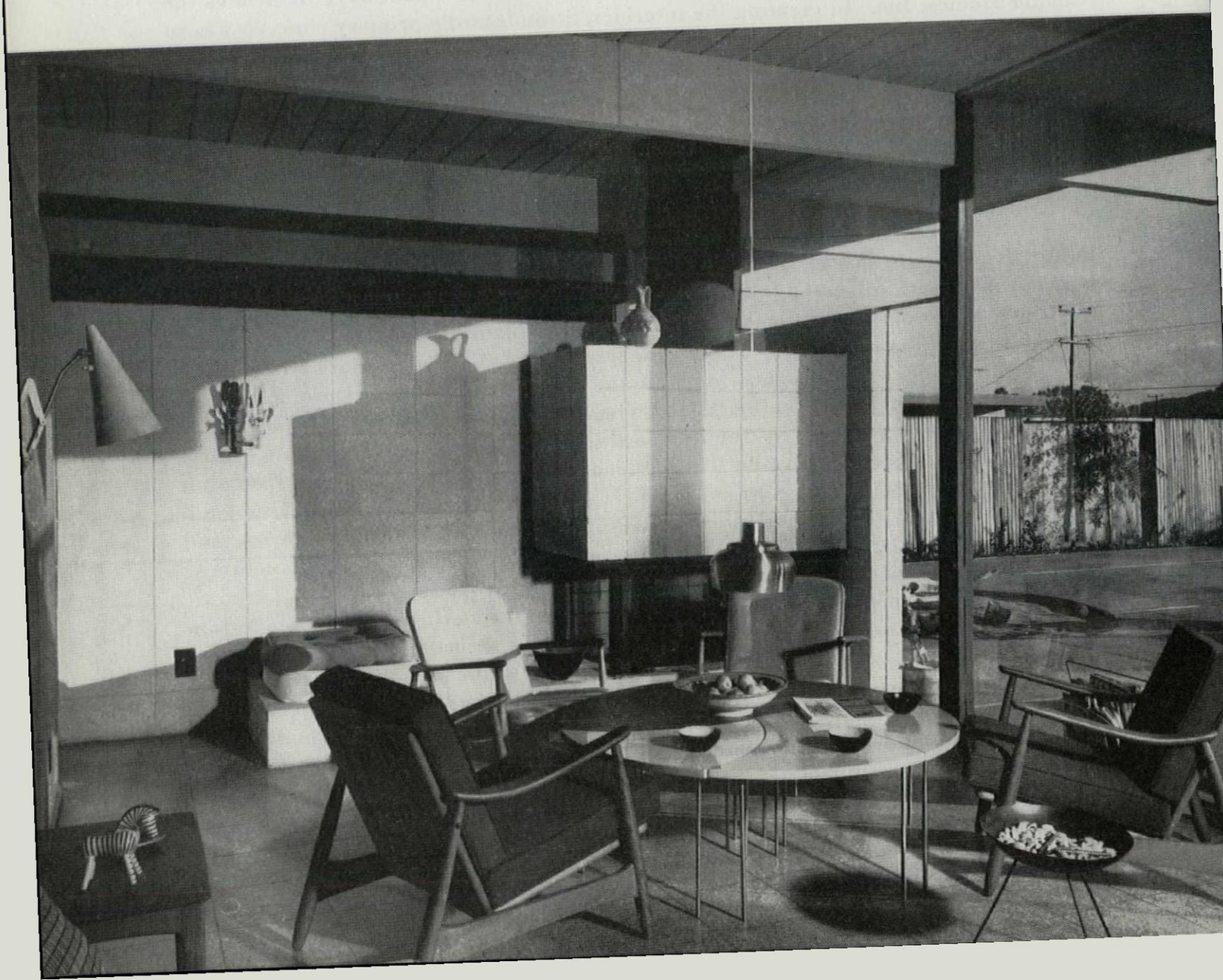
Danish-born Designer-Architect Torben Strandgaard, of San Francisco, chose for his family a house designed by Quincy Jones-Frederick E. Emmons & Associates for Eichler Homes, Inc. In creating the interiors, Strandgaard's primary concern was to provide maximum usefulness and ease of maintenance for present living needs, as well as maximum flexibility as the family grows and certain requirements change. (The desire for such flexibility, incidentally, eliminated a proposed built-in storage wall as "too restrictive in spite of its architectural features.") Most of the furniture in the house was designed by Strandgaard, produced in Denmark, and is now available in the United States. Wherever feasible, the furniture is multipurpose (sofa-backs are removable for guestsleeping; coffee table may be used with cushions as a bench for extra seating; dining table extends to seat fourteen; chest serves as dresser or buffet; teacart acts also as serving table, with extension top). Furniture woods are teak and oak, with oil-rubbed finish; color accents are introduced in the upholstery, in clear basic color; walls, floors, and ceilings are in natural tones and textures.

In Frey & Chambers' desert house for Raymond Cree, the interiors are virtually the exteriors, since the house is oriented to the desert and mountain view, and generously windowed for its full enjoyment. Living room, guest rooms, and kitchen may be combined or separated by folding partitions for entertaining or for privacy. Natural materials (rock from site for the fireplace, vertical-grain plywood facing on walls and cabinets) contrast with steel-and-glass doors, painted ceilings, plastic-laminate counters, vinyl fabric on folding partitions, textured upholstery fabrics, and carpeting. Color plan also "brings the outdoors in," with muted sky-blue ceilings; carpet the pale terra cotta of the rocks; beige, tan, and ivory fabrics.

For the New York City apartment of Mr. and Mrs. Irving Richards, George Nelson used cornices and hung ceilings to overcome obtrusive structural elements; storage walls both for design value and for function; sheer white walls as display for the owner's contemporary paintings and sculpture. Appropriate but subservient to the paintings are color accents of green-yellow, orange, yellow, orange-red, and brown. Furniture blends more severe modern pieces with sculptured Scandinavian pieces; rich textural interest is introduced in the Moroccan area rugs and the bead curtain.

living areas

client	Torben Strandgaard
location	San Rafael, California
interiors	Torben Strandgaard



Photos: Phil Palmer

data

doors, windows

Sliding Doors: Arcadia Metal Products, 801 S. Acacia Ave., Fullerton, Calif.

Windows: "Rusco"/ The F. C. Russell Co., Colubiana, Ohio.

furniture, fabrics

Furniture: imported from Denmark/ designed and manufactured for Hagen & Strandgaard, Inc., 478 Jackson Sq., San Francisco 11, Calif.

Fabrics: Knoll Associates, Inc., 575 Madison Ave., New York 22, N.Y.; Blaa Fabrik, Denmark; L. F. Foght, Denmark.

lighting

Fixtures: Kemp & Lauritzen, Copenhagen, Denmark.

walls, ceiling, flooring

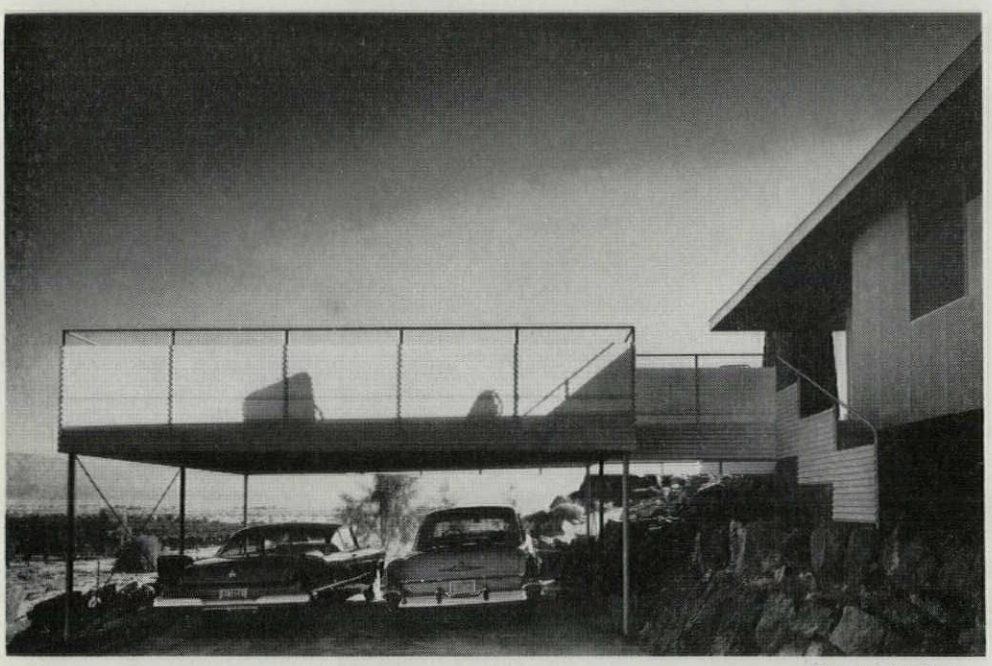
Walls: Philippine mahogany, redwood paneling/"Texture 111"/United States Plywood Corp., 55 W. 44 St., New York 36, N.Y.

Ceiling: redwood planks, stained white.

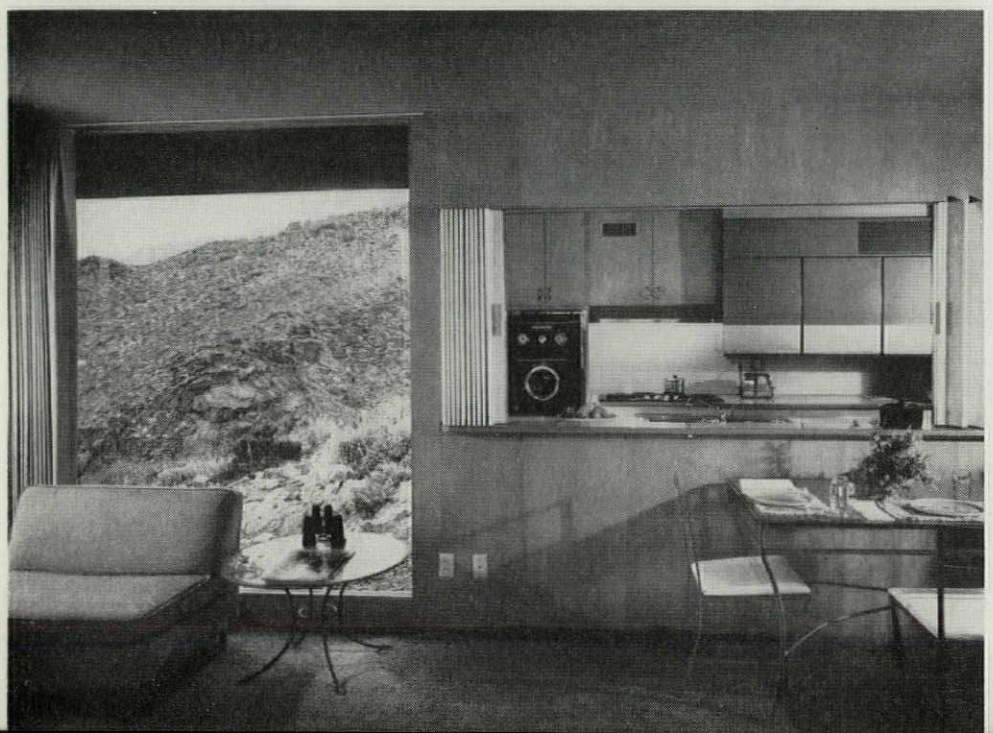
Flooring: cork tile, asphalt tile/ Armstrong Cork Co., Lancaster, Pa.

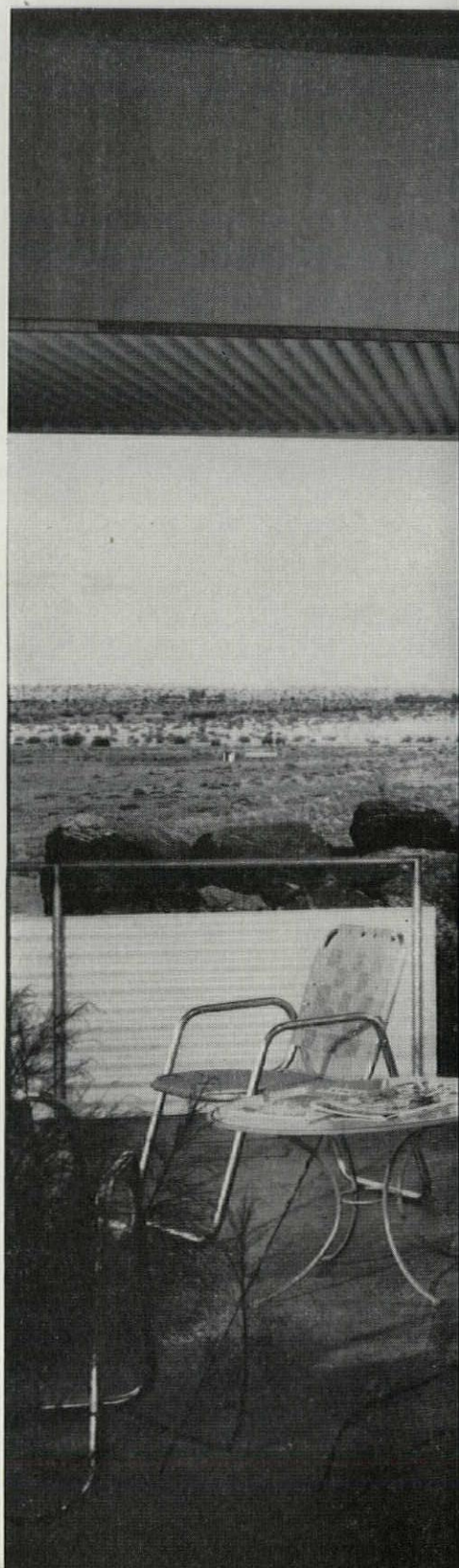
living areas

client | Raymond Cree
location | Palm Springs, California
architects | Frey & Chambers



Photos: Julius Shulman





data

doors, windows, partitions

Sliding Wardrobe Doors: "Dormetco"/ Sun Metal Products Co., Culver City, Calif.

Sliding Steel Glass Doors, Windows: Arcadia Metal Products.

Partitions: "Modernfold"/ Air Door, Inc., Div. of New Castle Products, Inc., New Castle, Ind.

equipment

Cooking Top, Oven: Western-Holly Appliance Co., 8536 Hays, Culver City, Calif.

Refrigerator: General Electric Co., 310 W. Liberty, Louisville, Ky.

Exhaust Fan: Trade-Wind Motorfans, Inc., 7755 Paramount Blvd., Rivera, Calif.

Counters: Formica Corp., 4630 Spring Grove Ave., Cincinnati 32, Ohio.

furniture

Table, Bench: Richbilt Manufacturing Co., 3275 Spring Grove Ave., Cincinnati 25, Ohio.

lighting

Installed: Emerson-Pryne Co., Pomona, Calif.

Portable: Nessen Studio, Inc., 5 University Pl., New York 3, N.Y.

walls, ceiling, flooring

Walls: fir plywood/U.S. Plywood Corp.

Stainwax: Samuel Cabot, Inc., 228 Oliver Bldg., Boston 9, Mass.

Ceiling: Gypsumboard, painted.

Flooring: vinyl-asbestos tile/Armstrong Cork Co.

Carpet: cotton boucle/Patrick Carpeting Co., 113 W. Ann St., Los Angeles, Calif.

living areas

client	Mr. and Mrs. Irving Richards
location	New York, New York
interiors	George Nelson & Company, Inc.
architect-in-charge	Gordon Chadwick
lighting consultant	Gerald Ewing

Photos: Scott Hyde

data

cabinetwork, partitions

Storage Wall: "Omni-Pole" / shelf brackets, fittings of aluminum/Structural Products, Inc., Charlotte, Mich.

Construction: Charles V. W. Brooks, 506 W. Broadway, New York, N.Y.

Bead Curtain: Karl Mann Associates, 16 E. 55 St., New York 22, N.Y.

furniture, fabrics

Modular Seating: Herman Miller Furniture Co., Zeeland, Mich.

Occasional Tables: Laverne, Inc., 160 E. 57 St., New York 22, N.Y.

Sculptured Chairs: designed by Finn Juhl / imported by Richards-Morgenthau Co., 225 Fifth Ave., New York 10, N.Y.

Upholstery: Thaibok Fabrics, Ltd., 3 E. 52 St., New York 22, N.Y.; Far Eastern Fabrics, Inc., 171 Madison Ave., New York, N.Y.

Drapery: Saran net/J. H. Thorp & Co., Inc., 250 Park Ave., New York, N.Y.

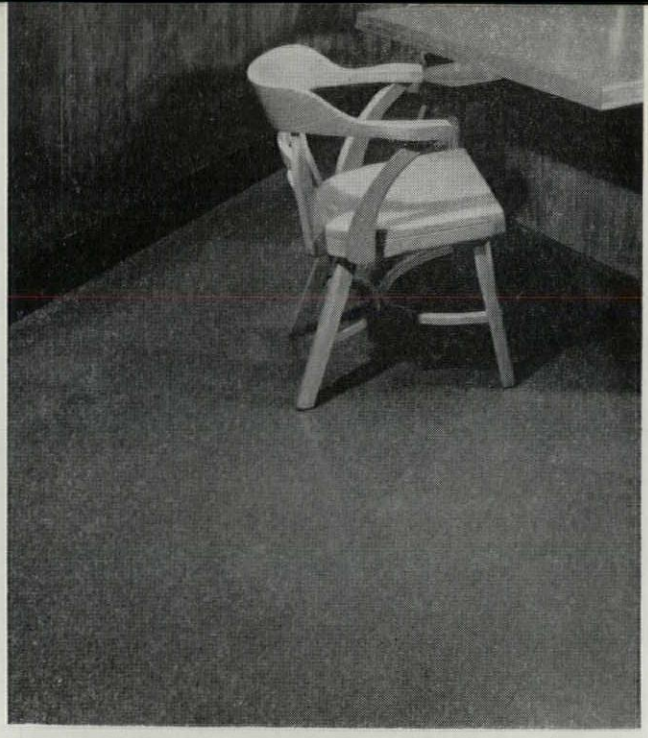
walls, ceiling, flooring

Walls: painted.

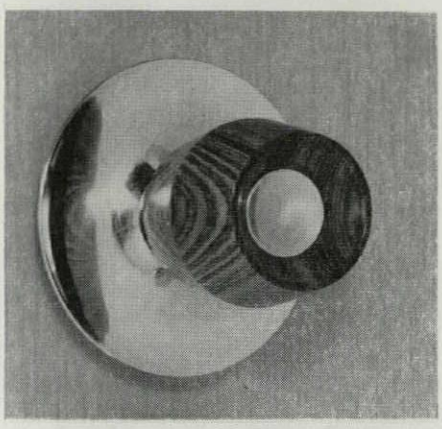
Ceiling: foyer, teak-wood slats, oil-finish, hung ceiling.

Area Rugs: Moroccan import/Mauretania Fabrics, Inc., 140 E. 56 St., New York 22, N.Y.

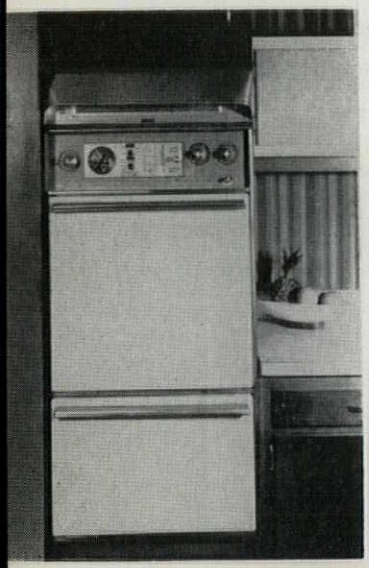
p/a interior design products



Doorknob: (below) from a new collection of decorative doorware/knob is of cocabola wood or rosewood, with concave rose/2-in diameter/ **P. & F. Corbin, New Britain, Conn.**



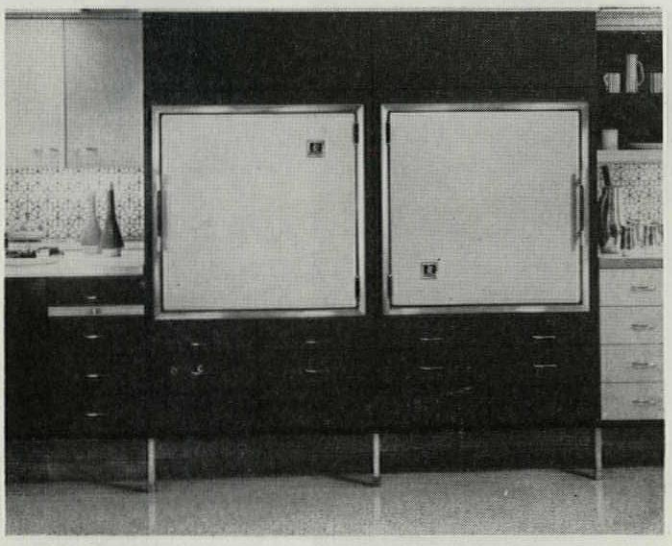
Flooring Tile: (above) "Par-Tile"/wood surface particle board, tough and resilient/may be stained, finished, waxed for various effects/applied to floor with mastic adhesive/available in variety of thicknesses/developed by Pacqua Div. of Pacific Plywood/**Plywood Service, Inc., Dillard, Ore.**



Wall Oven: (left) automatic wall oven with "drop-leaf" door that serves as loading and unloading shelf, swings down all the way for easy cleaning/"Custom Imperial" model has double oven, with both doors of the "drop-leaf" type/may be installed in standard 24-in cabinet, fits almost flush with wall or front cabinet surfaces/**Frigidaire Div., General Motors Corporation, Dayton 1, Ohio.**

Refrigerator, Freezer: (below) "Gourmet" refrigerator (left), "Custom Bilt-In" freezer (right)/compressor, integral with unit, is located above and outside food storage cabinet/in stainless steel, Copper-Glo, matching wood, 28 colors/**Revco, Inc., Deerfield, Mich.**

Packaged Kitchen Appliances: (above) "Kopper Kettle" kitchen, incorporating co-ordinated built-in units that include gas and electric ovens, surface cooking units, automatic dishwashers, refrigerator-freezers, disposers, ventilating hoods/in Antique Copper, Satin chrome, stainless steel, "Copperlux"/**Chambers Built-Ins, Inc., 2012 N. Harlem Ave., Chicago 35, Ill.**



Victex VEF
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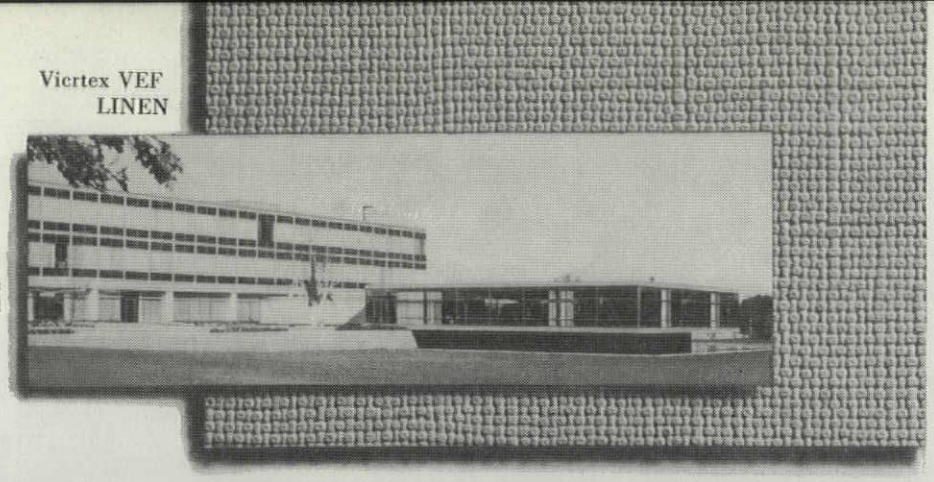

