PROGRESSIVE ARCHITECTURE

newsletter

AUGUST 1951

- Going back to a non-shooting war situation, what happens to controls? It has been interesting to see the almost frantic releases from government departments urging no relaxation: the pressures to ease restrictions on building and on the use of building materials will be just as strong, and it seems a good bet that we will slowly go back to a more normal building situation.

- Decision will have to be made now: are we sacrificing normal activity for an emergency period, or for a long time to come? If the decision is the long pull, this will have to be sold to the general public, and, in the building field, to the whole industry.

- Shifts in emphasis on methods of restricting construction can be expected: for instance, in the residential field, from a $35,000 to a 2500 square-foot basis.

- Defense Mobilization chief Charles Wilson now says that the 1952 housing program will not be cut below 1950's. This makes the home builders happy, since they had feared a further cut-back.

- To indicate how complicated one phase of construction permits can be, here are the places applications must be filed under NPA's M-4 order for residential construction: FHA insured construction, nearest local FHA office; conventionally-financed construction, Office of the Administrator, HHFA, Washington; public construction, appropriate field office, PHA; college housing appropriate regional office Office of the Administrator, HHFA; luxury housing, Office of the Administrator, HHFA, Washington (Director, Defense Liaison Staff). All on NPA Form NPAF-24.

- New construction amounted to $2½ billion in May, according to Dept. of Commerce reports. Home building finally dropped (the first May downturn since 1939), while in this month defense plant and military construction had risen only 6%. Total construction went up 19% above May 1950, with private work up 19%, public up 30%.

- By third week in June, Engineering News-Record figures began to show a drop below 1950 totals. Surprisingly, industrial building began to fall off during that month.

- In the meantime, military construction has been growing in volume until now an $8 billion program is being talked of. More and more architects are getting pieces of it; and another interesting question will be whether Congress will now be of a temper to continue to make the necessary appropriations.

- Eugene Raskin, assistant professor at Columbia U., has been awarded a Langley Fellowship to write a book on the theory of architecture.

- Other Fellowships: Ernest A. Grunsfeld Fund Traveling Fellowship, by Stanford University, to Thomas T. Williamson; George

(Continued on page 2)

newsletter

G. Booth Traveling Fellowship, by University of Michigan, to Matthias R. Goebel; Harley, Ellington & Day Scholarship, also by Michigan, to Tivadar Balogh; John Stewardson Memorial Scholarship for travel, to Bruce E. Gerwig of Penn. State.

- Institute of Design at Illinois Institute of Technology announces the appointments of Albert Szabo, instructor, and Charles L. Forberg, assistant professor—both Harvard architectural graduates.

- Parent institution, Illinois Tech., has received a contract for research on multi-story apartment construction, from HHFA. With the assistance of Howard T. Fisher and Associates and Structural Clay Products Research Foundation, studies will be made of possible economies in materials and labor.

- A model emergency ordinance setting minimum standards of construction which may be adopted during the emergency by local governments has been announced by joint committees of Building Officials Conference of America, Pacific Coast Building Officials Conference, and the Southern Building Code Congress.

- American Hospital Association will hold its annual convention in St. Louis Sept. 17-20. In co-operation with A.I.A., an exhibit of designs contracted for erection since January 1946 will be held.

- M.I.T. announces the thirteenth annual fall conference on City and Regional Planning, beginning Sept. 4, 1951. It lasts two weeks, is open to professionals, officials, and those in related fields, will be conducted under Prof. Frederick J. Adams, costs $50.

- Building Research Congress scheduled for London in September will be addressed by a number of U. S. specialists, including architect Marshall Shaffer of USPHS.

- Looking ahead, the 4th International Lighting Exposition and Conference, sponsored by National Electrical Manufacturers Association, will be held in the Cleveland Auditorium, Cleveland, Ohio, May 6th to 9th, 1952.

- A.I.A. local presidential elections: New York Chapter, Francis Keally; Chicago, L. Morgan Yost; New Jersey, Elmer S. Tuthill; Brooklyn, Vito P. Battista.

- N. Y. State will hold civil service exams for over forty architectural positions Sept. 8 this year, at Albany. Salaries offered range from $3846 for Junior Architect to $5744 for Senior Architect.

- Architects are finding new fields these days; John and Drew Eberson have been engaged as technical consultants to the Air Pictorial Service of the U. S. Air Force. This is not as strange as it sounds: Drew Eberson was once a movie director.

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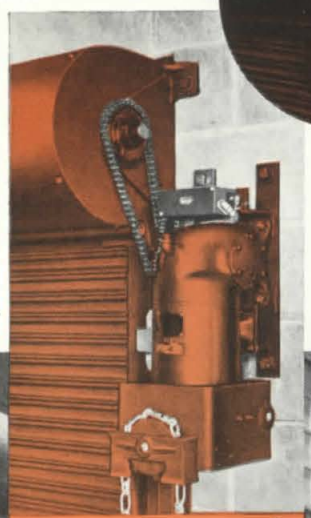

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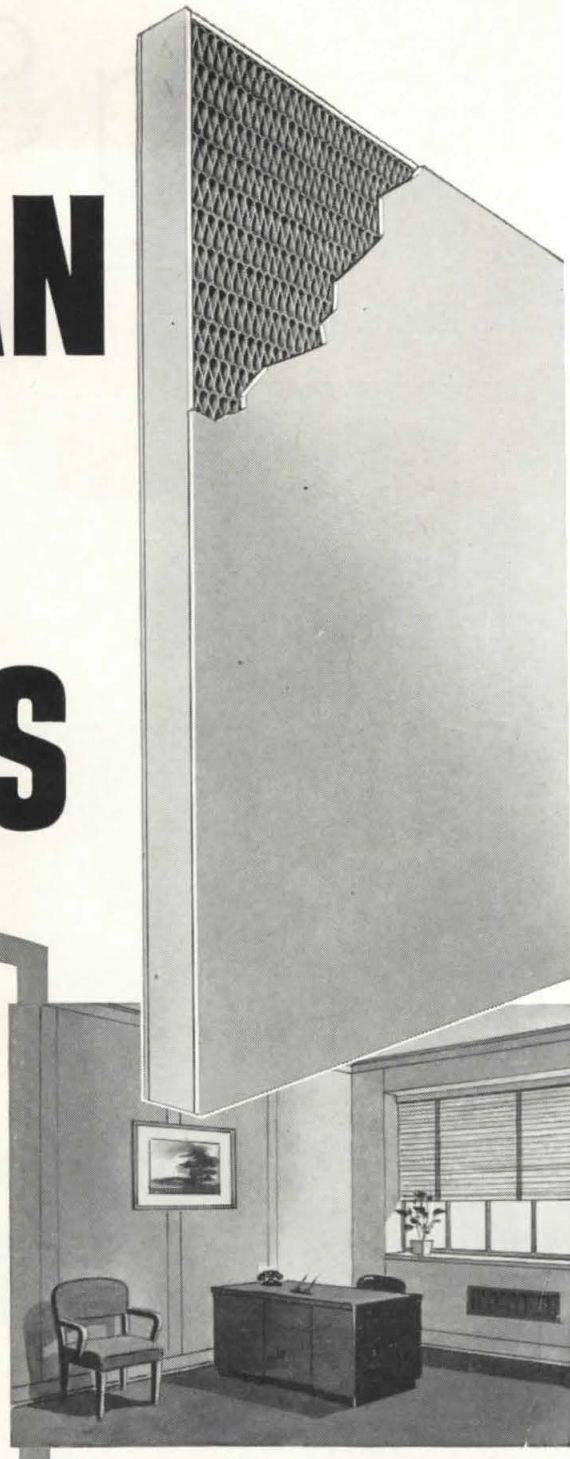

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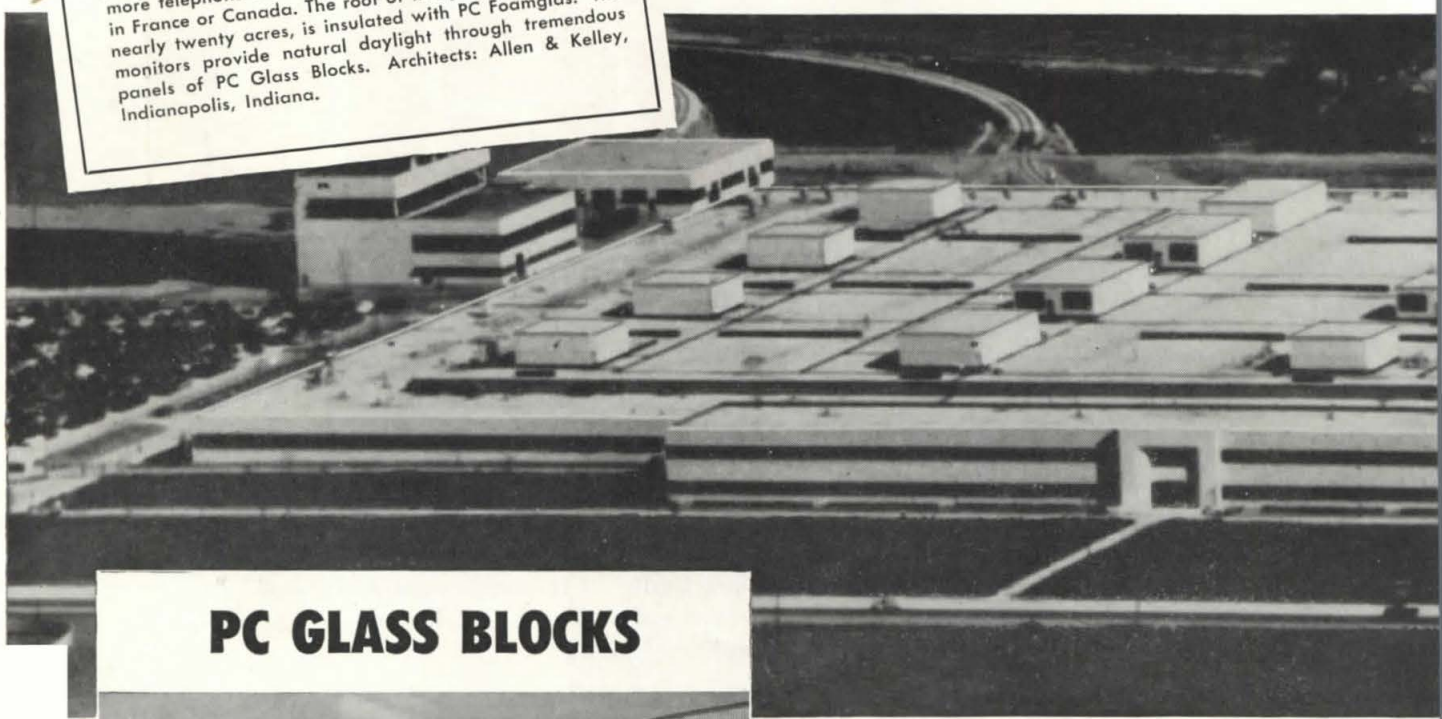
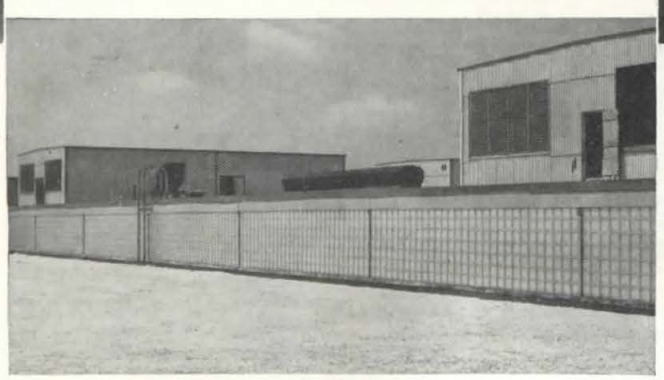


PC GLASS BLOCKS



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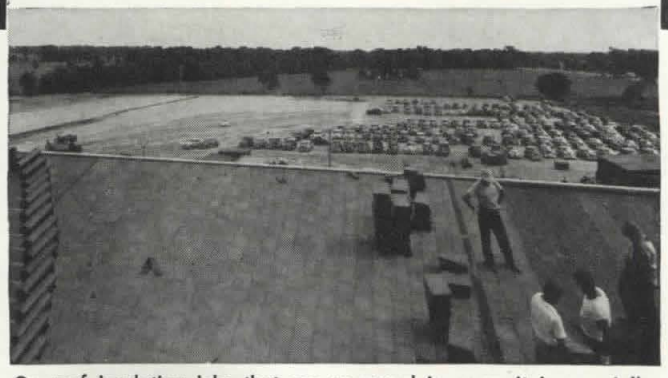

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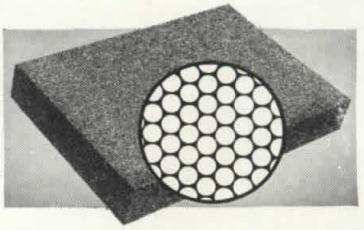

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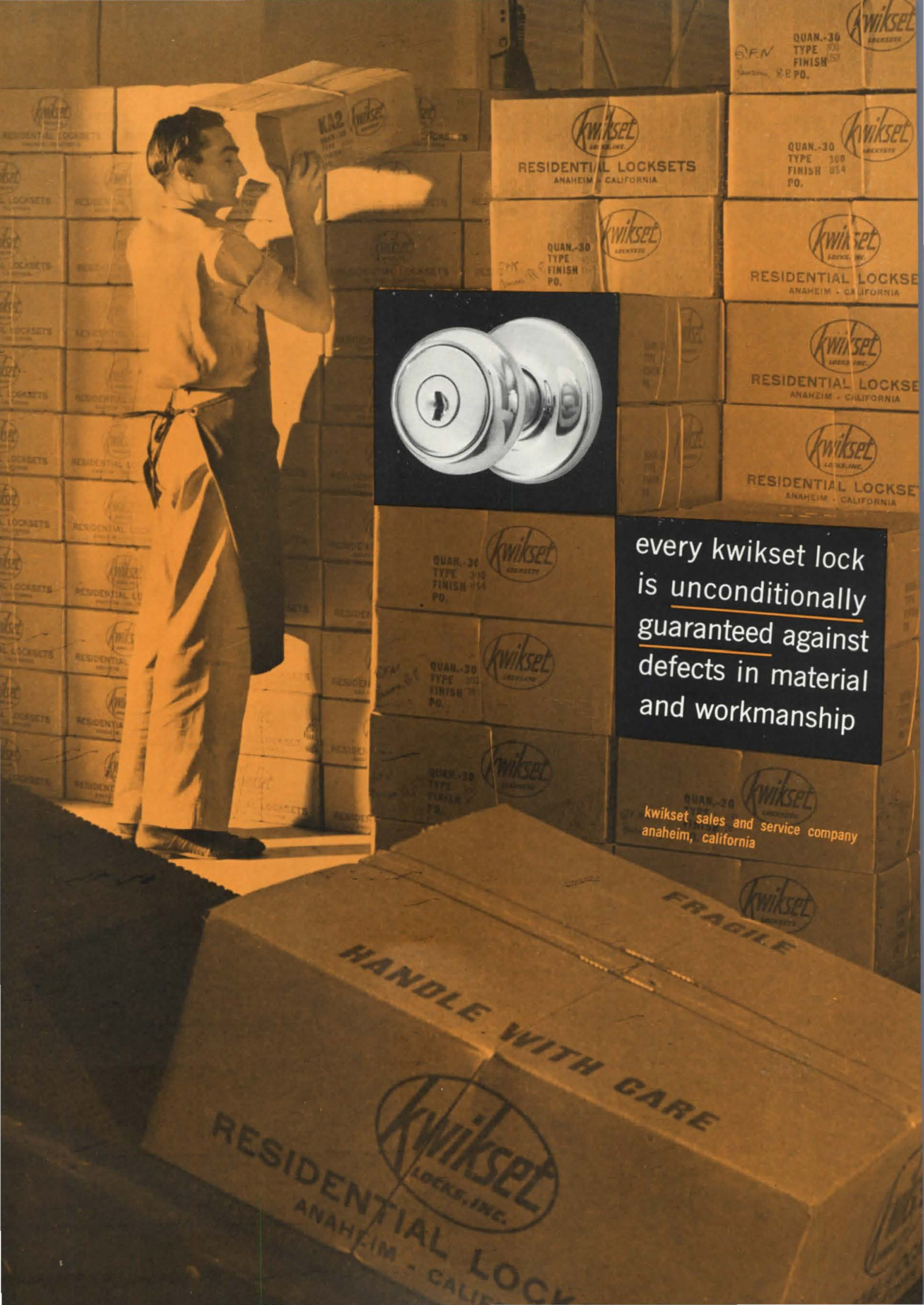
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p/a VIEWS

OAK RIDGE REPORT

Dear Editor: Mr. Woodford Taylor, Manager of the Roane-Anderson Company Housing Division, the Commission's municipal and real estate agent in Oak Ridge, handed me a complimentary copy of your June 1951 PROGRESSIVE ARCHITECTURE magazine. The feature story on Oak Ridge, and the role of the architectural firm of Skidmore, Owings and Merrill played therein being your lead article.

May I say that by long odds it is the most accurate, interesting, and intelligent job of factual and pictorial reporting it has been my pleasure to come across in my three years as Manager of the Commission's Real Estate Division in Oak Ridge. George Sanderson and your magazine are to be congratulated on a difficult job well done, particularly as it relates to the architectural profession's first opportunity to play the major role in the pre-planning, development, and execution of all phases (of) the physical development of a community of 34,000 people.

It would be greatly appreciated if you could make a dozen or more copies of this issue available to this office. We are constantly dealing with developers, investment sources, and the construction industry in connection with the development and disposal of commercial and residential real-estate in this government owned community.

RUSSELL FIELD, Manager
Commercial Services Division
U. S. Atomic Energy Commission
Oak Ridge, Tenn.

WONDER OR NIGHTMARE?

Dear Editor: I suppose it is expected that when a building project creates wonder, that sooner or later someone like me will find fault. So here goes.

We, here in Rhode Island, stress safety, especially from fire. We have a State Law that requires two ways out of every apartment, so this "8th wonder," U-235 at Oak Ridge, Tennessee, would not meet our Building Code.

In a fire we find most people lose their lives from smoke inhalation, not fire itself. On page 69 there is a plan shown. To get to the stairway from a bedroom, in case of fire in the kitchen (we will say), would be deadly for some. I'm glad that we have a law requiring *two exits from each apartment.*

Perhaps the terrace is supposed to be of some help. Well, we had a fire not so long ago where there were open porches or terrace on each floor and on two sides of each apartment—but four lives were

(Continued on page 10)

STEAK WITH F.L.W. (NO MUSTARD)

Frank Lloyd Wright arrived in Florence on Saturday evening, June 16. He had heard the day before that the opening of the exhibition of his life's work in 17 rooms of the 15th-century Strozzi Palace (a repeat of the Philadelphia exhibition of last January) had been postponed. It was to have been opened by Enaudi, President of the Italian Republic, but he had fallen ill. Telegrams flew round the world.

Many distinguished guests halted their footsteps, but some were not reached in time, and on Sunday a party of 18 architects — Italians and Swiss, Americans and English—trailed in the wake of the Master as he inspected room after painted room of the Palazzo Vecchio, in an oppressive heat, and then gratefully partook of a superb luncheon in his honor. F.L.W. had not been impressed by his Sunday morning tour, but he was no stranger to Florence. He had fled there 40 years ago, and two of the 24 original sketches (dating from 1889 to 1949) shown in the exhibition are his designs for a house at Fiesole and for his own office in Florence.

The great man said little, either at lunch or during his triumphal tour. But whenever he opened his mouth, all heads turned and a reverent hush descended. This was not at all displeasing to F.L.W. Benignity reigned. A late arrival entered at lunch—Scarpa of Biennale fame from Venice—brimming with emotion at, for the first time, coming face to face with his idol. The Master, in a quiet, clear voice said, and then repeated; "Tell him he is not new to me. I have known him for a long time." The theatricality was quite unforced and the effect on his audience was as though Scarpa (who had buried his face in his hands) had been blessed by a god.

At another time Bruno Zevi crashed through all conversation with his bull-like voice and accused Werner Moser of lack of appreciation of organic cooking. Moser had applied mustard to a Florentine steak! This, bellowed Zevi, was as though one applied decoration to organic architecture, and he called the Master's attention to the faux pas.

"Down with him!" cried Oscar Stonorov of Philadelphia (who had designed the F.L.W. exhibition). And Wright, scooping Moser's mustard off his plate with his own fork, remarked, in a tone of supreme rebuke, "And this was a Taliesin boy—a Taliesin boy." Werner Moser, perhaps Switzerland's most distinguished architect, seemed suitably abashed.

Speeches of homage were made in Venetian dialect and Sicilian dialect. F.L.W. replied that Italy was the font of architecture, and Professor Carlo Ragghianti, art historian of University of Pisa, who had organized the exhibition on behalf of the City of Florence, termed this one of the greatest experiences of his life, even though the exhibition itself would not open for a week or more.

JAQUELINE TYRWHITT

F.L.W. attends the exhibition of his work at Strozzi Palace, Florence, Italy.

Photo: Zevi
(Courtesy of Fred and Lois Langhorst)

p/a VIEWS

(Continued from page 9)

lost by suffocation. The fire damage was only a few hundred dollars; smoking woolen caused the deaths. They were in the rear hall on the first floor, yet those who lost their lives were on the second and third floors. A so-called fireproof building will hold the smoke longer.

This 8th wonder looks like a nightmare to me. COL. JOSEPH A. HICKEY
Providence, R. I.

PLANS BY ENGINEERS

Dear Editor: I am a licensed Engineer in Tennessee and a member of National Society of Engineers, Tennessee Society and Knoxville Chapter. Started practicing architecture and engineering in Knoxville in 1921 just before state law regulating such practice was passed. Registered as Engineer because I was a member A.S.M.E. and did not have to take examination. Have been doing buildings since then, now on my 402nd building. Now, after all these years, the architects are trying to stop engineers from planning buildings, and I do not yet know what the outcome will be.

It seems that the architects want a "Closed Shop" in the building business. Since I cannot tell whether I will be permitted to continue, I decided not to renew subscription to architectural magazine. Will wait to see if I am to do common labor for a living. If the engineers are able to win out I may re-subscribe.

My real reason for writing this letter is that I wish to suggest that your magazine make a thorough study of the situation involved in the above and publish some facts about what is happening in all of the states along this line. Nearly all of my practice is on buildings which are not desirable jobs for the architects. Or, at least, they have not done much of them in the past. I think you could do much to clear the air by putting out some factual matter along the line of architectural relations in the various states. JOHN V. PIERCE
Knoxville, Tenn.

SURGEON'S CRITIQUE

Dear Editor: Allocation of space in the "operating-room suite of tomorrow" designed by Yurchenco and published in July, 1950 P/A, is an interestingly dangerous concept. It is the acme of "functionary design" in which the ambitions and prejudices of functionaries find their way into structure. The purpose of surgery is to eradicate disease from a living patient—hence, functional design must stem from the patient and avoid misdirection due to emotional analogy to familiar life situations, traditional practice or self-interest of subordinates.

A patient is cared for by a surgical team; each member having well defined but overlapping responsibility for his care and the support of the surgeon. The team-work essential to ideal patient care arises only when competent individuals pool their contribution in the interest of *the* patient being operated upon. Teamwork results from integrated function rather than isolated effort of members of the surgical hierarchy. Yurchenco's operating room skillfully isolates the components of the surgical attack and blurs their focus on the patient.

To note specific faults, follow a patient to the operating room. Transportation is in the form of stretchers—thoughtlessly cruel intrusions on the patient's security and comfort. Induction-room technic invites hazardous and clumsy transport of the anaesthetized patient coupled to an anaesthesia machine through an unsupervised corridor. The conscious patient has his mental composure harassed by sights reflected in the plate-glass partitions between the

(Continued on page 12)

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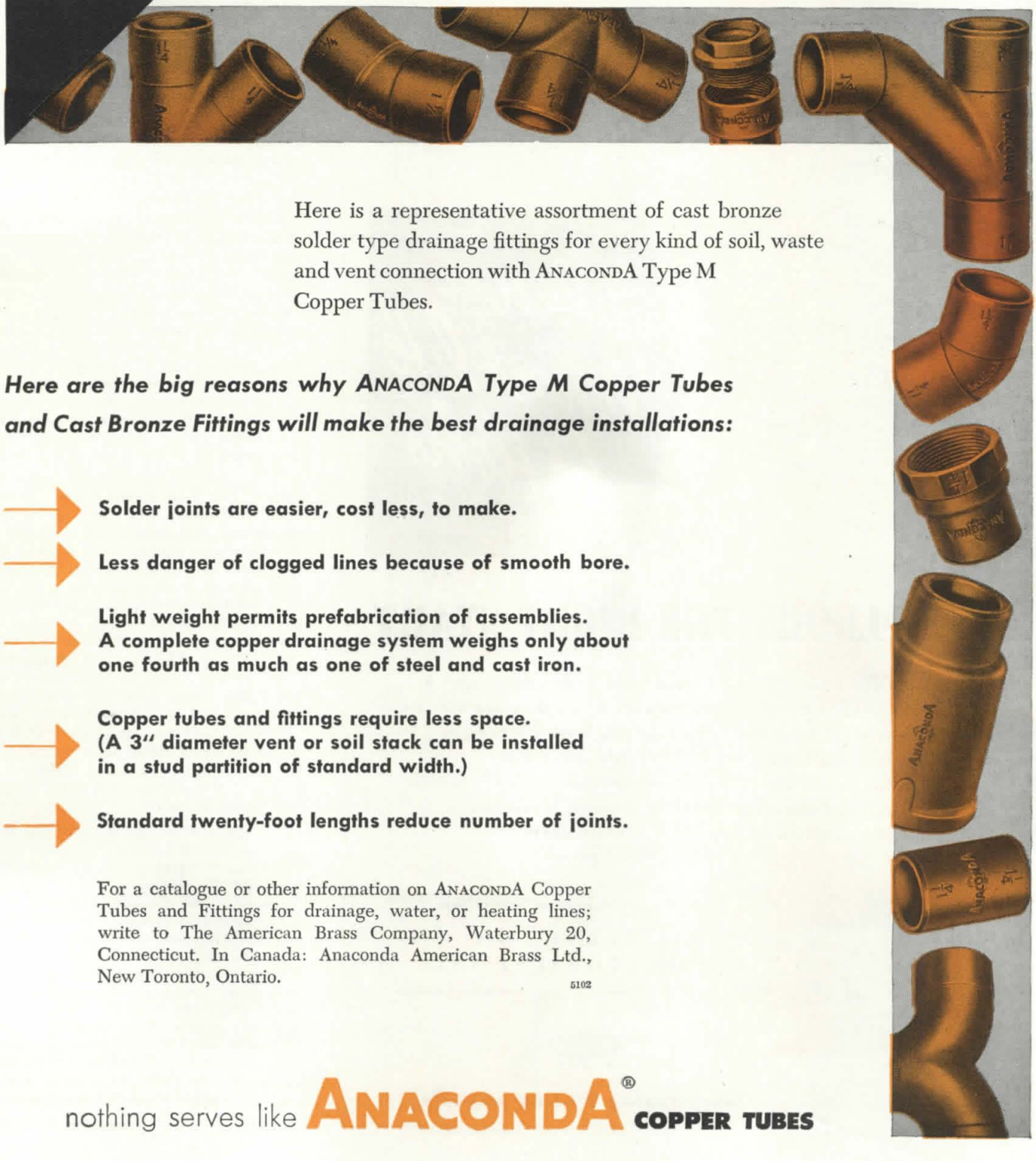

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p/a VIEWS

(Continued from page 10)

operating rooms, or by professional discussions at the scrub sink.

The nursing block is a highly developed work area springing from the functionary concept. This area completely disregards the fact that the nurse's duties do not center here, but are to care for the patient and to support the surgeon. This necessitates constant attendance in the operating-room and patient areas. Most of the duties accommodated in the specialized working block are actually accomplished by lay-attendants, in hospitals where there is division of labor. Their efforts are expended in preparing instruments and supplies for use by the surgical team. The supplies are best stored in the functional areas, where they are instantly available without forcing the nurse to leave her team in the operating room, to seek the materials with which to care for her patient. Ideally, this nursing block is located near the entrance to the operating room where lay-attendants and others whose duties demand access can do their task without going through the isolated operating-room corridor, itself.

Hiding the nursing supervisor in an office deep in this block is the ultimate in functionary expression. The supervisor of an operating-room suite belongs in the midst of its main corridor where she is in control of traffic, contacts team members and keeps abreast of minute-by-minute developments in the care of the patients entrusted to her.

Contrast the anaesthetists's plight with that of the nurse. Although the many supplies and cumbersome equipment used in anaesthesia are often urgently needed in the professional care of the patient, the anaesthetist's office, the induction room, and the anaesthesia storage are spaced widely apart.

There are several areas which indicate traditional allocation of space. For examples: a plaster room, an induction room, the large clerical and reception areas, contribute nothing to the care of the patient and are outmoded. There is a traditional dearth of storage area in this suite. Roughly 160 square feet of storage space are necessary to care for the equipment used on occasion in a pair of operating rooms. Because much of this equipment is needed unpredictably on instant notice, storage space should be contiguous to each pair of operating rooms.

The operating rooms themselves are disappointing, in that there is only one which has respectable size and the access to these rooms is such that they inevitably serve as corridors. A minimal size for any kind of operating room is 18 x 20 feet. For some types of major surgery, a larger room is essential. Rooms smaller than this are not worth constructing. The shape of an operating room is important in that the central functional area is a ten foot square. Space around this area is only useful if it is of uniform shape, so that it can be successfully used as a corridor for moving equipment about. There is no provision for storage of a day's supplies within the room.

The general design and allocation of space is intended to make it unnecessary for various members to encroach upon each other's domain. The surgeon is isolated to the dressing room and the scrub-up corridor, while the anaesthetist has his area and the nurse has hers. It is generally considered that the surgeon is responsible, both morally and legally, for the care of the patient. It is therefore his duty to oversee all the elements upon which a successful operation is based. Good architectural design thrusts him in the middle of all these functions, so that during the course of his daily work he becomes accustomed

(Continued on page 19)

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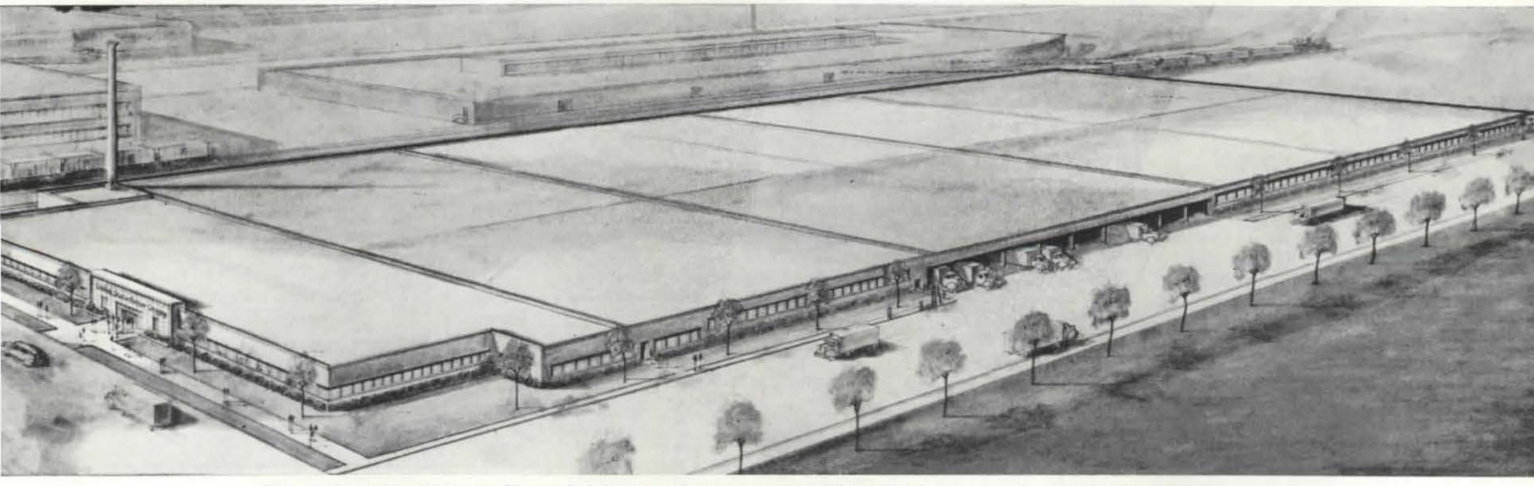

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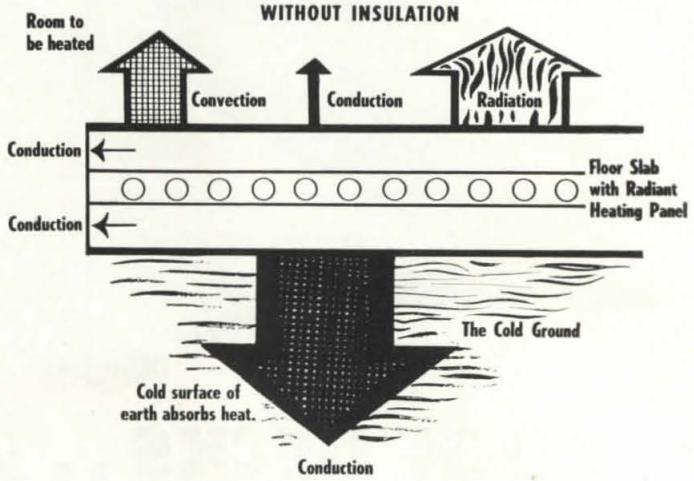
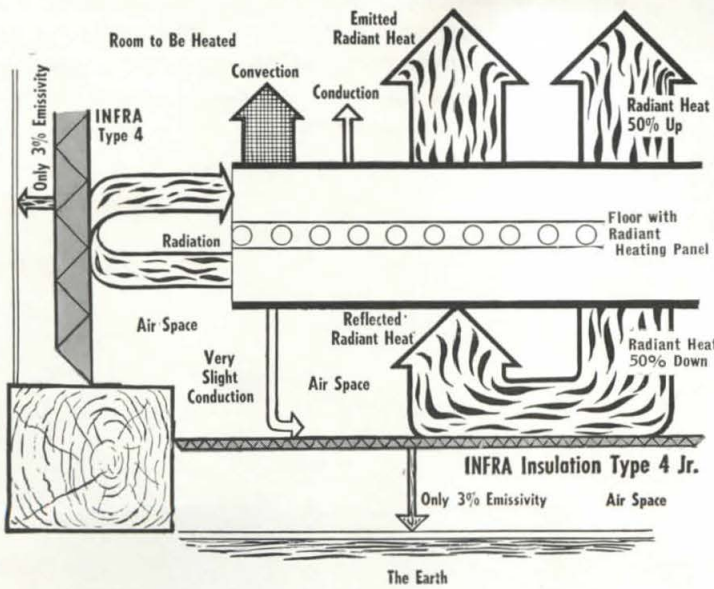
Heat Flow from Floor Radiant Heating Panel
WITHOUT INSULATION



COLD AREA

Heat Flow from Floor Radiant Heating Panel
WITH INFRA INSULATION



INFRA THERMAL FACTORS, DOWNHEAT FLOW

Type 6	**C.044 R22.72 equals 9″ DRY Rockwool**
Type 4	**C.065 R15.38 equals 6″ DRY Rockwool**
Type 4 Jr.*	**C.097 R10.30 equals 4 1/5″ DRY Rockwool**

***In 1″ Space**

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10 Murray Street New York, N. Y.

The National Research Council of Canada recently conducted numerous tests and found that without insulation under ground floor radiant panels, heat flow *into* the earth was preponderant; in considerable amounts to 6 ft. underground, and extending in lesser amounts to 12 ft.

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Six-space and 4 space multiple accordion aluminum have C factors for downheat flow of .044 and .065 respectively, equal to 9″ and 6″ laboratory dry rockwool. They are non-condensation forming, of zero vapor permeability.

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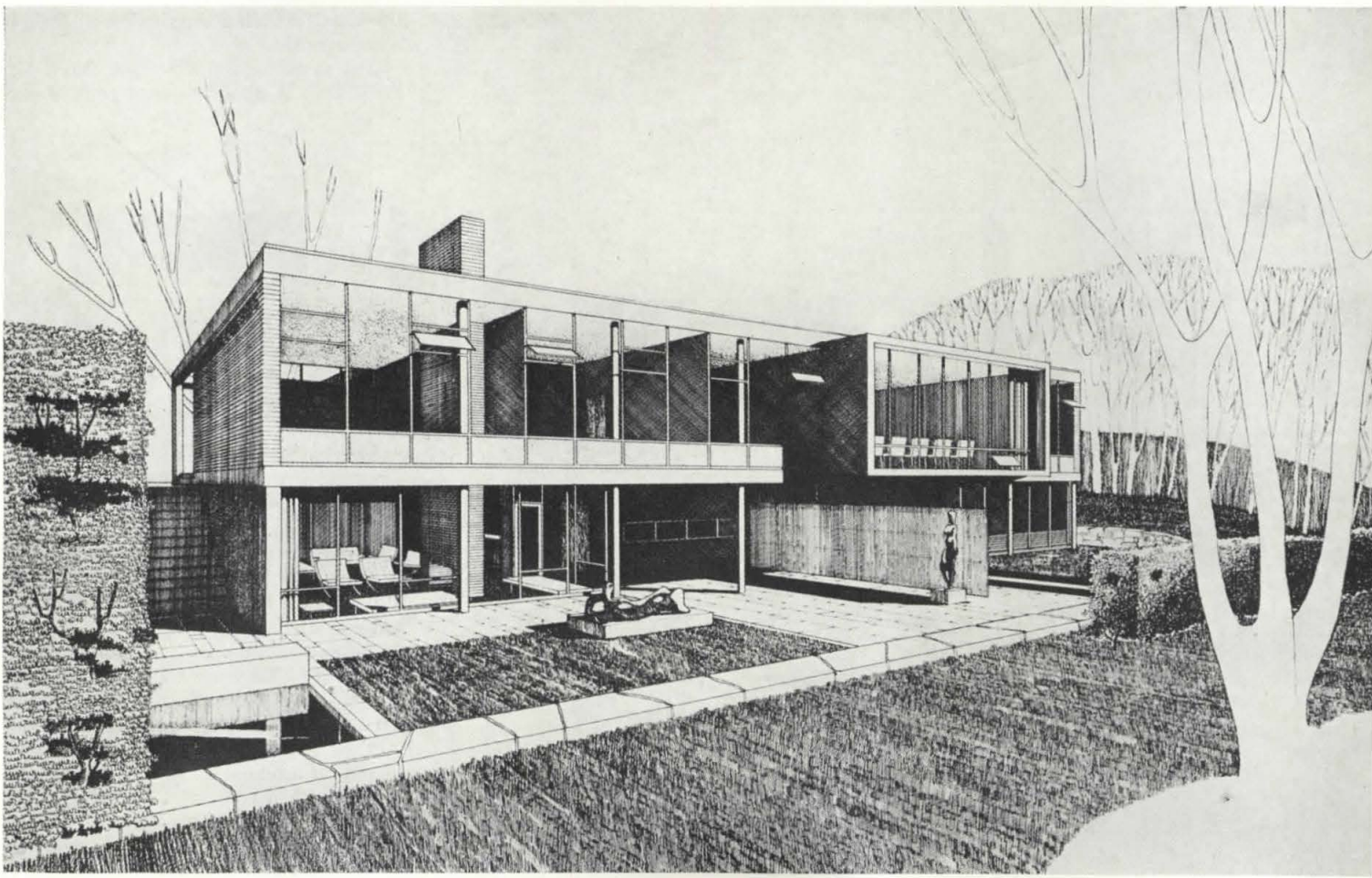
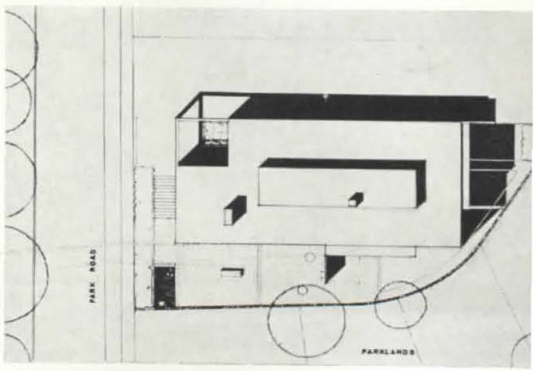
PROGRESS PREVIEW



headquarters for an architectural association

"For the 60 years of its recorded history, the Ontario Association of Architects has felt the need for quarters such as are enjoyed by other professional bodies. It can probably be said with truth that the Association has suffered, both in efficiency and prestige, by recurring changes of address and inadequate accommodation. With the above in mind, the Association has purchased a piece of property on which it proposes to erect a building . . ."

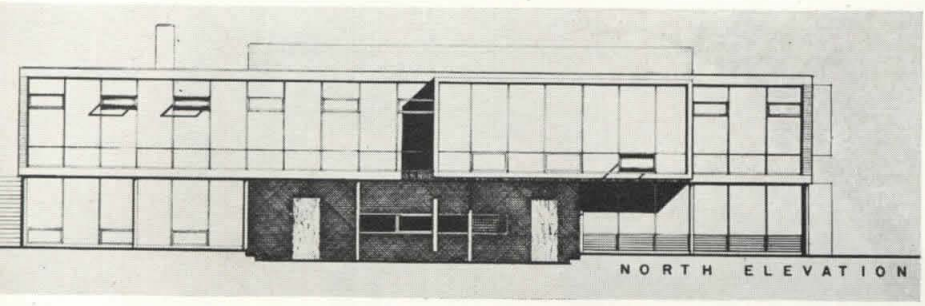
Thus the program for the recent O.A.A. Headquarters Competition set forth the need for the building wanted to shelter the Association—and also, until the Royal Architectural Institute of Canada erects a building of its own (in Ottawa), the offices of R.A.I.C. In a foreword on objectives, the program prescribed only administrative offices, a club and exhibition room, a board room, and a library, as it is anticipated that large meetings will continue to take place in a hotel. Recognizing that an architects' building will attract

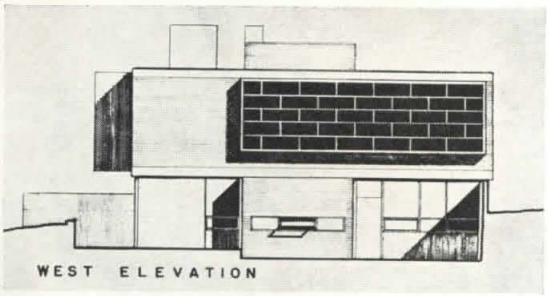


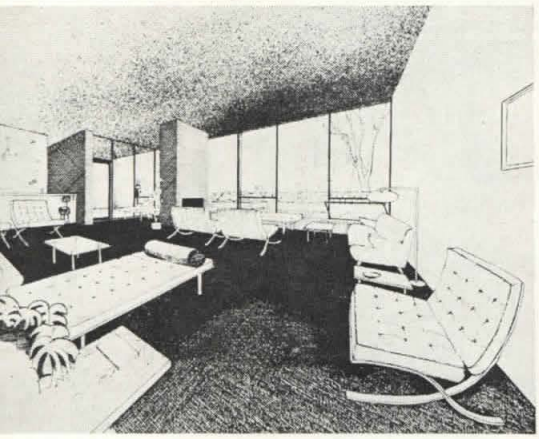
The prizewinning design for proposed headquarters for Ontario Association of Architects, by John B. Parkin & Associates, is shown here and overpage. It was designed for an actual site, wooded and bounded by park although but a few minutes walk from a majority of Toronto architectural offices.

much attention, "a certain dignity" was asked, but the competitors were warned against an institutional character. As for style, a design "that represents the aspirations and the ideals of the Association in 1950" was sought.

The design submitted by John B. Parkin & Associates was picked by

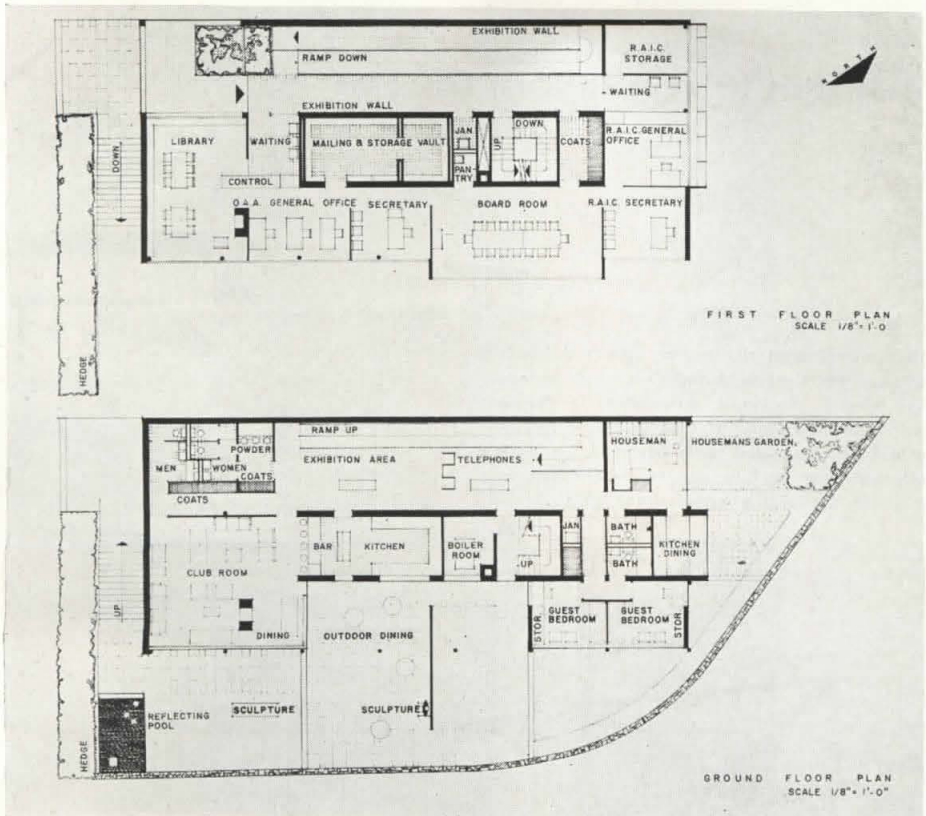






the three Jurors—Prof. E. R. Arthur, Murray Brown, and F. H. Marani—primarily because its plan "presents an air of spaciousness and the contact made with the O.A.A. Secretary, and the grouping of his office with the Board Room could not be improved upon. Control of the library is equally good . . ."

The prizewinning entry was judged the best of 36 submitted—all but a few being found contemporary in design expression. Three Honorable Mentions also were awarded: to George P. Hassig, Port Credit; to C. R. Worsley and to Page & Steel, both of Toronto.



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MINNEAPOLIS
Honeywell

First in Controls

p/a VIEWS

(Continued from page 12)

to supervising cleanliness, caliber of work, behavior, and technic.

One inspiring point is the inclusion of a recovery room. The technic of caring for the helpless postoperative patient has been proven by 40 years of use in some hospitals, not only for the safety of the patient but also for the saving of nursing time and the maximum utilization of specialized equipment for the care of these patients.

CARL W. WALTER, M.D.
Peter Bent Brigham Hospital
Boston, Mass.

AND ARCHITECT'S REPLY

Dear Editor: It is a pleasure to have the eminent surgeon-inventor, Dr. Carl W. Walter, discuss my preliminary projections of a "surgical suite of tomorrow." It seems to me that he has given articulate expression to a philosophy of planning based on today's belief in the infallability of the engineer and the production line, and one which leads to an achitectural incompleteness that many are beginning to deplore.

While architecture must deal with linear sequences and the *allocation* of space, it is primarily concerned with the reality of the space *organization* it assembles out of static elements—with the interplay of functions, just as much as of light and shade, form, and motion. Dr. Walter criticizes the "functionary design," and yet it seems to me that his is the approach of the real estate man parcelling out land on both sides of the busy streets; in contrast to the total *architectural* approach, which might be described as similar to a plant growing into space and creating and describing new space relationships as it develops.

Lining up functions as they are in the lineal hospital, is exactly comparable to lining up materials for an industrial production line. Fortunately, the realities and fluid complexities of healing ever more diverse and complex individual cases have begun to break down the engineers' norm in hospital planning. The growing concern (in such techniques as group nursing) is for the primacy of all persons within the hospital—perhaps even what Dr. Walter deplores: the "self-interest of subordinates."

There is something more important than the mere eradication of disease, and the "emotional analogy to familiar life situations" may not at all be a "misdirection" of the architect's aim. If one has seen a child being wheeled in for a tonsilectomy and being needlessly traumatized by the sight of gory instruments and operating debris, placed in the corridor while an adjoining operating room

(Continued on page 20)

p/a

VIEWS

(Continued from page 19)

is being cleaned for the next case, this point becomes very clear.

An examination of the specific points raised by Dr. Walter seems to show a misunderstanding of the intent of most important features of the plan. For instance: in the proposed scheme the patient is brought to surgery through areas planned to be pleasant and soothing (the economy factor of each particular hospital will necessarily determine whether the patient be carried on a bed or a stretcher); the induction space alcoved to one side serves either for anaesthetizing the patient or as a place for him to wait while he is checked by the supervising nurse or delegated assistant; the entry to the operating suite is controlled by the administrative clerical section; the circular-corridor plan separates the post-surgical from the incoming patients.

Reflection angles would make it impossible for the patient's "mental composure to be harassed by sights reflected in the plate-glass partitions," which worries Dr. Walter, and the overhearing of "professional discussions at the scrub-sink" could be obviated by enclosing the scrub-up area, at the cost of access doors. There seems to be a difference of opinion among surgeons on this subject (as well as others!).

Dr. Walter wants the surgeon "to oversee all the elements upon which a successful operation is based" and says "good architectural design thrusts him in the middle of all these functions." Here again one finds a difference of opinion of the surgeon's function, and Dr. Walter's point of view leads him naturally to object to the separation as well as the concentration of all the adjunct nurses' work and supplies into one area, which is channelled directly to the operating room through sub-utilities instead of being located along the corridor. The criticism of this arrangement appears at first to be based on a belief that the elimination of cross-traffic would hamper the surgeon in his overseer's responsibilities; but one wonders if it is not rather an example of the common but significant errors made by people who have difficulty visualizing two-dimensional plans in their ultimate three-dimensional reality. To my way of thinking, in terms of daily activity, an attractive, centralized work area with short walking distances, abundant light, and possibly a bit of view, would not only be a pleasant working environment, but also should even extend a pleasant invitation for an administrative visit.

There was a desire not to freeze details of the operating suite until other component parts of the hospital had been developed to the same degree. Only a general indication of secondary units such as dressing and storage areas, plaster room, etc. was made, as a reminder of their existence. The adequate storage area could be divided as desired.

With regard to the ideal shape for a surgery, many people would prefer the oval, were it economical to build; certainly other forms should be investigated. It is good to hear a demand for larger surgical areas, even in the case of "minor" surgery; with this criticism I must agree. Even within the module, these areas could be increased in size with no great difficulty.

It is pleasant to note that Dr. Walter approves the recovery room.

BASIL YURCHENCO

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The firm of EDWARD LOEWENSTEIN, Architect, announces the opening of a branch office at 129 S. Main St., Reidsville, N.C., under the supervision of ROBERT A. ATKINSON, JR., assisted by RAY M. HEPLER.

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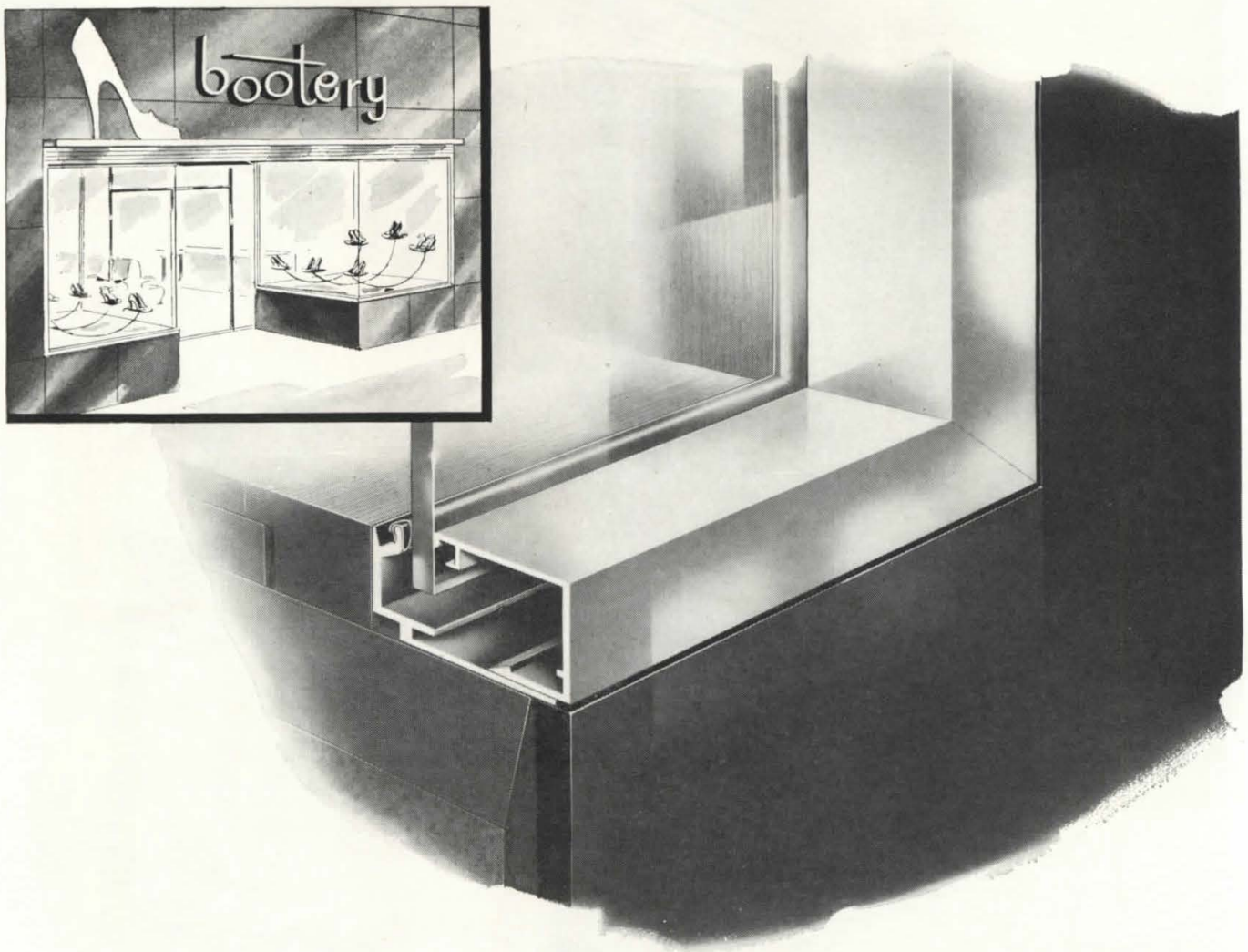

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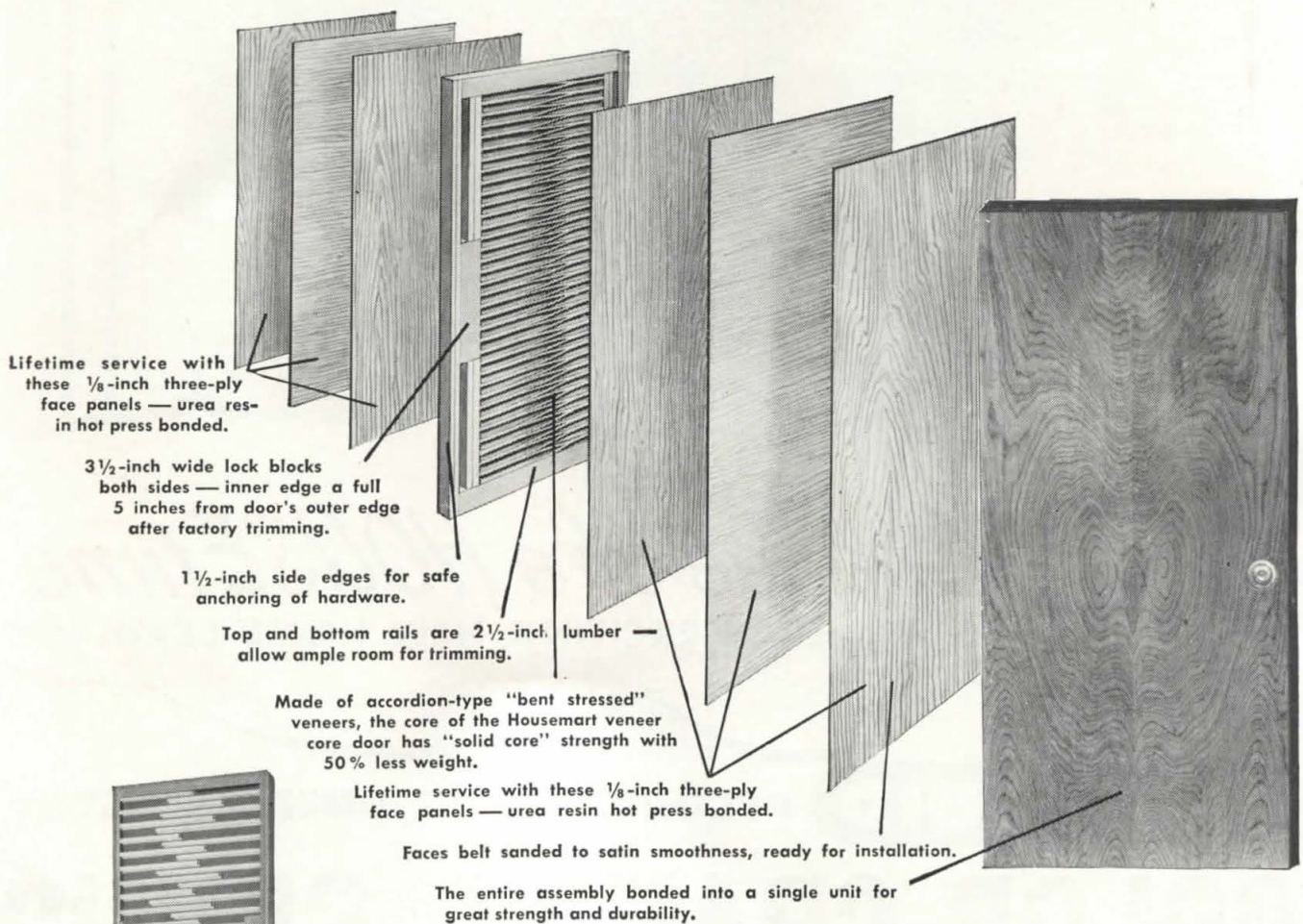