ARCHITECTS:
Skidmore, Owings & Merrill

another VICRTEX V.E.F. INSTALLATION

CONNECTICUT GENERAL gets lifetime premium value with VICRTEX V.E.F.* everlastingly beautiful WALLCOVERING FABRICS

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LUZON

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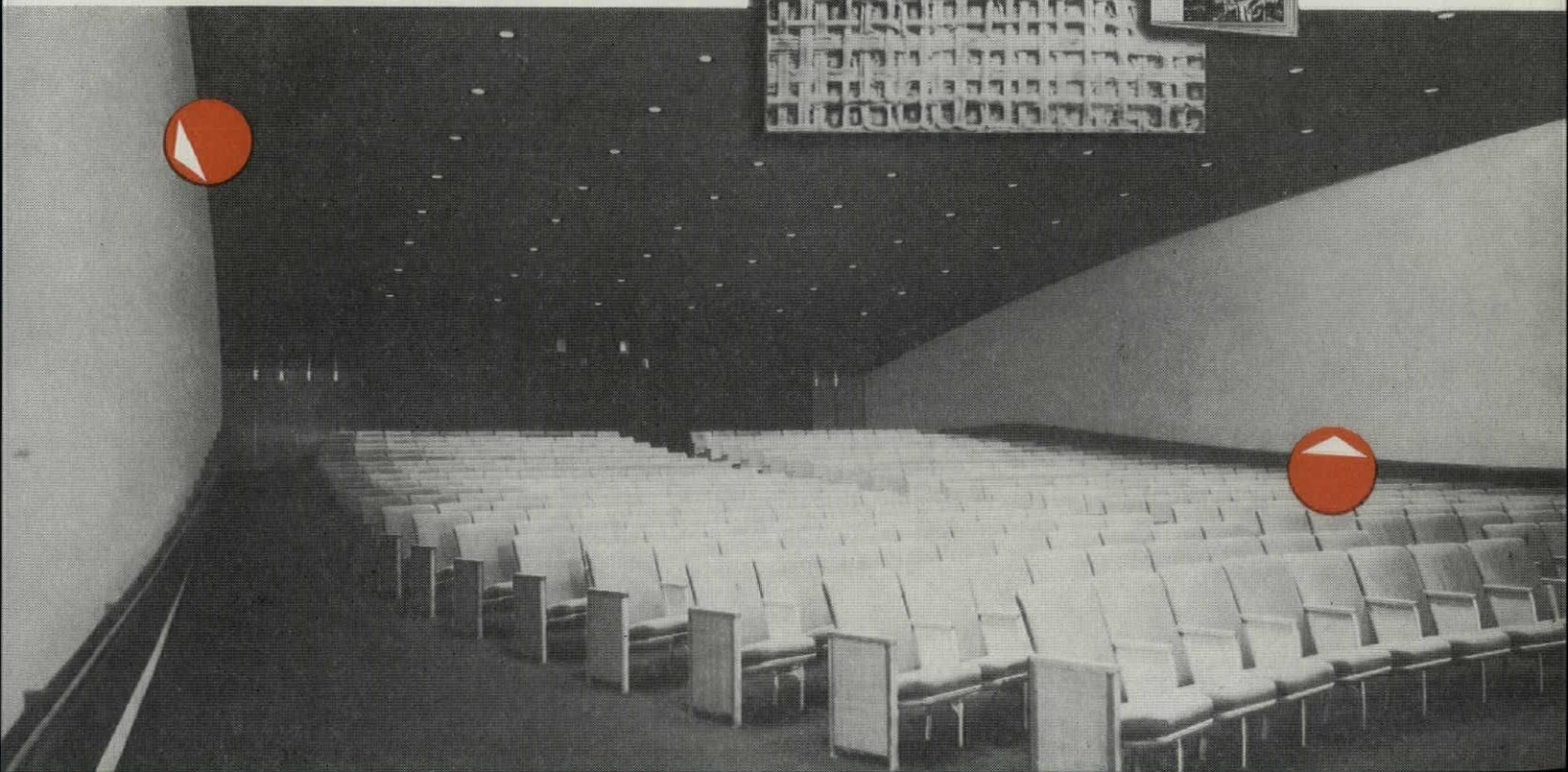

Lobby of the Fontainebleau Hotel • Architect: Maurice Lapidus, AIA, Miami Beach, Fla.

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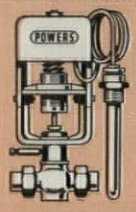

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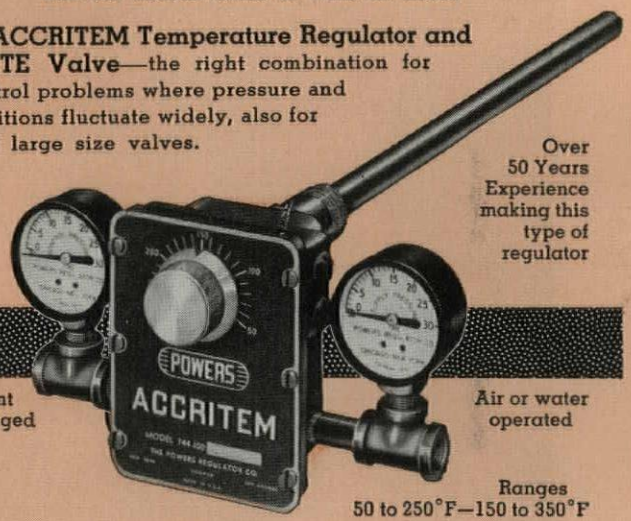

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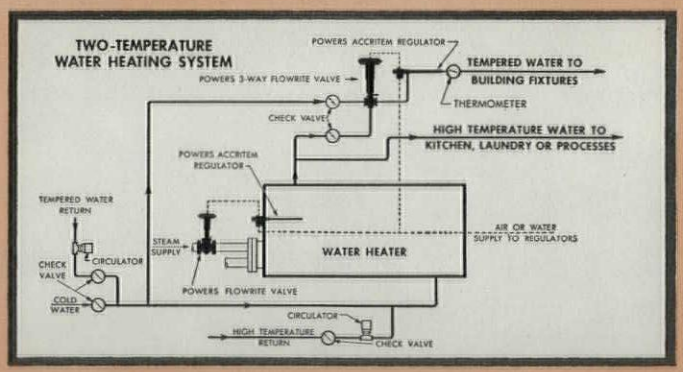

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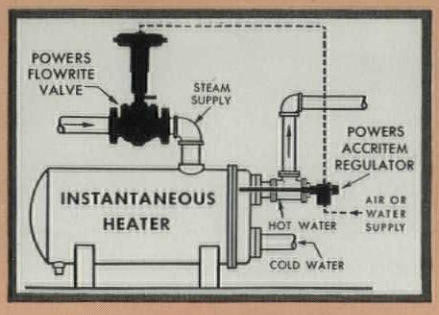

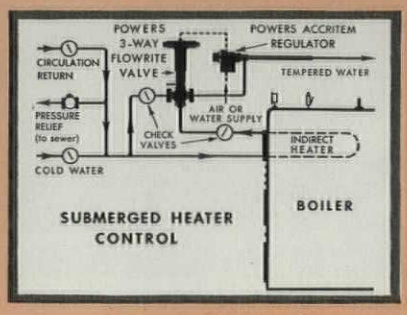

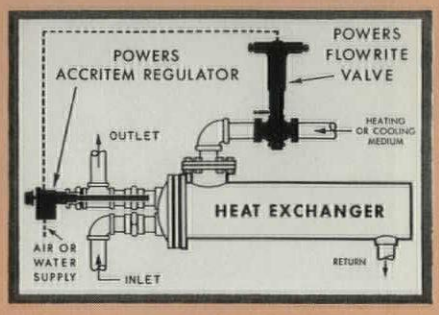

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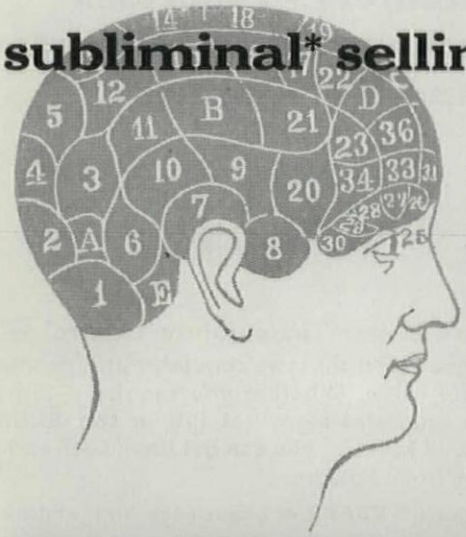


This attractive young lady is not the type that usually tries to spruce up her husband. But right now she's doing a great selling job because that's the most attractive suit she's ever seen. In fact, everything in the windows of Moore's new San Francisco store looks especially "buyable." The secret, of course, is in the lighting. Moore's uses display window ceilings of Honeylite to diffuse a soft, even, completely shadow-free light that makes window shopping a pleasure—buying a must. The outstandingly low surface brightness of Honeylite displays merchandise in its finest light—and it is subliminal* (below the threshold of consciousness). ■ Robert Israel, Moore's general manager in San Francisco, appreciates that modern lighting is a part of modern building and merchandising. That's why he chose Honeylite...light-diffusing aluminum honeycomb by Hexcel. ■ For prices and design information on Honeylite see your nearest lighting distributor or write Hexcel Products Inc., 2741 9th Street, Berkeley 10, California.

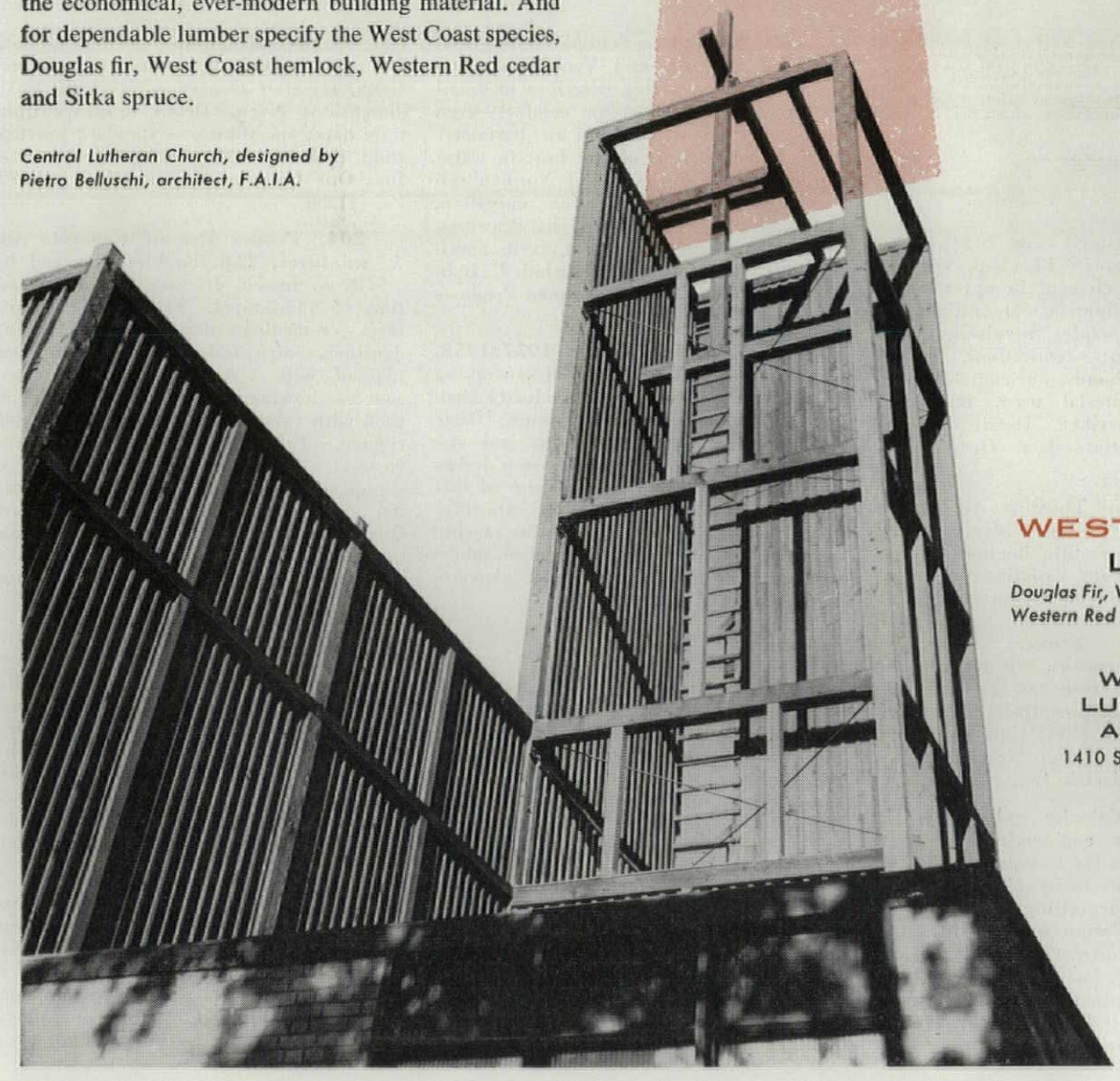
HONEYLITE®
Modern lighting by Hexcel Products Inc.

MODERN DESIGN USES WEST COAST LUMBER

Function and dominance are imaginatively combined in this bell tower, constructed completely of lumber. The tower complements the all-wood wall to create a harmonious entity, with fenestration and wall an integrated composition and neither windows nor wall dominant. The tower is not enclosed because, functionally, it requires no weather protection.

For freedom of design, of expression—select wood, the economical, ever-modern building material. And for dependable lumber specify the West Coast species, Douglas fir, West Coast hemlock, Western Red cedar and Sitka spruce.

Central Lutheran Church, designed by Pietro Belluschi, architect, F.A.I.A.



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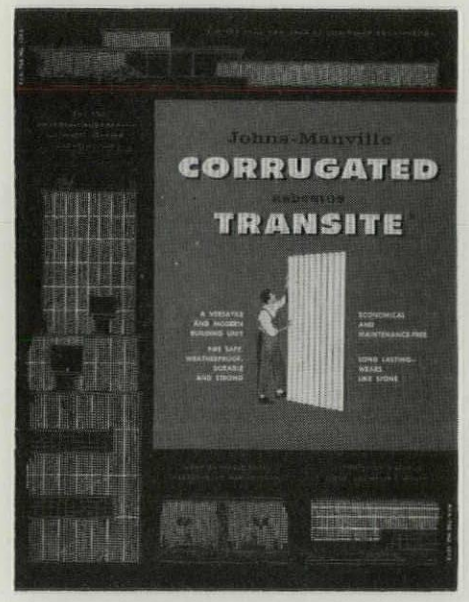

Properties and uses of a versatile building material—corrugated transite—are outlined in a new brochure (left). *Asbestos and cement are combined to form structurally strong sheets 42" wide by 3' to 11' in length. Light gray in color, this durable material may be painted if desired. Detail drawings show erection over steel or wood framing, and construction of joints. Numerous photos illustrate specific applications, particularly use in combination with other materials such as metals, plastics, brick, stone, wood.*

208. Corrugated Asbestos Transite, *AIA 12-F-2, 32-p. Johns-Manville Corporation.* E.C.D.

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.

air and temperature control

162. Design Criteria for Stacks and Breechings, Chapter 12, 23-p. file discusses this basic element in operation of fuel-burning equipment. Definitions of terms used, principles involved, sizing techniques given; connections, height, stack caps, rain hoods, horizontal breeching, elbows, material used, insulation, dampers are described. Detail drawings and graphs illustrate data. Orr & Sembower, Inc.

163. GE Custom Thinline Air Conditioner, AIA 30-F-1, 4-p. folder describes new, smaller air-conditioning unit. Newly developed spine-fin cooling-condensing coils allow more cooling surface; compressor gives simultaneous compression and suction action. Features include easy controlling, performance selector, air pattern director, air freshener, air filter, automatic temperature control. Two 1 hp models—115-v and 230-v. Cutaway photo, specification data. Room Air Conditioner Dept., General Electric Co.

★ **164. High-Velocity Systems,** 52-p. catalog gives engineering and performance data for 19 types of Thermotank-Agitair high-velocity air-conditioning systems. Units for ceiling, perimeter, interior-zone installation number 106. Operation and construction data, charts, drawings, photos for each general type. Performance information in table form. Duct design, typical systems, layouts displayed. Air Devices Inc.

★ **165. Manual on School-Room Packaged Heating and Ventilating Systems,** 38-p. catalog describes in detail requirements for classroom comfort—even temperature, distribution of air, perimeter heating, comparison of wet heat to warm air. Complete discussion of Norman system—applications, installation operation, maintenance, etc. illustrated by drawings. Performance and design data given. Specifications, engineering data included. Individual units also shown. Norman Products Co.

166. Aspiration, Winter 1957/1958, 24-p. special edition of manual concerning design of ducts for air high-velocity heating and air-conditioning systems. Basic definitions of important terms and systems, full description of step-by-step design procedures and simplified resumé of this procedure, duct construction drawings given. Layout and work sheets for specific examples. Numerous performance tables with cutaway drawings included. Anemostat Corp. of America.

construction

★ **203. Test-O-Graph,** 4-p. leaflet shows how to test architectural porcelain when specifying grades. Tests can be performed in the office—means of testing are simply described. Included are tests for visible stain, dry-rub, wet-rub, blurring highlight, disappearing highlight. Graphic chart illustrates test results and how to evaluate them. Davidson Enamel Products, Inc.

Metal Grating Handbook, 32-p. book establishes standardization in metal grating industry. Three years research provided technical data included. Standard marking system shown by drawings and photos. Safe loads table, conversion factors, sample calculations, as well as data for cross bars, bent connecting bars, anchors, erection clearances, nosings, tread dimensions given. Detail drawings illustrate data; specifications, standard practice code included. Metal Grating Institute, Inc., One Gateway Center, Pittsburgh 22, Pa. $1.00.

★ **204. Proper Use of Concrete Admixtures,** 22-p. booklet prepared by R. A. Jessen, discusses use and selection of admixtures. Three basic admixtures — retarding densifier, accelerating densifier, air-entraining resin—are explained with test data from numerous sources showing characteristics of each as used with varying amounts of water, sand, cement. Tables illustrate bleeding, etc. Necessary uniformity—water content v. slump, effect of temperature on uniformity, strength development — included. Quality control for concrete and evaluation of field tests, summary of basic properties given. Admixture specifications suggested. Sika Chemical Corp.

205. Aluminum Expansion Joint Covers, AIA 4-E-11, 4-p. booklet covers expansion joint covers for floors, walls, ceilings, exterior walls. Detail drawings illustrate numerous components and types. Rubber-type strips are used with plain, corrugated, and abrasive plates for floor installation. Socket-head set screws are feature of interior covers. Full size details of component parts complete folder. Architectural Art Mfg. Co.

206. Kaiser Aluminum in Architecture, AIA 15-J, 24-p. booklet contains manufacturer's line of alloys and mill products for architectural applications. Included is information on available extrusion and sheet aluminum, properties of alloys, surface treatments such as porcelain

enamel, and characteristics and advantages of aluminum. Selection tables give recommended alloys for specific uses. Detail drawings and photos serve as illustrations. Kaiser Aluminum & Chemical Sales, Inc.

207. A Guide to Erie Porcelain Enamel Colors, AIA 17-A, 4-p. folder contains samples of 50 typical colors available in porcelain-enamel panels. Finishes in satin, matte, or stipple surfaces. Description of coloring process given. Color matching is also possible. The Erie Enameling Co.

209. Crest Tile-Set, AIA 23-P, 16-p. booklet describes new thin-bed, inorganic Portland-cement material for dry installation of real clay tile, ceramic mosaics, glass mosaics, marble, marble tile, etc. Material is a dry powder to which water is added—eliminates mortar-box mixing, wetting tile, waterproofing, lathing; can bond directly. Material is waterproof and frostproof. Complete data on where and how to use it, plus characteristics included. Specifications and installation drawings. Kaiser Manufacturing, Inc.

210. Metal Curtain Wall, CWS-3, AIA 17A, 4-p. folder containing elevation and detail drawings of curtain-wall framing system designed for stainless steel. Three basic components—mullion, wall panel, and window unit—are individually shop fabricated. Stainless-steel mullions allow expansion, eliminate exterior screws. Wall panels are variable—stainless steel, porcelain enamel—and are insulated. Window unit has stainless-steel frames and fasteners, welded intersection, single or double glazing. Available in aluminum, bronze, or stainless steel. Suggested specifications included. Michaels Art Bronze Co.

211. Soil Compaction by Vibroflotation, 8-p. booklet explains application and operation of vibroflotation. Compaction of 8′ to 10′ in diameter cylinders of sandy soil by this method is shown in detail. Overlapping the cylinders in a predetermined pattern eliminates need for piling. Features—high-bearing capacity and elimination of settlement—described in detail. Typical questions asked about vibroflotation answered and explained. Applications for various types of structures given. Vibroflotation Foundation Co., subsidiary of The Rust Engineering Co.

212. Simpson Redwood Grades, 12-p. publication illustrates five grades of redwood. Description and available sizes are given for Clear All Heart California Redwood, Aye Grade California Redwood, No. 1 Shop California Redwood, Simpson Palo Alto, Merchantable Redwood. Photographs showing grain, color, given for each. General information for finish grades and construction grades supplied. Simpson Redwood Co.

1958 Fir Plywood Catalog, AIA 19-F, 20-p. guide in three parts gives basic data on fir plywood standard grades and specialty products. Twelve-page section is devoted to plywood used in construction and design, including such information as tabulated data on plywood grades, building code requirements, design and property data, construction detail and structural drawings for floor, roof, wall installations; use of plywood for concrete forms. Other sections devoted to fir plywood in product design and special products. Write direct: Douglas Fir Plywood Association, 1119 A St., Tacoma 2, Wash.

213. Structural Glued Laminated Larch, AIA 19-K, 12-p. file folder gives standard specifications and design for glued laminated Larch — specially prepared wood laminations with grain longitudinally parallel. Working stresses, modification of stresses described with tables for various conditions. Specifications for lumber, adhesives, end joints; fabrications, finished sizes given. Standard-appearance grades discussed. Western Pine Associations.

214. Engineered for Design—Aerobat Curtain Walls, 8-p. booklet describes complete package unit of aluminum windows, window wall, curtain wall, and various entrance treatments. Discussion of intermediate projected windows which may be used individually, as one-story continuous windows, or integrated component of curtain wall. Feature is continuous wool pile seal to minimize air infiltration. Monumental projected windows have 1/8″ wall thickness, can be accessory to curtain-wall system. Construction details given as well as specifications for window series. Drawings of single story, multistory curtain walls. Aerobat Industries Inc.