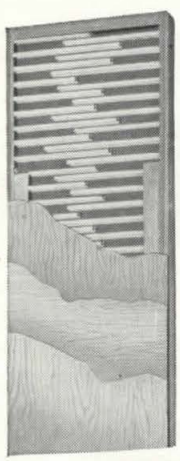

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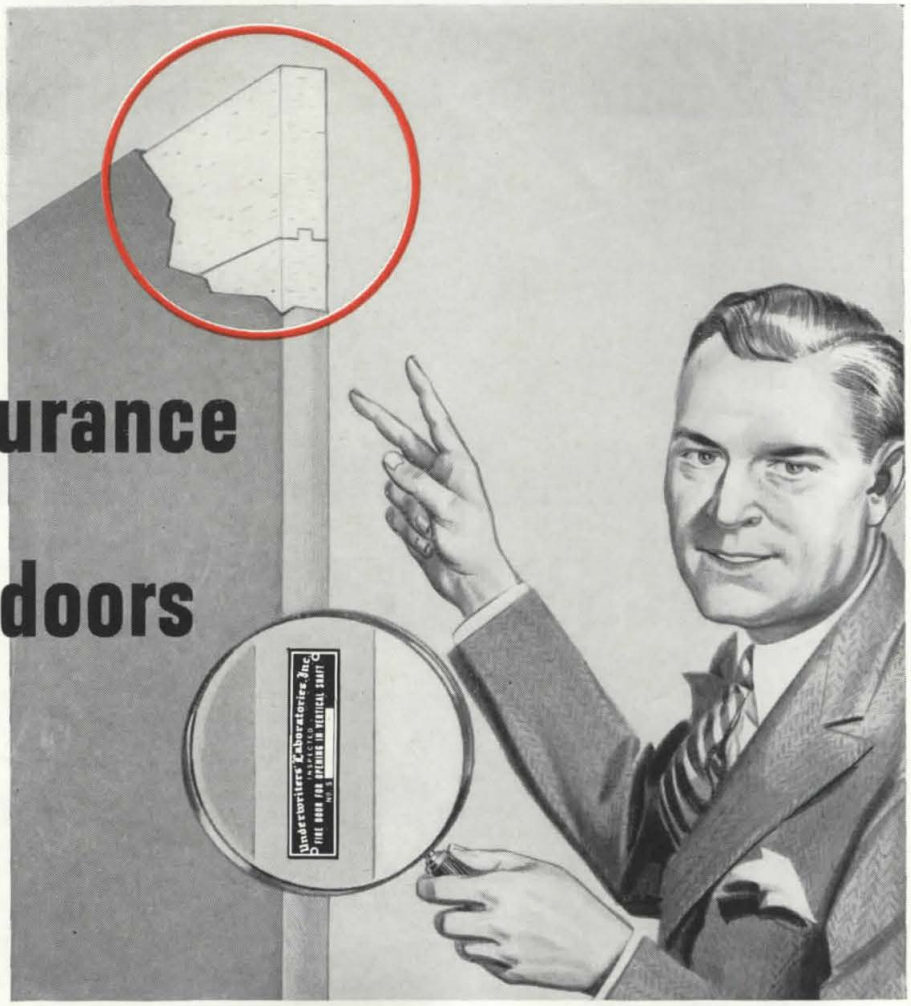

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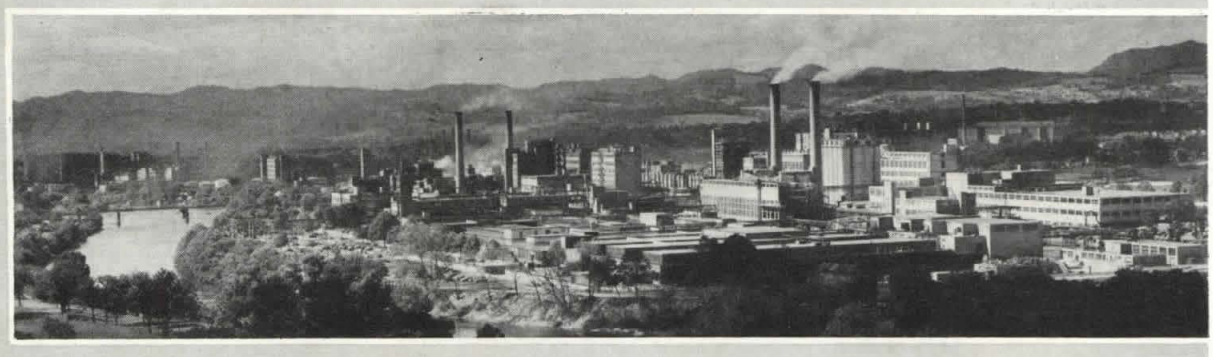

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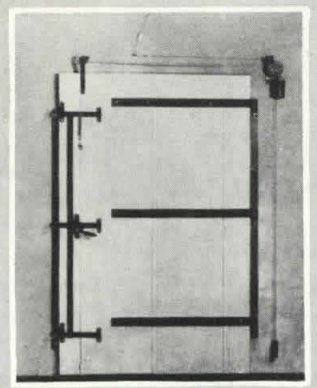

Single-swing Fyrgard Door

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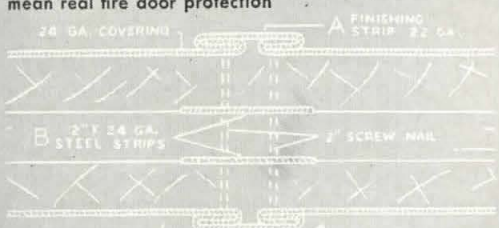

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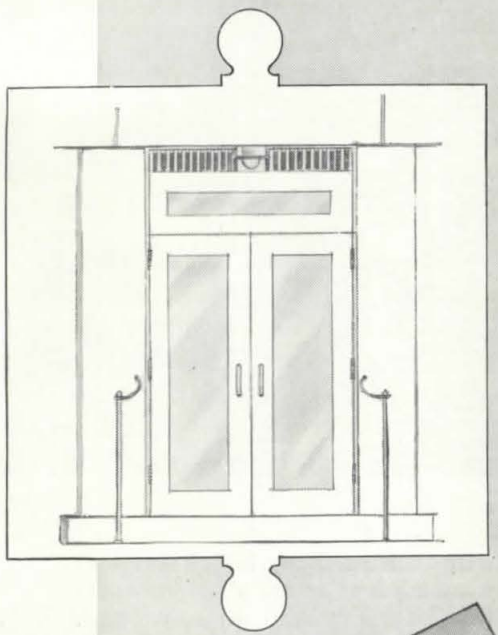

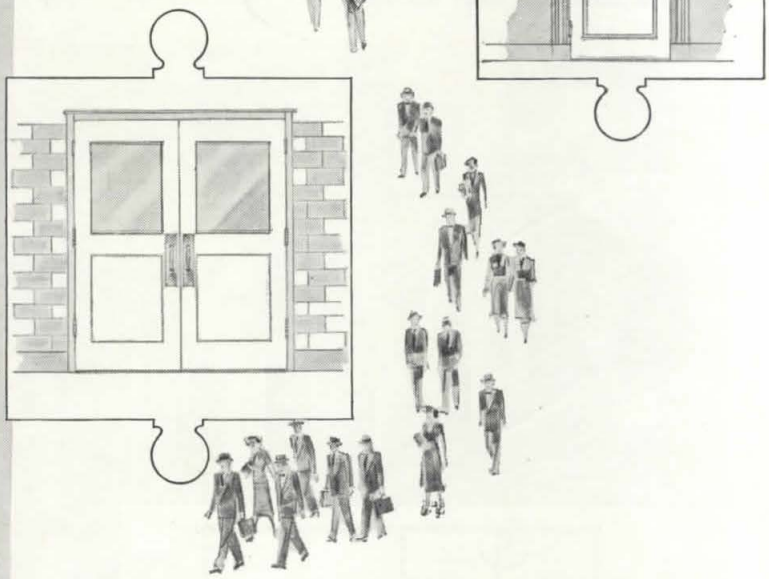

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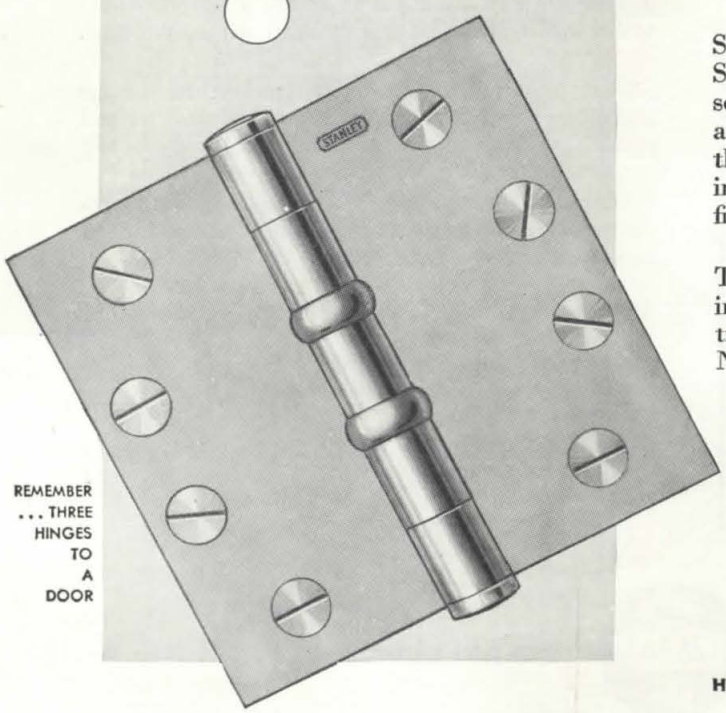

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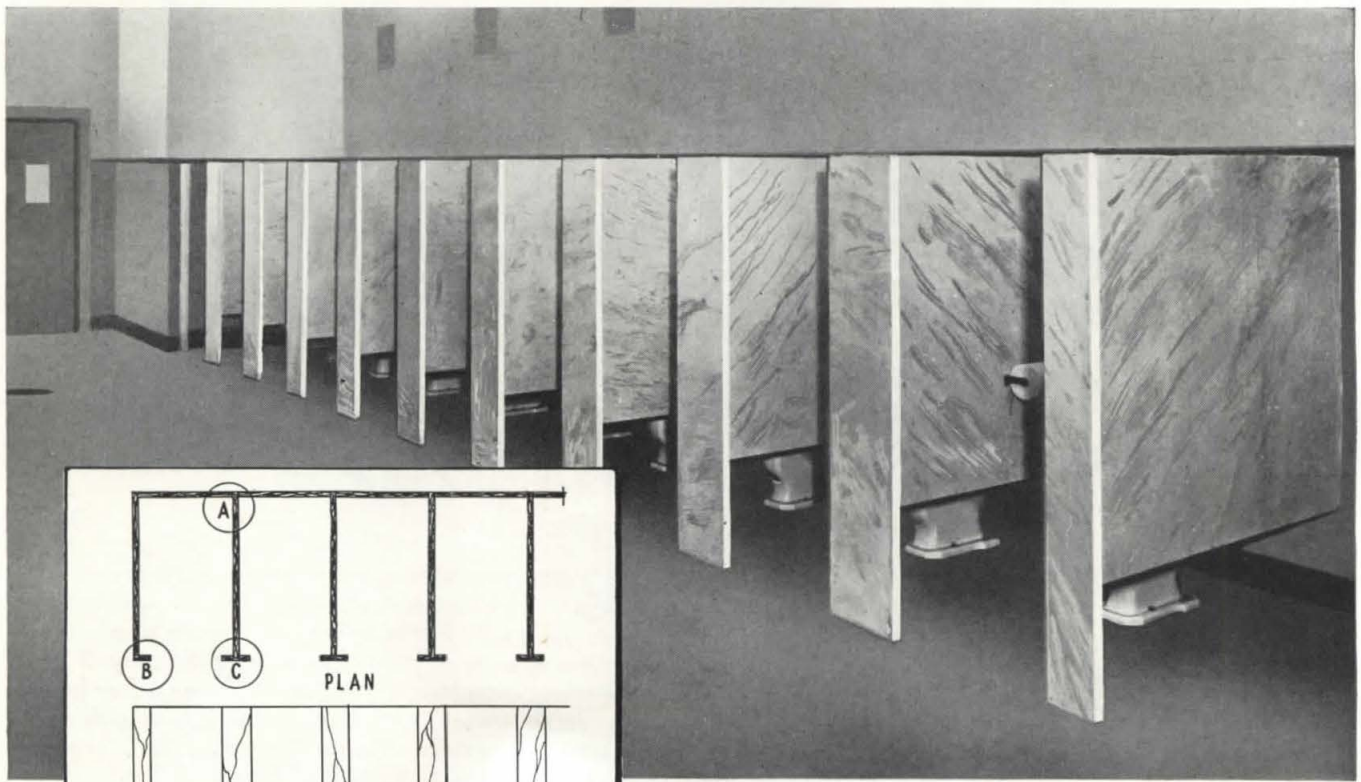

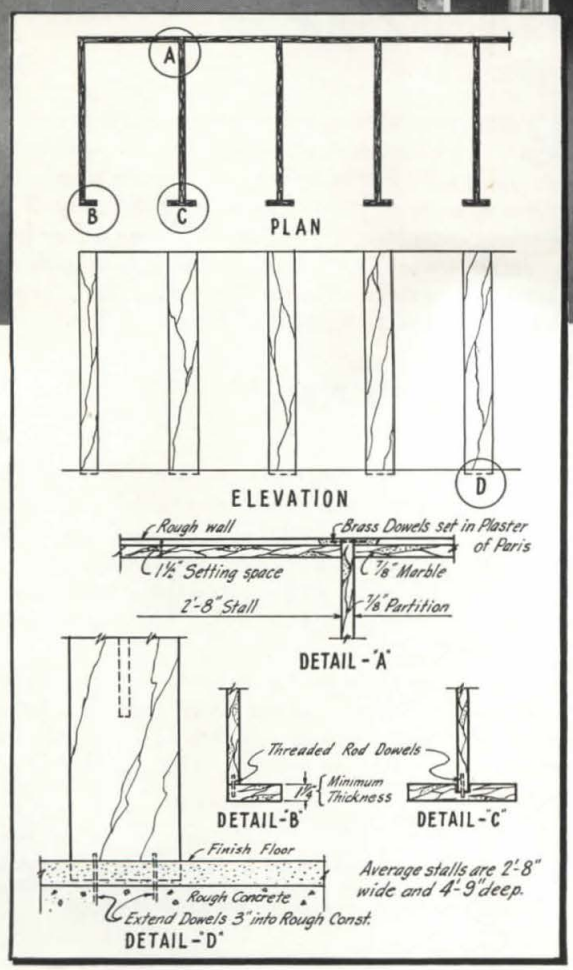

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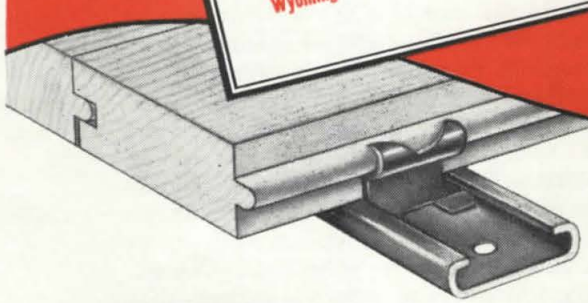
Pennsylvania	Eagles Home Aerie 828	Uniontown
South Carolina	County Jail	York County
Texas	Gymnasium Building	Premont
Virginia	Community Building	Norfolk
West Virginia	Douglas High School	Huntington
Wisconsin	Blessed Sacrament Church	Madison
Wyoming	St. Lawrence O'Toole School	Laramie

A FEW TYPICAL LOXIT CHALKBOARD TRIM INSTALLATIONS

Alabama	Coffee High School	Florence
Arkansas	Fayetteville High School	Fayetteville
California	University of California	Berkeley
Colorado	Gilpin School	Denver
Connecticut	Old Greenwich School	Greenwich
Delaware	Rehobeth Beach School	Rehobeth Beach
Florida	Anna Marie Elem. School	Bradenton
Illinois	Morton High School	Cicero
Indiana	Indiana University	Bloomington
Iowa	Longfellow School	Iowa City
Kansas	Kansas State College	Manhattan
Kentucky	Lafayette High School	Lexington
Louisiana	Istrouma High School	Baton Rouge
Maryland	Eastern Suburban H. S.	Silver Spring
Massachusetts	New Junior-Senior H. S.	Randolph
Michigan	North Side School	Niles
Minnesota	La Crescent Grade School	La Crescent
Mississippi	Hattiesburg Jr. High School	Hattiesburg
Missouri	McKlean Community H. S.	St. Louis
New Jersey	Allendale School	Newark
New Mexico	Belen Elementary School	Belen
New York	Nassau Grade School	Albany
North Carolina	Carver School	Winston-Salem
Ohio	Colerain Twp. School	Cincinnati
Oklahoma	Oklahoma Military Academy	Claremore
Oregon	Edwin Markham School	Portland
Pennsylvania	Primos Elementary School	Primos
South Carolina	First Presbyterian Church	Hartsville
South Dakota	Eugene Field School	Mitchell
Texas	Holy Name School	Houston
Utah	Olympus Junior H. S.	Salt Lake City
Vermont	New High School	Brattleboro
Virginia	Ruthville School	Providence Forge
Washington	Mt. Baker Union High School	Deming
West Virginia	Hockingport Grade School	Parkersburg
Wisconsin	Jefferson Grade School	LaCrosse
Wyoming	Rawlins Public School	Rawlins



EVERYTHING
LOCKS
TOGETHER

LOXIT *is proud of this* "ROLL CALL"

When the roll of states is called, you'll find Loxit well represented. For the LOXIT FLOOR-LAYING SYSTEM and the LOXIT CHALKBOARD SETTING SYSTEM will be found in many of the nation's outstanding schools and other public buildings.

The LOXIT FLOOR-LAYING SYSTEM means durable floors that will give years of trouble-free service. Installation is simple. No special tools required. Uses Standard T & G Wood Strip Flooring—without nails, wood sleepers or mastics.

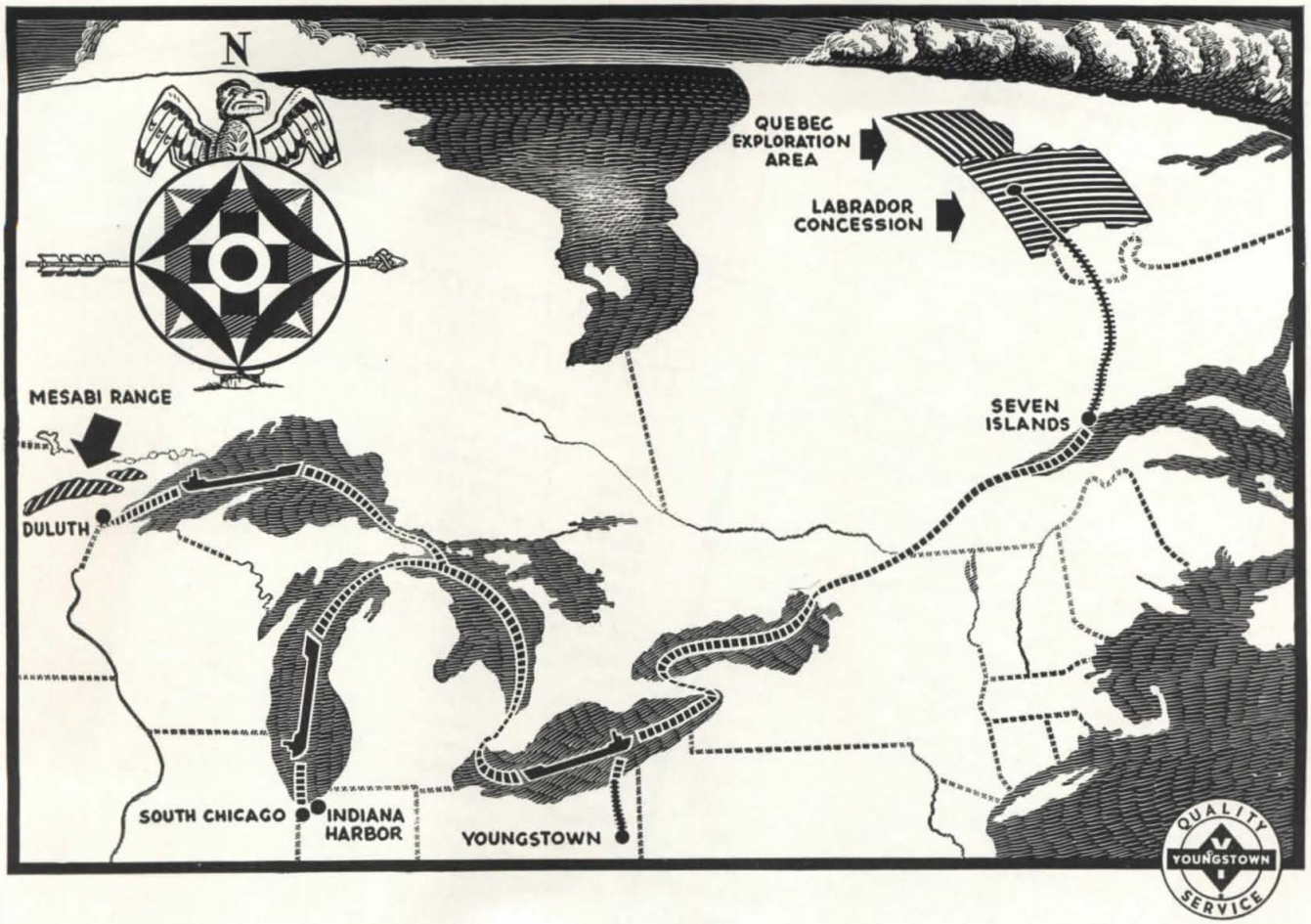
The LOXIT SNAP-ON ALL-ALUMINUM CHALKBOARD SETTING SYSTEM is recommended by leading architects, contractors and school executives for practical, durable and economical chalkboard and tackboard installations. Cannot burn, shrink or warp. No painting required.

There's a Loxit installation near you which you can check for yourself. Write today for additional information.

AMERICAN SOCIETY INDUSTRIAL ENGINEERS MERIT AWARD

Another Reason
Why You Should
"Always Specify
Loxit!"

LOXIT SYSTEMS, INC. • 1217 W. WASHINGTON BLVD. • CHICAGO 7, ILLINOIS



Mister, can you spare Half a Billion Dollars?

ONE half a billion dollars may seem like pin money compared to the sums mentioned for our national finances.

But it is more than three dollars for each man, woman and child in the United States. It is more than the entire steel industry earned in the "dreadful decade" from 1930 to 1939. It's more than America spent to win two wars--the War of 1812 and the Mexican War, combined.

Approximately one half a billion dollars is the estimated sum that a group of steel and mining companies, one of which is The Youngstown Sheet and Tube Company, is investing to guarantee future iron ore supplies for America. In the Mesabi iron range of Minnesota, development projects are under way which will produce millions of tons of iron concentrates from taconite. In Labrador and Quebec, a vast deposit of high grade ore is being developed. Plans include building a 360-mile railroad into the wilderness to ore docks on the St. Lawrence River.

Where does this money come from? From an unnoticed addition to our national debt? From "extra nickels" tucked away in the Federal budget? From more taxes levied on every citizen's income? *Certainly not!* Development of these ore reserves will be financed by each participating Company asking its shareholders to share in its tremendous cost.

America, in peace or in war, is served--now --and for generations to come. This is free enterprise. This is the system that created America from a wilderness and is the only sure way to keep it vigorous and strong.

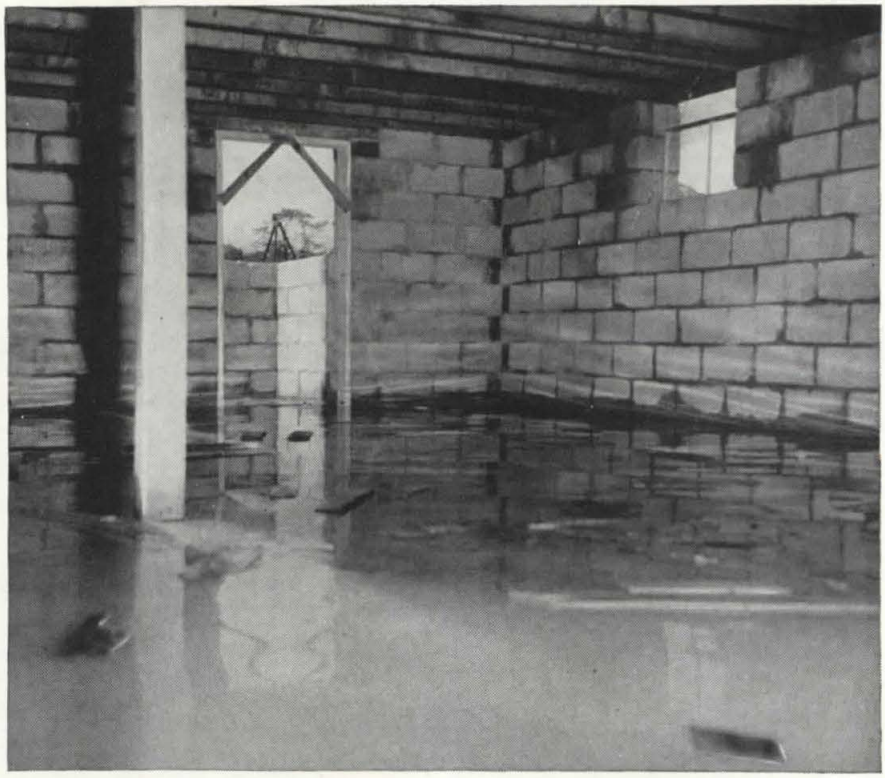
Scrap Metal is Critical Again

The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio
Export Offices--500 Fifth Avenue, New York
MANUFACTURERS OF CARBON ALLOY AND YOLOY STEELS

The steel industry is using all its resources to produce more steel, but it needs your help and needs it now. Turn in your scrap, through your regular sources, at the earliest possible moment.

HAVE YOU A WATER PROBLEM OF THIS KIND ?



Here is a basement with nearly two feet of water in it. Yet this apparently hopeless flooding was stopped—fully and at the first treatment —by Nova-I.P.C methods!

For cellars or pools, for concrete slabs or dams, or for any porous masonry surface—*wherever you want to keep water in or out*— there are fully tested Nova-I.P.C products and methods available.

We have the products, the know-how and the current case histories that will convince you. To get the full story, mail the coupon today!

NOVA SALES Co. TRENTON 3, N. J.

A wholly owned subsidiary of the Homasote Company, manufacturers of the oldest and strongest insulating-building board, Wood-textured and Striated panels.

***Another group of* NOVASCO PRODUCTS**

NOVA SALES CO., Trenton 3, N. J.
Dept. 23

Send full details on NOVA-I.P.C Method of protecting buildings from the weather.

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ADDRESS.....

CITY & ZONE.....STATE.....

My lumber dealer is.....

INSULITE® Leadership in Des Moines...

Survey Shows More builders prefer INSULITE® than any other brand of Insulating Sheathing

Better sheathing jobs at a lower cost . . . that's why more builders prefer INSULITE BILDRITE SHEATHING. Here's how Robert Uetz, a leading Des Moines builder, explains it:

"Gentlemen:

There's no doubt in my mind—Bildrite is the best sheathing material on the market. I actually saved $218.00 on my latest job (Westminster Presbyterian Church Manse in Des Moines) by using Bildrite instead of wood sheathing.