215. Tensioning Materials for Prestressed Concrete, 16-p. booklet provides information on various types of tensioning materials used in prestressing concrete. Method of tensioning for uncoated stress-relieved strand for pretensioned bonded design described; element is 7-wire strand —properties or strand included. Similar information set forth for post-tensioned design, using galvanized strand. Details for post-tensioned strands for end fittings, bearing plates, typical jacking equipment. Method of prestressing slabs on grade illustrated. Uncoated stress-relieved wire uses and properties shown by tables and photos. Construction Materials Div., John A. Roebling's Sons Corp.

doors and windows

339. Steelcraft Steel Doors and Frames, 12-p. catalog of doors for homes, schools, hospitals, offices. Fabricated from steel, doors are mechanically stiffened for rigidity—finish can be baked-on primer, finished colors, or wood grained. Detailed specifications given; standard types and sizes for doors and frames included. Drawings of swing doors; frame, hardware details shown. Exterior entrance door-frame units, sliding recess doors and sliding closet doors described. The Steelcraft Manufacturing Co.

340. Electric Doorman Units, AIA 16D, 12-p. catalog of doors for industrial and commercial applications. Four-fold door units featured, with description of operation, appearance, hardware, clearances given. Specifications outlined. Data on hospital and computor room door units, gate operators, pedestrian door operators, other applications given. Controls listed. Drawings and photos. Electric Power Door Co., Inc.

341. Miami Awning and Projected Windows, AIA 16-E, 16-L, 17-A, 18-p. catalog covering line of windows available. Frame and glass sizes given and illustrated. Balancing hardware features, specifications, construction drawings given—details of mullions, hopper, glazing. Operations and installation described and shown by photo and detail drawings. Miami Window Corp.

342. Working Glass, 6-p. folder discusses properties of colored plate glass. Three hues shown, with transmission analysis chart and data. Various colors, densities available. Glass offers control of light, heat, glare—gives possible design opportunities. Folder shows photos of actual installations in recently completed structures of note. Projected Air Force Academy installation pictured. Franklin Glass Corp.

(Continued on page 160)

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p/a manufacturers' literature

(Continued from page 159)

electrical equipment, lighting

452. Mercury Vapor Floodlighting, 18-p. bulletin describes line of heavy-duty mercury-vapor floodlights. Operating characteristics, economies, and color properties detailed for all available lamps. Selection chart given. Choosing ballasts and estimating floodlighting requirements included. Drawings illustrate specific lamps of various sizes. Two types of reflectors and three to five types of lenses available. The Pyle-National Co.

★ **453. Reflections on Hospital Lighting,** 24-p. publication containing seven articles by H. Haynes and K. A. Staley on hospital lighting, which appeared in *The Modern Hospital* during 1957. General categories include: "Lighting Public Spaces," "Lighting Corridors," "Lighting Nurses' Stations and Laboratories," "Patients' Rooms and Wards," "Dining Areas, Auditoriums, Chapels, Classrooms," "The Operating Theater and Recovery Room," "Sunlight, Sunlamps and Germicidal Tubes." Necessary footcandles and other factors in choosing appropriate lighting for these areas are detailed. Illustrated by photos and drawings. Large Lamp Dept., General Electric Co.

454. Seven Guides for Selecting and Installing Quiet Dry-Type Transformers, 8-p. bulletin acts as guide to selecting and installing transformers in commercial buildings where quiet is especially necessary, i.e., hospitals. Chart on average ambient sound levels for typical locations given. Photos and drawings. General Electric Co.

455. A Condensed Catalog of Sylvania Lighting Fixtures and Lighting Systems, AIA 31-F-2, 8-p. brochure of fixtures and systems for industrial, commercial, residential installation. Design advantages and construction discussed. Numerous fixture designs, ranges of light output, mounting methods are available. Each series is described and illustrated. Wall-to-wall lighting systems also included. Sylvania Electric Products, Inc.

456. Contemporary Lighting, 20-p. booklet includes types of recessed spot, flood, downlight, dome, directional, and general lighting series available, as well as specialized lighting equipment. Each type pictured by photo, described by material data, tables, detail drawings. Installation suggestions, photos given. Hospitality fixtures featured, with specifications, adaptability stressed. Swivel series, indirect fixtures shown. Lighting tables, details, advantages of each pointed out. Kurt Versen Co.

finishers and protectors

550. Swimming Pool Paint, 4-p. folder describes nonflammable, fast-drying paint for concrete swimming pools. Adhesive binder—Acrypolyrene—allows application of latex-alkyd material without primers. Can be used for fresh- or salt-water pools. Directions for application included; seven-day curing period required. Four colors available. Luminall Paints Div. of National Chemical & Manufacturing Co.

551. P. A. R., AIA 19A-3, 4-p. bulletin, discusses water-repellent finish for wood. Two types—pigmented for reddish brown woods, and clear for natural appearance. Qualities of finish: penetrates wood, resists moisture, protects against discoloration, does not blister or peel. Economy, durability claimed. Protection Products Mfg. Co.

552. Paint, AIA 25, 28-p. architect's specification manual aids selection of finishes for all surface conditions. Selection chart gives description of painting systems, collated with materials, surfaces, types of finishes. Various painting methods are evaluated, with new paint vehicle formulations stressed. Products are described by methods of application, drying times, calculated coverages, thinners necessary. Detailed specifications for interior, exterior applications given. The Glidden Co.

(Continued on page 168)

Floors for designing people

Bruce Block HARDWOOD FLOORS

Naturally Beautiful

Floor in room photograph, Bruce Laminated Blocks. Close-up shows Bruce Unit-Wood Blocks.

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• PHOENIX, ARIZONA, is basking in a limelight created by the new multi-million dollar cooperative apartment building, PHOENIX TOWERS. In the four 14-story wings are 60 spacious apartments surrounding a center core which houses elevators and stairs, with front and rear entrances to all apartments. Residents do not completely enter the building proper until they turn keys in their own doors. The building has a reinforced concrete skeleton. All enclosing walls and many interior walls are fireproof. Sound deadening materials were used throughout. Individual air conditioning and heating equipment is adjacent to each home. For the enjoyment of all the tenant-owners there is a large swimming pool with private cabanas, and a children's play area in a garden-like patio. Atop the building is a covered roof terrace. An underground garage provides space for 120 cars. For this building, which demonstrates superlative planning, SLOAN *Flush* VALVES were specified.

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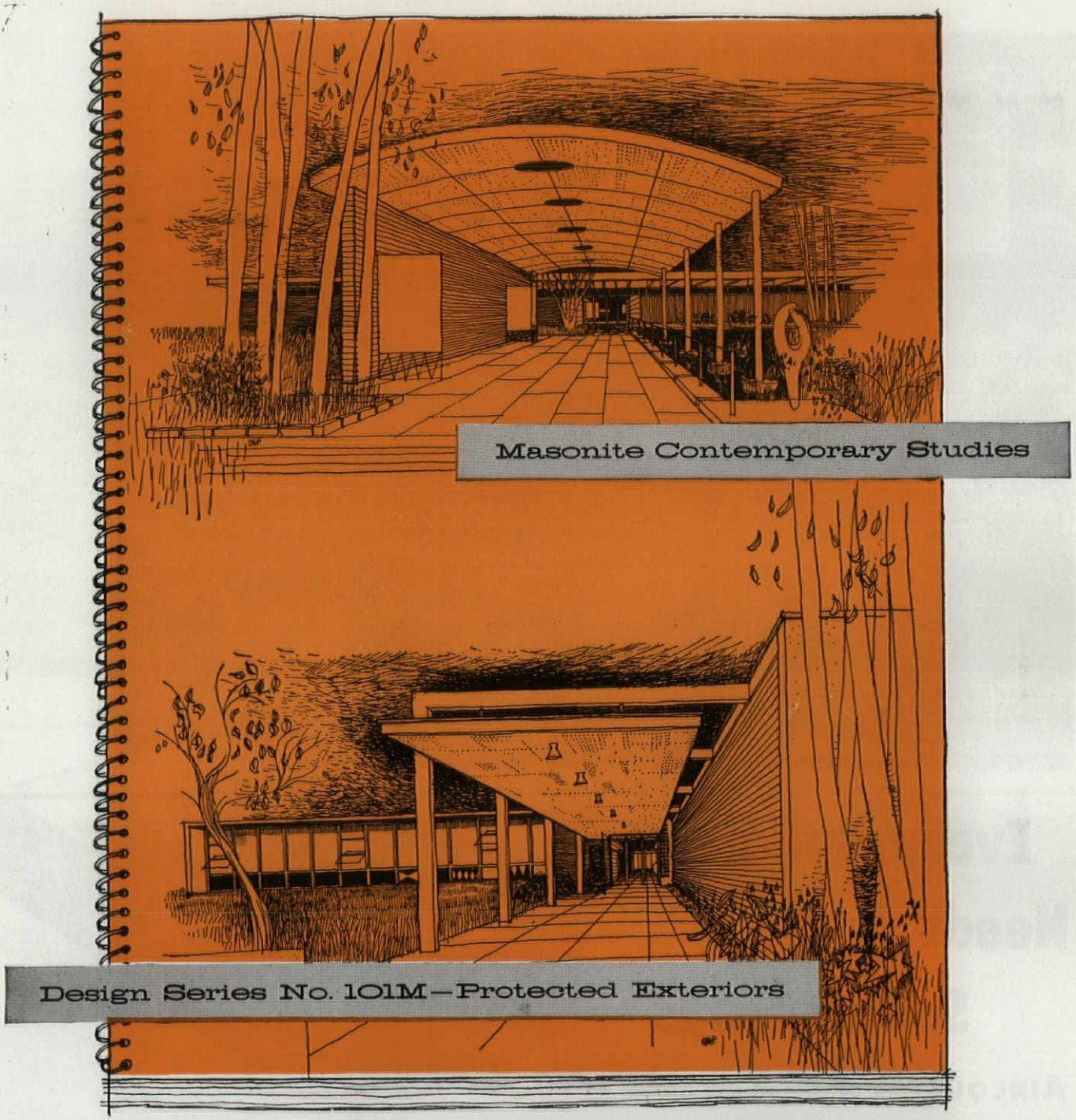

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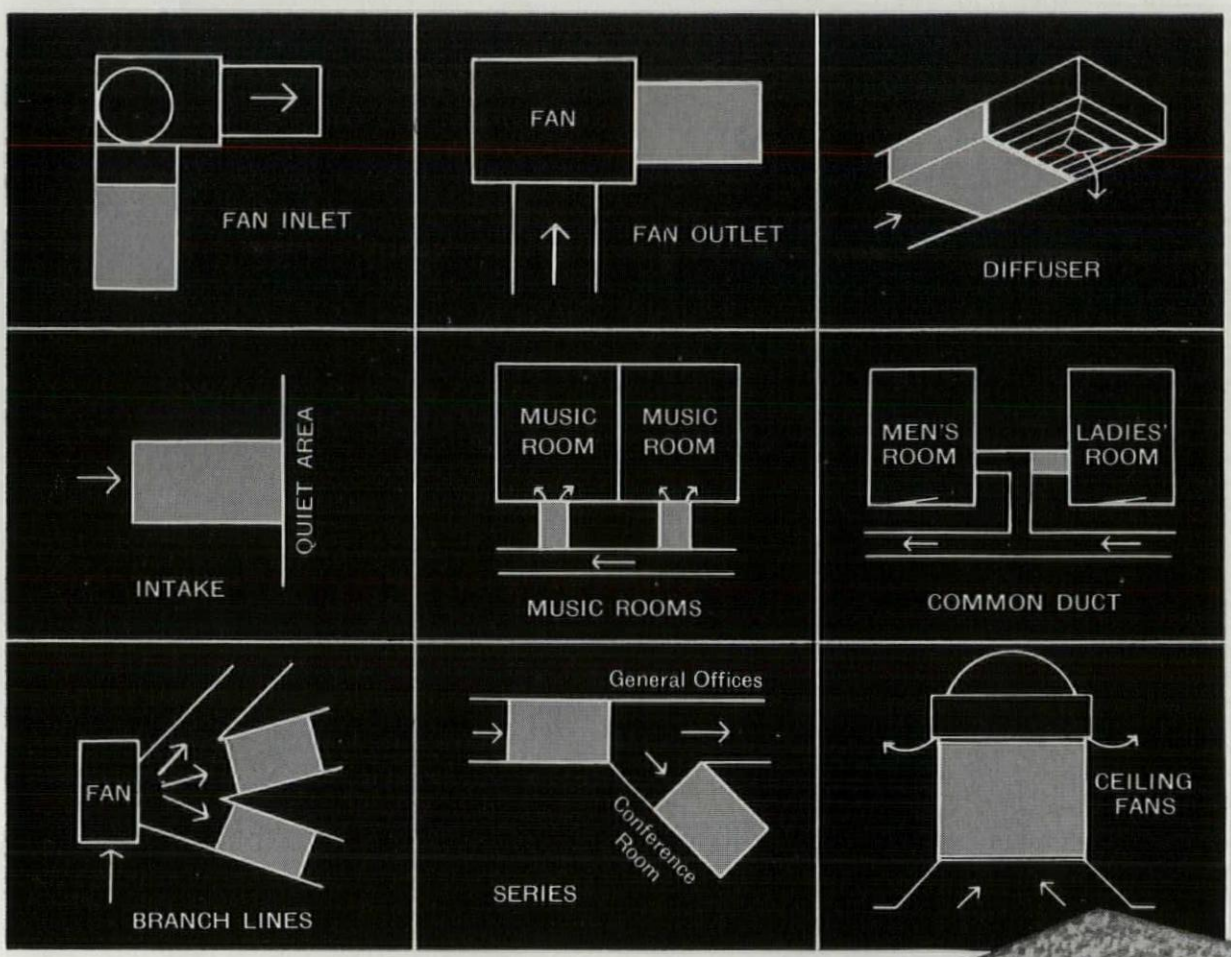

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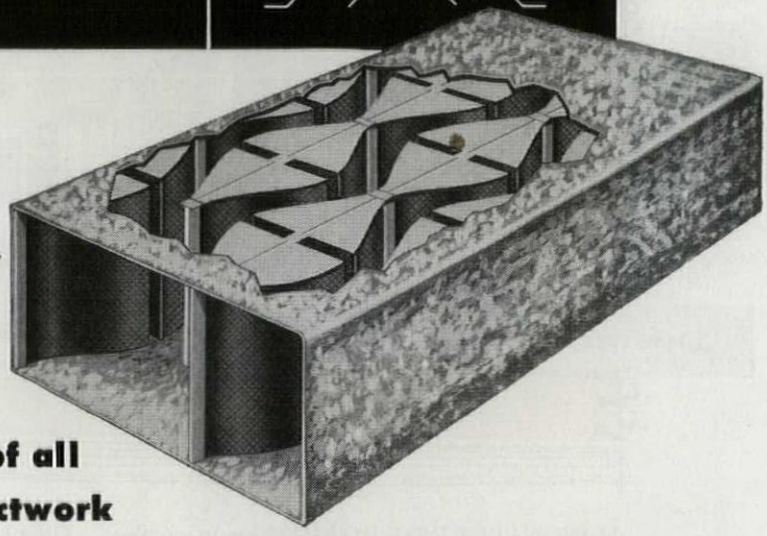

AIRCOUSTAT silences all noise of all frequencies traveling through ductwork

Eliminate disturbance, distraction and irritation caused by noises escaping from one area to another through ductwork.

Install AIRCOUSTAT Sound Traps. AIRCOUSTAT eliminates guesswork, wasted space and unnecessary expense of duct lining. You can guarantee your client trouble-free performance. You can estimate with complete confidence the performance of particular applications. If AIRCOUSTAT fits geometrically, it fits acoustically.

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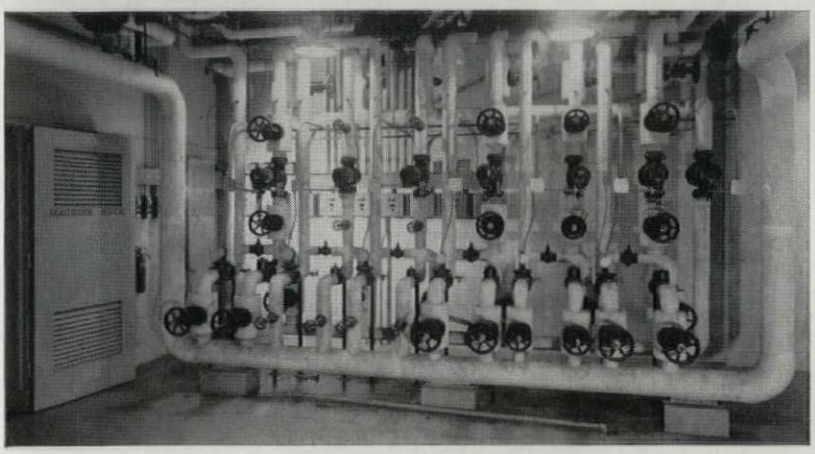
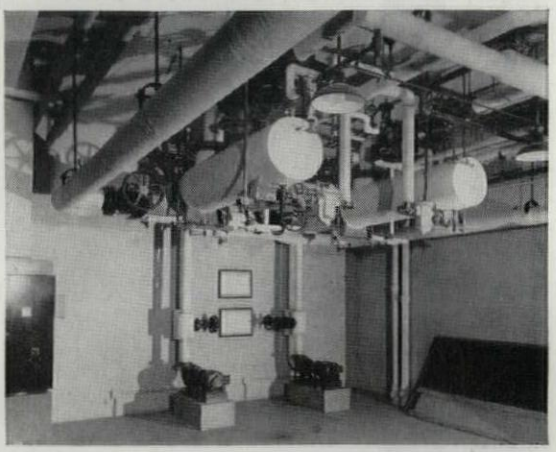
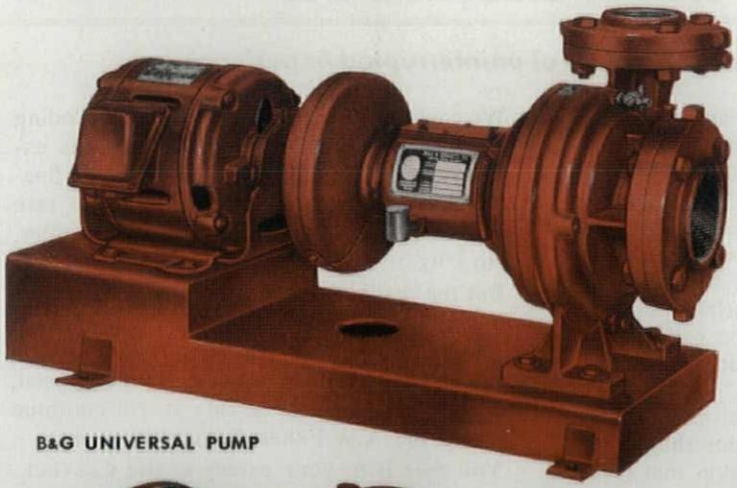


Secondary heating circuits are circulated by this battery of B&G Booster Pumps.



The piping of the primary circuit does not leave the apparatus room and is circulated by B&G Universal Pumps.

Architect: Leo P. Provost, A.I.A., Manchester, N. H.
Engineer: Romeo P. Morin, P.E., Manchester, N. H.
General Contractor: Harvey Construction Co., Inc., Manchester, N. H.
Heating Contractor: R. C. Peabody, Inc., Manchester, N. H.



B&G UNIVERSAL PUMP

B&G BOOSTER PUMP

This installation illustrates two important factors in the design of a satisfactory forced hot water heating system.

First, it employs primary and secondary pumping—a design arrangement developed by B&G for more accurate control of temperatures. As shown in the photos, B&G Universal Pumps circulate the primary mains and B&G Boosters circulate the secondary circuits supplying seven zones.

Second, the B&G pumps selected are noted for *quiet* operation—an all-important consideration. Transmission of pump noise through the piping system can penalize the most careful designing and installation.

B&G Booster and Universal Pumps are engineered and built to meet the exacting demands of water heating and cooling systems. These are not run-of-mine centrifugal pumps...they are distinguished by numerous features which assure *silent, vibrationless* operation. Among these are specially built, more costly motors, tested for quietness—oversized shafts of hardened alloy steel—long sleeve bearings—noise dampening spring couplers—oil lubrication and leak-proof mechanical seals.

That's why B&G Circulating Pumps are *preferred*...they're *quiet where silence counts!*

Hydro-Flo SYSTEM

Reg. U.S. Pat. Off.

BELL & GOSSETT
COMPANY
Dept. FG-37 Morton Grove, Ill.

Canadian Licensee: S.A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto 16, Ontario

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The Masters of the drawing board on every continent say that CASTELL #9000 is the world's finest wood-encased pencil.

Why?

Because this green polished perfect drawing tool is saturated with **"Black Gold"** graphite, the purest black mineral known to man, that assays at more than 99% pure carbon.

Because its low index of friction makes each CASTELL stroke outstandingly smooth, a pleasure to work with.

Because our exclusive microlet-milling process reduces granules to optimum shape and size, producing an opaque adhesion that gives you cleaner, sharper blueprints.

We could talk about CASTELL's Color-Coding that makes for instant identification — its exceptional lead strength and durability, its fine-grained cedar wood impregnated with rare waxes, its perfectly-graded scale of 20 degrees, 8B to 10H.

But the really significant answer is — *almost 200 years of uninterrupted manufacturing experience–since 1761.* Perhaps the next 200 years will produce a markedly superior pencil, but if it does you can be sure it will continue to carry the A.W.FABER-CASTELL imprint.

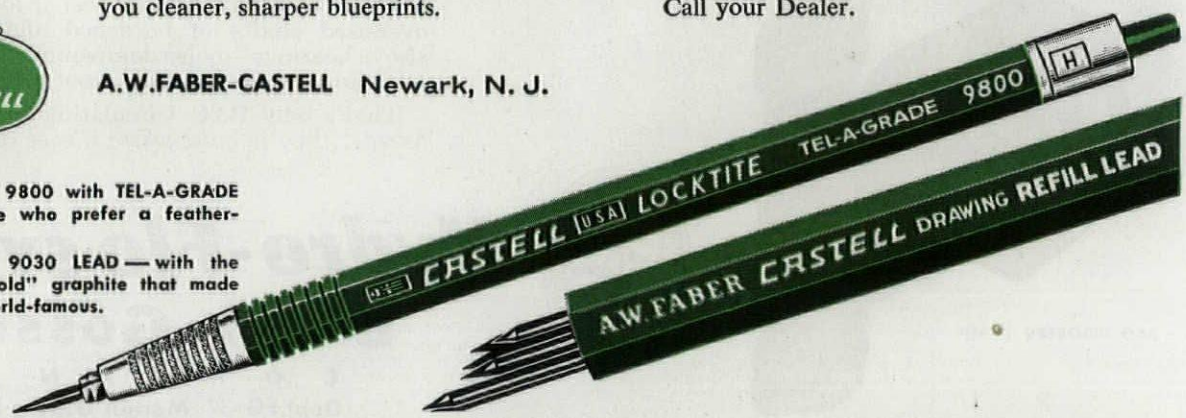
You owe it to your career to use CASTELL. Call your Dealer.