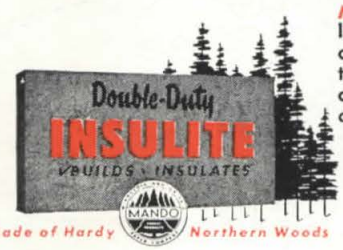
But best of all is the fact that in addition to its lower applied cost, Bildrite is far superior to wood as a sheathing material. It's not harmed by long exposure to the weather—doesn't warp or buckle under extreme moisture conditions—leaves no mess or waste around the job—and is far easier and cleaner to handle.

Our carpenters prefer Bildrite Sheathing, too, because it's waterproofed throughout and doesn't need an outside asphalt coating. This keeps it from gumming up saw blades, or blackening hands and clothes.

Very truly yours,
Robert Uetz
Des Moines, Iowa"

Refer to Sweet's File, Architectural Section—10a/In

More and more architects, *everywhere,* are passing Insulite's savings and other advantages on to their clients by specifying Bildrite Sheathing. May we arrange to show you samples and give you complete information about Bildrite and other quality Insulite products? Just drop us a card at the address below.



INSULITE DIVISION

8-51

MINNESOTA AND ONTARIO PAPER COMPANY

MINNEAPOLIS 2, MINNESOTA

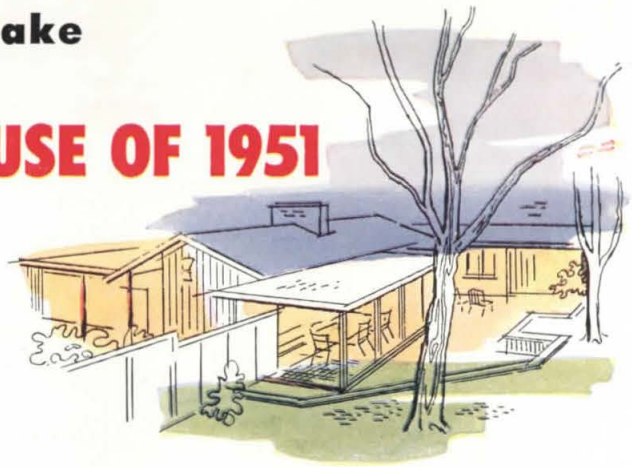
how MOSAIC tile helped make

THE PACESETTER HOUSE OF 1951

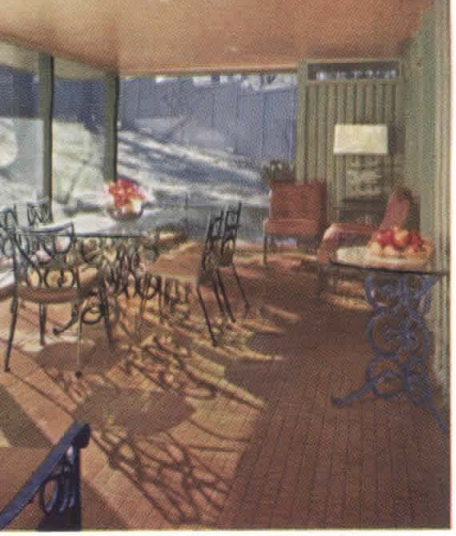
a spectacular success

The editors of "House Beautiful" have pioneered some unusually practical uses for Mosaic Tile in their *Pacesetter House for 1951.*

Architect—Julius Gregory
Builder—Robert Chuckerow Construction Company
Tile Contractor—R. L. Leonardi, Inc.

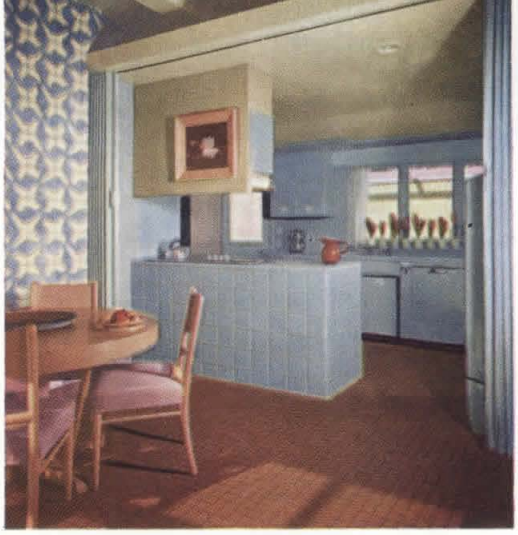


The "House Beautiful" Pacesetter House of 1951, at Dobbs Ferry, New York.



IN THE OUTDOOR living room the rich, earthy, red of the Mosaic Granitex Tile floor blends perfectly with its garden setting. Continuous traffic from the garden areas across this floor will never mar its surface or texture. Neither sun nor weather will change its permanent color. This floor may be hosed daily, for Mosaic Tile is impervious to moisture and stains.

Floor—Granitex Mosaic, Pattern No. 1779-A3.



BLUE FAIENCE TILE is an ever-beautiful finish on the sides of this combination serving bar and cooking peninsula. The hand-crafted appearance of Faience aids in blending the casual character of the living-dining area with the trim efficiency of this ultra-modern kitchen. Other types of Mosaic Tile are used on work counters, splash boards and walls for the utmost in easy cleaning and lasting beauty.

Peninsula—6" x 6" Faience color No. 2102.

MOSAIC TILE in this bathroom will turn in top performance for the life of the house because water and moisture will never effect the tile nor the manner in which it is set.

The vanity top and the floor are unglazed ceramics, an especially hard and durable type of Mosaic Tile, with permanent color throughout its wear-proof body.

Harmonitone wall tile color—No. 161.
Vanity top and floor color—No. 201 Velvetex.

From these pictures, you can visualize how Mosaic Tile, an extremely practical material —and used in every room in the *Pacesetter House*—may be used on both vertical and horizontal surfaces.

For example, Mosaic Faience Tile, which makes the fireplace wall so outstanding, offers opportunities of great interest if planned for elevator lobbies and for other large surfaces where everlasting beauty, utility and rock-bottom maintenance are required. For such uses, the cost of Mosaic Faience Tile will be no more than that of equally sturdy materials. *In fact, it will probably be less.*

There are other patterns you will want to see. Or, taking a clue from this job and from such other jobs as the ceramic Mosaic wall in Harvard University's recently completed graduate school, you may wish to develop your own design for the job you plan for Mosaic Tile.

In either case, Mosaic's Design Department is at your service. There is no obligation.

Center of attraction in *Pacesetter House* is this truly magnificent and really distinguished floor-to-ceiling fireplace wall, which serves also as a decorative partition between living and dining areas. Made of Mosaic Faience Tile, in a special design, its colors are there to stay; can't fade or bleach. Floor of living and dining area is Granitex Mosaic, which is also used on the floor of the outdoor living room.

—fireplace wall Mosaic Faience Tile, pattern No. 6056.

—floor Granitex Mosaic, pattern No. 1779-A3.

ON THE FLOOR at the windows in the master bedroom, Mosaic Faience Tile, in a delightful green, is used as an "indoor greenhouse." Here plants live in ideal atmosphere, on a floor that will never stain and which is so easy to clean.

Mosaic Faience Tile—Color No. 2164.

NO MATERIAL is more practical for window sills and window shelves. Here Mosaic Granitex are used as a broad under-window shelf—fine for plants, books, knick-knacks—an ideal combination of durability and decorative texture.

Shelf is Granitex Mosaic, color No. 1228.

THE DINING ROOM FLOOR is a continuation of the living room floor, a feature that contributes to the feeling of spaciousness which is apparent throughout the house.

Floor—Granitex Mosaic, Pattern No. 1779-A3.

THE PACESETTER HOUSE is open to the public until July 1. We'd like you to see it if you are in the East. It's at Dobbs Ferry, just up the Hudson River from New York.

Mosaic Tile offers a great deal to modern, contemporary design. No other material is more functional. No other material provides so much in color, long life or freedom from maintenance.

The Mosaic Tile Company offers freely of its assistance to those architects, builders and owners who want to investigate our products for their jobs. Ask any Mosaic representative or write Dept. 28-4, The Mosaic Tile Company, Zanesville, Ohio.

THE MOSAIC TILE COMPANY

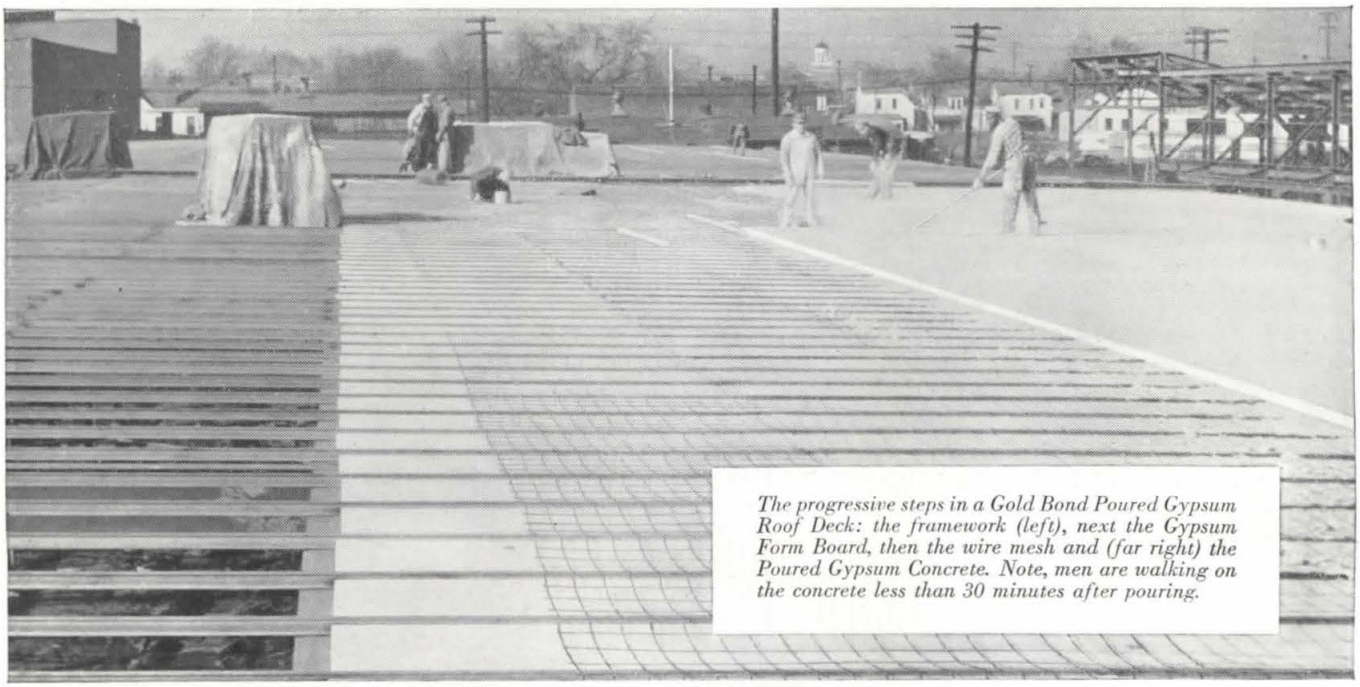
General Offices—Zanesville, Ohio

Member Tile Council of America

MOSAIC

SHOWROOMS, OFFICES AND WAREHOUSES IN PRINCIPAL CITIES ACROSS THE NATION.

Save Steel...Cut Supporting Structure Costs with Gold Bond Poured Gypsum Roof Deck



The progressive steps in a Gold Bond Poured Gypsum Roof Deck: the framework (left), next the Gypsum Form Board, then the wire mesh and (far right) the Poured Gypsum Concrete. Note, men are walking on the concrete less than 30 minutes after pouring.

66% Lighter than Ordinary Concrete

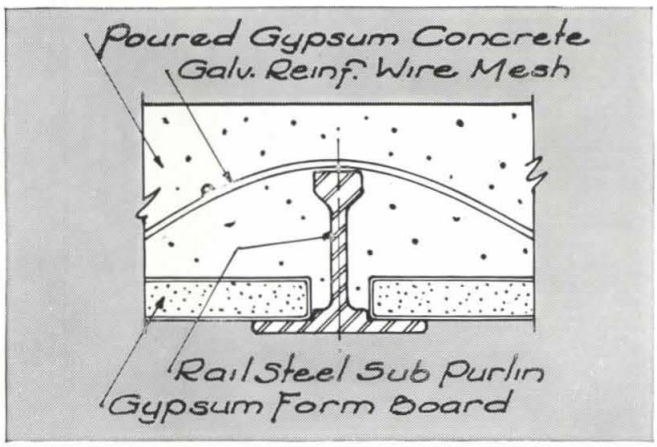
THE Gold Bond "Poured-In-Place" Gypsum Roof becomes an integral part of the main steel construction of a building. It is adaptable to any design—curved, sloped, or flat. Installation is rapid! The quick set gives full working load capacity in less than 30 minutes, and roof covering can be applied within 24 hours. Poured Gypsum is ⅔ lighter than concrete. Dead load is greatly reduced, along with the cost of the entire supporting structure, including columns and foundations.

ADDS EFFECTIVE INSULATION

Gypsum has four times the insulation value of concrete. Buildings with Gold Bond Poured Gypsum Roof Decks are warmer in winter, cooler in summer, need less radiation and heating equipment. Fuel savings are considerable.

FIREPROOF

For fireproof construction, Gypsum is generally accepted as superior to most materials. Sub-purlins welded to roof members add to the rigidity of the total structure. A Gold Bond Poured Gypsum Roof Deck costs very little to maintain. If changes are ever necessary, it can be cut, nailed or patched easily and quickly. Gold Bond Poured Gypsum Roofs are installed only by approved fireproofing contractors. Send us a postcard for detailed drawings and load tables.



Typical Gypsum Roof Slab Section showing fit of Gypsum Board to sub-purlin and the galvanized reinforcing wire mesh.

Fireproof Wallboards, Decorative Insulation Boards, Lath, Plaster, Lime, Sheathing, Wall Paint, Textures, Rock Wool Insulation, Metal Lath and Sound Control Products.

You'll build or remodel better with Gold Bond

NATIONAL GYPSUM COMPANY • BUFFALO 2, NEW YORK

Here's a *Space-Saving* air distribution system

using
kno·draft
type HPC high pressure
air diffusers

Kaufmann's Department Store, Pittsburgh, Pa., uses 3,500 Kno-Draft HPC Air Diffusers. Units are installed 7 feet apart on 7″ x 14″ ducts, which are located 20 feet apart and mounted about 9 feet from the floor. In spite of the small, space-saving ductwork, thorough, draftless distribution of air is obtained.

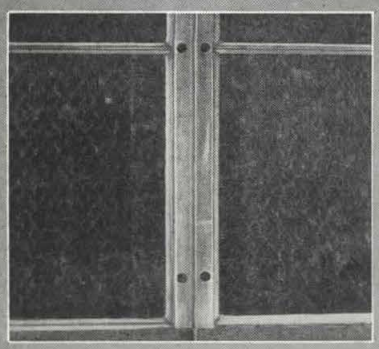
Kno-Draft Type HPC High Pressure Air Diffusers are brand-new in principle, but already *proved* in service. Operating at high pressure and velocity, they provide draftless distribution of air to large open areas but require only small, uniform, exposed ducts. As developed for Kaufmann's Department Store in Pittsburgh, the Kno-Draft Type HPC High Pressure Air Diffuser—

1. **Saves** space; uses small, uniform exposed ducts.
2. **Operates** at high pressure and velocity —allows 3000 fpm velocities and 2″ static pressure in ducts.
3. **Achieves** high air induction, draftless distribution—primary air 25° colder than room air.
4. **Provides** complete adjustability to any volume between 90 and 180 cfm, or may be totally shut off.
5. **Functions** perfectly in department store and general office applications.

A new type perforated damper, combined with an interior baffle and jet exit, permits the high pressures and velocities necessary. For a detailed description of the new Kno-Draft Type HPC Air Diffuser—how it works and its application possibilities—mail the coupon today.

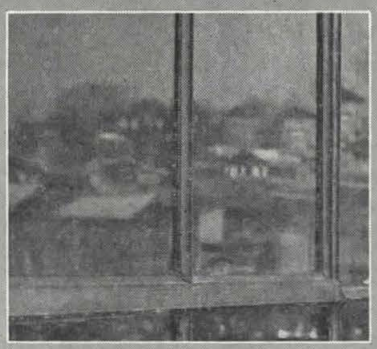
These Strong Steel Windows Have Never Rusted!

(Un-retouched photographs taken in 1950)



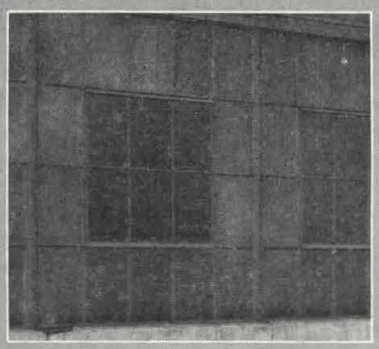
IN TEXAS
INSTALLED IN 1927

Galvanized, unpainted Fenestra Steel Windows in Mallory Pier of Galveston Wharf Company, Galveston—unblemished after a 24-year-long siege of salt spray.



IN MASSACHUSETTS
INSTALLED IN 1928

No rust even after sitting in the steam of the cooking room of the Wm. Underwood Company, Watertown, for 23 years—proof of the protection of hot-dip galvanizing.



IN ILLINOIS
INSTALLED IN 1923

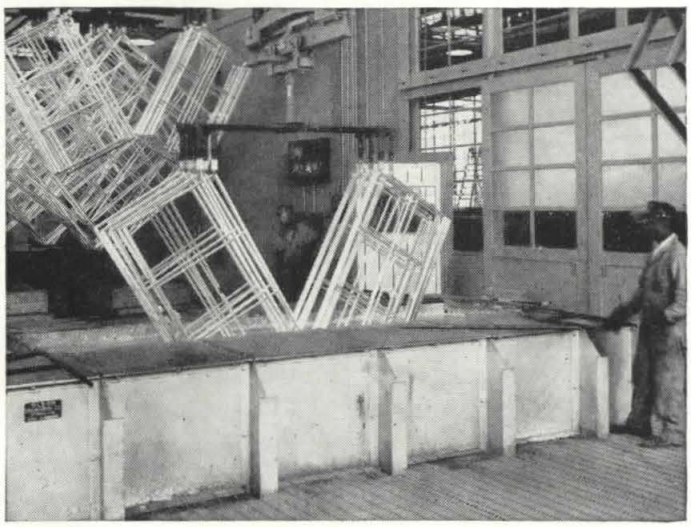
Steel-strong and rust-free, these 28-year-old galvanized Fenestra Steel Windows are still serving faithfully in the steel carshop of the Elgin, Joliet and Eastern Railroad, Joliet.

And Now Fenestra Makes Them *Even More Durable!*

Now Fenestra* engineers have developed a new hot-dip galvanizing system that does an *even better* job—and they've built a brand-new plant around it, the *only* plant of its kind in America. Everything is ingeniously designed to give you *steel-strong* windows that really *eliminate* painting and save you maintenance money year in and year out.

First, the assembled frames are hung from the conveyor separate from the assembled ventilators. Then automatic controls move these assemblies from tank to tank—dipping them, lifting them, controlling each temperature, timing every move.

From degreasing to pickling to hot and cold rinsing to fluxing and drying they go. Then when finally they are perfect for galvanizing, they dip deep into molten zinc. Then they are Bonderized, which prepares the finish to take decorative painting if it's ever desired. Then they are rinsed again. And with every segment of surface, corner, joint and edge covered by locked-on galvanizing, the frames and their vents go to final assembly . . . and to you.



RISING UP out of molten zinc in the great Fenestra galvanizing kettle, these windows will *never* need painting!

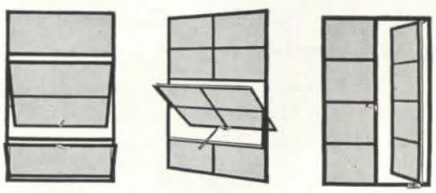
So see them today. Call the Fenestra Representative (he's listed under "Fenestra Building Products Company" in your Yellow Phone Book) or write Detroit Steel Products Co., Dept. PA-8, 2253 East Grand Blvd., Detroit 11, Michigan. *®

Send for Your Free Illustrated Book on Fenestra Hot-Dip Galvanizing

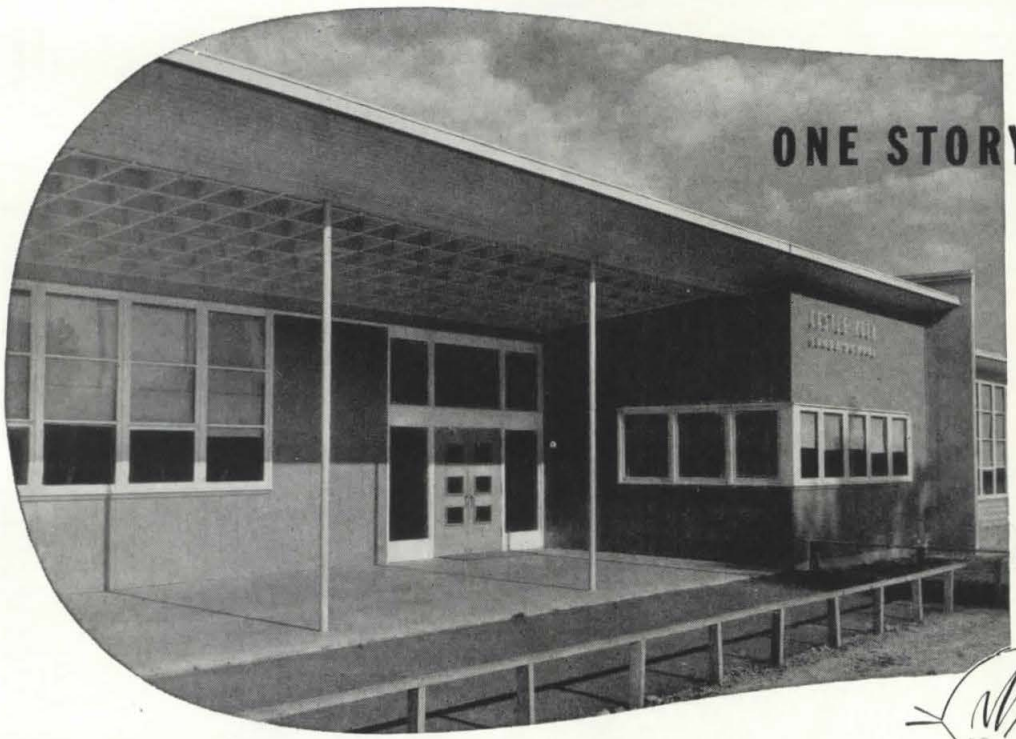
Steel-Strong Windows made to STAY new

Fenestra

HOT-DIP GALVANIZED STEEL WINDOWS

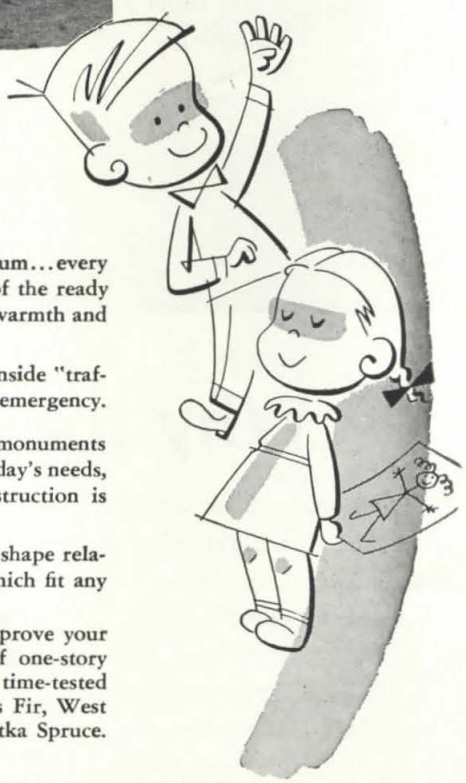


Intermediate Industrial Residence



ONE STORY SCHOOLS OF WOOD

offer 4 distinct advantages!



Throughout the nation, modern, one-story schools of wood are answering the requirements of the rapidly expanding school population. Here are the reasons why:

1. Schools of Wood Are Functional. Classrooms, cafeteria, auditorium...every part of the school...can be easily planned for maximum efficiency because of the ready adaptability of wood construction. Both student and teacher appreciate the warmth and friendliness of wood.

2. Schools of Wood Are Safe. One-story construction allows better inside "traffic" control...all exits at ground level provide maximum safety in time of emergency.

3. Schools of Wood Are Practical. Schools are no longer expensive monuments which become outdated and obsolete. One-story schools can be planned for today's needs, easily enlarged or remodeled to fit future requirements. And wood construction is economical construction.

4. Schools of Wood Are Attractive. Latitude of design, pleasing shape relationships, and variety in choice of texture and color, result in structures which fit any community and setting.

Students, teachers and parents alike will approve your choice when you plan your next school of one-story wood construction. And for dependable time-tested wood specify West Coast Woods...Douglas Fir, West Coast Hemlock, Western Red Cedar and Sitka Spruce.

SEND FOR FREE BOOKLET

Beautifully illustrated in natural colors, this booklet, "Today's Better Schools Are Built of Wood", points out many different applications of wood in school construction. It tells how schools of wood help meet today's educational needs. Send coupon now for your free copy.

There's a RIGHT WAY to do everything...Build RIGHT with

WEST COAST WOODS

Douglas Fir
West Coast Hemlock
Western Red Cedar
Sitka Spruce

Lumber of Quality Produced by Members,
WEST COAST LUMBERMEN'S ASSOCIATION

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Please send free copy of "Today's Better Schools Are Built of Wood".

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Deerfield (Illinois) School. Architects, Perkins & Will, Chicago.

Why these wide open schools?

Because architects are designing them for two kinds of space: the kind that's built, measured with a ruler, and the kind that's felt, sensed with your eye.

To make classrooms *seem* more spacious, they are being built today with clear glass from wall to wall and sill to ceiling. Some rooms have glass from *floor* to ceiling. Clear glass does *not block* vision. The eye slips past the ceiling to the sky and the surrounding greenery. This creates unity between the inside and the out-of-doors. It makes any room seem larger.

Clear glass also admits the maximum amount of daylight, so that daylight-engineered schools are flooded with natural light. Such design solves the problem of glare because it reduces contrasts in light, the too sharp contrasts that *produce* glare.

Another advantage of using clear, flat glass for entire walls is its low cost. Clear, flat glass is the lowest cost glazing material you can buy and the cheapest to install.

But low cost is not the big reason for building-in sunshine and view. It's because children and teachers—in fact, office and factory people, nurses and patients, homeowners and apartment dwellers—just naturally love walls of daylight!

Whatever you're going to build, please write for our literature on Daylight Engineering and *Thermopane*. Libbey·Owens·Ford, 1881 Nicholas Building, Toledo 3, Ohio.

WHERE WINTERS ARE COLD, Thermopane* insulating glass is widely and successfully used. Thermopane with ½" of dry air hermetically sealed between two panes has twice the insulating value of single glass. This minimizes chilliness, drafts and heat loss at windows. Write for Thermopane literature.

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THERMOPANE · PLATE GLASS · WINDOW GLASS

DAYLIGHT WALLS

THAT DON'T BLOCK VISION

Got a Space to Span?

Specify MACOMBER BOWSTRINGS

WANT PROOF?

Ask for a quotation on your next project. Prove to yourself, your organization, that anyone with a space to span can do it better, safer, faster and MORE ECONOMICALLY with Macomber Bowstrings.

It takes a basic economic reason for a product to attain INDUSTRY-WIDE preference.

Macomber Bowstring Truss sales have pyramided since their introduction 28 years ago.

Each size from 30 to 130 feet is as standard as a piece of pipe.

That's why MACOMBER BOWSTRINGS are your most economical way to span a wide area.

STANDARDIZED STEEL BUILDING PRODUCTS

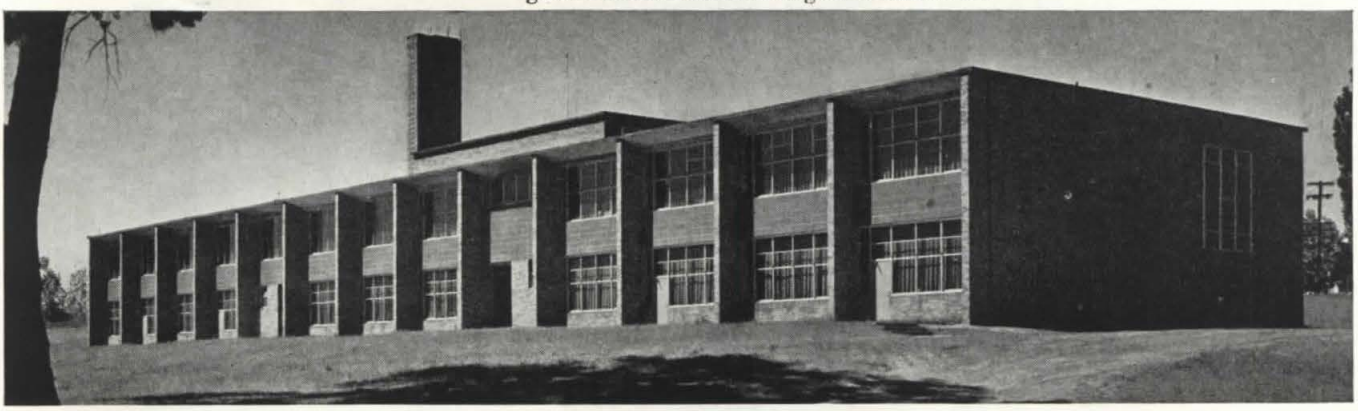
MACOMBER • INCORPORATED

CANTON, OHIO

V BAR JOISTS • LONGSPANS • BOWSTRING TRUSSES • STEEL DECK

EXTERIOR

INDIAN LANDING ELEMENTARY SCHOOL Brighton, New York.
Kaelber & Waasdorp Perkins & Will *Architects.*
Werner Spitz Constr. Co. Swartout & Rawley, Inc. *Builders.*
Building shown is the original; additions are now being built. Facing of 4" thick Enduro-Ashlar Architectural Terra Cotta in moss green glaze gives a colorful contrast to golden tan bricks.



or INTERIOR

WASHINGTON SCHOOL Caldwell, N. J.
Starrett & Van Vleck—*Architects.* Reginald Marsh—*Associate Architect.*
Zwigard Construction Co.—*Builders.*
Assembly room-gymnasium, and lobby of this newly completed school are enhanced with Enduro-Ashlar Architectural Terra Cotta in neat-appearing 16" x 16" units. Terra cotta wainscot in gymnasium is a mottled buff trimmed with rich maroon. Lobby facing is a mottled mist green.

it's SUPERIOR

ENDURO-ASHLAR *Architectural Terra Cotta enables you to meet the creative challenge* where quality, appearance, price and maintenance are of equal importance!

In hundreds of modern schools and colleges, you'll find Enduro-Ashlar Architectural Terra Cotta. Why? Because its remarkable plasticity of form, color and texture gives you complete design freedom. It can be custom-made in units large or small, for interiors or exteriors, plain surfaces or decorative sculpture, in an unlimited range of ceramic colors. Enduro-Ashlar's larger units provide more attractive facings with fewer joints to collect dust and dirt. Moreover, the original richness and beauty of Enduro-Ashlar Architectural Terra Cotta can be retained indefinitely by simple soap-and-water washings. And remember—terra cotta is *available* as well as *versatile*, so send us your inquiry today. *Construction detail, data, color samples, estimates, advice on preliminary sketches, will be furnished promptly without charge.*

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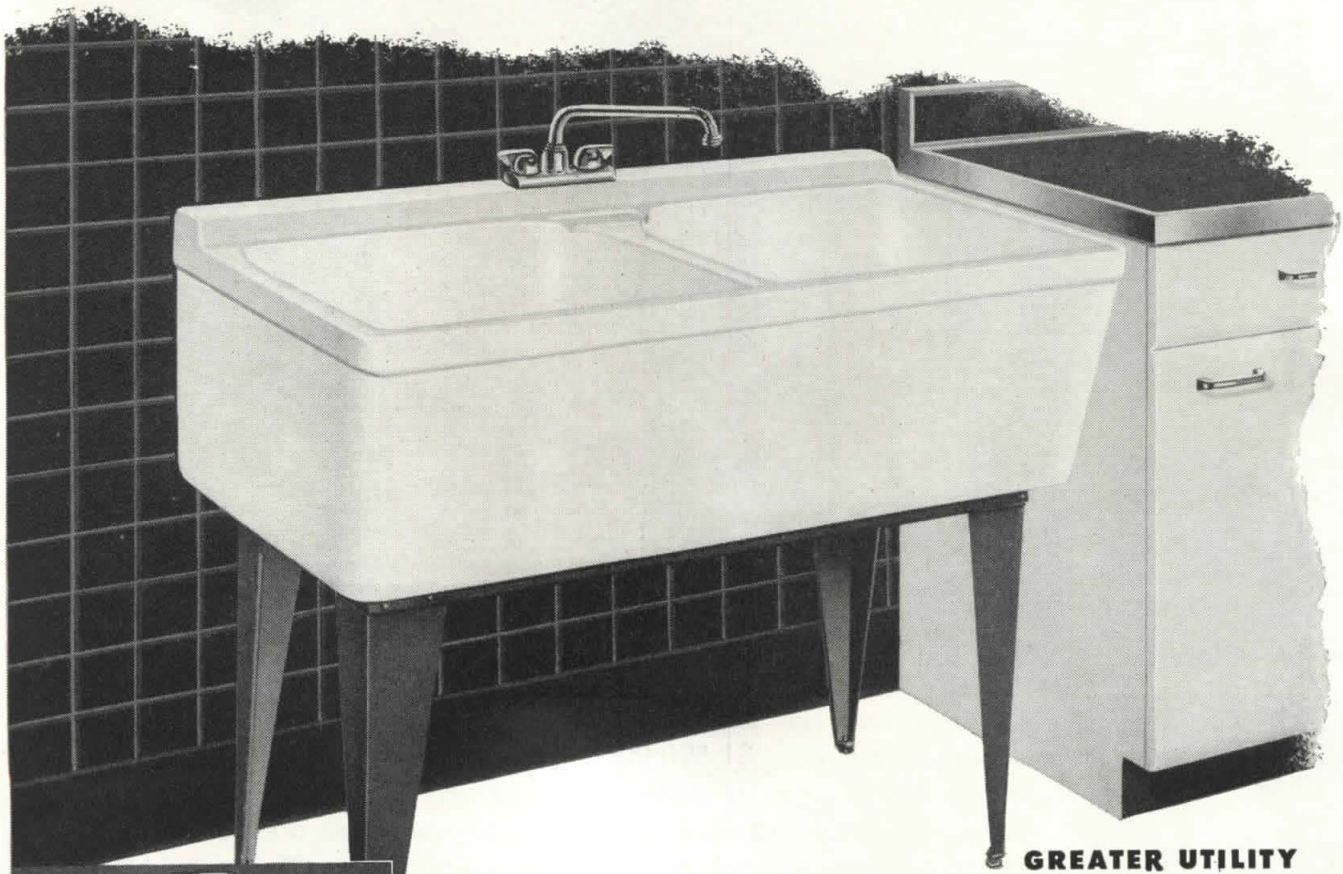
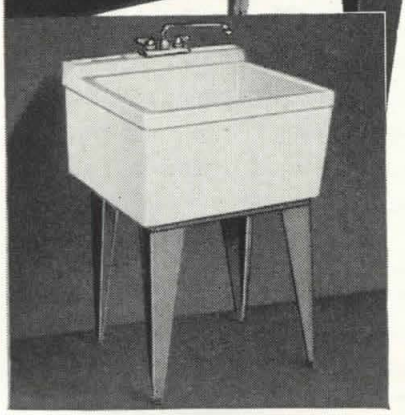
CRANE *Laundrette*

BRINGS BATHROOM BEAUTY TO THE LAUNDRY





Single-basin *Laundrette* available in 22 x 25 in. size

Crane *Laundrette* is an advancement in laundry tub design that meets the requirements of the modern home. Sparkling white and meant to be seen, *Laundrette* matches the styling of new home appliances.

Made of *Duraclay,* the exclusive Crane vitreous glazed earthenware used in hospital fixtures, *Laundrette* resists abrasion, acid, stain and thermal shock. It has a smooth-as-glass surface that wipes clean with a damp cloth. Legs are steel, painted black, and have self-leveling screws. Two sizes: 36 x 25 in. and 42 x 25 in. Consult your Crane Branch or Crane Wholesaler.

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Laundrette is ideal for big family washes—for sudsing the finest silks. Left-hand compartment has molded-in scrubbing board.

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operate at a finger's touch—help reduce wear and consequent dripping. The end of the chromium-plated swinging mixing spout is threaded for hose.

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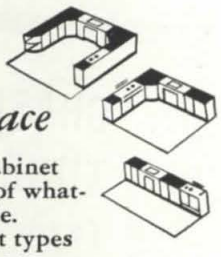

friendly to space

Yes, Curtis kitchen cabinet units make the most of whatever space is available. With 20 basic cabinet types and a total of 70 sizes to choose from, you can create a kitchen of any size or shape. The dimensions of all units have been standardized to coordinate with other standard kitchen equipment.

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Curtis wood cabinets are the result of years of research and experience to develop comfort-creating, step-saving, modern kitchens. Counters are of correct height. Toe space is ample. Greater storage space is achieved by special Curtis construction. Labor-saving cabinets "fit around" corners—pan trays, ventilated vegetable drawers, snack bars, are easy to reach, easy to clean.

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The fine cabinetry of Curtis kitchen units assures lifetime service. Drawers are completely dovetailed—not merely rabbeted and nailed. Hardware is furnished and applied. Curtis wood kitchen units come primed in white so that one finish coat, in any desired color, completes the job.

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is the way to handle it

THE SQUARE SHAPE of Chase Copper Tube Bus Conductors means more rigid construction . . . higher mechanical strength to resist the stresses of short circuits. With four flat sides, and a large cross-sectional area, they can be securely anchored to the floor, assembly is easier . . . efficient and economical connections can be made to power-and-light panels. And — there is no danger of insulation moving downward, to leave thinly protected sections.

IN ADDITION to having excellent current-carrying capacities and extreme resistance to corrosion, Chase Square Copper Bus Conductors require only one tube per phase . . . minimize "skin effect". . . can be arranged in triangle-formation, resulting in equal spacing and equal voltage between phase conductors.

• *For complete information about these stronger, better Bus Conductors, write to Dept. PA851, Chase Brass & Copper Co., today!*

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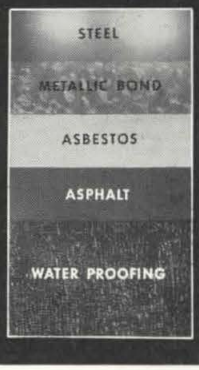

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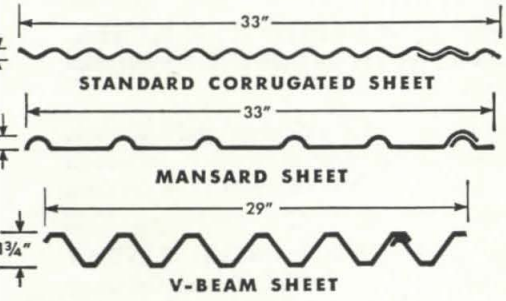
A steel sheet to which asbestos felt is metallically bonded. Then the felt is impregnated with asphalt and waterproofed. Tested and approved by Underwriters' Laboratories, Inc., Chicago, and by Associated Factory Mutual Fire Ins. Co., of Boston. Galbestos metal comes in maroon, black or aluminum color and is fabricated in various shapes. It has been architecturally well designed into thousands of installations all over the world.

• Galbestos metal for defense plant construction provides a wall resistant to fire, corrosion and blast. It can be well designed, worthy of permanent structures. It is maintenance-free. And, whether you want a mere skin, with or without insulation or panels, the Robertson method enables you to build faster with Galbestos metal than with any other material.

Available in these forms:



THE TOP-SPEED FASTENING METHOD

permits all fastening work from the outside, eliminates interior scaffolding. This new method permits erection crews to place twice as much material in the same time, with safety. Top-Speed Insulation is a Robertson method for applying insulation from the outside, before the Galbestos is fastened over it. This method also halves the time. It makes a good-looking job inside. Needs no painting.

WRITE FOR COMPLETE LINE OF CATALOGS

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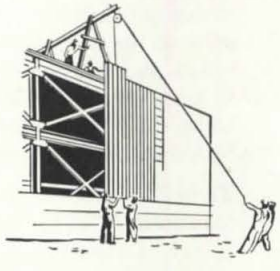
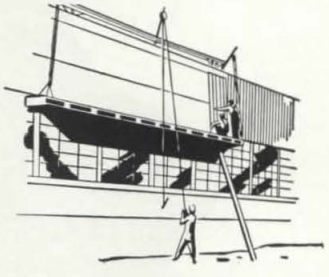
3. G•PANELS
4. Q•PANELS



◀ Q-PANEL OR G-PANEL ▶



Q-Panels are the famous Robertson factory-fabricated, insulated curtain wall. They are available in a variety of fluted metal surfaces. Available 2' wide, in lengths up to 25', lightweight, only 3¼" thick, but superior in insulation value to a 12" masonry wall with furred plaster. A small crew can erect a Q-Panel—50 sq. feet—in 9 minutes.

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With the huge program of essential military and civilian building that lies ahead of us, three things—time, labor and materials—are obviously of critical importance.

To everyone concerned with the construction of private homes or public housing, military installations, expanded plant capacity, government facilities and all the other building required for strengthening our defenses, new developments or improvements that will save either time, labor or materials will be of extreme interest.

The purpose of this message is to tell you about one such development that saves *all three.*

It is a revolutionary new type of window that can be *completely installed in a few minutes* instead of the hours required to install many types of conventional windows.

F. C. Russell, PRESIDENT
The F. C. Russell Company • Cleveland 1, Ohio
World's largest manufacturer of All-metal combination windows

It is a complete, finished unit—containing rustproof Lumite screen, glass, weatherstripping and also insulating sash if desired.

It comes factory-painted, fully assembled including the casing and hardware—all ready to place in the window opening. There is no time-consuming, labor-consuming glazing, fitting, altering and painting on the job.

It has no troublesome sash cords, weights or balances. Instead, the windows operate smoothly and easily in vertical slides and lock automatically in both open and closed positions. And because the glass inserts are easily removable and interchangeable, "spares" can be kept on hand for inserting at any time breakage might occur.

For long life and resistance to the elements, it is made of Armco Zincgrip steel, hot-dipped galvanized, Bonderized —or equal—and finished with baked on enamel.

Because of its unique tubular construction, it has great strength yet uses up to *60% less metal* than most conventional types of steel windows.

The double glass insulation permits rainproof and draft-free, filtered-screen ventilation in any type of weather. Insulation from outside noise, as well. And it saves up to ⅓ in precious heating fuel!

This window, known as the RUSCO PRIME WINDOW (Vertical Slide) was developed by The F. C. Russell Company two years ago. Despite its many advantages and superior features, specially-devised tooling and production methods enable us to sell it competitively with the lowest priced window units on the market. Thousands are already in use on private homes and housing projects, and they have been specified on many large installations such as Ladd Air Force Base and Eielson Air Force Base in Alaska; Selfridge Air Force Base, Selfridge, Michigan; and Scott Air Force Base, Belleville, Ill.

We believe that the Rusco Prime Window merits the serious consideration of everyone concerned with building and with the conservation of precious time, labor and essential materials.

For the same convenience and economy advantages on *existing* buildings RUSCO COMBINATION SCREEN AND STORM SASH is recommended. These windows save up to ⅓ on fuel, eliminate changing of screens and storm windows and can be installed without alteration to present windows.

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Distinctive BRASCO FRONTS Spotlight QUALITY STORES

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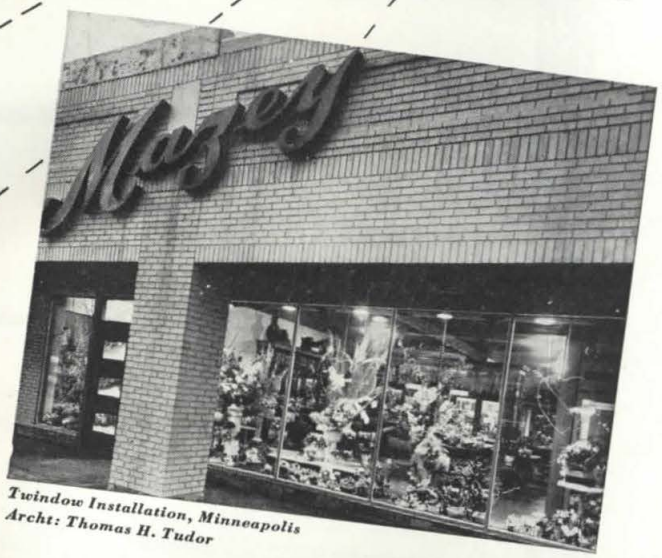

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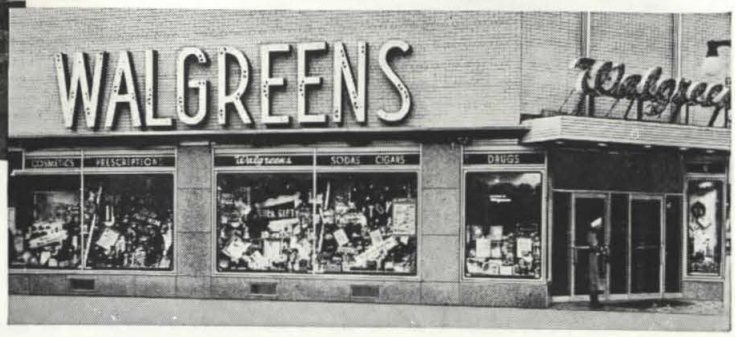

▲ Eau Claire, Wisc.
Archts: E. F. Klinger & Associates

◀ Marshall, Minn.
Gen. Contractor: Dan Rowe

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Specialists in Metal Store Front Construction for more than 40 Years

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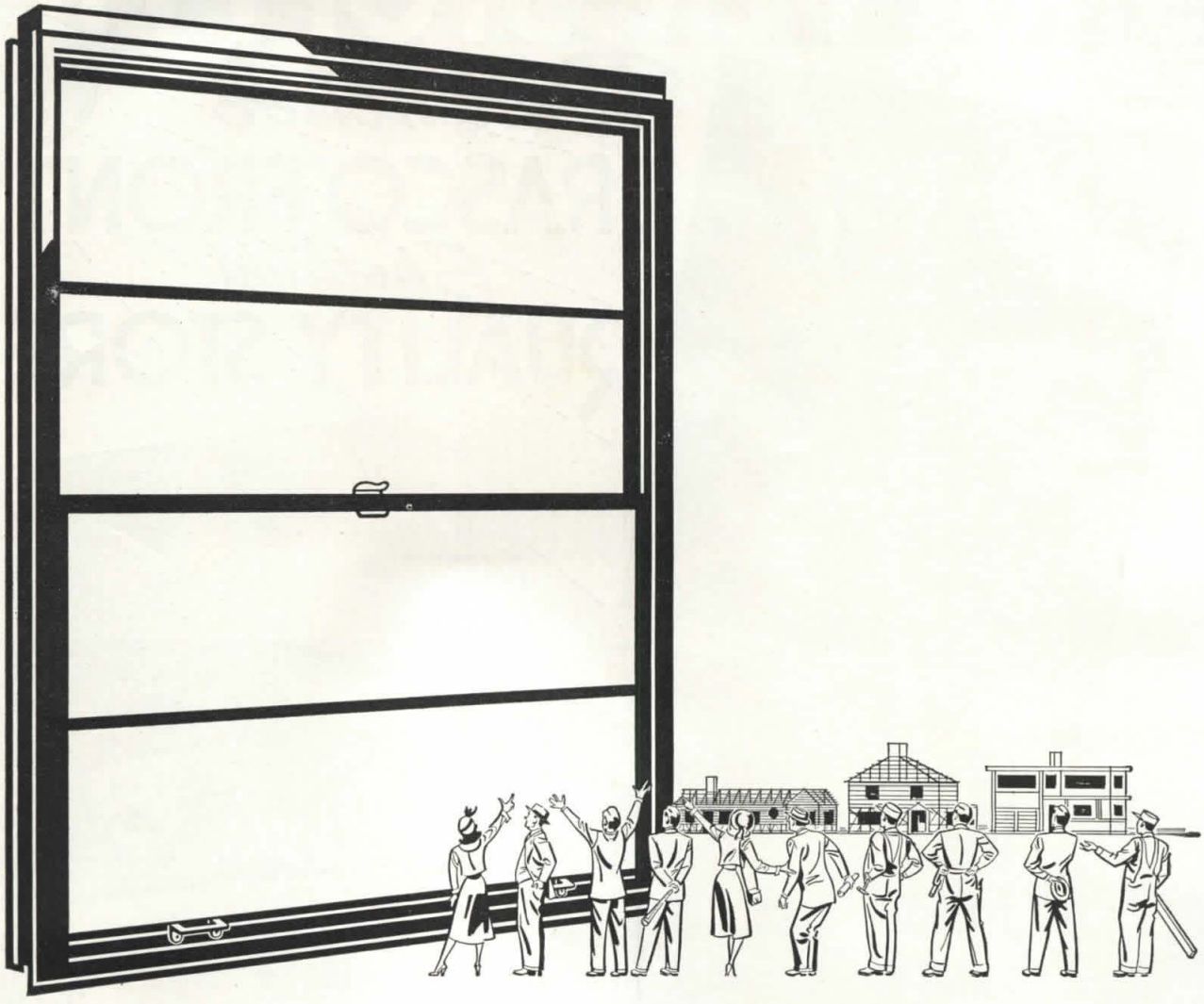

the window in demand is the window for better business

TRUSCON Series 138 Double-Hung STEEL WINDOWS during the past 12 years have been used in more residential buildings than any other similar type of metal window. Excellent engineering design, adequate strength and weight of materials, and efficient manufacturing methods combine to assure quality and price in a highly saleable unit.

A wide range of styles and sizes in modular standards is available to meet every architectural requirement. Mass production technique results in unbelievably low costs. Prompt service to building supply dealers is available through the 24 nationwide warehouses and sales offices owned and operated by Truscon.

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It's

Vivid!

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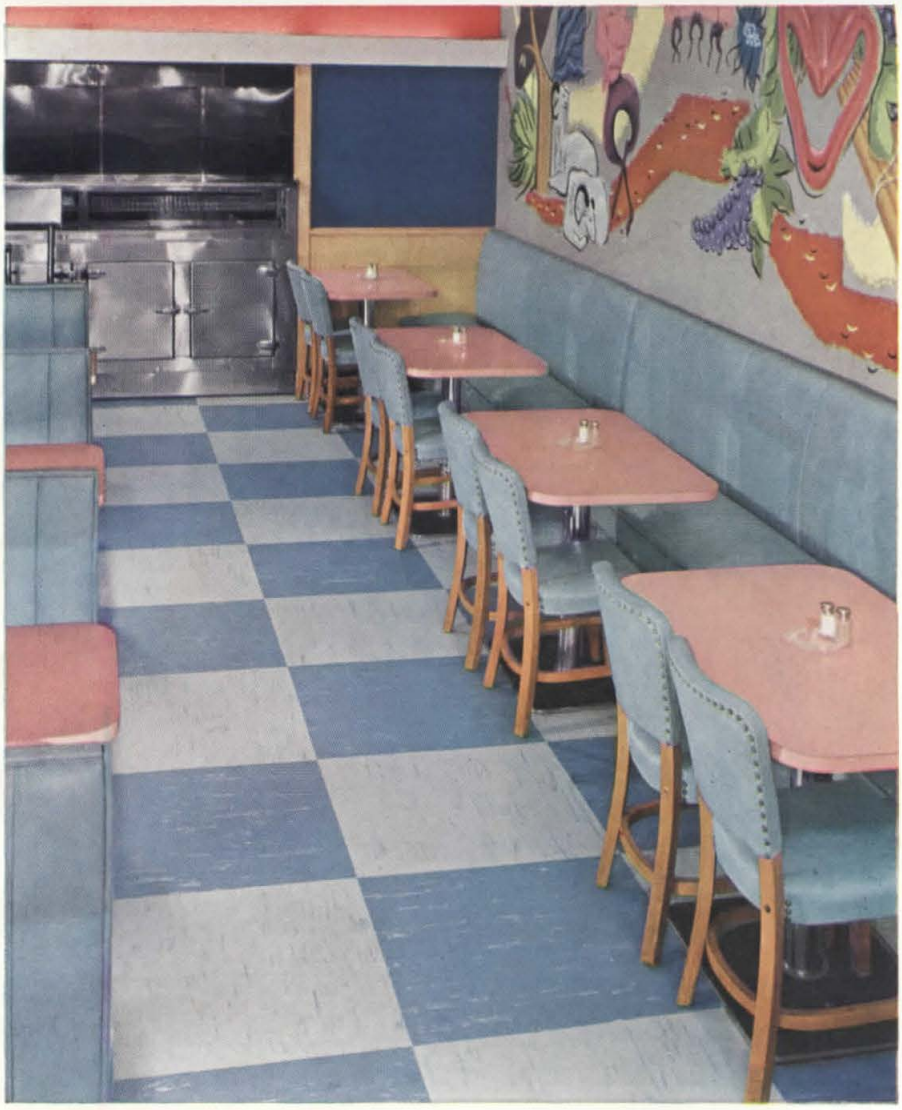


. . . truly Greaseproof Resilient Flooring at moderate cost

Shrugs off attacks of the acids, alkalis, oils and fats in food...stays at its sparkling best with a minimum of maintenance . . . brilliant colors brighten interiors.

What does a restaurant man want in a resilient flooring material?

First, he wants resistance . . . resistance to the factors in foods that can ruin ordinary resilient floors . . . resistance to the oils and fats, resistance to the acids and alkalis, that bite into a floor when food is spilled.

Vitachrome gives him that . . . even more than he needs.

Second, because, ordinarily, maintenance is expensive...he wants a floor with simple upkeep requirements.

Vitachrome merely needs daily sweeping, to remove loose dirt . . . periodic washing...and water-waxing, when it's desired.

Repairs are quick and easy. Replacement is limited to damaged area, because of tile-by-tile installation.

Third, the modern restaurateur demands decorative beauty. A bright, attractive interior brings in customers.

Vitachrome comes in many brilliant colors and sizes, making it difficult to beat for decorative versatility. And, since a restaurant man is a *business* man, he wants all these advantages at as low a cost as possible.

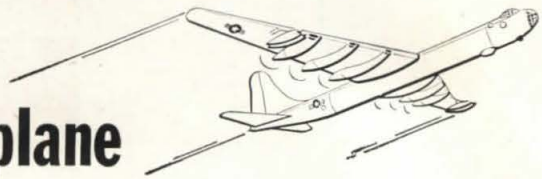
Vitachrome again fills the bill, with its many advantages.

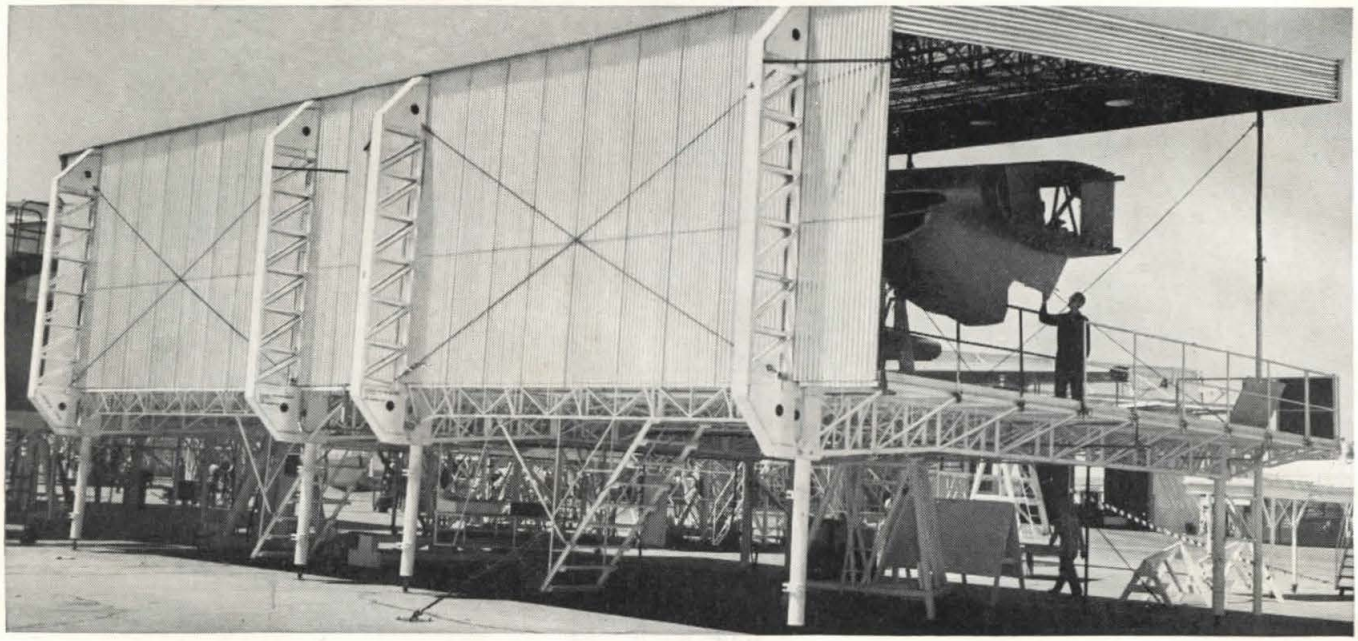
Tile-Tex
RESILIENT
FLOORS AND WALLS

Ask local Tile-Tex* Contractor. Or, if you don't find his name in your telephone directory . . . write THE TILE-TEX DIVISION, The Flintkote Company, Dept. R, 1234 McKinley St., Chicago Heights, Ill.