FABER-CASTELL

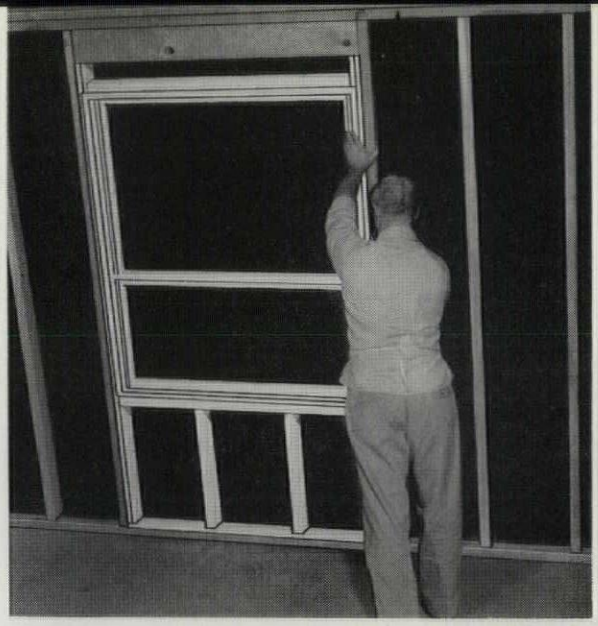
A.W.FABER-CASTELL Newark, N. J.

CASTELL LOCKTITE 9800 with TEL-A-GRADE indicator, for those who prefer a feather-weight holder.

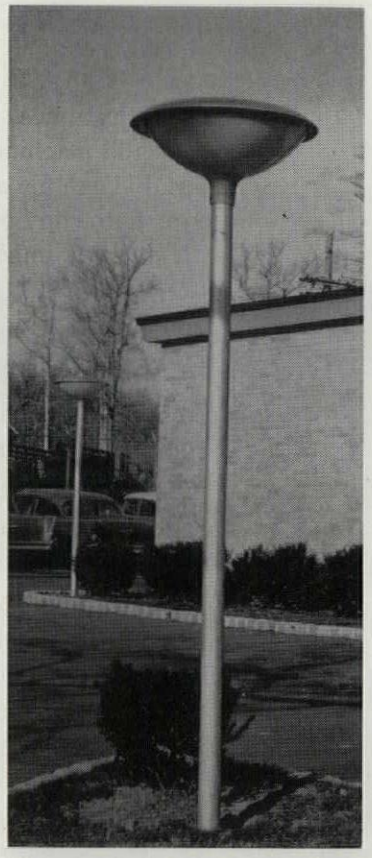
Imported CASTELL 9030 LEAD — with the identical "Black Gold" graphite that made CASTELL #9000 world-famous.



PREFERRED BY PROFESSIONALS IN EVERY CIVILIZED COUNTRY ON EARTH.

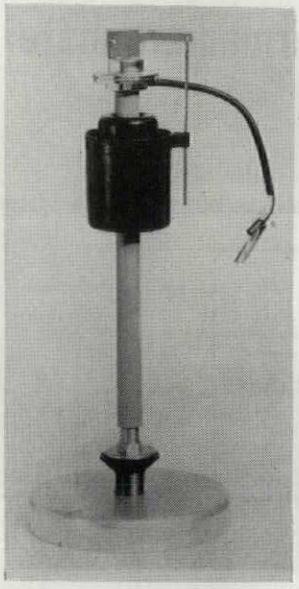


New Windowall component (above)—*in which factory installation joins a complete window unit with wall-framing members—makes possible savings in labor and materials by eliminating two-thirds of steps involved in framing a conventional rough opening and installing a window unit. Window unit is actually glued and nailed to two loadbearing struts and to nailers at head and sill. Only two cuts are needed to adjust height of the loadbearing struts to the type of construction used at the head. Structural Windowall can then be joined with adjacent studs and tilted up with rest of wall frame. Andersen Corp., Bayport, Minn.*

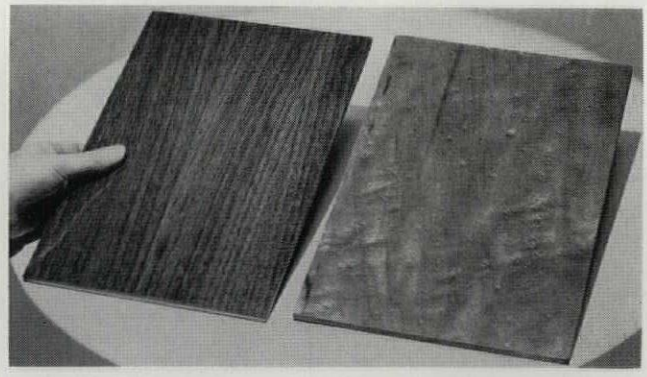


Shatter-resistant outdoor lighting fixture (above), *topped by aluminum reflector and featuring Plexiglas diffusing globe, is intended for many outdoor applications. Silvray Lighting, Inc., 100 W. Main St., Bound Brook, N. J.*

New toilet ball cock (below), *using first radical departure in valve principle, design, engineering, materials, and production methods, is now being marketed. Fluidmaster Model 400 uses dynamic principle of self-energized actuation, a simplified concentric float which eliminates familiar rod and air-sealed ball, has instant positive shut-off, contains automatic anti-siphoning, and is self-adjusting to varying pressures. Fluidmaster, Inc., 132 E. Orangethorpe Way, Anaheim, Calif.*



Portable hand-operated machine, developed in England by the Building Research Station to test soils of a predominantly clayey nature, includes recording system for permanent record of all tests made. U. S. Distributors: Soiltest, Inc., 4711 W. North Ave., Chicago 39, Ill.



Plywood samples, covered with Videne A—just announced polyester-plastic laminating film—are given excellent surface quality (above). *Plastic provides protective surface highly resistant to marring, abrasion, and scratching, eliminates need of lacquer or varnish, and at same time is used as adhesive to bond plies together. Film also has potential for textile, metal, wood, paper, plastic, and packaging industries. Goodyear Tire and Rubber Co., 1144 E. Market St., Akron 16, Ohio.*

You can make design changes simply . . .

and save hours of drafting time . . . with Ozalid's family of intermediate materials

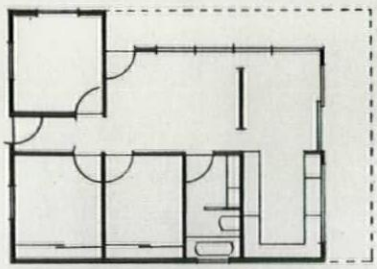
Once . . . just once . . . you run your original drawing through your Ozalid machine with a piece of Ozalid intermediate material. Then file away your drawing. Your Ozalid intermediate copy becomes a duplicate original—all set to give you important benefits.

Take design changes, for instance. With an Ozalid intermediate print, there's no need to trace or redraw the original design. Changes are as easy as 1-2-3 . . . just see below!

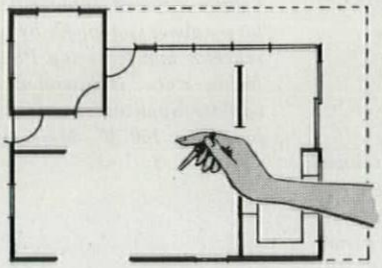
Not only are Ozalid intermediate prints exact copies of your original—they can be *better* than the original. Faded or weak areas are intensified.

There's an Ozalid intermediate material for every drafting room need: film, translucent paper, and cloth.

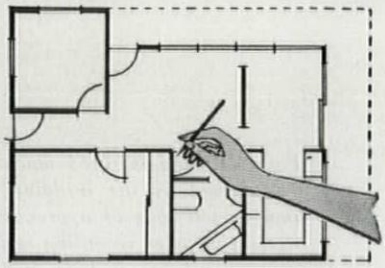
See for yourself how quick and easy you can make design changes with Ozalid intermediates. Contact your local Ozalid man—his name is in the phone book—or write for free folder. Write to Ozalid, Dept. DD-5 Johnson City, N. Y. In Canada: Hughes Owens Co., Ltd., Montreal.



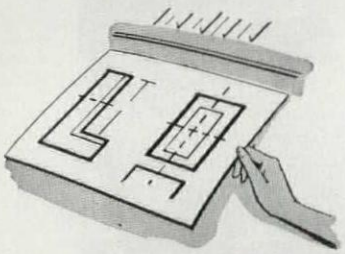
1. This is an Ozalid intermediate (translucent) print of the original drawing.



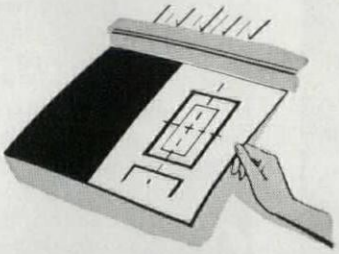
2. Draftsman eradicates obsolete lines with Ozalid Corrector Fluid.



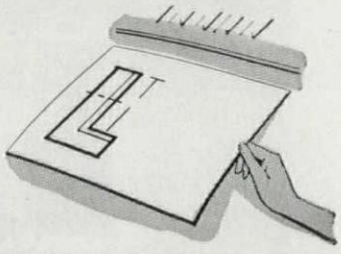
3. New design is drawn in. Prints can now be run from this intermediate "master."



1. Expose original drawing in the usual manner on Ozalid intermediate paper, cloth, or foil. But do not develop!



2. Cover all printed yellow lines which are to be retained on the intermediate with a mask of black opaque paper—re-expose in Ozalid machine. The light will remove all obsolete details left uncovered.



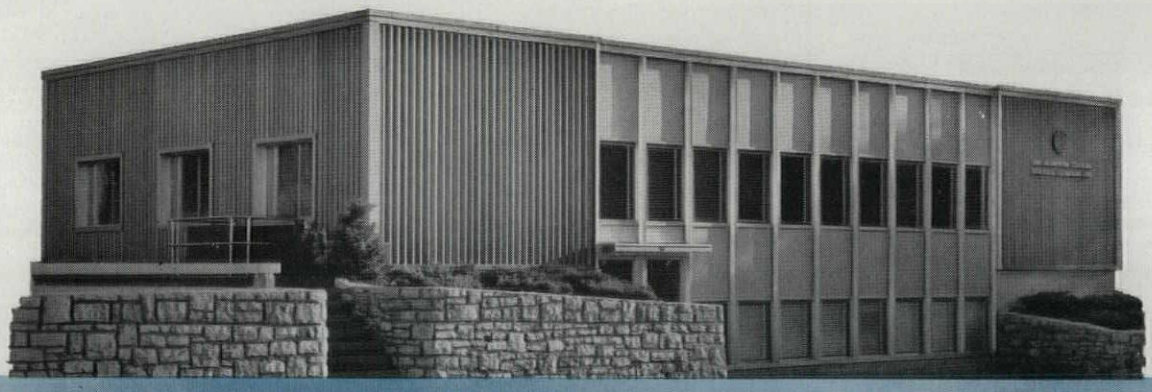
3. Develop the intermediate . . . and you have a clear, up-to-date "framework" to which you add the new design. Use this intermediate master to produce prints.

OZALID®

Products for Design

A Division of General Aniline & Film Corporation
In Canada: Hughes Owens Company, Ltd., Montreal

The Aluminum Cooking Utensils Company, Inc., Office, Natick, Mass.



The Aluminum Cooking Utensils Company, Inc., Office, Kansas City, Mo.

modern walls of Alcoa aluminum crafted by Overly

METAL PRODUCTS SINCE 1888

Above are two examples of Overly's craftsmanship in fabricating walls of versatile aluminum. The first combines 18 gage uninsulated ribbed spandrels with 11 gage column covers. For a striking contrast, spandrels were anodized a light gray; columns and cornice a jet black. Material was applied over a cinder block backup wall. • The lower building contrasts fiberglas insulated panels with extruded aluminum (6063) spandrel sections. Spandrels are colored Alcoa architectural blue; panels and trim are finished in silver Alumilite. • Walls of both buildings have built-in provisions for expansion and contraction, plus watertight, interlocking joints that eliminate caulking with Overly's unique flashing-free construction. Overly coping on these offices has a silver anodized finish. • Learn the economies and unlimited design possibilities of Overly fabricated aluminum walls; write us today for our catalog 8b-Ov.

OVERLY MANUFACTURING COMPANY

GREENSBURG, PENNSYLVANIA

LOS ANGELES 39, CALIFORNIA

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SQUARE and RECTANGULAR

AIR DIFFUSERS

Custom made in unlimited air patterns, AGITAIR square and rectangular air diffusers suit all job conditions . . . blend perfectly with any interior design.

These AGITAIR diffusers need not be centrally located. They assure draftless, noiseless, equalized air distribution from any location in the ceiling or side wall.

THERMOTANK AGITAIR®

high velocity units • punkah louvers
air diffusers • filters • exhausters

Write for Catalog R107 for complete data on these Agitair Diffusers

Sold exclusively by representatives for:

AIR DEVICES INC.

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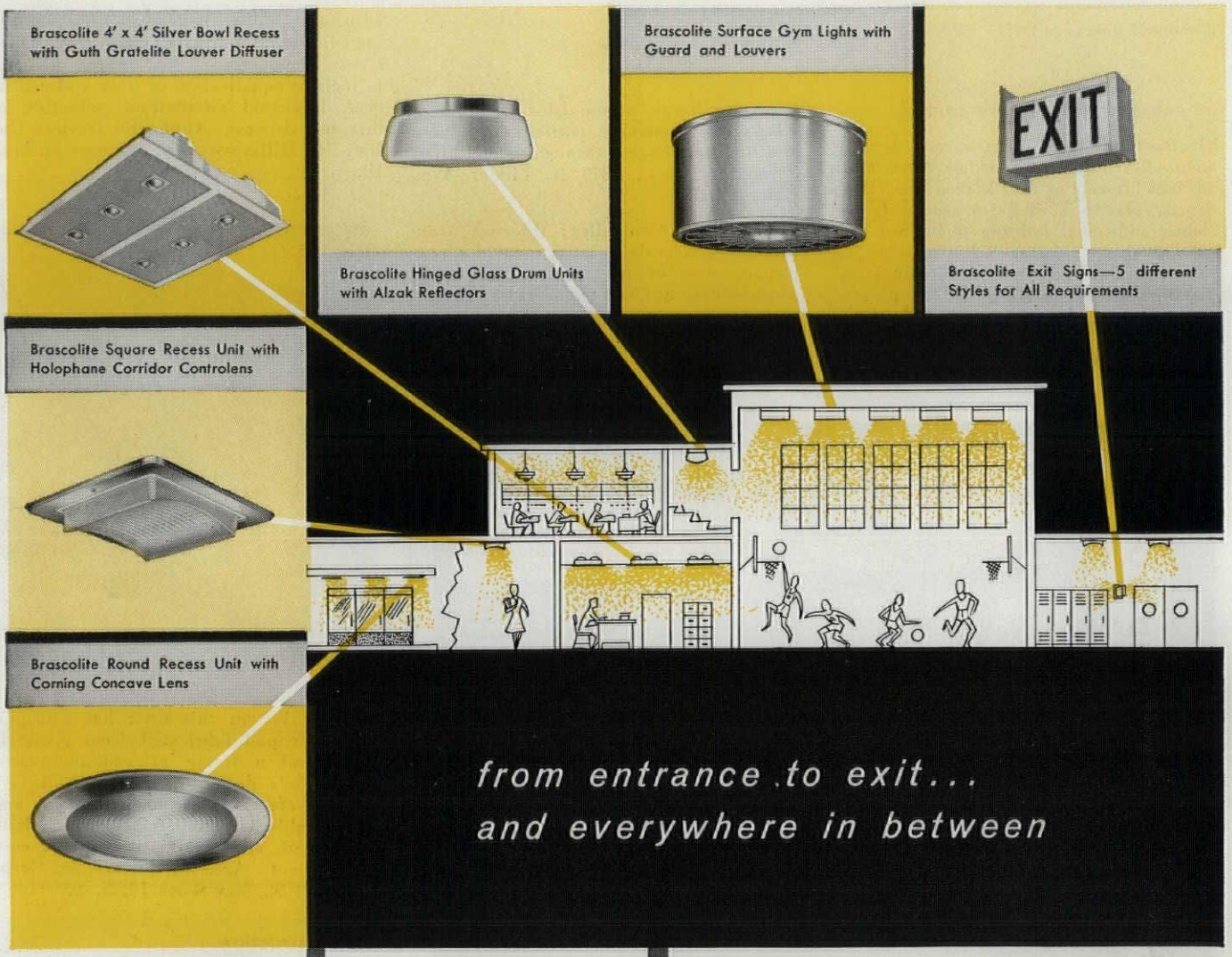


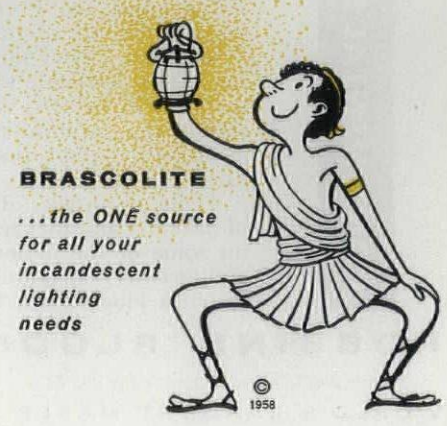
Guth brascolite

THE LINE FOR EVERY INCANDESCENT LIGHTING NEED

Whatever the lighting job—large or small, simple or complex—the Guth Brascolite *incandescent* line offers a fixture for every purpose. Now, from one *complete* source, you can figure the entire installation, without having to search through numberless catalogs to find the fixture you need. And every Brascolite listing gives "*Pre-Formance Data*"—complete lighting curves, interflectance coefficients and mounting-to-spacing ratios!

Whether the job involves a school, hospital, industrial plant, office or store... the Brascolite line and the comprehensive Brascolite catalog put the material you need right at your fingertips. Send for the Brascolite catalog today—a *complete* working tool for the *complete* incandescent line.

THE EDWIN F. GUTH COMPANY
2615 Washington Blvd. • St. Louis 3, Missouri



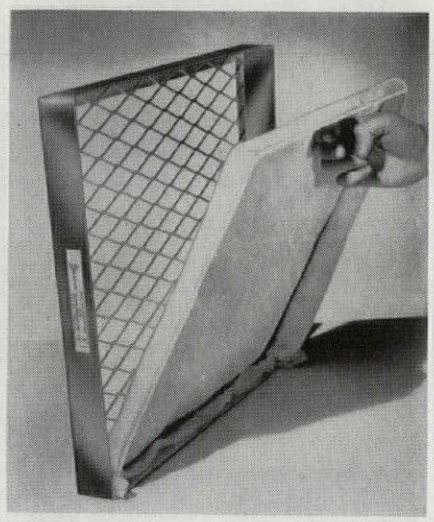
p/a products

(Continued from page 177)

air and temperature control

Electrostatic Air Filter: recent developments in construction of air filter allow efficient filtering as well as free-flow. High-density plastic is used for woven fabric; claims additional holding power for dirt, pollen, dust, because of supercharging process. Two or more individual ¼" metal-framed filters are mounted in a steel frame for models 1" or more thick. Space between filters—"accumulator chamber"—allows any remaining particles to adhere and be filtered again through second filter. Permatron Corp., 4840 N. Linder Ave., Chicago, Ill.

Weather-Flo Controller: three-way control for residential heating provides continuous flow of heat while taking into consideration outdoor temperature changes. Fixed bulb measures outside temperature; adjustable bulb—made of ⅛" copper tubing, liquid-filled—gives measurement for system temperature. Advantages are said to include equalization of floor and ceiling heat, increased circulation, reduction of dirt and dryness. Automatic Devices Co., Inc., 714 Hillgrove Ave., Western Springs, Ill.



Pure-Air Filter: this filter has a disposable filter pad fabricated from synthetic fibers, and a frame of cadmium-plated metal. Pads do not use oil or adhesive material, are easy to change (*above*), and are available in various efficiencies. Lightweight pads are easy to handle, low cost, and efficient. Arco Manufacturing Corp., 542 W. 55 St., New York 19, N. Y.

construction

Moistop Flashing: new plastic flashing material is formed from polyethylene plastic bonded to reinforced, waterproof paper, thereby retaining inertness and adding strength. Narrow widths are especially adaptable to concealed waterproofing applications—door and window flashing, sill flashing, foundation dampcoursing. Wider widths used as vapor barrier under floors. Low cost and flexibility for various operations are features of this construction material. American Sisalkraft Corp., Attleboro, Mass.

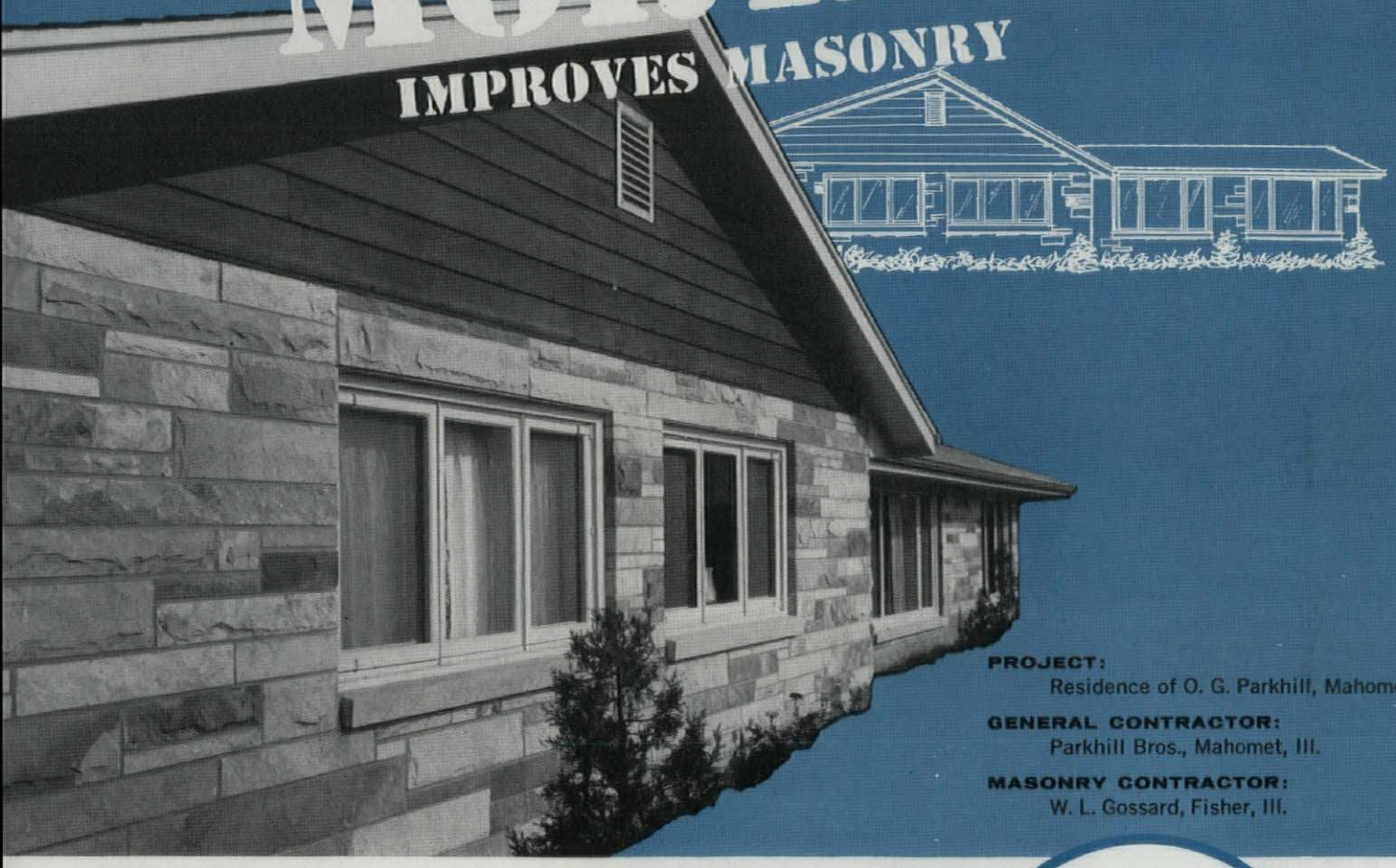
Milcor Rigid-Ex: corner bead combines properties of expanded metal with rigidity by solid metal strip running along edge of each wing. Wings measure 1⅝" wide. Straight, uniform nose aids formation of clean corners. Can be easily formed into arches or spliced with nails. Inland Steel Products Co., P. O. Box 393, Milwaukee 1, Wis.

Galvadek: ribbed galvanized roof deck sheet is said to eliminate need for painting. Special metal clip is used for fastening to standard galvanized sub-purlins. Continuous beam action appears when sub-purlins span three or more structural purlins. Decking is available with 1" ribs in 28-gage sheets 10'-1" long. Metal Decking Corp., Architects & Builders Bldg., 333 N. Pennsylvania St., Indianapolis, Ind.

(Continued on page 184)

ATLAS® MORTAR

IMPROVES MASONRY



PROJECT:
Residence of O. G. Parkhill, Mahomet, Ill.

GENERAL CONTRACTOR:
Parkhill Bros., Mahomet, Ill.

MASONRY CONTRACTOR:
W. L. Gossard, Fisher, Ill.

"... has all the qualities desired for good workmanship."

Says W. L. Gossard, Masonry Contractor

- Builders report the excellent workability characteristics of ATLAS MORTAR cement help keep costs down in masonry construction.
- ATLAS MORTAR mixes are plastic, require less retempering, stay workable.
- Quality-controlled manufacture of ATLAS MORTAR masonry cement maintains high product standards, assuring uniform performance and appearance on every project. *(Complies with ASTM and Federal Specifications.)*

Write for your copy of "Build Better Masonry," Universal Atlas, 100 Park Avenue, New York 17, N. Y.

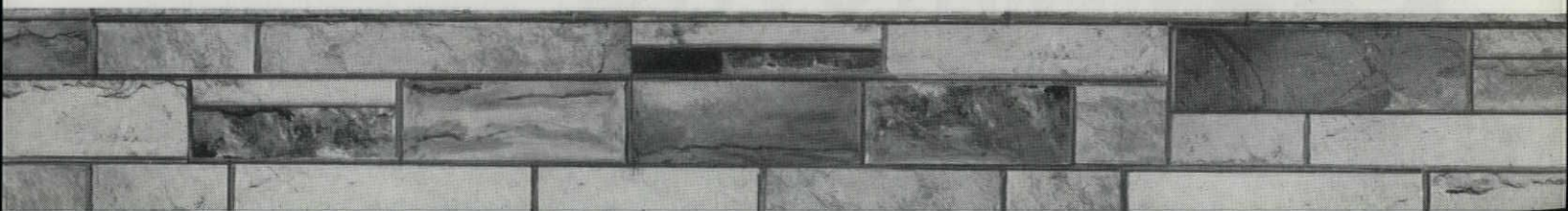
UNIVERSAL ATLAS CEMENTS

USS TRADE MARK

M-70

UNIVERSAL ATLAS CEMENT COMPANY—member of the industrial family that serves the nation—**UNITED STATES STEEL**

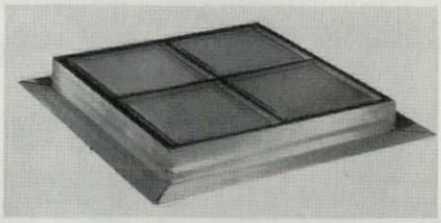
OFFICES: *Albany · Birmingham · Boston · Chicago · Dayton · Kansas City · Milwaukee · Minneapolis · New York · Philadelphia · Pittsburgh · St. Louis · Waco*



p/a products

(Continued from page 182)

Multi-Purpose Shure-Set Hammer-In Tool: new tool can be used for hammer-in fastening work and manual drilling. Masonry drill holder has been combined with hammer-in tool, allowing direct fastening into such hard materials as concrete and brittle materials as face brick. Can set studs as well as nonthreaded fasteners. Ramset Fastening System, Div. of Olin Mathieson Chemical Corp.



doors and windows

2x2 Toplite: skylighting system is said to select most desirable rays of sunlight. Unit (*above*) consists of four prismatic glass panes set in aluminum frame, 2′ x 2′. A prefabricated unit, skylight is adaptable to residential and light commercial use. Easy installation comes from flange-perimeter construction. Only 3″ high, Toplite is almost unseen from street level. Reduces solar heat transmission in summer and has high insulating factor—operates on principle of diffusing light. Kimble Glass Co., subsidiary of Owens-Illinois Glass Co., Toledo 1, Ohio.

Ceco Aluminum Windows: three new series are now available for residential use. Double-hung with channel frame sections, double-hung with integral fin-trim frame sections, and single-hung with integral fin-trim sections are available in modular sizes. Silicone-treated wool-pile weather stripping on aluminum backing reduces air infiltration. Frame members are mechanically joined at corner with stainless-steel screws; sash frames are mitered at corners and lockwedged by staked corner braces. Easily lowered and raised. Integral fin-trim speeds installations—can be nailed or screwed into sheathing or framing and used with wood stud construction or plaster or dry wall interior finish. Ceco Steel Products Corp., 5601 W. 26 St., Chicago 50, Ill.

electrical equipment, lighting

Daylume Series: new line of very thin surface-mounted elements. Give advantages of surface lighting with recessed appearance. Lightweight fixtures are 3¼″ thick, are available in six sizes from 1′x4′ to 4′x4′, in two, four, six, eight, lamp arrangements. Equipped with separately fused CBM ballasts, fixtures can be wired through sides, center, or ends. Recessed back plate gives alignment with ceiling. Choice of glass and plastic enclosing materials. Day-Brite Lighting, Inc., 16 N. Ninth St., St. Louis, Mo.

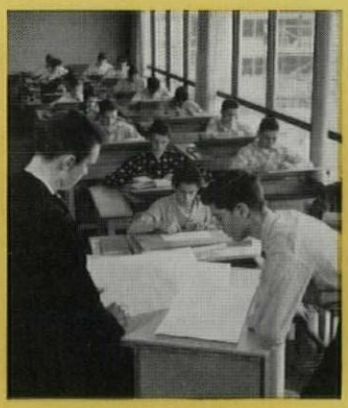
finishers and protectors

Luma-Tint: aluminum-based coating has been developed for roofs and exterior wall surfaces. Available in eight colors, coating is aluminum asphalt material. Properties include light and heat reflection, sealing and waterproofing characteristics. Recommended for application over asphalt asbestos, built-up composition roofing, tar paper, cinder, and cement block, concrete, etc. Also resistant to chemicals and drying. James B. Sipe & Co., Pittsburgh 16, Pa.

insulation (thermal and acoustical)

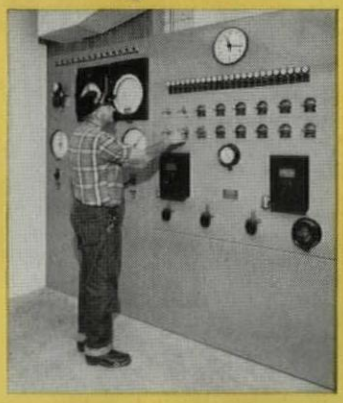
L.O.F. Glass Fibers' Pipe Insulation: pipe insulation of glass fibers is effective for temperatures ranging from below zero to 350 F and can be used for pipes carrying hot or cold water, brine, low pressure steam. High thermal efficiency comes from uniform diameter of glass fibers. Available in one-piece formed sections 3′ long, with inner diameters to fit standard iron pipe, range of wall thicknesses. Longitudinal cut through one wall and almost through second wall provides "hinge action" opening and closing. Material is lightweight, resilient, tough. Libbey-Owens-Ford Glass Fibers Co., Toledo, Ohio.

Teachers and Students.... Administrators



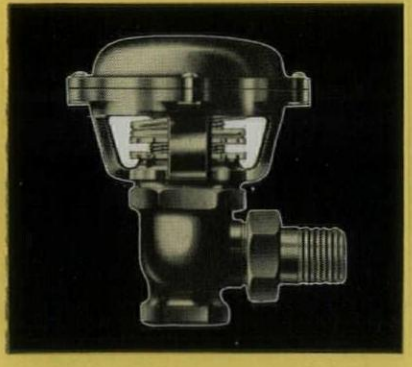
Engineers and Taxpayers

Powers DAY-NIGHT Thermostats are adjustable for normal temperature during occupancy and lower economical temperature during unoccupied periods.



All benefit.. from the comfort, fuel economy, and low cost maintenance of

POWERS Quality System of Temperature Control



Powers PACKLESS Control Valves prevent water leakage, banish packing maintenance and give better control due to reduced valve stem friction.

Powers Control helps reduce school costs. Economical DAY-NIGHT thermostats stop fuel losses due to wasted heat in unoccupied rooms and over-heating in occupied rooms.

Thermal Comfort for every school activity helps keep teachers happy, protects health of students and keeps them alert.

In your new school make sure taxpayers get the biggest return on their investment in accurate temperature control. Ask your architect or engineer to include a time-proven Powers Quality System of Control.

(c91)

THE POWERS REGULATOR COMPANY

SKOKIE, ILLINOIS | *Offices in chief cities in U.S.A. and Canada*

65 years of Automatic Temperature and Humidity Control


DOW

SCORBORD

TRADEMARK

NEW member of the STYROFOAM® family cuts fitting time up to 80% in foundation perimeters and cavity walls

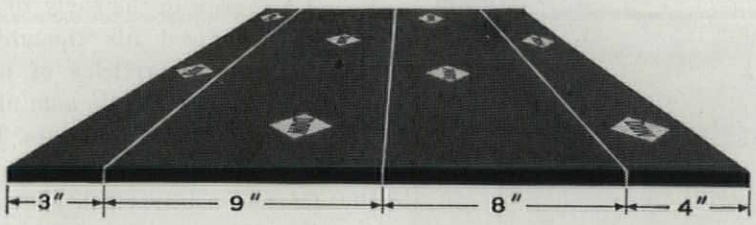
Scorbord* is a real "snap" to use!

This newest rigid insulation board actually reduces sawing, cutting and fitting time to a bare minimum. Why? Simply because it can be snapped off to almost any desired width. Clearly marked pre-scorings at strategically located intervals make fittings easy as can be. Your labor costs go down, while the quality of your building goes up!

Developed by Dow after more than a decade of experience with Styrofoam*, Scorbord is specifically designed for use along the edges of concrete slabs, along foundations and in cavity walls. Its many outstanding properties (see below) give it *permanent* insulating efficiency and unyielding resistance to water and moisture.

Scorbord has a compressive strength of over 2,000 lbs. per sq. ft. It has excellent strength and rigidity, yet weighs only 2.4 oz. per board foot, making it the lightest of all commonly used rigid foam insulations. It has no food value to attract rodents or other vermin and effectively resists rot, mold and deterioration.

PROPERTIES OF SCORBORD



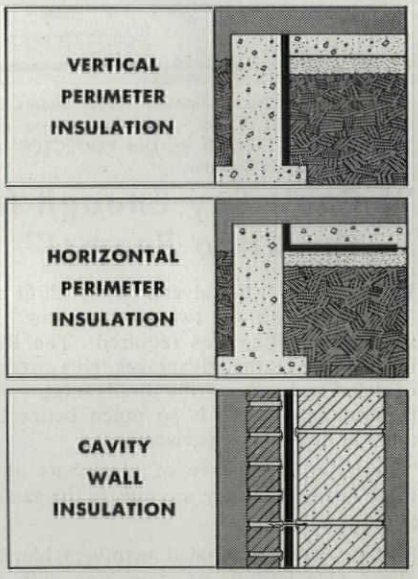
Thickness .....1 inch
Width .....24 inches
Length .....8 feet
Density .....2.5 lbs/cu. ft. average
Compressive Strength .....2,000 lbs/sq. ft. minimum

Thermal Conductivity ("K" factor)
Less than 0.28 at a mean temp. of 40°F.

Water Resistance Properties
Capillarity—none
Water absorption—less than 0.1 lbs/sq. ft.
(Water pickup on surface of samples tested under a 10' head of water for 48 hours.)

SCORE MARKS *are positioned to provide boards of 3, 4, 8, 9, 12, 17, 20, 21, or 24 inches in width.)*

USE SCORBORD FOR



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books received

Betty Pepis' Guide to Interior Decoration. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1957. 215 pp., illus. $4.95

Building Cost Manual. Chicago AIE & Real Estate Bd. John Wiley & Sons, 440 Fourth Ave., New York, N. Y., 1957. 367 pp., illus. $15

The Buildings of England: London. Vol. I. Nikolaus Pevsner. Penguin Books Inc., 3300 Clipper Mill Rd., Baltimore, Md., 1957. 631 pp., illus. $3

Handbook of Noise Control. Edited by Cyril M. Harris. McGraw-Hill Book Co., 330 W. 42 St., New York, N. Y., 1957. $16.50

Sources of Art Nouveau. Stephan T. Madsen. George Wittenborn, Inc., 1018 Madison Ave., New York, N. Y., 1957. 488 pp., illus. $18.50

Steels for the User. R. T. Rolfe. Philosophical Library, Inc., 15 E. 40 St., New York, N. Y., 1956. 399 pp., illus. $10

Sweden Builds. G. E. Kidder Smith. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1957. 270 pp., illus. $10

The Trees on Your Street. Desmond Muirhead. Portland General Electric Co., Portland, Ore., 1957. 36 pp., illus. $2

the space maker

Le Corbusier. *Oeuvre Complète, Vol. VI: 1952-57. Distributed by George Wittenborn, Inc., 1018 Madison Ave., New York, N. Y., 1957. 223 pp., illus. $13.50*

Picasso said: "I do not seek, I find." Le Corbusier seeks during a period of nearly forty years and thousands of practitioners *find*, as can be seen in the examples of a worldwide building activity. This is not surprising, for LC since his writings for the *Esprit Nouveau* in the early 20's has often summarized his thoughts in sets of rules or articles of action for the benefit of public administrators and architectural students. These rules were based on certain specifically (if not arbitrarily) abstracted aspects or fragments of his buildings. In 1933, we find the five basic commandments for modern architecture: the stilts, the independent frame, the free plan, the free façade, and the roof garden; while, in 1956, urban problems are condensed in 99 consecutively numbered paragraphs (LC: *Architecture du Bonheur, Forces Vives*, Ed., Paris). To the former five, a sixth has been added, the sunscreen, and all are still in use as a yardstick to evaluate modern architecture; like, for instance, the 1954 mass condemnation of Brazilian architects by some architectural critics.

LC seeks because finding in present-day architectural activity is, perhaps, of modest importance and a source of minor compensations.

(Continued on page 190)

HOW

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With Brown & Grist Window Walls, Johnson & Johnson got a two-story building for almost the cost of a one-story, conventional wall structure. B & G custom-built the 31-foot, two-story panels at stock prices. They went up fast, saving months of costly building time.

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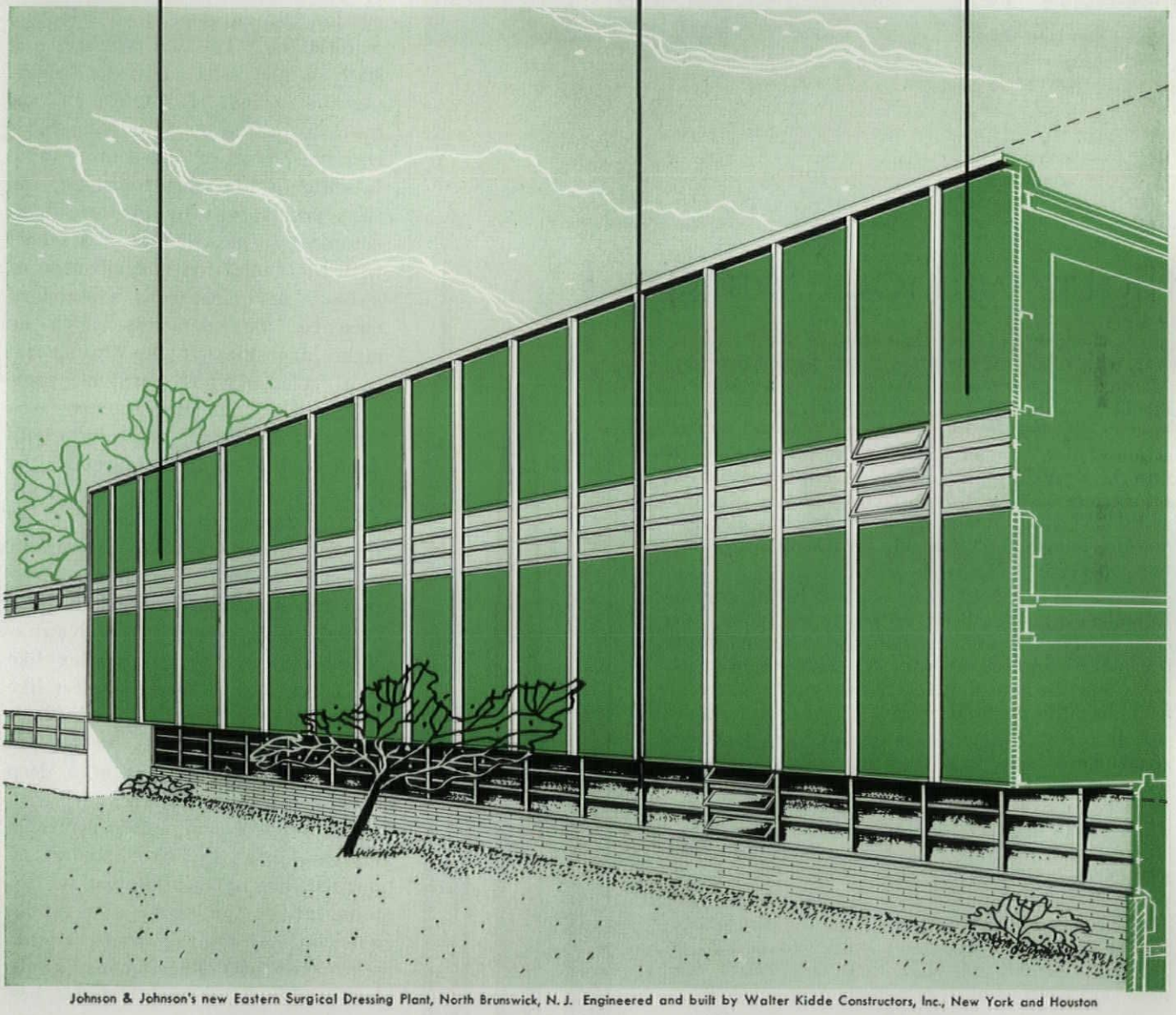

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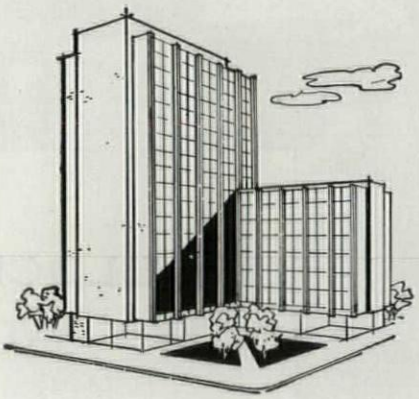
reviews

(Continued from page 188)

But his search for the plastic rhythms which may grace the environment of the "machine era"—an era defined by mobility, collectivization of people and things and mass planning by small administrative minorities—can only be understood outside the envelope of a scientific materialism. In this volume, the sixth of his collected works (covering the period, 1952-1957) LC appears to be the most individualistic creative power of the century and, in spite of his wide following, the least predisposed by his own temperament to be a leader of a school with the dedication and affection of a Boule or to serve as a standard measure. The demands which he makes upon himself, the very special contingencies which form his projects, and the immense sources from which he draws are not to be easily duplicated. Here the intellectual, the artist, and the builder in LC are joining forces to produce a panoramic synthesis, the major trait of which is the lyrical act. We may say that the resulting building, be it a "Dwelling Standard"[1] like Nantes-Reze, a governmental complex like Chandigarh, or a family shelter like those for the Sarabhai and Shodhana in Ahmedabad, is the expression of and the impact of a deep emotional event: it is an entity with a reality of its own, not transferable (in parts or as a whole), irreducible, inextensible, not flexible, not subject to mutations and, above all, escaping quantitative analysis and rational schematizations. The famous "dwelling machine" becomes a music box and nothing can demonstrate this better than the chapel at Ronchamp. From a modest, rural floor plan, something short of a cosmogony takes place among wayside flowers

(Continued on page 194)

[1] The reviewer took the liberty in changing *Unité d'Habitation de Grandeur Conforme*, a term introduced by LC, to *Etalon d'Habitation;* Lewis Mumford in a recent article uses Unity House.



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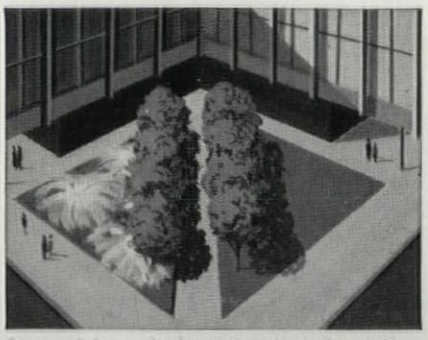
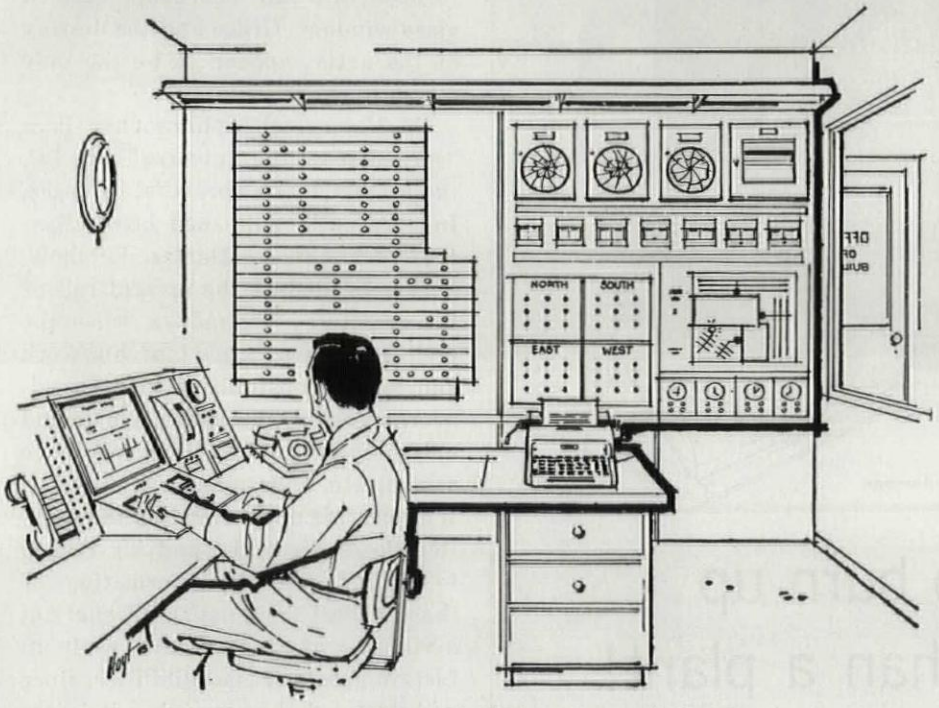


Supervision of plumbing includes indication and warning of low or high levels, low or high pressure in the system; automatic switchover to standby equipment and graphic layout of the lawn sprinkling equipment.