Registered Trademark, The Flintkote Company

Maintenance Dock
for the world's biggest warplane





No Maintenance
for its roofing and siding

When Consolidated Vultee engineers designed a maintenance dock for the B-36D jet-augmented bomber, they naturally turned to the "aircraft metal" for the closed side and roof—rustproof, corrosion-resistant aluminum.

Reynolds *Lifetime* Aluminum Industrial Corrugated has ample strength for industrial use (see specifications). Yet it weighs only 56 lbs. per square. That's important in this structure that moves up and down on hydraulic jacks; it's important for framing economies in *any* structure. And aluminum's radiant heat reflectivity is another advantage—important under the California sun of this Lindbergh Field, San Diego, installation—important in *any* plant, to keep interiors cooler in summer and warmer in winter.

Call on us for literature, for technical assistance, application details...

• Offices in principal cities. Check your classified phone book for our listing under "Building Products," or write: Reynolds Metals Company, Building Products Division, 2014 South Ninth St., Louisville 1, Ky.

Aluminum is required for planes and other military needs. Reynolds *Lifetime* Aluminum Industrial Corrugated is still produced, but the total supply is necessarily reduced. DO-rated orders receive priority handling.

Specifications for Reynolds *Lifetime* Aluminum Industrial Corrugated:

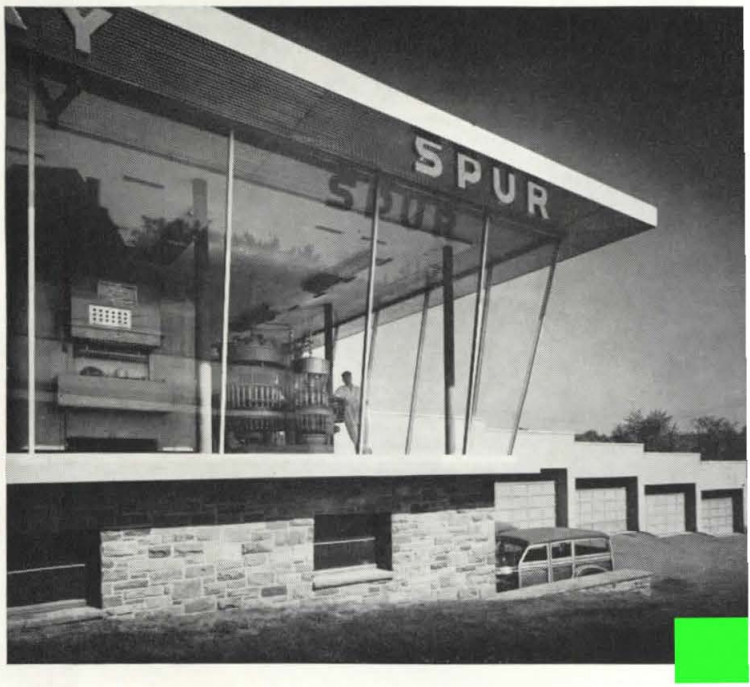
Thickness .032"
Corrugations 7/8" deep, 2-2/3" crown to crown
Uniform load support (roof) 80 p.s.f. on 4' purlin spacing
Uniform wind load capacity (siding) 20 p.s.f. on girt spacings up to 7'9"
Roofing width 35", coverage 32"
Siding width 33-3/4", coverage 32"
Lengths 5', 6', 7', 8', 9', 10', 11', 12'

REYNOLDS ALUMINUM

REYNOLDS *Lifetime* ALUMINUM INDUSTRIAL CORRUGATED

REISNER & URBAHN, ARCHITECTS
AMES WALLACE FOLGER, ASSOCIATE ARCHITECT
HENRY C. ADAMS, INC., ENGINEERS

bottling plant: BALTIMORE, MARYLAND



program Primarily, a building to facilitate the mixing and bottling of Canada Dry-Tru Ade beverages, plus the truck delivery and shipping business that the process involves. In addition, the building was to house two of the owner's other enterprises—an advertising business for the making of out-door signs, showcards, etc., and a machine shop (which doubles as a repair shop for bottling plant trucks) where the owner works as an inventor.

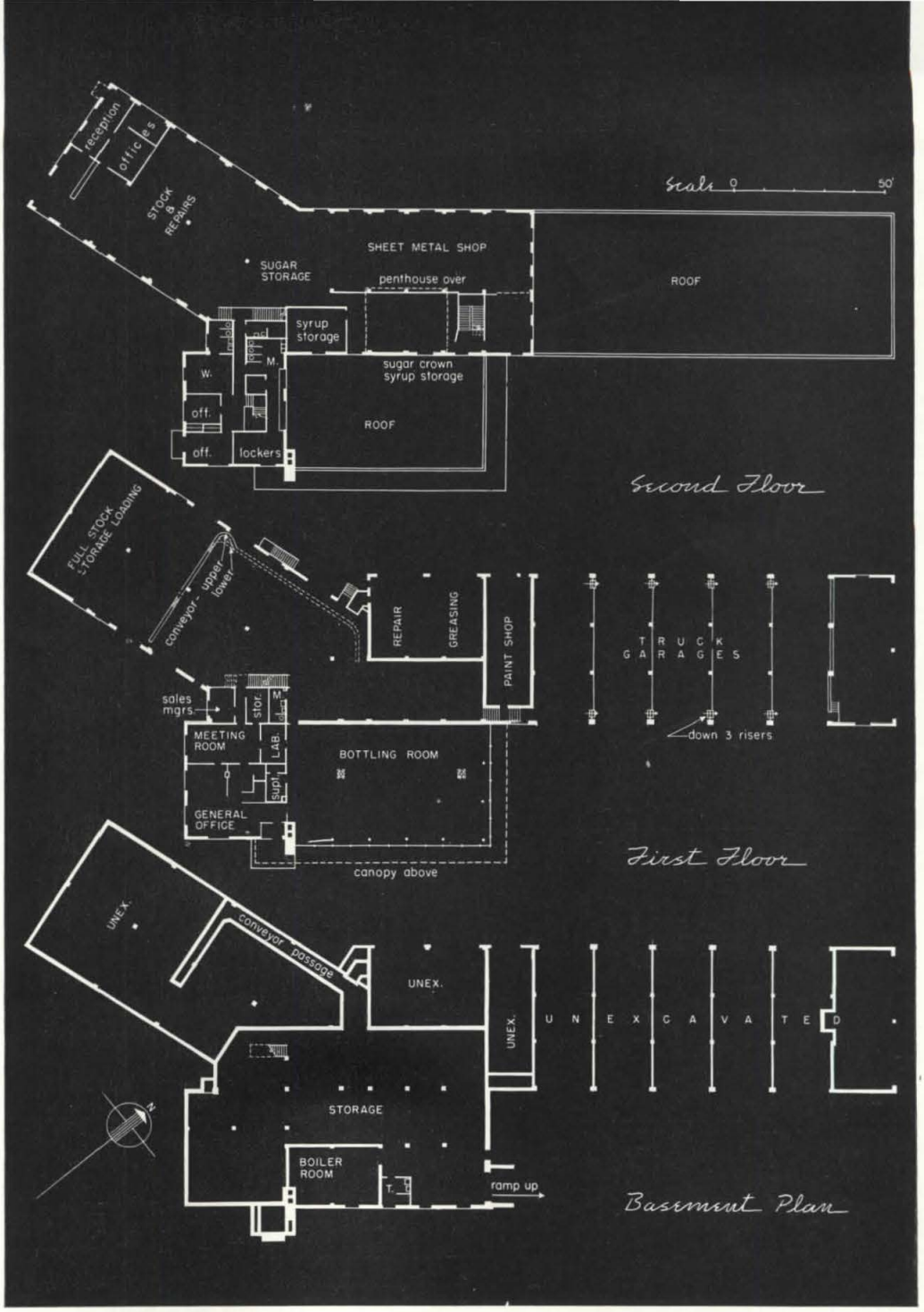
site A steeply sloping, long, narrow lot, bordered on the east by a main thoroughfare and on the south and west by secondary streets.

solution Building organized on three levels across the site contours, so that there is access at grade on each of the levels. The mixing-bottling operation is arranged on a vertical axis involving use of all three floors, while the receipt of "empties" and storage and shipping of the finished product takes place on a "slanting axis" following the slope of the site (see diagram, bottom of facing page). The completely automatic production line is the invention of the owner, A. C. Davis. Hand operations are limited to the loading and unloading of trucks.

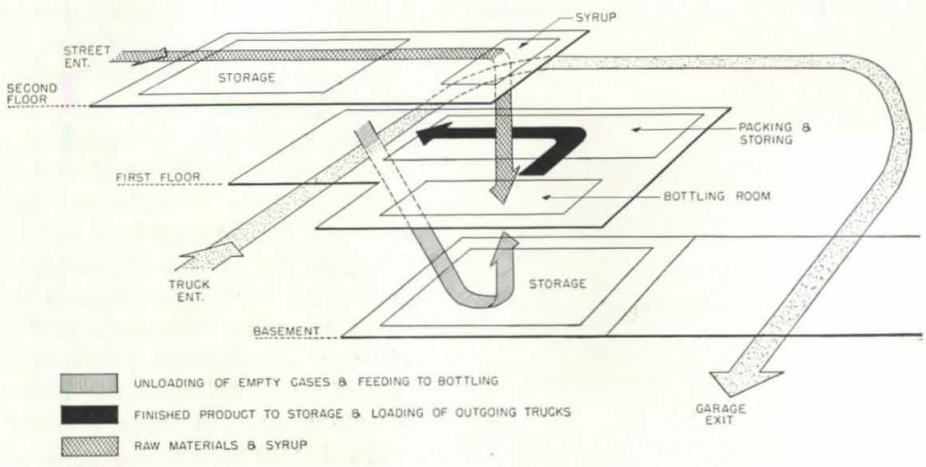
The advertising business is conducted from the offices in the northwest corner of the top floor, beside the truck entrance on this level; a sheet-metal shop adjoins this area, toward the east.

Since the bottling process is a fascinating one to watch, this all-important phase of the activity is exploited as a promotional device and designed as a giant showcase, visible to all passers-by through the huge, outsloping windows. Structurally, the building consists of a steel frame and concrete floor-slab system, with brick exterior walls; the office space is air conditioned; elsewhere the building is ventilated.

materials and methods CONSTRUCTION: *Foundation:* cement mortar footings; steel concrete forms. *Frame:* steel. *Walls:* exterior—brick, stone, concrete block; interior—concrete block, with ceramic tile, plaster on metal lath, glazed tile, and aluminum surfaces. *Floors:* reinforced concrete, left plain or surfaced with asphalt tile or quarry tile. *Roof:* poured gypsum. *Insulation:* 1″ thick cane-fiber board, with ceiling of bottling room surfaced with perforated acoustical tile. *Fenestration:* steel sash with double-strength glass. *Doors:* tempered plate glass; wood; metal-clad fire doors. EQUIPMENT: *Heating:* oil-burning boiler; steam-pressure reducing valves; condensate pumps and receiver; boiler-feed pumps. *Lighting:* fluorescent in office and sales areas; RLM reflectors in warehouse spaces.



Incoming empty cartons and bottles arrive at the first-floor dock and are transported by conveyor to basement storage, from which they are fed (by small case elevators) to the bottling room above, for washing and refilling. Raw materials—syrup, sugar, etc.,—arrive by truck at the west end of the top floor, are taken to centrally located storage space on this level and fed by gravity to the bottling mechanism on the floor below. Filled cases move from the bottling room to storage space directly behind and, as needed, out to their destinations by trucks that travel through the truck dock on this floor, out in back of the building, and down and around through the garages at the east end of the building.



Recreation Building: Philadelphia, Pennsylvania

CARROLL, GRISDALE & VAN ALEN, ARCHITECTS
SAUTER & CASTOR, STRUCTURAL ENGINEERS
A. E. D'AMBLY, MECHANICAL ENGINEER

program A building to be used both day and night by all the children of the near-by neighborhood, plus occasional evening use by adult groups.

site A restricted corner site in a built-up area consisting largely of row houses, near an industrial district; one end of a large playground that occupies the remainder of the block, except for an old Carnegie library that immediately adjoins the recreation center. Convenient walking distance for most of those who use the building, but with a trolley line along the street to the south.

solution To preserve the site as much as possible for playground use, the building is fitted in tightly in a corner of the block. Plan, organized on two floors, is worked out within a rectangle, with the gymnasium and platform stage, snack bar, meeting rooms and office on the upper floor; a large game room, dressing rooms, craft rooms, and heater room, downstairs. The main entrance is at the northwest corner of the building at a central level, with stairs up and down to the two main floors; a pair of direct exit doors on the south wall of the gym lead out to sidewalk staircases.

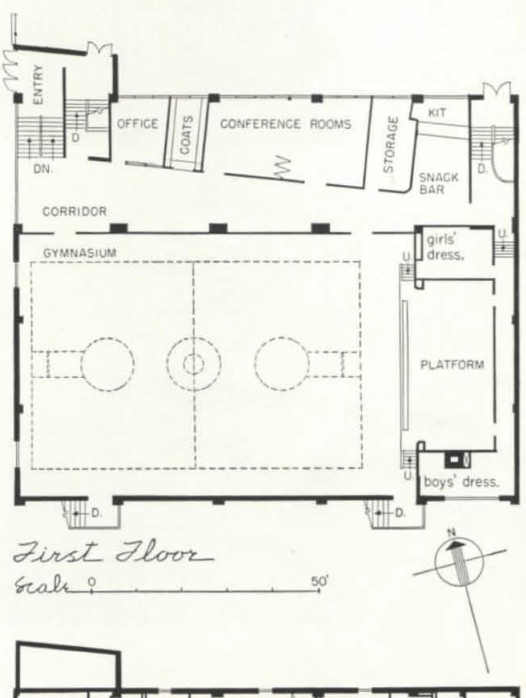
Structurally, the building consists of a steel frame with bar joists; concrete ceilings fire-protected by suspended plaster ceilings. The gym has a full-size basketball court, but since the building is meant for participation rather than spectators, there is almost no provision for seating, although a space of about 6 feet along the sides of the basketball floor can be used for a couple of rows of seats, and the stage is also sometimes used in this way. In addition to sports, the gym will occasionally be used for neighborhood gatherings, but the stage is small and not equipped for elaborate play pro-

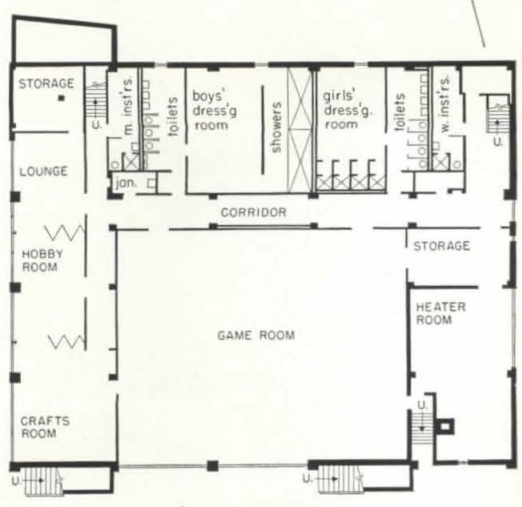
ductions. All inner walls have masonry finishes of one sort or another, chiefly structural glazed tile floors, other than that of the gym (which is maple), are finished with either plain cement or asphalt tile. Both these factors are a direct reflection of the wish to have the building as durable as possible.

materials and methods

CONSTRUCTION: *Foundation:* concrete. *Frame:* structural steel. *Walls:* brick curtain walls, with glazed structural units on interior. *Floors:* 2½" slabs on lightweight steel beams, surfaced with liquid hardener (ground floor), asphalt tile (upper floor) or maple (gym). *Roof:* precast-concrete slabs on steel joists, surfaced with 20-year bond slag roofing. *Insulation:* rigid insulation in roof. *Fenestration:* aluminum, projected sash, with acryllic plastic glazing. *Doors:* flush birch; aluminum.

EQUIPMENT: *Heating:* vapor system, with steel, oil-burning boilers; recessed cast-iron convectors; wrought-iron piping; zinc-coated steel ducts; cabinet-type heating and ventilating units; automatic, zoned controls. *Lighting:* recessed ceiling lights; border and footlights for stage.





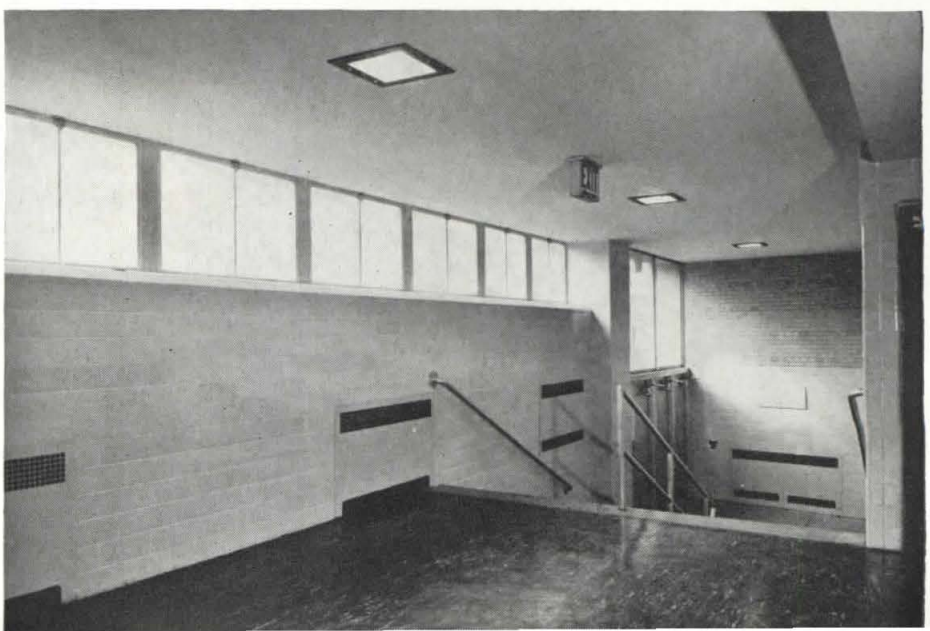
RECREATION BUILDING: PHILADELPHIA, PENNSYLVANIA

Shape of the roof above the gym is a result of the structural design. The cross girders are deep, while the roof I-beams between exterior columns are shallow. With the top of the steel at one level throughout, this means that the bottoms of the beams are considerably higher than the bottoms of the girders; hence the ceiling is sloped up to meet the beams.

Above—view of gym, looking toward stage.

Left—general view from northwest, with entrance door near corner of building.

Below—looking from upper-floor corridor down to entrance doors. *Photos: Alfred A. De Lardi*



"Zephyr" (below) is a power-loomed, mercerized-cotton, sheer casement material specially designed to prevent sagging. It is 50″ wide and is stocked natural for dyeing all colors. "Zephyr" is gracefully used in the room (right) photographed by Lionel Freedman in the home of Roy S. Johnson, New York architect.

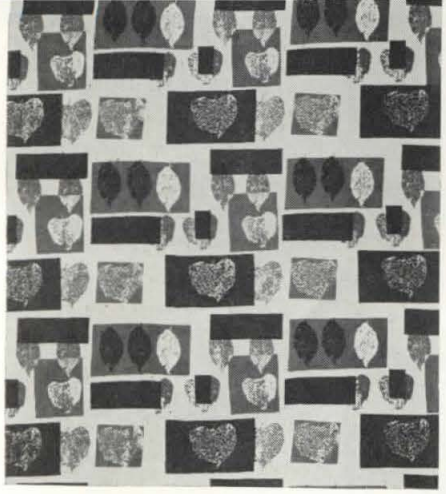
Right — the handwoven plastic and metallic window shade (shown against black and against light) may be had in all colors, 36″ to 50″ wide.

Below—the upholstery fabrics, "Thistle" and "Berwick" are stocked black and white and may be dyed any color, as the white "takes" but the black rejects dye. Width is 50″.
Photos: Rudy Bleston

ISABEL SCOTT, NEW YORK

woven fabrics

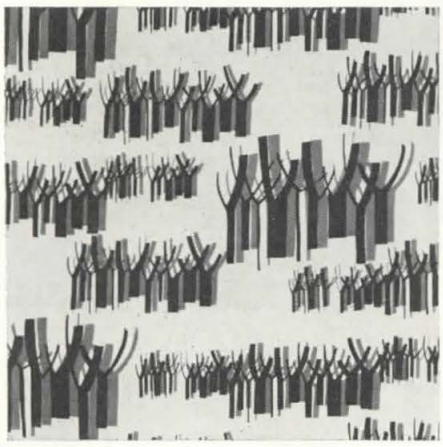
The contemporary enthusiasm for expanded glass areas that expose and floodlight the interior, demands new consideration of fabrics chosen to modulate window light or to appear to best advantage on walls and furniture exposed to full light. The decorator or architect accustomed to first considering the use and character desired in an interior, finds the emphasis shifted to an urgent need for light control. Fabric designers have been alert to this need for new types of fabrics. Among the leaders is Isabel Scott, experienced weaver and a pioneer in adaptation of unusual materials in her woven fabrics. In addition to her studio for handweaving, she maintains a studio with power loom, to produce "the feeling of handwovens" for a wider market.



Photogram of a leaf inspired "Foliation" (above), printed by photographic screen process in two colors (coral and tan, chartreuse and charcoal, or stone grey and blue) on 48″ white Satinweave, with 28½″ repeat. Correlated wallpaper also available.

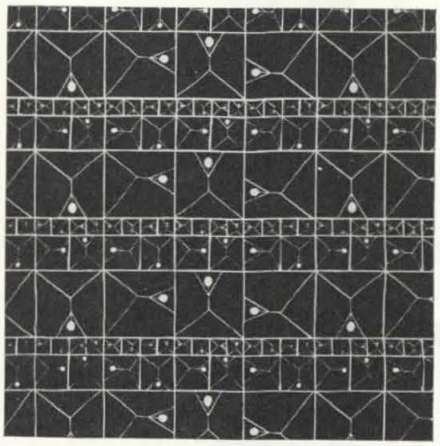
Right — Tinkertoy shapes suggested "Schematics," printed in tan, Navy, coral, or quartz green on 48″ white Satinweave, with 10″ repeat. Correlated wallpaper.

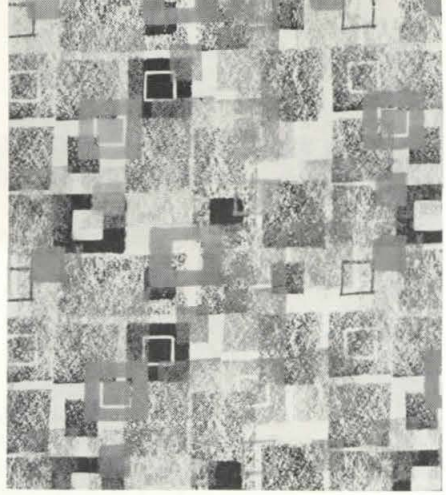
Background color is important in "Tall Timber" (below) and in a correlated upholstery fabric, "Small Timber," and a wallpaper. Printed in gold and black, green and brown, blue and grey, or coral and grey on 48″ white Randomweave, with 31¼″ repeat.



BEN ROSE, CHICAGO AND NEW YORK

P/A RELATED DESIGN FIELDS





"Façade" (above) is a new design based on an interplay of simple forms, solids, and texture. Offered as a background for contemporary or period furnishings, it is printed in two colors (rust and grey, gold and slate, or sand and quartz green) on 48″ white Satinweave or *Studio Loom*. In one color, it is also printed on sheer rayon. Correlated wallpaper.

Varying weights of line express a three-dimensional design in "Portals" (left), printed in dark green, gold, coral, sandalwood, or sage green on 48″ white Satinweave, with 27½″ repeat. Correlated wallpaper.

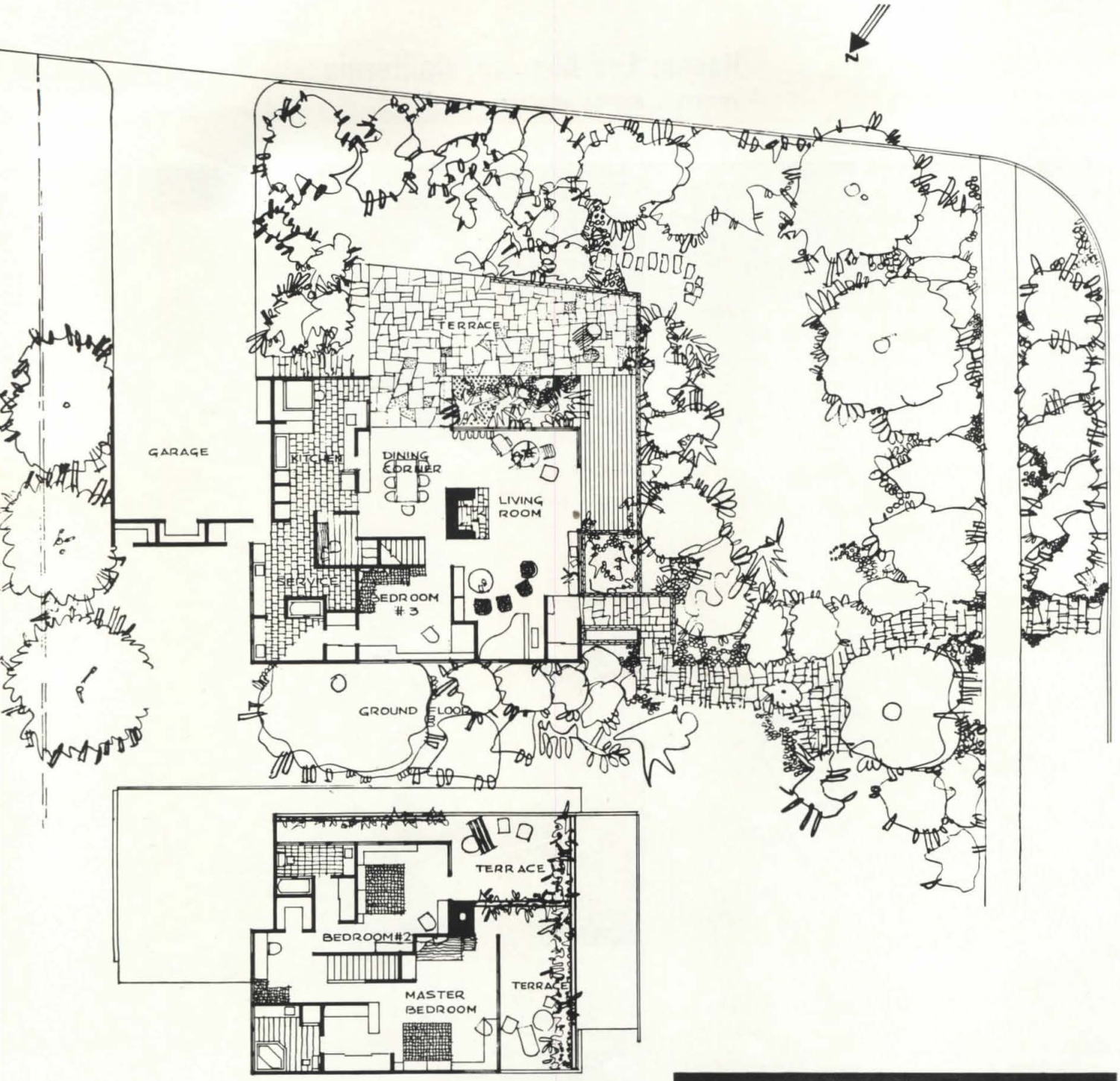
Below — a vertical arrangement of paper clips was photographically reproduced to compose "Vibrations," printed in two colors (mulberry and bronze green on white, raspberry and jade blue on grey, stone grey and blue on white) on 48″ Satinweave with 14″ repeat. Correlated wallpaper.

printed fabrics

Printed fabrics and wallpapers should be considered building materials as functional as stone and brick, maintains Ben Rose as he searches in his designs for balance and modulation of mass, scale, and line. He also is aware of the need for close collaboration between the architect and the fabric designer, feeling that stimulating fabric designs may often answer a definite architectural need in the interior. His patterns are printed on various textures and weights of materials, to fill specific requirements, and his color use is exceptionally flexible.