Supervision of air conditioning system —Console provides supervision and control of all equipment—pumps, fans, motors, compressors, valves, cooling towers and dampers. Controls temperatures in open areas.



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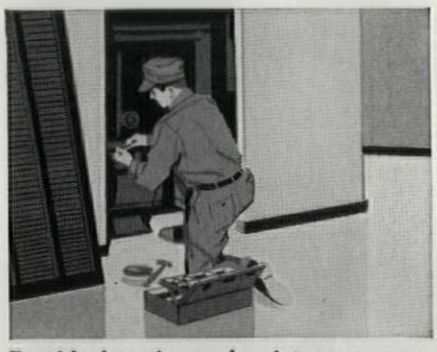
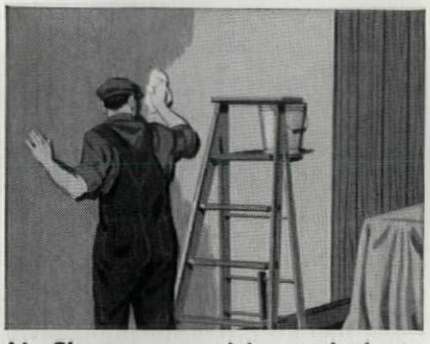


Trouble detection and maintenance crew location. From Control Center, supervisor spots trouble at any point in the system, dispatches crews to remedy. Crews push check-in buttons; lights on console show location.



Air Cleaner supervision and alarm. Supervises air cleaner efficiency and warns if cleaners are inoperative, or operating inefficiently. Offers dramatic reductions in cleaning and decorating costs.

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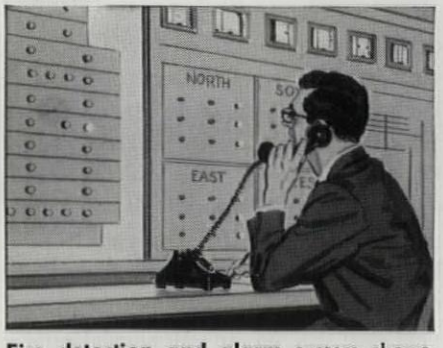
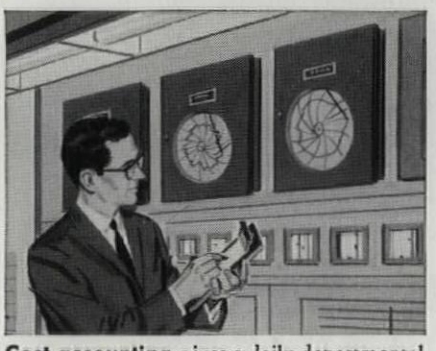


Fire detection and alarm system shows location of fire, enables quick action by supervisor. Control Center can also provide supervision of the automatic sprinkler system throughout the building.



Cost accounting gives a daily departmental metered record of power, steam and chilled water used. A data logging system can provide a typewritten record for immediate use by accounting department.

Light-Saver* for such areas as stenographic pools, billing departments, automatically supplements daylight with artifical light. Reduces lighting costs up to 80%. Lighting can be programed from Control Center.

reviews

(Continued from page 190)

and blades of grass. Neither the section nor the outer shell of the building are predictable nor could they be anticipated; no element is a structural consequence or a logical deduction of what precedes it; a whole side of the Chapel is transformed into an enormous stained glass window. Grace and the destiny of the artist appear to be the only forces at work.

To Valery, the philosopher is a "specialist of the universal"; to LC, the architect is a specialist of space. In a recently published book *(Synthèse des Arts* by Damaz, Reinhold, N. Y.) LC defines the present role of the architect: "nowadays, when the architect entrusts part of his work and his responsibilities to the engineer, access to the profession should only be permitted to those who have a complete understanding of space. Without this understanding the architect loses his right and his reason to exist." The transformation of the architect from *maitre d'oeuvre* to a virtuoso of space should result, in fact, in greater responsibilities, since architectural imagery by its own nature evolves in space. Moreover, spatial imagery must stem from depth, must be qualitative and not a simple interplay of arithmetically related dimensions, if it is to act as a forceful emotional source.

What is space as we see it exemplified in the work of LC? We know of a height of 2.20 M. used by him singly or in its double; this height is part of LC's preferred frame for a man standing up, a limit enclosure. Other dimensions, widths, and depths, while analogical in themselves but not directly conditioned by this height, must remain subjective or empirical. It is necessary, perhaps, to go to Merleau-Ponty's definition of perceived space as left and right, front and back, above and below without any notion of comparative measurements (in *Phenom-*

enolgie de la Perception) to grasp better LC's working dimensions. Then we may say that proximities and separations, presences and voids, limits and infinities could act as a means to define a space. But this space would remain existential even if it is interpreted by a mystique of numbers—LC is a master working with them—and brought close to concepts of universal harmonies.

Some other "qualities" within the realm of substances must be added for a space to achieve a greater identity, namely the four Aristotelian ones: cold and heat, dryness and humidity. While coolness or warmth are easy to be interpreted and could be obtained by an exacting use of materials (stone, concrete, tapestries, color, etc.), the last two qualities need further clarification. A few years ago, Gaston Bachelard in his psychological study of the "paternal house" produced a sentence which in its literal meaning could have been an immovable obstacle for the contemporary architect: "no archetypes in a house without a cellar, no sublimation in a house without an attic."[2] It is true that both cellar and attic are symbols of refuge within a condition of solitude; but the challenge to the architect's creative abilities must then be enormous if he is to retain the emotional qualities of the symbols, their equivalence, without the actual moisture of the beaten earth and the dry stillness of the space under the roof. To the humid and the dry, we must add the dark and the light, the down and the up, the earthy and the aerial, if we have to complete the conditions of refuge. Then some of LC's spatial imagery

(Continued on page 206)

[2] To this we must add the following saying by the late Umderstock, *Chef d'Atelier* at *L'Ecole Nationale des Beaux-Arts:* "the exterior walls of a family house must have a minimum thickness of two feet as a moral protection to the family." Umderstock was perhaps lacking in creativity, but not in intuition.

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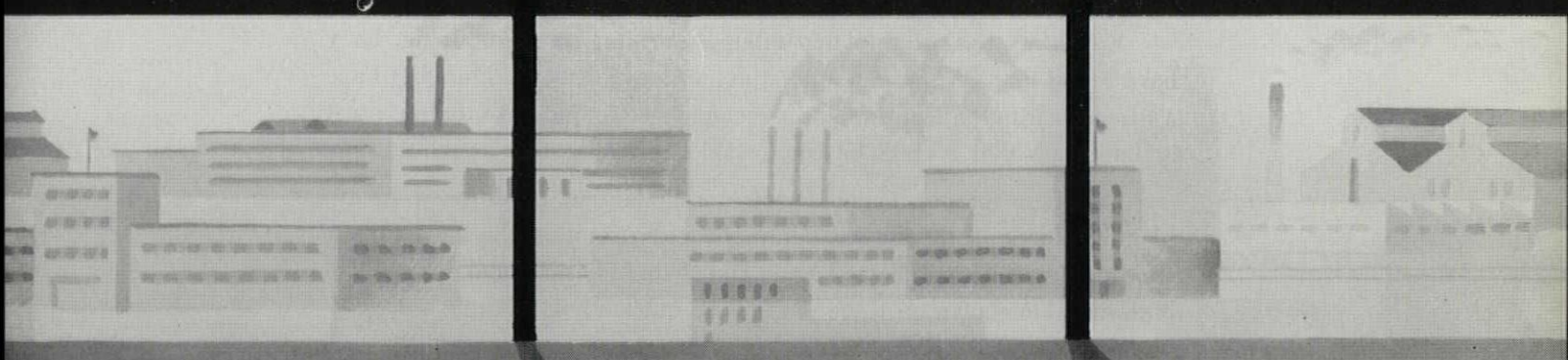

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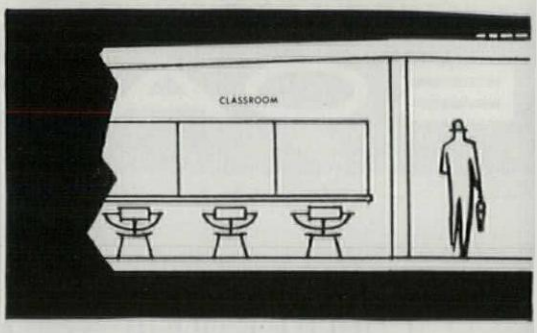

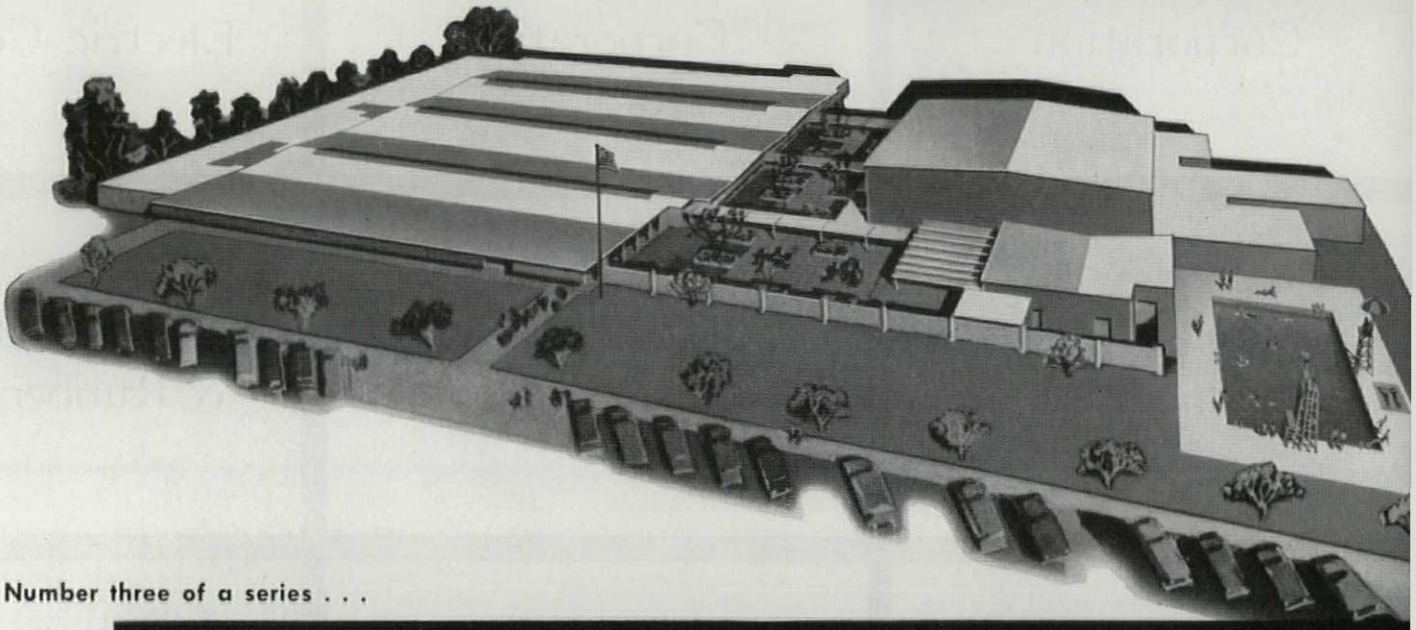

Number three of a series . . .

The herman nelson file of

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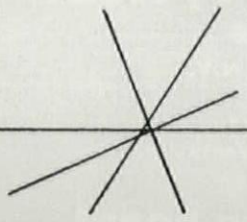
Does the school you are planning include eventual air conditioning? Think it over. Chances are—it should.



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By using Herman Nelson unit ventilators, schools have held heating and ventilating costs–including provision for future air-conditioning–to a total of less than $1.35 per square foot. Other schools have heating, ventilating and immediate air conditioning–for a total per square foot cost of less than $1.70! (And, in many cases traditional design concepts were used.) These are current costs, too! HerNel-Cool II unit ventilators have been available for little more than a year.

Look at the costs shown below. They are particularly interesting when you realize that they are truly representative–for Herman Nelson equipped schools in all parts of the country. Locations range from California to New York, from Wisconsin to Georgia.

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School	Total Cost	Total Cost Per Sq. Ft.	Heating & Ventilating Cost Per Sq. Ft.	Per Cent of Total Cost
A	$ 659,000	$15.33	$1.15	7.6
B	416,211	9.05	1.13	12.4
C	435,270	11.21	1.48	13.2
D	131,223	9.00	1.98	22.0
E	260,164	13.56	1.47	10.9
F	1,013,960	11.27	1.25	11.1
G	577,193	8.39	1.07	12.9
H	310,178	9.84	1.05	10.7
I	344,291	10.43	1.11	10.7
J	118,147	12.38	2.09	16.6
Average	$ 426,564	$11.05	$1.38	12.8

SEVEN SCHOOLS ON WHICH BIDS WERE TAKEN ON HERMAN NELSON UNITS FOR HEATING AND VENTILATION PLUS FUTURE AIR CONDITIONING

School	Total Cost	Total Cost Per Sq. Ft.	Heating & Ventilating Cost Per Sq. Ft.	Per Cent of Total Cost
K	$ 666,000	$15.49	$1.32	8.5
L	423,511	9.21	1.29	14.0
M	356,800	10.04	1.55	15.4
N	2,813,000	15.44	1.78	11.5
O	2,745,381	16.54	1.76	10.7
P	1,311,000	10.40	1.55	14.9
Q	500,000	15.63	1.72	11.0
Average	$1,259,385	$13.25	$1.57	12.3

Avg. add. cost provisions for future air conditioning. .0.19

FIVE SCHOOLS ON WHICH BIDS WERE TAKEN ON HERMAN NELSON UNITS FOR HEATING AND VENTILATION PLUS COMPLETE AIR CONDITIONING

School	Total Cost	Total Cost Per Sq. Ft.	Heating Ventilating & Air Conditioning Cost Per Sq. Ft.	Per Cent of Total Cost
R	$ 690,000	$16.04	$1.88	11.7
S	371,100	10.44	1.95	18.7
T	406,463	14.38	2.41	16.8
U	360,700	13.11	2.22	16.9
V	1,094,387	11.55	1.68	13.8
Average	$ 584,530	$13.10	$2.01	15.6

Average added cost for complete air conditioning.....0.71

Complete cost studies–for schools employing immediate air conditioning as well as for those which are planning for its installation later–are available upon request.

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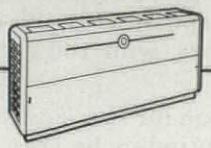

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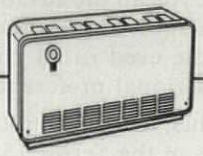
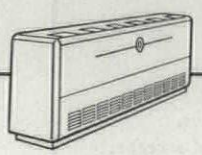


Amervent unit ventilators



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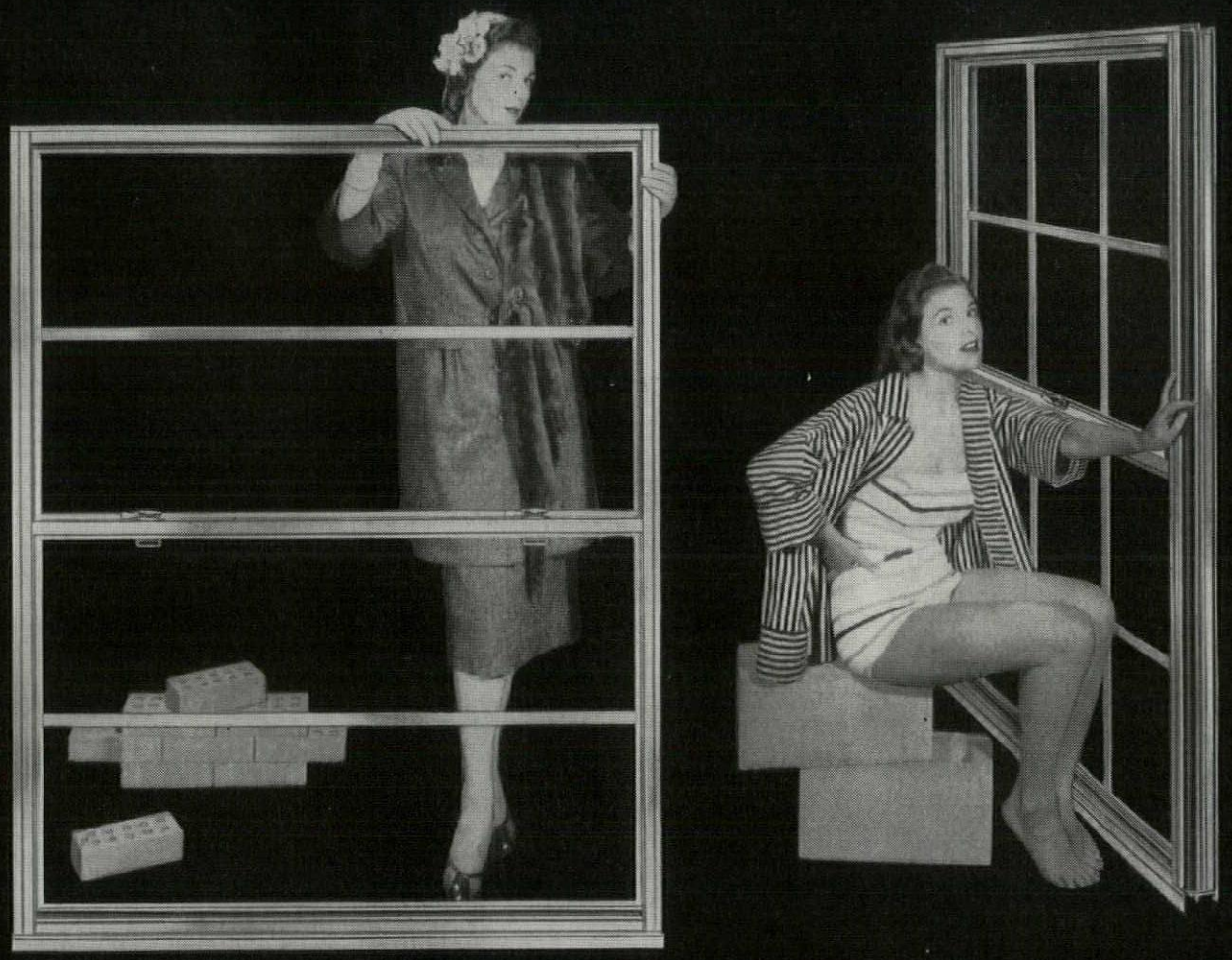

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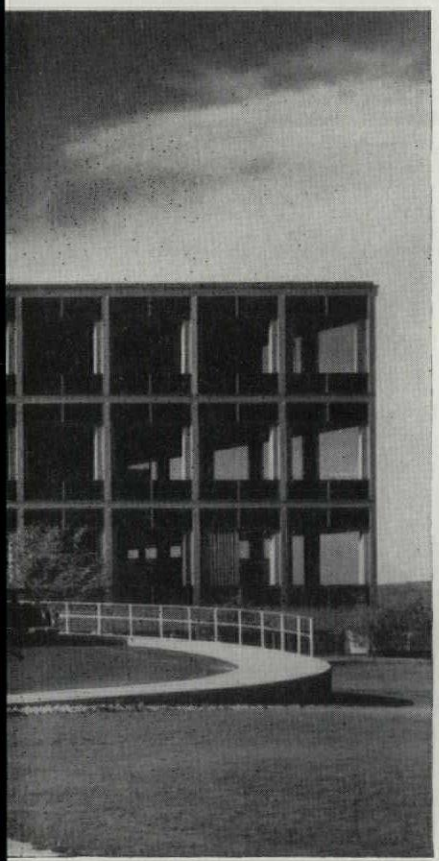

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reviews

(Continued from page 195)

of the Sarabhai or the Jaoul house acquire a new meaning if seen within such a *qualitative* climate. The dwelling units in Marseilles (presented in a previous volume but still the *bête noire* of welfare housing experts) with their deep and narrow dimensions, their areas of bright daylight and dark center regions, their high and low ceilings, the mystery of the "interior streets" and the channeled or framed outdoors must also be evaluated from a similar point of view, as the boundaries of an emotional space and not in terms of data established by a materialistic humanism.

The work of LC in its long and continuous metamorphosis does not stand alone on surface patterns nor on esthetic standards—even if most of those standards were created by himself. It moves toward a greater substantialization of the building and this is achieved not through advanced techniques and the use of new materials so much as through a fuller understanding of the enclosed space. Unlike many of his contemporaries, LC sees that total rationalization of the building, blind obedience to flow diagrams and charts of performance without any attempt at interpretation, do not lead to the development of a better building-machine but to the ultimate mechanization of Man. And it is the artist in him who forbids him to see Man as a consumer of rationed space, that famous statistical entity of the socio-economist which could be maintained on any fuel producing 1200 calories a day. While there seems to be a persistent misunderstanding in contemporary architecture — identifying analytical data arranged alphabetically, spatially, or in any other way with the end work—LC strives with a hardly restrained passion, not as a *chef d'école* but often alone, to produce the basic elements of a human environment by way of a new and intuitive empiricism.