House: Los Angeles, California

RICHARD J. NEUTRA, ARCHITECT

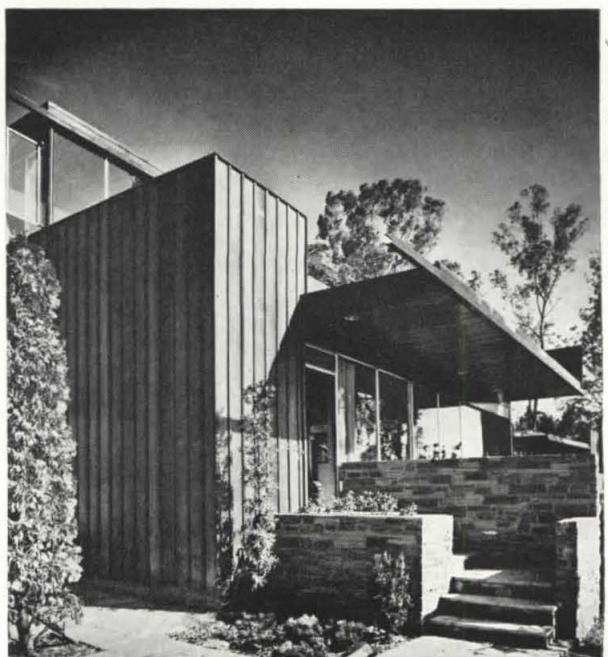


SECOND FLOOR

Right—footpath entrance from the lakefront. On the page facing are two views of the western front of the house and (the lower photo at far right) a general view from the southwest. Garrett Eckbo of the firm of Eckbo, Royston & Williams was landscape consultant.

Exterior color includes, in addition to the trees and growing things, the warm glow of oiled redwood siding, the light rose and buff tones of the flagstone terrace walls, and the sparkle of large glass areas reflecting the sky and western view.

Photos: Julius Shulman



HOUSE: LOS ANGELES, CALIFORNIA

program

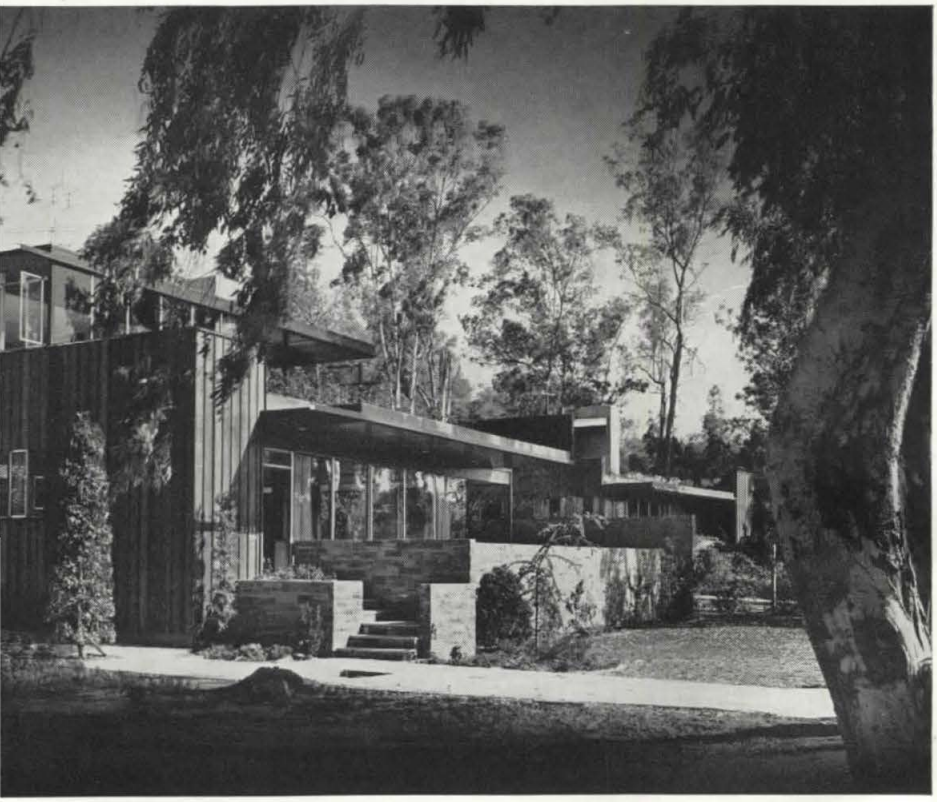
Home for a physician, his wife, and daughter. Generous provision for outdoor living.

site

Gently rising ground (from west to east) with dramatic western outlook across a lake to a panorama of hills and mountains, reflected in the water. Grove of eucalyptus trees to the south; auto access from southern side street; pedestrian path up from lakefront.

solution

The compactly planned ground floor, organized around a freestanding stone fireplace, opens through huge sliding glass doors to living decks and terraces to the west and south. A bay at the north end of the living space contains a grand piano, a radio, record player, television set, and books. The sitting area extends past the fireplace, out to the paved areas south and west of the house which sweep around to form the dining room's southeastern outdoor extension. A kitchen door in the corner of the terrace facilitates outdoor dining.



At the top of the stairs, on the second floor, is a landing that may be used as a small sitting room or occasional sewing room; opening from this landing are the owners' and daughter's rooms, each with its private bathroom and living terrace. The high-windowed lakefront walls are glazed with glareproof glass.

materials and methods

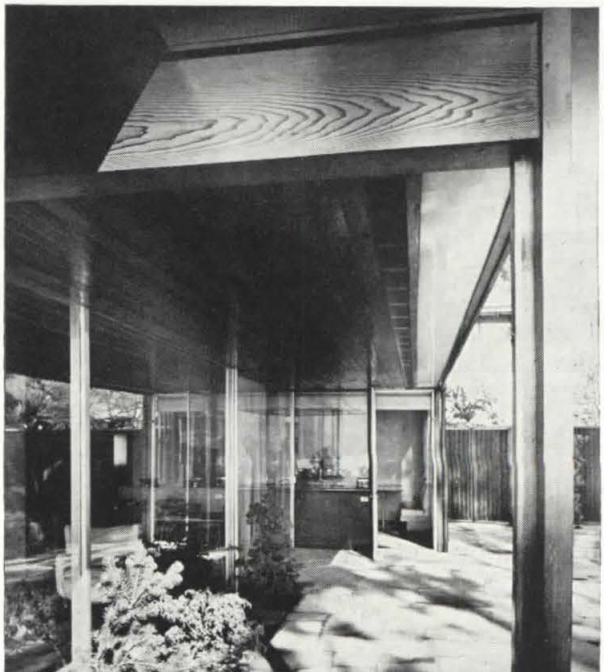
CONSTRUCTION: *Foundation:* concrete slab, grade beam, piers and wood joists. *Frame:* wood. *Walls:* frame with exterior surfaces of redwood board and batten, flagstone veneer, and plywood; interior walls—birch plywood; flagstone veneer. *Roof:* built-up gravel, over frame. *Floors:* concrete slab, with asphalt tile and ¼" ply on sub-floor to take wall-to-wall carpeting. *Ceilings:* redwood T&G; plaster. *Fenestration:* aluminum casements; regular, plate and heat-absorbing plate glass. *Doors:* plywood slab and aluminum, sliding glass panels; electrically operated overhead garage door.

EQUIPMENT: *Heating:* electric, forced-air furnace. *Lighting:* flush, recessed fixtures and fluorescent strips. *Kitchen:* all electric equipment.

Above—an outdoor-indoor view toward the lake along the south wall of the house, with the living terrace at left and the south end of the living room at right.

Right—looking back along the terrace, past the dining space into the kitchen door at the corner. For kitchen detail, see page 68.

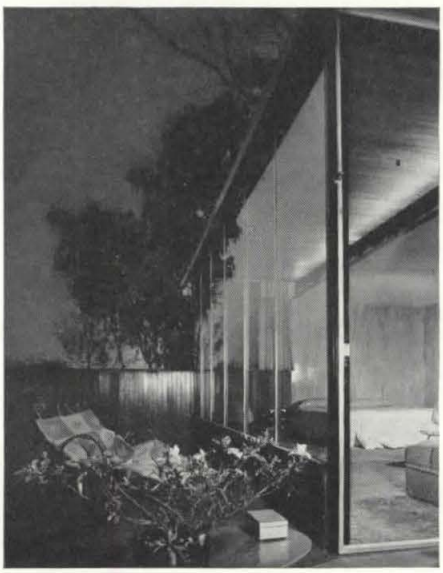
At bottom of opposite page—looking across the living room to the western window-wall and terrace beyond (left); and the stone fireplace, with southern living-dining terrace in background (right).

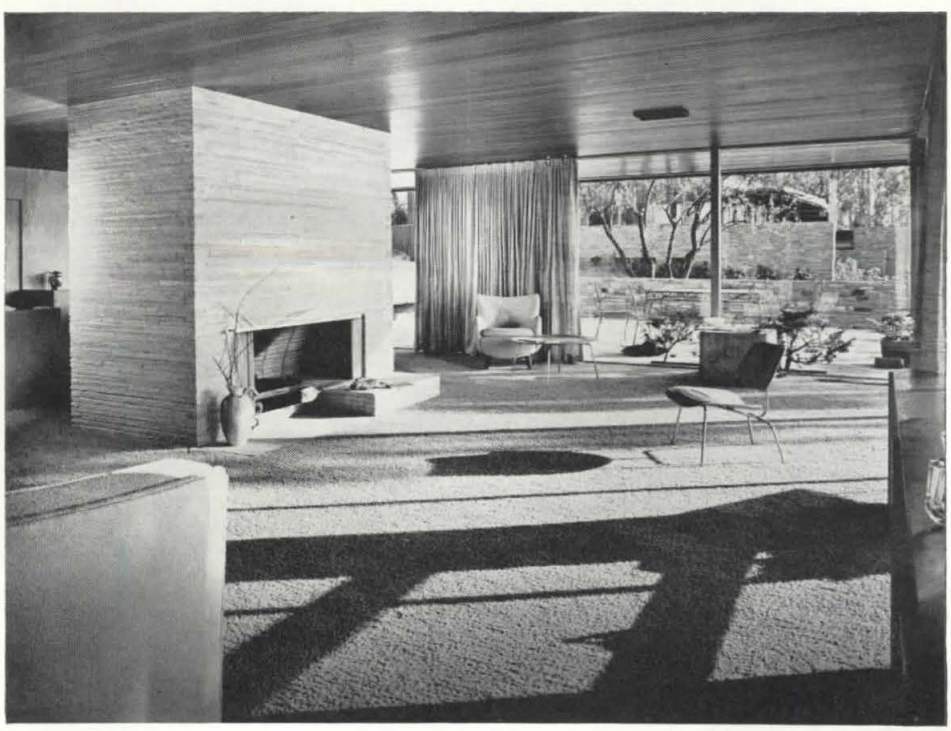


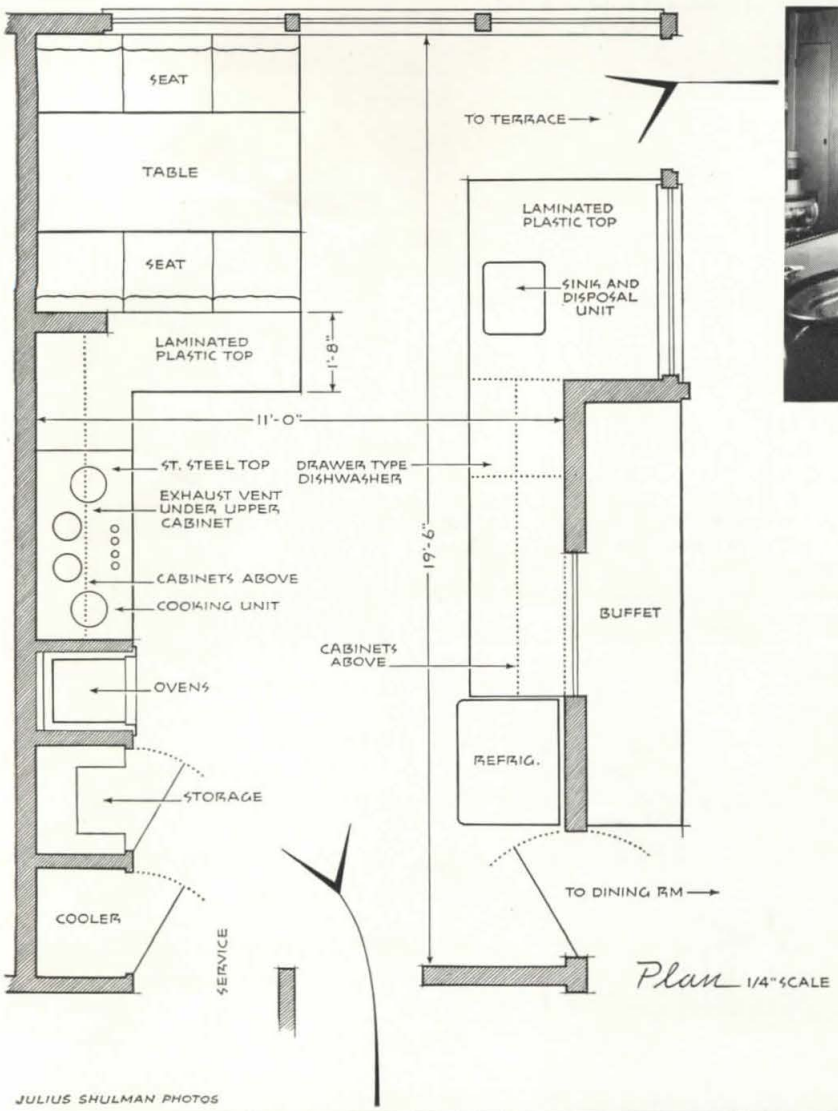
HOUSE: LOS ANGELES, CALIFORNIA

Right—corner of master bedroom, with lake and hill view seen through tall panels of glareproof glass.

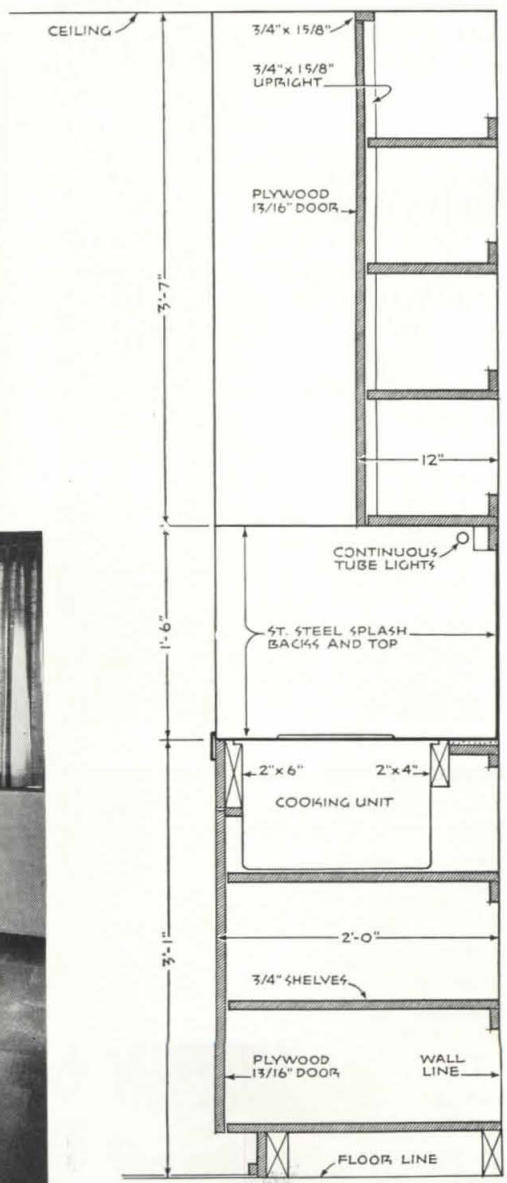
Below—detail of terrace outside owners' bedroom.







JULIUS SHULMAN PHOTOS



TREWEEK RESIDENCE, Los Angeles, Calif.

RICHARD J. NEUTRA, Architect

How One School Committee Selected Its Architects

By John G. Belcher

In November, 1949, the town of Darien, Connecticut awoke to its need for a new period of school expansion. Darien is a southern New England community with a population of 12,000, 40 miles eastward from New York which, since early Colonial days, has taken all formal town action through Town Meetings, with administration by a Board of Selectmen. The 1949 Town Meeting elected two building committees (17 members each: 7 laymen, 9 members of the school board, and the first Selectman) to study the problem of school needs, one for the high school age group, the other for the elementary and junior high school ages. Among their duties was the selection of architects for the buildings that would result.

There are many ways of choosing architects for school building programs. Often the choice is affected by precedent, occasionally by political expediency, many times by the fact that a firm has had a specialized school practice. Darien's committeemen determined to make an objective choice, and base their final selection only on demonstrated ability to solve these basic fundamentals:

1. the most economical use of space
2. utilization of modern materials and methods
3. development of low-cost construction technique
4. production of a design and a building that would reach a new national standard in meeting educational needs.

It was of great interest to note the manner in which the architectural firms which were considered at various stages—big ones and little ones—handled their contacts with the building committees. To a large extent, the impressions created by the architects in writing letters and making personal presentations were as important as their design ability. Citizen committees are more critical of and usually better able to appraise human characteristics with which they deal every day, then to judge design competence accurately. Perhaps too few architects realize this fact.

The approach which the Darien committees used was direct and straightforward. First, all Darien architects were invited to qualify and further, every Darien citizen was encouraged to suggest architectural firms that seemed fitted for the job. Every effort was made by the committeemen to discover names of qualified firms not only near home, but even at some distance, until a total of 41 architectural firms were listed for invitations to qualify—firms from 13 cities in 5 states. Each of them was then sent a letter of invitation, containing two carefully prepared questionnaires. Of these 41, six did not reply at all (which seems a rather shocking aspect of architectural public relations; certainly the letter deserved the courtesy of a reply); four said that they could not undertake the projects for one reason or another.

The returns from the 31 whose responses indicated interest in the commission were then carefully analyzed and the qualifications presented were thoughtfully considered. Thirteen firms were selected from the group to make personal presentations to the committees, and were invited by letter to appear. (The others were notified of their elimination with a carefully worded letter of regret.)

The next step of the committees was to study carefully the qualifications, the abilities and the characteristics of the thirteen "semi-finalists." This was done in several ways: each firm was invited to make a personal presentation to a joint meeting of the two committees; subcommittees visited buildings which had been designed by the thirteen firms; in most cases the architects' offices were also visited. At the end of this period of analysis ten more firms were eliminated and so notified, and the three finalists who remained were asked to make a final, more specific presentation. A more thorough study of their past work was also undertaken, including personal talks by committee members with owners of buildings designed by them, and visits to recent commissions under their supervision.

By this time the committees had talked to enough architects and enough clients of architects to have a fairly high and objective standard of judgment. The major factors in this final selection were the design quality and the cost analysis of recently finished work; evidence of understanding educational problems in general and Darien problems in particular; the general impressions made on the committees in the personal contacts that had taken place; the reactions of clients who had been interviewed; and, finally, the ability of the architects involved to start to work immediately on Darien's pressing needs.

The results of all this analysis and study of architectural abilities, were interesting. For the smaller project (an addition to the senior high school) a firm of school specialists was selected. For the larger commission (the expansion of two schools and a completely new school building) the committee chose

a firm which had never designed a school, but which evidenced such excellent design ability in other fields and such research-developed understanding of educational requirements that its qualifications were irresistible.

It seems to the writer that there are many lessons to be learned from the way in which the 41 architectural firms involved took advantage—or failed to take advantage—of the opportunities which were presented to them to demonstrate their abilities. Mention has been made of the fact that questionnaires were sent out with the first letter of invitation. These were carefully prepared by the committees, and indicated information that was seriously desired, both to evaluate the firms individually and to compare them in a fair and objective manner. In many cases the architects ignored the questionnaires and substituted their own summaries of their background and work. The firms who did that were eliminated immediately.

In other cases, certain questions were not answered or were answered in an amazingly uninformative manner. By contrast, in perhaps a dozen cases the qualifying firms supplemented and documented their answers with well prepared material, brief and to the point, closely identified by reference numerals with the particular question that was being answered. Obviously, such special efforts met with approval.

In looking back over the experience, the plus and minus factors of the presentations seem capable of summary, in the following manner:

negative factors:

By letter:

1. *Late acknowledgement of invitation to qualify.*
2. *Evidence of off-hand consideration of questions.*
3. *Careless appearance of returned forms.*
4. *Failure to answer questions fully.*
5. *Poor follow-up or none at all.*

By personal presentation:

1. *Failure to study Darien specific needs prior to appearance before committees.*
2. *Too much dependence on prominence of firm name reputation.*
3. *Failure to talk in terms of the problem from the viewpoint of the client's interest.*
4. *Poorly organized talk.*
5. *Visual material inappropriate to points under discussion.*
6. *Unenthusiastic or timorous impressions given to audience by poor speaking mannerisms.*
7. *Poor follow-up or none at all.*

positive factors:

By letter:

1. *Clear, concise replies to questionnaire.*
2. *Invitation to visit office to view the organization at work and to inspect plans in progress.*
3. *Interesting, well developed and well organized supplementary material tieing in with important sections of questionnaire.*
4. *By virtue of (3) above, specific evidence of an intimate understanding of educational problems.*

By personal presentation:

1. *An obvious interest in, and enthusiam for the opportunity to qualify.*
2. *Evidence of thoroughly understanding educational problems.*
3. *An open and friendly manner.*
4. *A pre-study of the town schools, proposed building sites and impressions gathered from expressions from parents and faculty . . . used as a basis for specific discussion.*
5. *An understanding of the town corporate structure; how it operates; how a town building program is financed; the relation and importance of various boards and committees to such a project.*
6. *Proof and examples of design ability and practice of economical construction techniques.*
7. *Good organization of presentation; the ability to speak easily and answer questions clearly and succinctly.*
8. *Evidence that the architectural firm worked as an integrated team rather than being dominated by one personality.*
9. *Good follow-up and letting it be known definitely that the firm really wants the job and that it will exert every method at its command to turn in an exceptional performance.*

Is this aspect of architectural practice—the ability to sell the qualifications of one' firm—an unimportant one? It would seem that it is not only important but is too often overlooked. The architectural firm cannot forget that its potential client faces a difficult job in trying to make an honest and fair decision in the selection of professional talent. Building committees are usually composed of men who begin their task with few criteria and few standards with which to judge professional and technical ability. Yet they are usually intelligent, successful men —and busy men. The necessity for clarity, simplicity and honesty in the presentation should be very obvious.

In summary, the Darien school program, as in the case of many other commissions that are being awarded every day of the week, three prime factors were the ones that resulted in the final selection:

The evidence presented that the architects could provide a physical school plant suited to modern educational methods, which would be economical in first cost and in operation and would serve the community well over a period of years.

The foresight of the architects in researching and analyzing for their presentations the background data for the building program.

The thoughtfulness, organization, and method of presentation of these facts for the consideration of the building committees.

It all comes back to the point PROGRESSIVE ARCHITECTURE has made many times before—by having consideration for the problems of the client, the architect does himself and his profession a service.

p/a critique elementary school construction

Among the factors that delimit and, therefore, determine the designer's choice of a structural system for an elementary school, there are three that occur so frequently that one can assume them as constants. In the first place, school boards being what they are—and public funds being what *they* are—there is always a limited budget to work with. Then, since discussions, bond issues, preliminary plans, etc., consume much time, the need that originally existed becomes increasingly aggravated as time ensues and it is, therefore, important to employ a scheme that can be speedily erected. Third, school children being what *they* are, an absolute essential is the selection of materials and equipment that will take abuse and that can be maintained inexpensively.

What is the result? The four schools shown in this study provide a good composite answer. To meet limited budgets—in every case an economical system was adopted, economical in initial cost as well as in future maintenance. All four employ a lightweight steel frame—in one case, bolted light-steel sections and open-web steel joists; in the other three, welded rigid frames spaced 16 feet on centers. With only these three cases to study, it is instructive to note the adaptability of the rigid-frame single-slope roofs in two cases (employing two types of fenestration), and a pitched-roof scheme in the third instance. All the architects also report that these approaches assisted construction speed. In the case of the South San Francisco School, the frame went together in just three and a half days.

Curtain walls in the four schools vary widely. In the case of the Warwick, Rhode Island, school cavity walls with 4″ brick veneer, 2″ air space, and 8″ cinder-block interior wall were used. The Maricopa County, Arizona, school has walls of pumice block. The South San Francisco job has concrete end walls, but is otherwise of dry-wall construction with wood-stud frame and sheathing, exterior surfaces of redwood boards and battens. In the school in Phoenix, Arizona, portions were built on the premise that the buildings would be moved elsewhere later on; for these units, wood-frame walls with rigid asbestos-shingle siding were adopted. In both the Arizona schools, a reflective white sealer on the roofing assists in obtaining the desired insulative properties.

All floors are of concrete on fill, and two of the schools have radiant heating systems with pipe coils embedded in the slabs. The architects all chose asphalt-tile flooring for the classrooms, ceilings of perforated acoustical tile. Three of the schools have plywood partitioning between classrooms, while the fourth (the Rhode Island job) has cinder-block partitions (for discussion of acoustical properties of cinder-block partitions, see page 89, August 1950 P/A). The four schools present a variety of answers to the problem of light control. In the Rhode Island school, directional glass block was used to provide glareless bilateral lighting. Roof overhangs and variations on the *brise soleil*—one in roof outriggers, another as a continuous screen in front of glazing—control sun in the others.

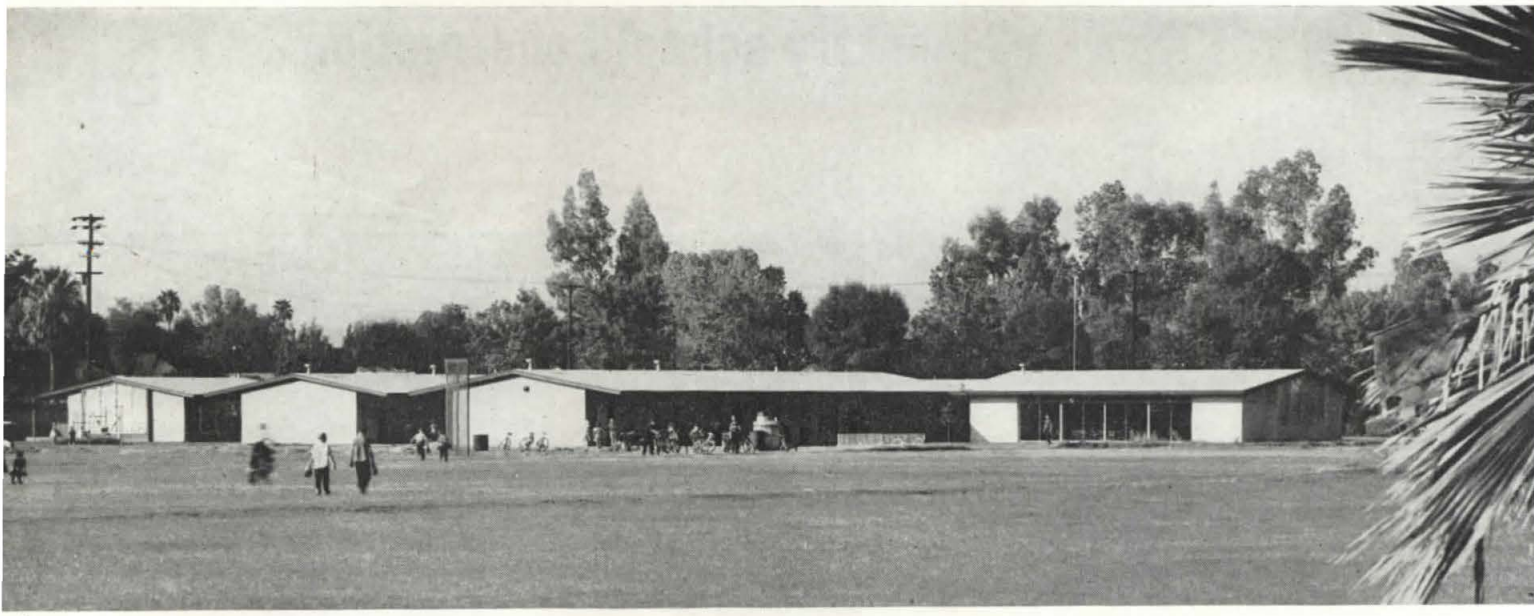
Above—Monterey Park School, Phoenix, Arizona (top); kindergarten and classroom wings, designed for removal to another site at a later date. Edward L. Varney Associates, Architects and Engineers.

Los Cerritos School, South San Francisco, California. John Lyon Reid, Architect. South-facing, L-shaped classrooms; sunlight controlled by continuous louvers.