STAMO PAPADAKI

(Continued on page 210)

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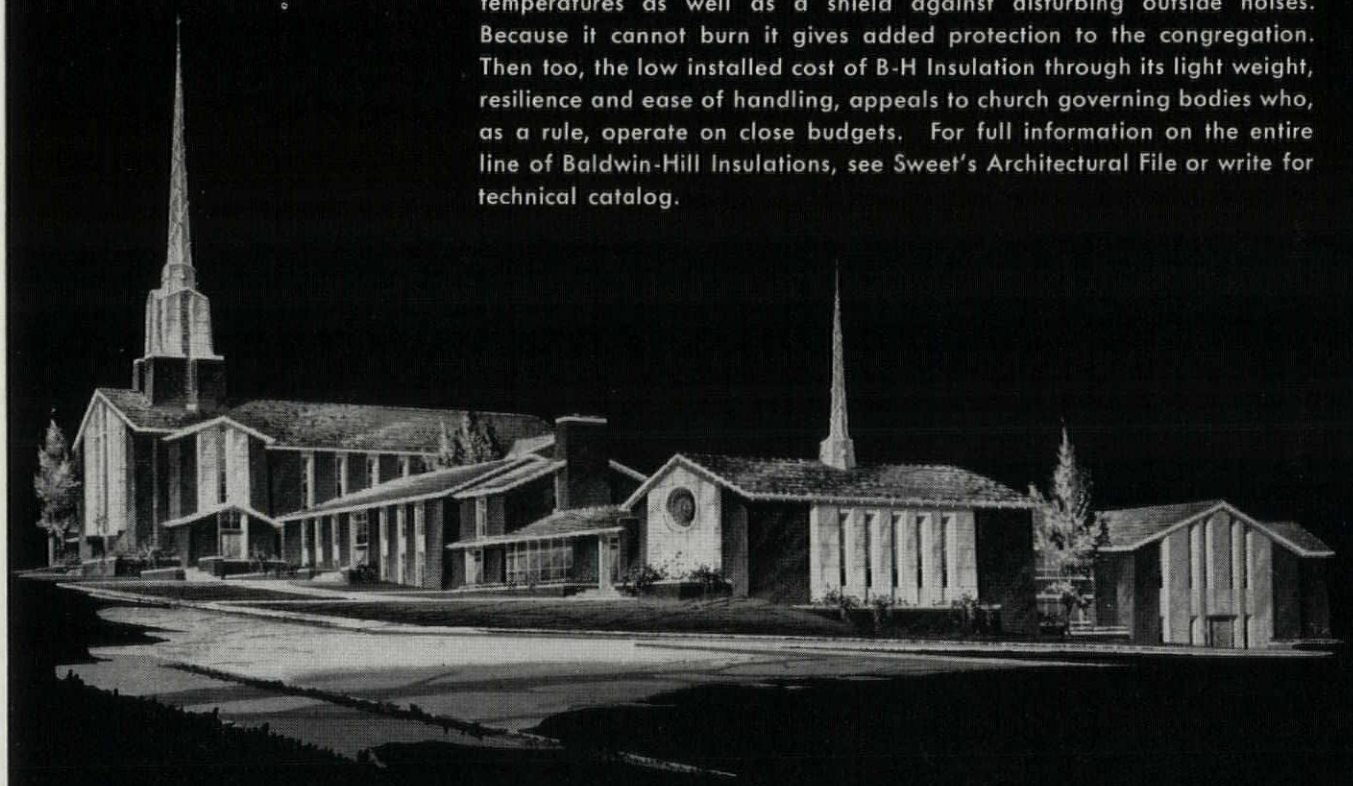

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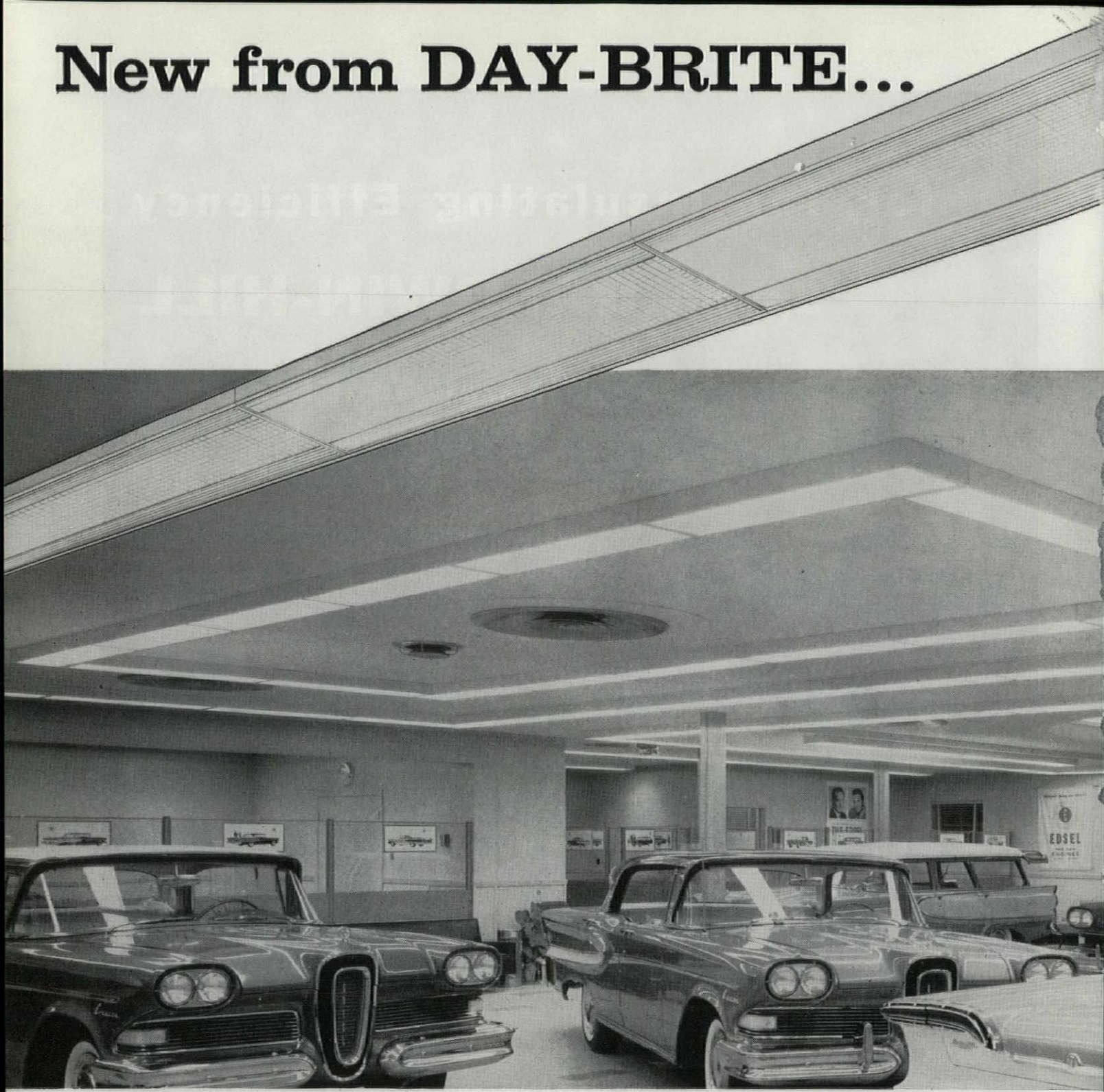
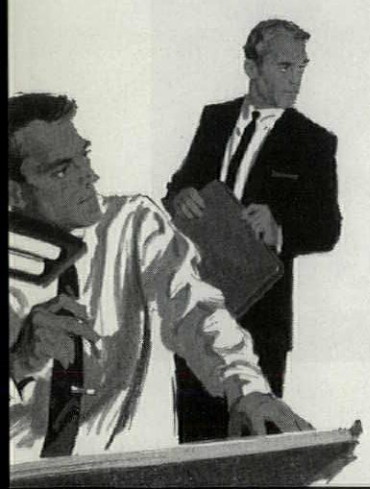


Daylume® makes the most of the merchandise in the Berglund Edsel showroom, Camden, N. J. F. HERBERT RADEY, A.I.A., *Architect.* JOHN T. PLASKET, INC., *Electrical Contractors.*



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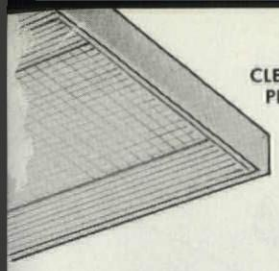

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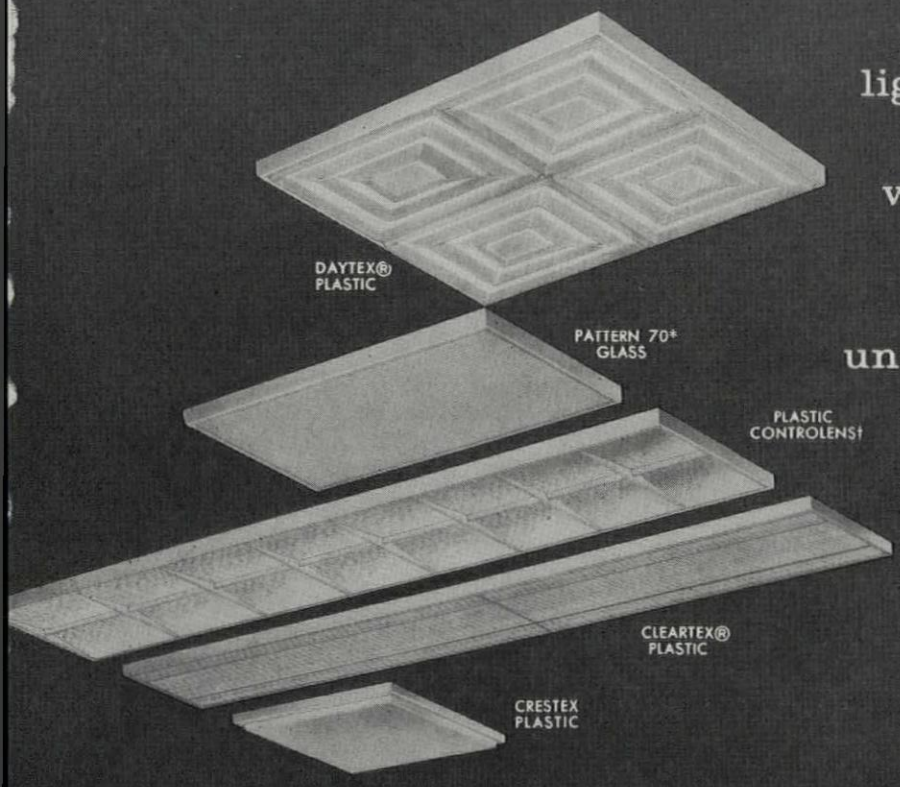

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reviews

(Continued from page 206)

elementary mosaics

Course in Making Mosaics. *Joseph L. Young. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1957. 60 pp., illus. $3.50*

The author's competence in the mosaic field has been convincingly established; along with other work of his, a large mosaic mural which he executed for the Los Angeles Police Facilities Building has attracted much favorable comment.

The book offers instruction in elementary mosaic procedures, materials, and supplies for the nonprofessional; and in addition, a brief study of the methods of operation of many professionals. Of these, the work of Gino Severini in France and Italy and of Juan O'Gorman in Mexico City is given special attention and attentive study. A short study of mosaic composites—mosaics combined with other materials such as wood, plastics, metals, concrete—indicates some interesting possibilities of further development.

Indisputably the subject deserves continuing sympathetic consideration as an adjunct of contemporary architecture: as a means of luring art back into architecture; and to add a human quality and spiritual grace to today's inhuman, spiritless structures.

Toward that high end, this work is a bold, brave start.

LAWRENCE E. MAWN
Alhambra, Calif.

genially written

Painting Surf and Sea. *Harry R. Ballinger. Watson-Guptill Publications, Inc., 24 W. 40 St., New York, N. Y., 1957. 93 pp., illus. $8.50*

In this profusely illustrated volume, the artist-author analyzes in detail precisely what happens in the ocean as waves build up, reach their crest,

(Continued on page 212)

John Ekin Dinwiddie, AIA, Architect

Photo: Phil Palmer

California Redwood Siding is the architect's most versatile exterior surfacing... available in dozens of standard patterns, in widths from 4" to 12". Many patterns can be laid up vertically or horizontally—using either the resawn or the smooth face. Add to this redwood's warm color and rich variety of grain patterns, as well as its natural ability to take and hold every type of finish, or to weather beautifully unfinished—and you can see why so many specifications call for "CRA Certified Kiln Dried Redwood."

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reviews

(Continued from page 210)

tumble into foam, stretch up on the shore, and then recede. He not only studies their form and shape from various angles as they go through their exhuberant routines, but also describes in words and illustrations their performance as they collide with a rocky headland or race across a sandy beach. He notes their color in sunlight and shadow; at night and in stormy weather. Sketches and text indicate step-by-step approaches to achieving realistic impressions of the sea in oil painting; suggestions are made regarding effective composition; and ten practice examples are included that offer the experimenter a wide area of choice. In addition, advice is given as to appropriate palette, brushes, and other painting equipment to use. Any would-be marine painter could hardly fail to find useful instruction in this genially written, how-to-do-it book. G.A.S.

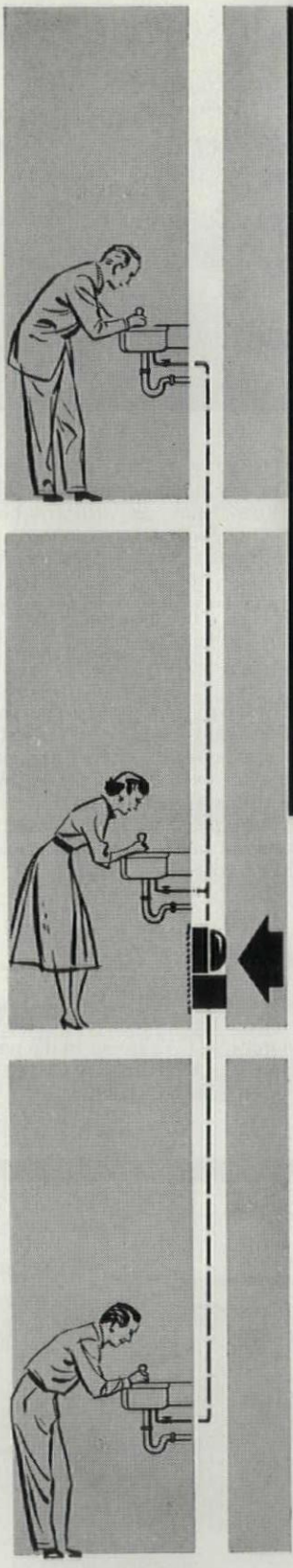
for prospective clients?

An Investigation of The Small House. *Pratt Institute, School of Architecture, 215 Ryerson St., Brooklyn, N. Y., 1958. 80 pp., illus. $2*

A simplified study, attractively illustrated with cartoons and lucid symbols and diagrams, this book—the work of architecture students with guidance and assistance by faculty members—should be required reading for clients and students, and may offer architects amusement (and fresh, rather than conventional or standard, approaches to the solution of design problems).

Planning possibilities for the small house in terms of the functioning family—its growth, activities, and comfort; small house structures; and mechanical equipment are investigated, with some stimulating ideas presented. B.J.M.

(Continued on page 216)



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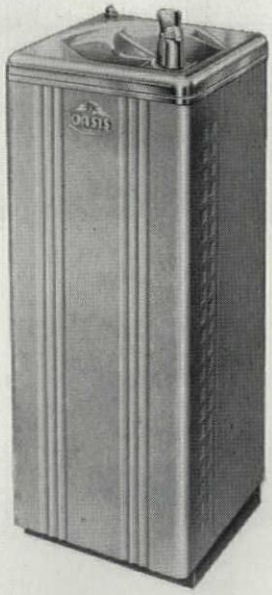

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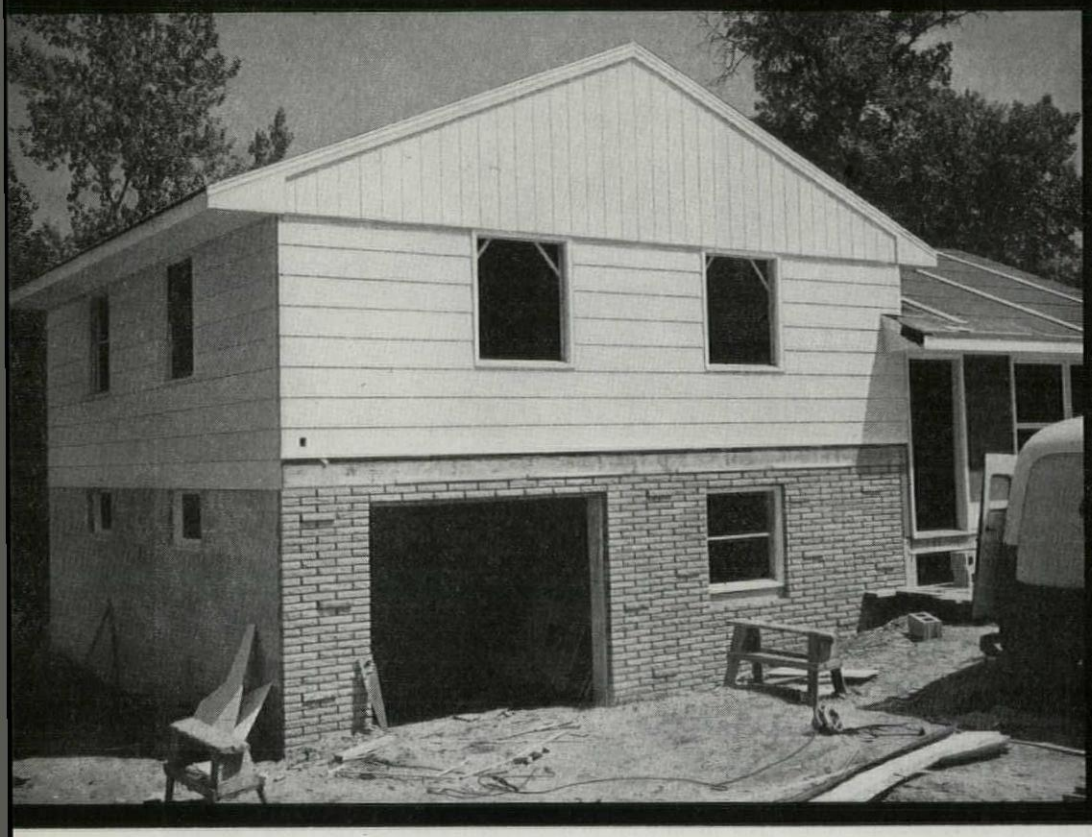

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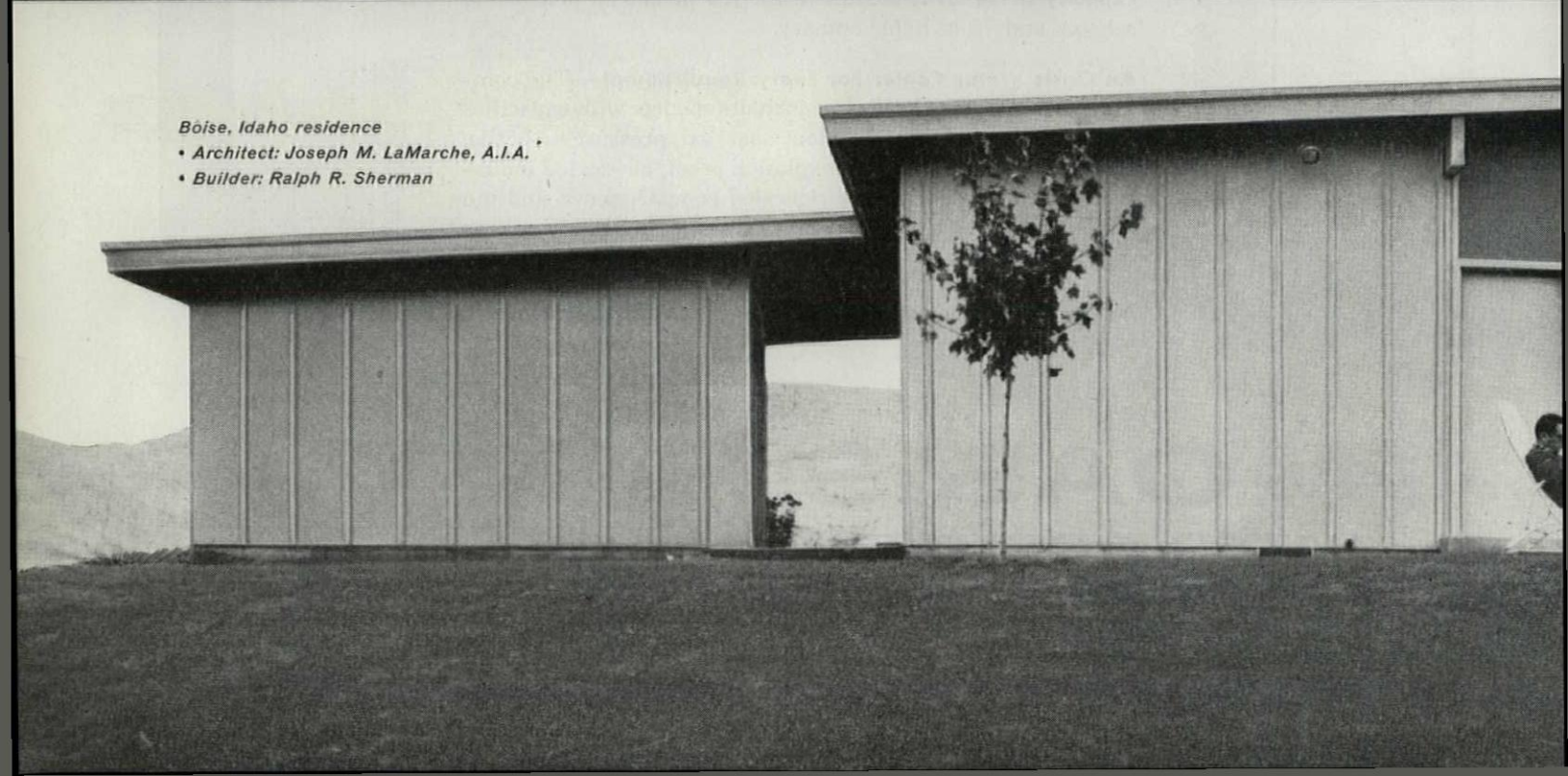
Home shown below is electrically heated, tri-level design featured editorially in LIVING For Young Homemakers. Here, Architect Joseph M. LaMarche, A.I.A., Boise, Idaho has used plain 4′ x 8′ panels of Insulite Primed Siding, with battens.

Boise, Idaho residence
- *Architect: Joseph M. LaMarche, A.I.A.*
- *Builder: Ralph R. Sherman*



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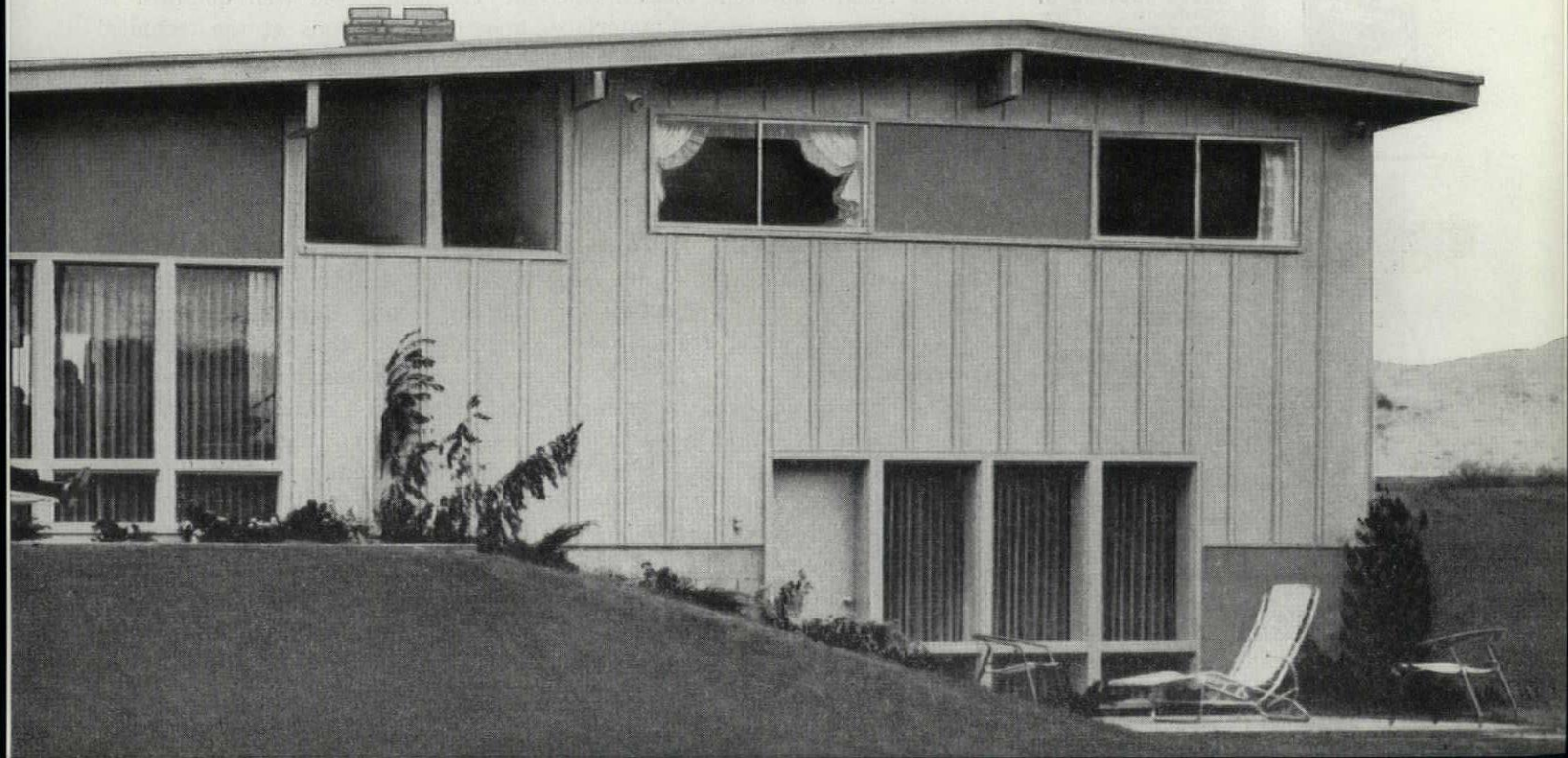

reviews

(Continued from page 212)

practical handbook

Acoustics for the Architect. *Harold Burris-Meyer and Lewis Goodfriend. Reinhold Publishing Corp., 430 Park Ave., New York, N. Y., 1957. 126 pp., illus. $10*

Burris-Meyer and Goodfriend have produced a most attractive and useful handbook on the subject of architectural acoustics. They have presented their material in simple, easy-to-understand terms, and they consider many of the practical everyday acoustics problems facing architects in practice. They point out the importance of arriving at sensible design goals, and they then discuss the principles and actual selection of materials, shapes, finishes, etc., to achieve these goals.

They stress the importance of considering the frequency spectrum characteristics of noises and sounds to be controlled, along with the frequency dependence of basic acoustical properties of building materials. Too often, single numbers are used to describe acoustical properties of materials, and these are never adequate.

The authors have stressed the very important differences between materials which absorb sound and those which isolate adjacent spaces. The chapters on structures and materials present a great deal of practical information on noise control constructions, and give good up-to-date tabulations of absorption and transmission characteristics of many building materials. The illustrations throughout are well chosen, and particularly commendable are the very good photographs of details for vibration isolation of transformers, fans, etc.

The chapter on acoustical designing presents comprehensive check lists on the acoustical aspects of the problem which must be considered by the architect in the planning stages in many types of spaces. Even if the architect does not follow through in detail with such a check list on each project, a reading of these sections will give him a good feeling for the relative importance of the various factors.

This handbook should prove useful to architects in handling the everyday acoustics problems which arise in every building project. They will learn that good acoustics cannot be pasted in after the building is finished and that, on the more complex problems, they should look for expert assistance.

ROBERT B. NEWMAN
Bolt, Beranek & Newman, Inc.
Cambridge, Mass.

for drafting room

Handbook of Standard Structural Details for Buildings. *Milo S. Ketchum. Prentice-Hall, Inc., 70 Fifth Ave., New York, N. Y., 1956. 117 pp., $4.65*

The preparation of general working drawings and details by architects, engineers, and contractors can be greatly expedited by the use of this book. The author—a partner in the firm of Ketchum & Konkel, Consulting Engineers, Denver, Colorado, and a former Professor of Structural Engineering at Case Institute of Technology—is well qualified to know the problems of the technical office, the new draftsman, and the student.

Standardized presentation is important for the universal understanding of technical drawings. This new work forms a background against which to measure office practice. The burden of training new draftsmen can be greatly lightened by providing them with this book. Courses in working drawings have been notably lacking in good reference texts; this need is now satisfied.

Subjects include: The Small House, Small Masonry Building, Reinforced-Concrete Building, Steel-Frame Building, Industrial Building, and Timber Building. Well illustrated by

(Continued on page 221)

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miscellaneous

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reviews

(Continued from page 216)

plane and isometric drawings and details, the book has no lack of explanatory text to describe building assemblies and parts, and the methods of presenting them.

WILLIAM J. McGUINNESS
School of Architecture
Pratt Institute
Chairman, Department of Structural Design

plant protection

American Standard Practice For Protective Lighting. *Illuminating Engineering Society, 1860 Broadway, New York, N. Y. $.50*

The purpose of this new booklet is to assist plant officials in planning protection against trespassing and theft. Defining principles necessary in plant protection, the report supplies descriptive and application data for many types of outdoor-lighting equipment. Light sources, specifications for special areas and types of structures, recommendations, and illustrations for various lighting problems are included. Tables provide a source of typical equipment needed for protective lighting, including distribution characteristics.

E.C.D.

notices

new offices

THEODORE T. BOUTMY, Architect, 45 Castle St., San Francisco 11, Calif.

FREDERICK SAPHIER, Architect, 200 Fourth Ave., New York 3, N. Y.

CORMAC C. THOMPSON, Architect, 1124 Fifth St., Prosser, Wash.

office reopened

GEORGE LOANE TUCKER, Architect-Industrial Construction Consultant, 5877 N. Kilbourn Ave., Chicago 30, Ill.

(Continued on page 225)

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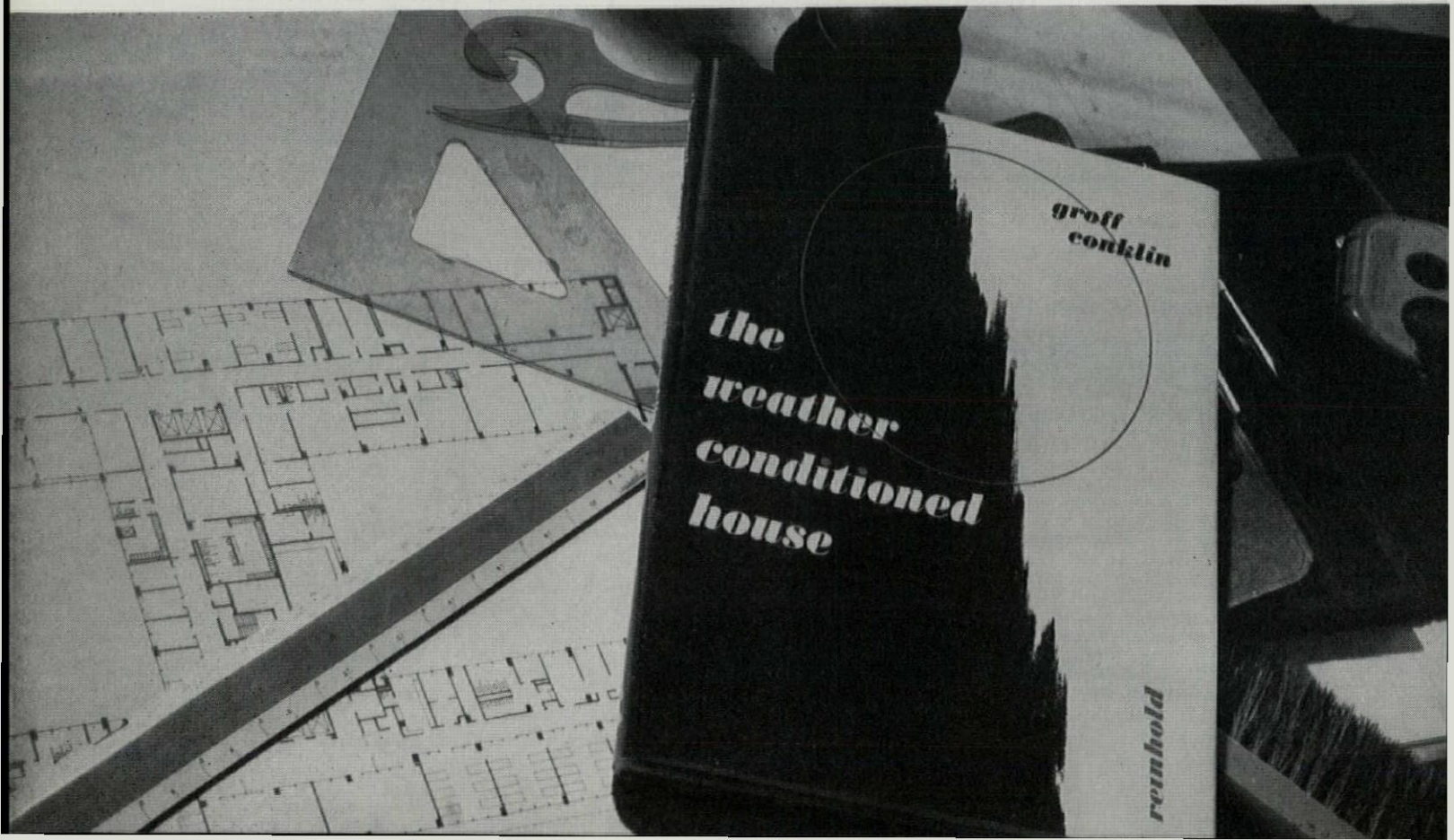

notices

(Continued from page 221)

name change

SUNDELEAF & HAGESTAD, Architects, Portland Trust Bldg., 319 S.W. Washington St., Portland 4, Ore., formerly SUNDELEAF, HAGESTAD & PEACE.

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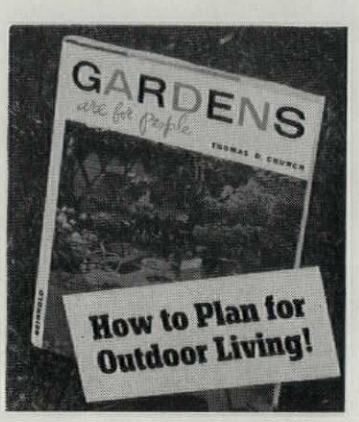

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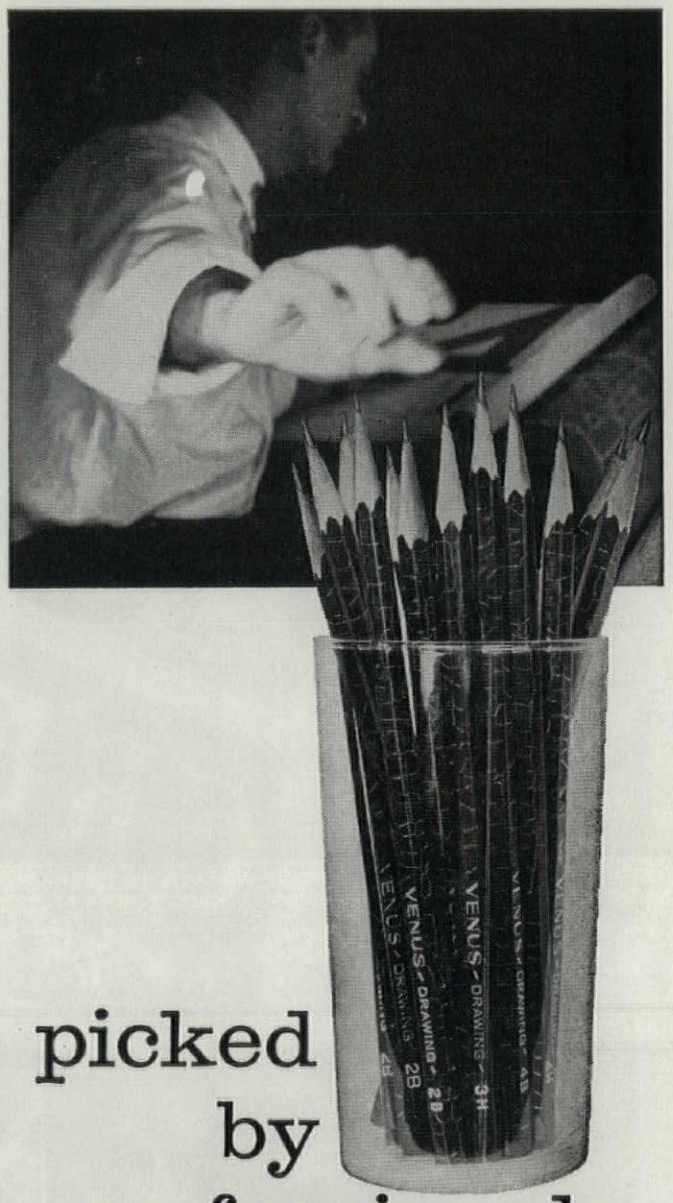

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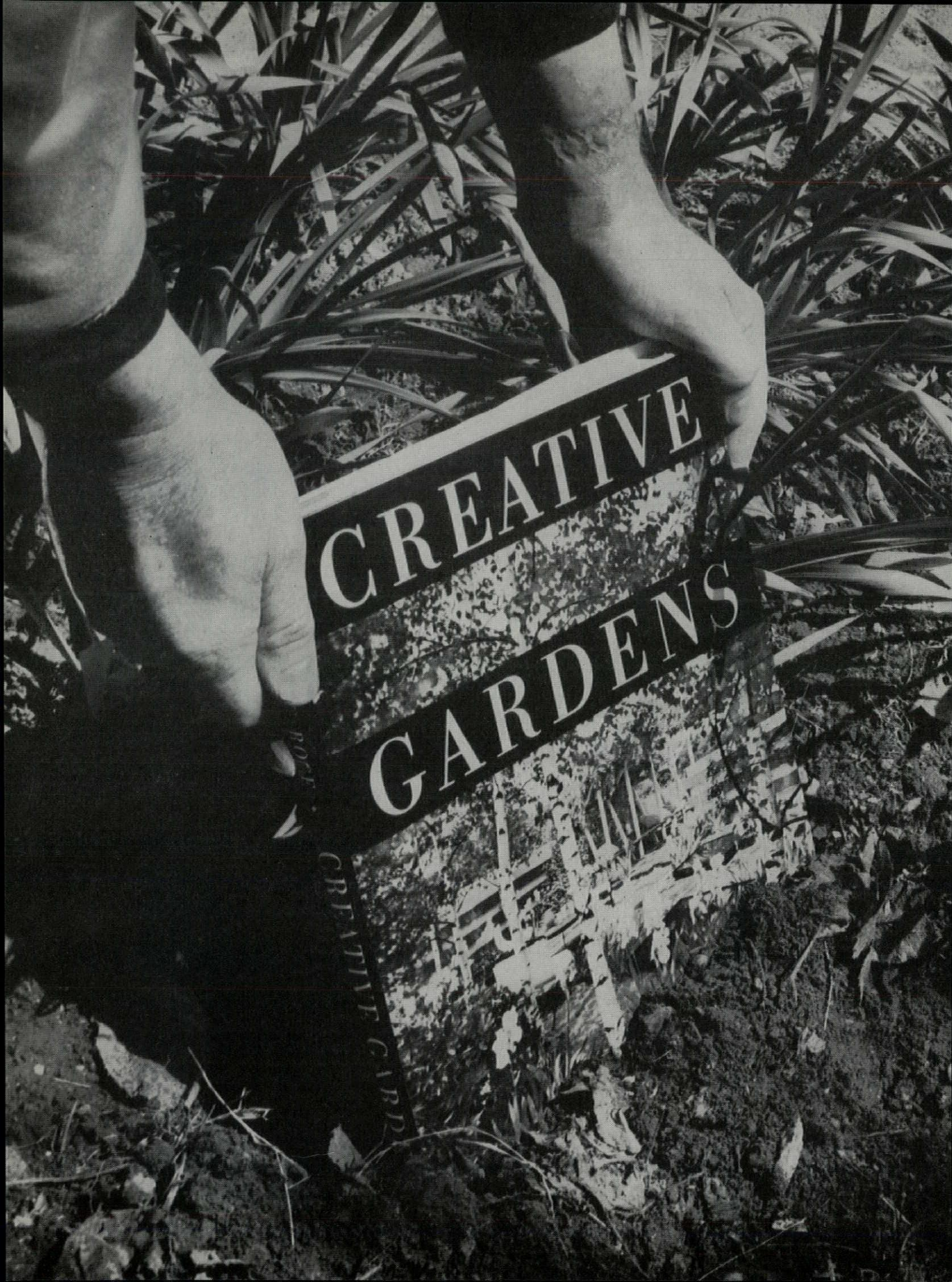
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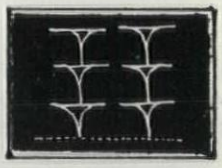

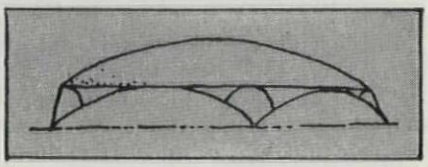

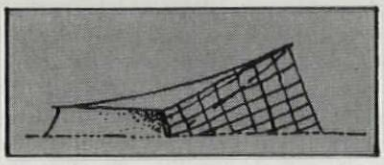

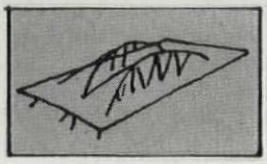

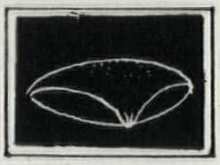

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we aren't that bad

I have begun to wonder recently whether we are developing *within* the profession of architecture a remarkable self-doubt—a breast-beating degree of self-criticism, self-abnegation, and something approaching a guilt complex that is positively morbid.

An editor of an architectural magazine today is constantly beset with appeals to be "more critical" of work presented. I sympathize thoroughly with the desire for more architectural criticism—objective, constructive, mature appraisal of work underway and work accomplished. The P/A Design Awards Seminars are, on our part, a move in this direction. But I rather question a letter which complains that we "always say good things about" work we publish. I don't think that that is reprehensible; we publish work because we *do* think it is good—not because we think it's bad. We know that it is never perfect, but the reader demand that we *deprecate* published material seems peculiar to our field. I have yet to find a literary magazine—even an avant-garde journal of criticism—that prefaced a story it published with a comment to the effect that: "We don't think this is a very good piece of writing, but despite all its faults, here it is . . . "

I have heard half a dozen speeches recently to architectural groups, by architects, bawling hell out of other architects.

I've just been reading Ralph Walker on what's wrong with architecture, John Burchard on what's wrong with architecture, Lewis Mumford on what's wrong with architecture.

The English magazine, *Architectural Design*, just arrived, with a piece by Peter Smithson, Architect, on U.S. architecture: ". . . folk art . . . old style European images and disciplines . . . used without understanding." This is our best recent architecture that he is talking about, not colonial work.

Our own *AIA Journal* for March arrived: deprecatory comments about Saarinen, about Philadelphia's Penn Center, about Le Corbusier (twice: the Marseilles Unité is "railroad siding housing of fifty years ago" . . . and "Corbu understands his world not at all"), about Wright, about Mies, about Bunshaft. . . . The only *complimentary* article is about the Roman Baths at Ostia. But there is a piece by our public relations counsel, urging us to prove to government agencies how good architects are.

•

We seem, in short, to be wallowing in self-deprecation and self-criticism. I for one am getting rather tired of it. I think it is harmful, because it is inhibiting, and perhaps keeps us from the constructive things we should be doing. Basically, what is the criticism of the profession of architecture that we hear from others and that we seem to plead guilty to?

I think it consists of five points, all of which can be at least partially answered.

1. The criticism is that in a business sense, architects are inclined to be sloppy; they sometimes show a lack of efficiency.

In answer, one can say that a huge industry is co-ordinated by architects, with billions of dollars of expenditures for fairly permanent establishments controlled by them, and with almost never a breath of scandal or business lapse being charged against them.

2. The criticism is that in a technical sense, architects are inclined to follow, rather than lead; there is not enough serious study, research, and experiment.

In answer, one can point out that never in man's history has so great a change in design and construction methods been accomplished in so short a time as our last few decades. And architects *have* led in this development.

3. The criticism is that in the sense of social responsibility, architects are inclined to take the proffered commission and ignore the one that is socially important but hard to get and do. Thus the package dealer, the speculative home builder, the interior decorator, and the developer-entrepreneur have bitten into the broad business of designing a total environment.

In answer, one can point out that architects have taken the lead in developing housing and urban renewal legislation, in health and education studies, in development of new, 20th Century types of buildings (such as the regional shopping center) and are even trying, in many areas, to work with the evanescent operative home builder.

4. The criticism is that in an educational sense, architects are prone to forget their obligations to future generations of architects once they have obtained their registration.

In answer, one can point out that no area of professional training has gone through such a radical change in our time as has the teaching of architecture; this has been a remarkably successful co-operative venture of the practicing profession and the schoolmen.

5. And finally, there is the criticism that in a design sense, architects are inclined to copy rather than originate. Thus clichés develop rapidly after an original work has been published; the design masters wield an extraordinary influence both in school and out of school, and a phenomenon like the curtain wall can spread like wildfire without much care being given to variety in its design development.

This is the most difficult criticism of all to answer. We can reply that in a design sense also, the changes have been revolutionary in our time. Whether one thinks that a new style has already emerged, or whether one believes that certain abstract tendencies such as romanticism vs. rigidity or whatnot are still doing battle, we all must admit that: in relation to the history of architecture there has been too little time—less than a century—in which to expect a fully matured, new architecture to develop.

•

Now I am not trying to write a Pollyanna-type editorial and avoid looking at reality. We have to face up to the fact that the physical face of the U.S.A. is not as beautiful as it might be. In fact, one critic has called this the ugly century. The architect can't be blamed for all of this, and yet—I have a friend who loves to cock an eye at a particularly unpleasant building and remark, "It took an architect to design that, didn't it?"

Let's all agree that we might do things better. But let's allow ourselves to *try* to do better without bopping all over one another at *every* opportunity and without condemning every attempt at improvement. The odd thing about this breast-beating is that it comes from left *and* right. It isn't only conservatives decrying advanced tendencies, or revolutionaries deriding academic trends: *everyone* seems to dislike *everyone else.*

Perhaps the great guilt we seem to feel about current work is one reason for the over-anxiousness to be *different,* and is harmful in inhibiting us from *development* of what good things we have. Perhaps if we stopped trying to form schools of New Brutalism, New Empiricism, New Classicism, New Regionalism with every move of the pencil on paper, we might accomplish more in the way of distinguished architecture. Perhaps a school of New Relaxation is called for.

It might be wise to study ways to mature, enrich, and find greater variety within the framework of today's accomplishments. As a first step, let's admit to some accomplishments. Our current design isn't *all* bad. Maybe those who criticize it most are sometimes frustrated, jealous, or unhappy; and perhaps the profession's reaction should be more of proud defense and less of guilty confession.

Thomas H. Creighton

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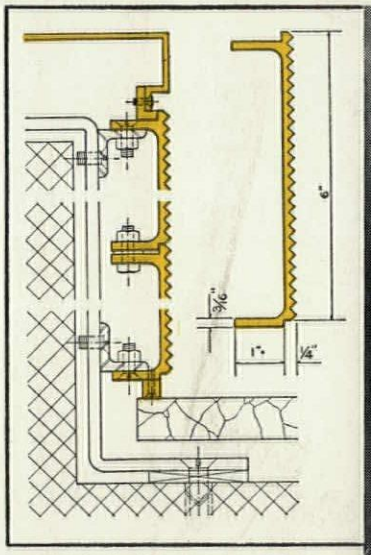

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