Right—the Randall Holden School, Warwick, Rhode Island (above). MacConnell & Walker, Architects. Rigid-steel frames; cavity-wall construction.

Madison School, Maricopa County, Arizona. Ralph Haver, Architect. Steel frame exposed on exterior; roof overhang to cope with sun.

For complete listing of materials and equipment used in these four schools, see Page 152



Monterey Park School: Phoenix, Arizona

EDWARD L. VARNEY ASSOCIATES, ARCHITECTS & ENGINEERS

program A challenging "pro tem" design problem of providing primary classrooms for a part of the city that had just about reached its population peak, but with full expectancy that, within a few years, the rooms would no longer be needed in this location and should, therefore, be readily movable to another part of town. There was the further consideration that some portion of the group be of permanent construction, for eventual conversion (as well as present vacationtime use) as a building for the city's Parks Department.

site A small city park (playground; soft-ball field) where a summer recreation program is conducted.

solution Organization in five distinct units joined by covered walks—a west-facing administration building with offices and toilets; a multi-purpose room with a small platform stage; two south-lighted classroom pavilions (one with three rooms, the other with two) and a kindergarten unit at the southern end of the group. The administration building and multi-purpose building are of masonry construction and will be permanent park buildings in due course. Classroom units are so designed that when population shifts they may be unbolted and lifted from the concrete slabs to which they are attached and moved to another part of the city.

The architect explains his approach to the design of the school: "It is based on the philosophy that school buildings should provide a pleasant environment for a group of very young children. This implies a very gradual transition from the protective shelter of the home to the world outside. The gable roof form, with low eaves and gently sloping ceilings, imparts some subtle feeling of protective shelter not possible, I believe, with flat or shed-roof forms. The whole aim was complete avoidance of any institutional feeling and the creation of an intimate, child-scaled atmosphere. . . I am inclined to think," he continues, "that too much attention has been paid to the scientific qualities of planning schools at the expense of the humanistic qualities."

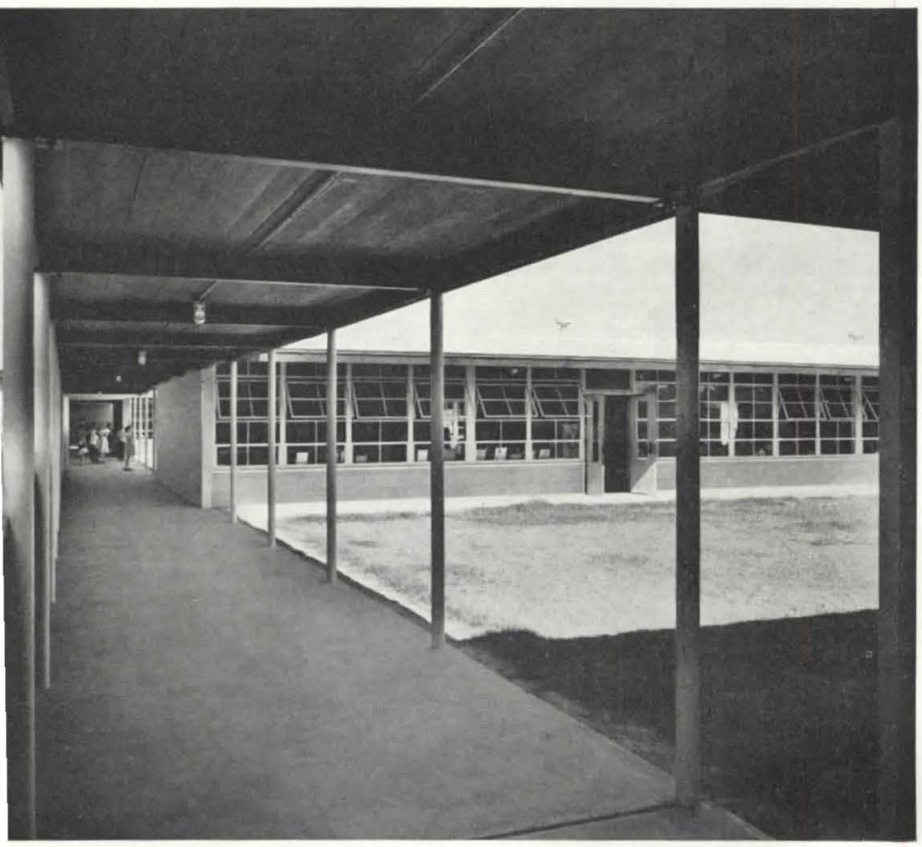
An interesting echo of this approach is the architect's report on the terrazzo hippopotamus that is used as wall decoration on the multi-

purpose building, just to the left of the main entrance. "This perhaps whimsical element caused a good deal of comment, some adverse," he tells us, "but I feel that it helps the child identify himself with the building." One comment retold by a parent was: "Mama, will I get to go to the hippopotamus school?"

The building was completed in 1950 at a cost of $62,553, or $6.72 per square foot, figuring covered corridors at half area—complete, except for landscaping and movable classroom furniture.

structure

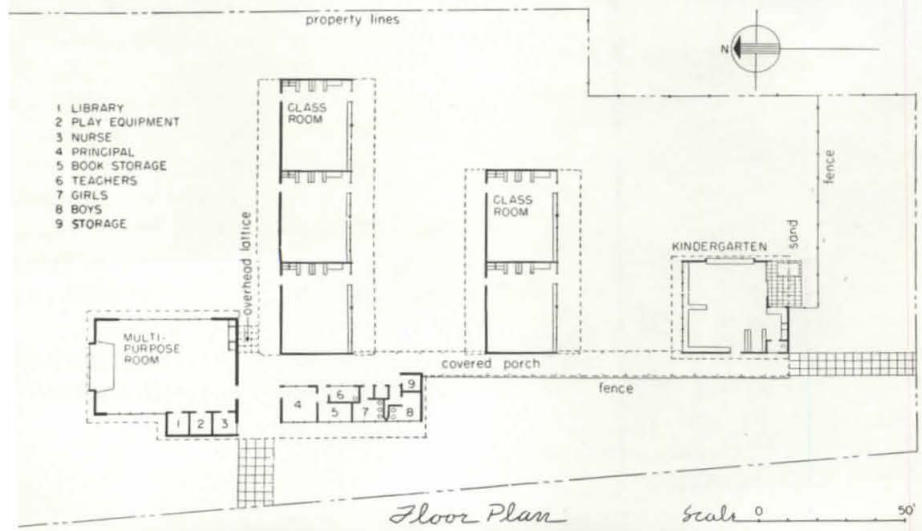
The permanent units are of brick, masonry construction. The movable wings are built, on a 4-foot module, with steel rigid frames on 16-foot centers. Access holes at the base plates of columns permit unbolting of the frame from the slab, lifting off of entire classroom wings and placing on new slabs at another site. Drywall construction was used for the walls, with blond fir plywood interior surfaces, acoustical cane-fiber tile ceilings, and asphalt-tile floors; exterior surfaces are asbestos-shingle siding.

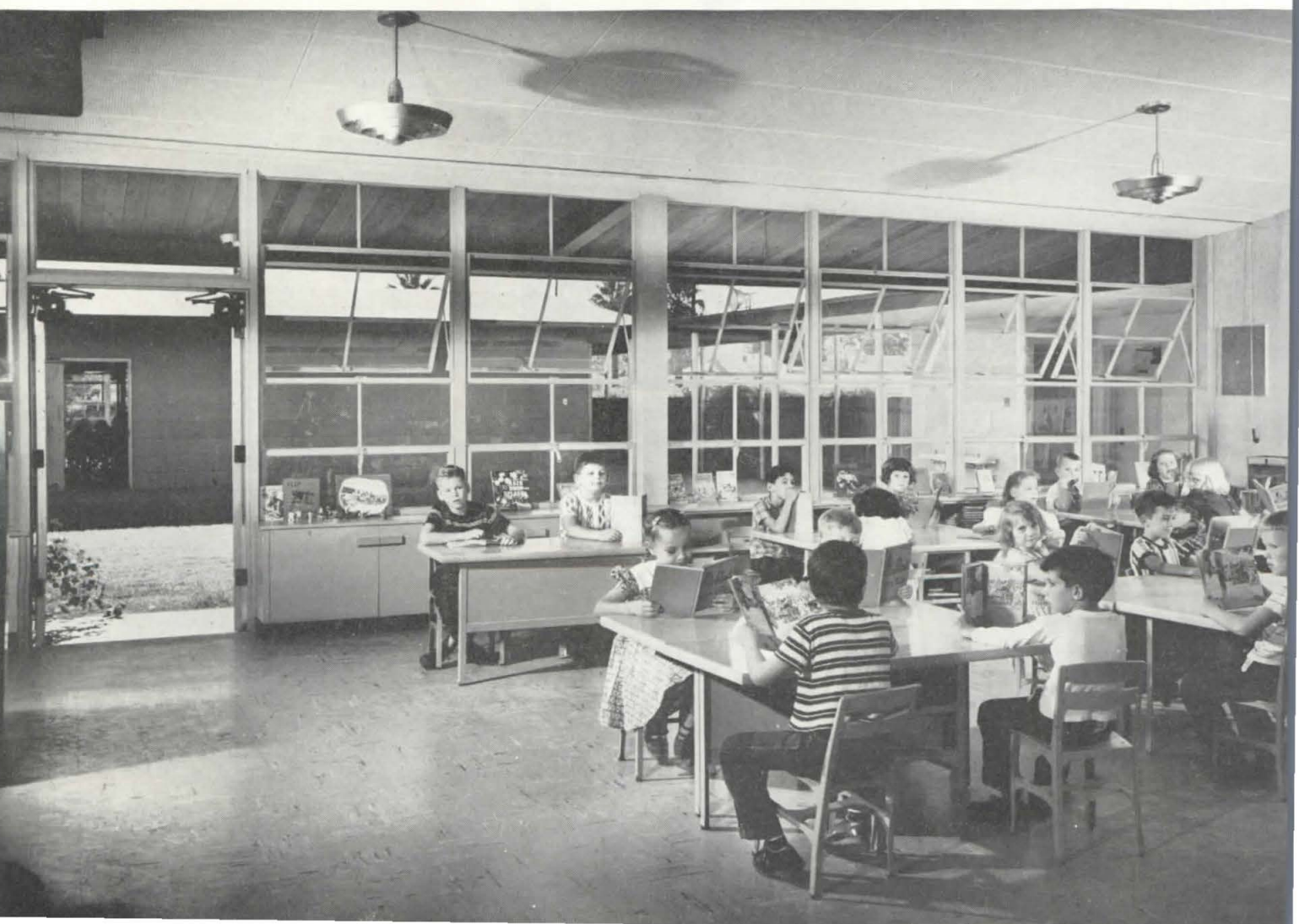


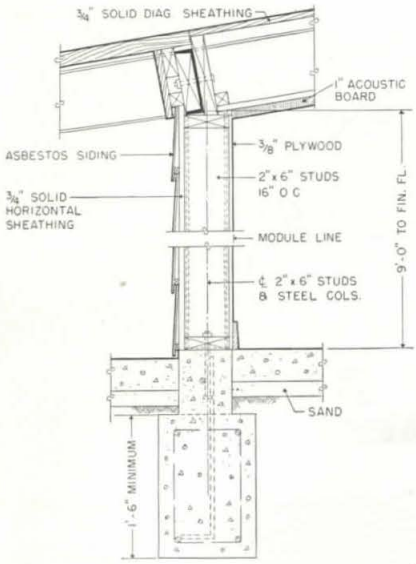
Acrosspage—general view from the northeast; multi-purpose unit, at right.

Left — corridor connecting administration building and classroom pavilions.

Below—general view from front showing redwood fence that shields the covered walk from the street. Exterior color includes sand-colored masonry; natural redwood, and soft, gray-green asbestos-shingle siding. The roof has a reflective white coating to reduce heat transmission. ***Photos: Julius Shulman***







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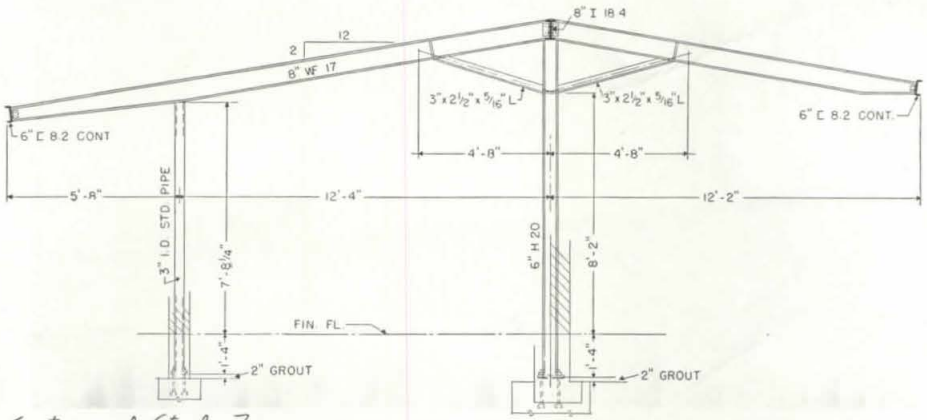
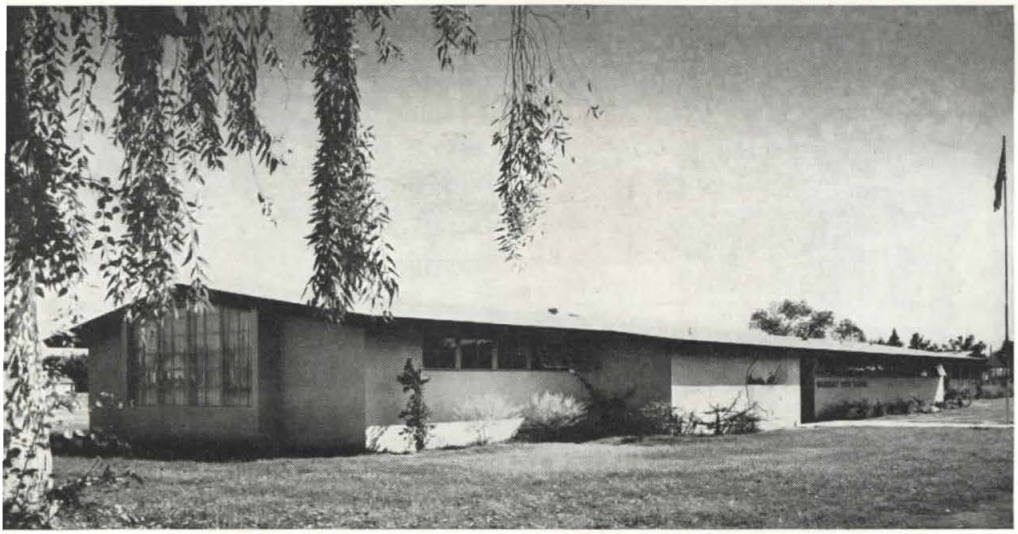


Section of Steel Frame

Acrosspage—top, north side of the three-classroom wing with wall of multi-purpose-unit at left; and (right) looking along the south wall of the same unit. Bottom of page, typical classroom with acoustical-tile ceiling, asphalt-tile floor, blond fir plywood partition wall, and concentric-ring lights.

Above—sectional details showing simple bolt connection of columns to slab—for ready removal and transportation to another site.

Right—east side of multi-purpose building; below, interior of multi-purpose room.



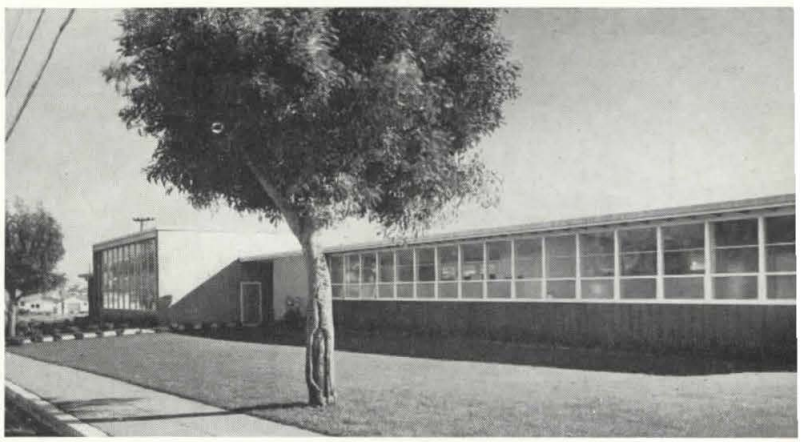
The permanent buildings—multi-purpose-unit (left) and administration building (beyond). In the bright sun on the projecting wall may be discerned the engaging terrazzo hippopotamus.

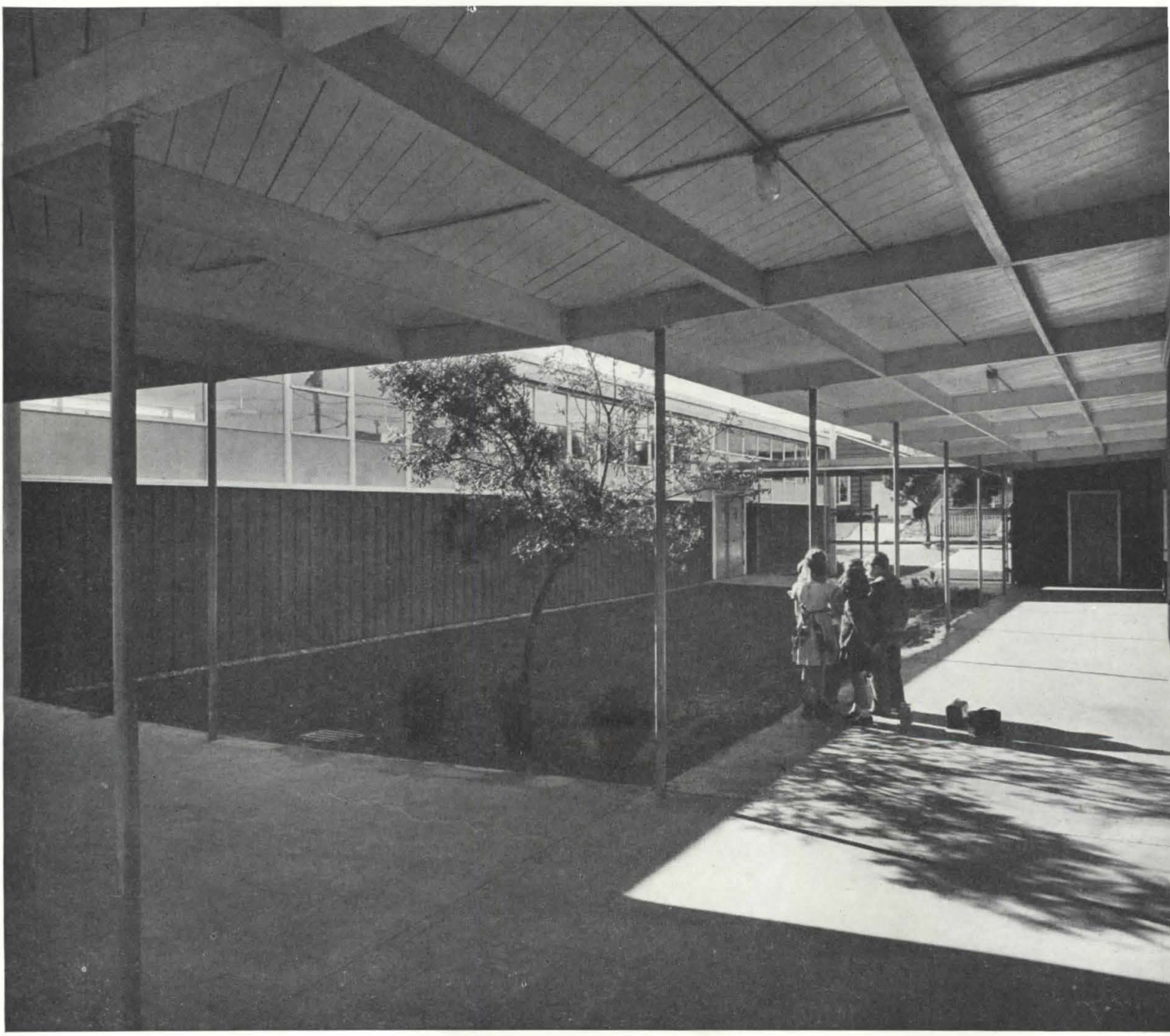
MONTEREY PARK SCHOOL: PHOENIX, ARIZONA

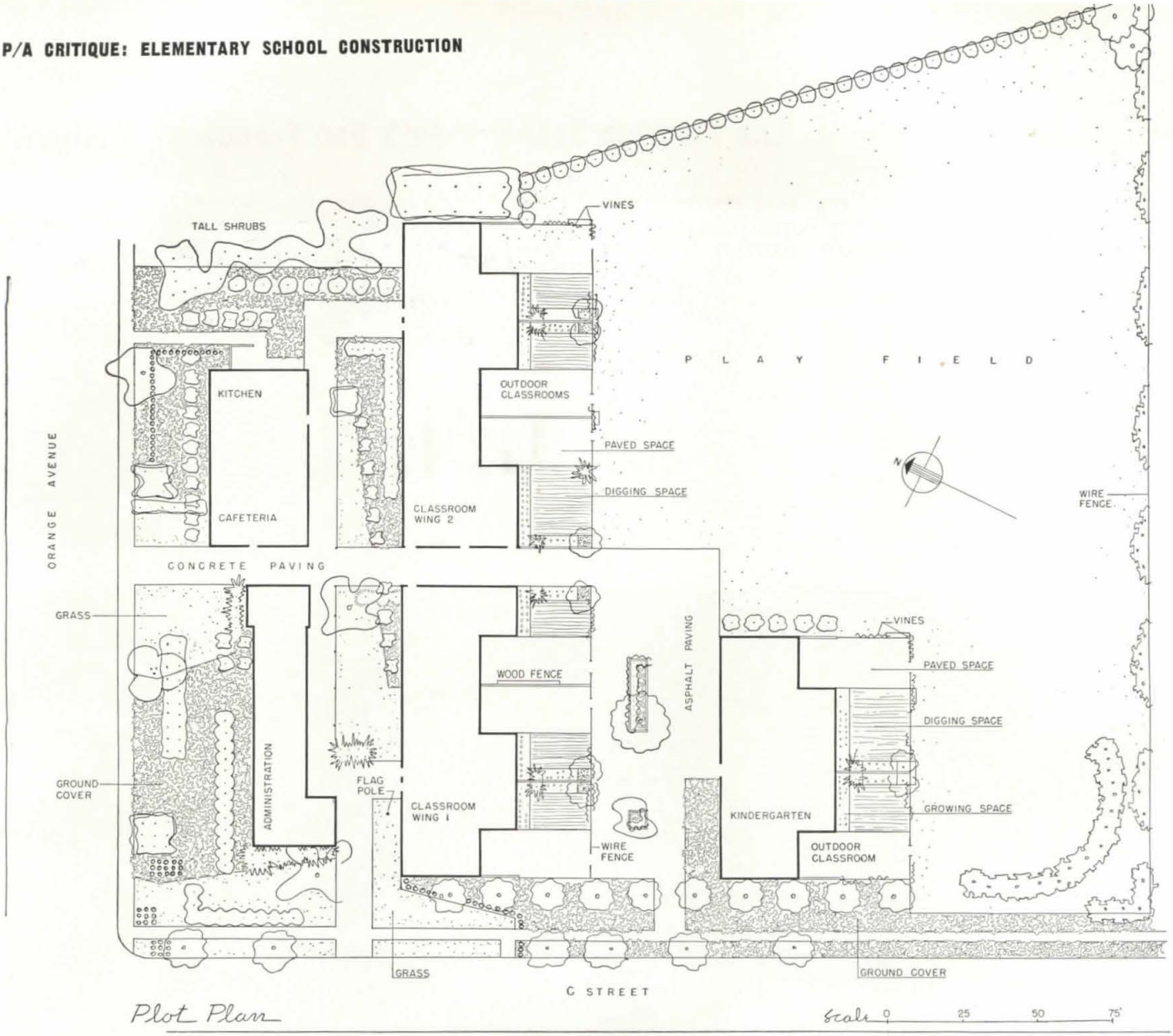
Above and left—details of the kindergarten, placed away from the other units at the south end of the group.

Los Cerritos School: South San Francisco, California

JOHN LYON REID, ARCHITECT
DARIEL FITZROY, ACOUSTICAL ENGINEER
ECKBO, ROYSTON & WILLIAMS, LANDSCAPE ARCHITECTS







program A six-classroom, two-kindergarten primary school, economical in construction and resourceful in meeting the twin exigencies of limited space and limited budget. Particularly desired by District Superintendent James C. Cherry were provisions for a highly developed activity-type of teaching program.

site Fairly flat, trapezoidal site, distinctly limited in area, with busy traffic street along its northwest boundary and a secondary street on the southwest side. Almost constant, and sometimes disagreeable, winds from the northwest.

solution The size of the site limited the number of classrooms, assuming allocation of sufficient playground space, to a total of eight. To gain all space possible, the cross-over corridor scheme was developed—short connecting corridors leading to primary-grade classrooms from the single long corridor along the southeast side of the administration-cafeteria wing. Since kindergartens were considered wholly separate in activity and use, these occupy a third structure located somewhat apart at the south of the group and reached from the side street. To shield classrooms as much as possible from street noises, the administration-cafeteria building is placed near the busy street to the northwest—a placement that also helps to protect the whole complex from the northwest winds. For the same reason, the classrooms are arranged with high windows on this northwest side and extensive window areas on the lee side.

The unusual L-shaped classrooms (*see details on page 80*) were planned, in collaboration with Superintendent Cherry, to give the fullest potential to several activities taking place simultaneously in one room. Wholly movable furniture within them further expedites this type of program. Each of the rooms has its adjoining outdoor teaching area.

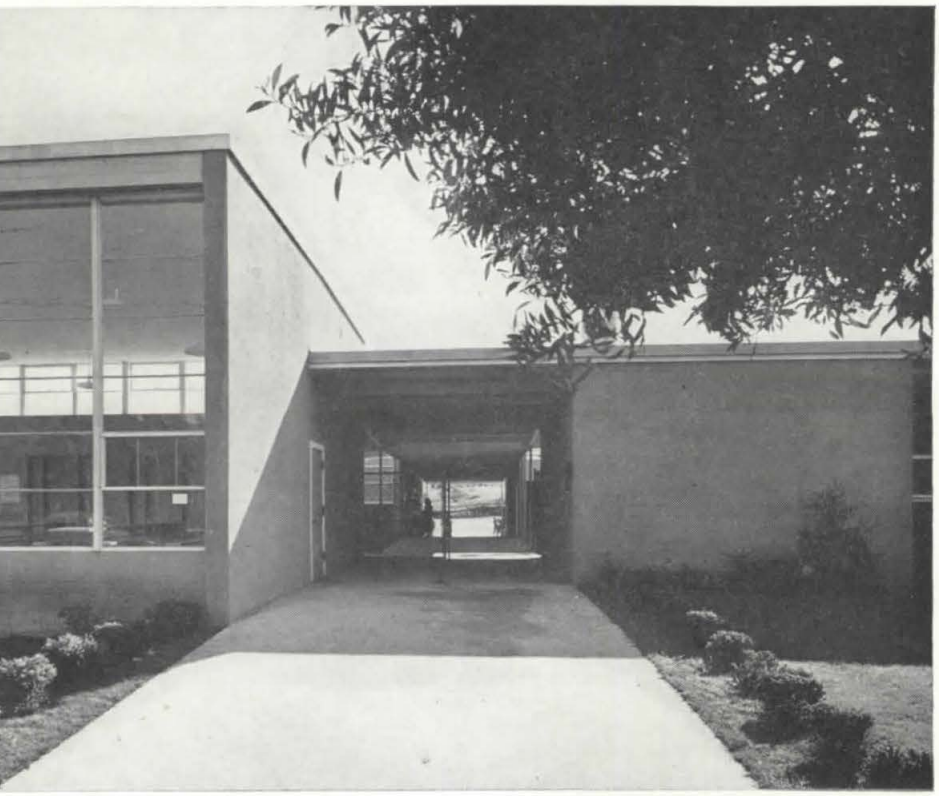
The school is heated by a radiant-heating system, with soft-copper pipes embedded in concrete floor slabs. Concentric-ring lighting fixtures provide even, glareless artificial lighting of approximately 30 footcandles. No sound-deadening was used between classrooms, the partitioning consisting simply of ⅜" plywood on both sides of the studding. For the benefit of others, the architect reports that "we have since found that this permits the passage of some sound between rooms, especially when a radio or phonograph is playing in one classroom." In subsequent work, he favors partitions with a fibrous padding material placed between the studs and the plywood surface. Total construction cost of the school was $150,161.82, or a per-square-foot of $9.83 including all equipment.

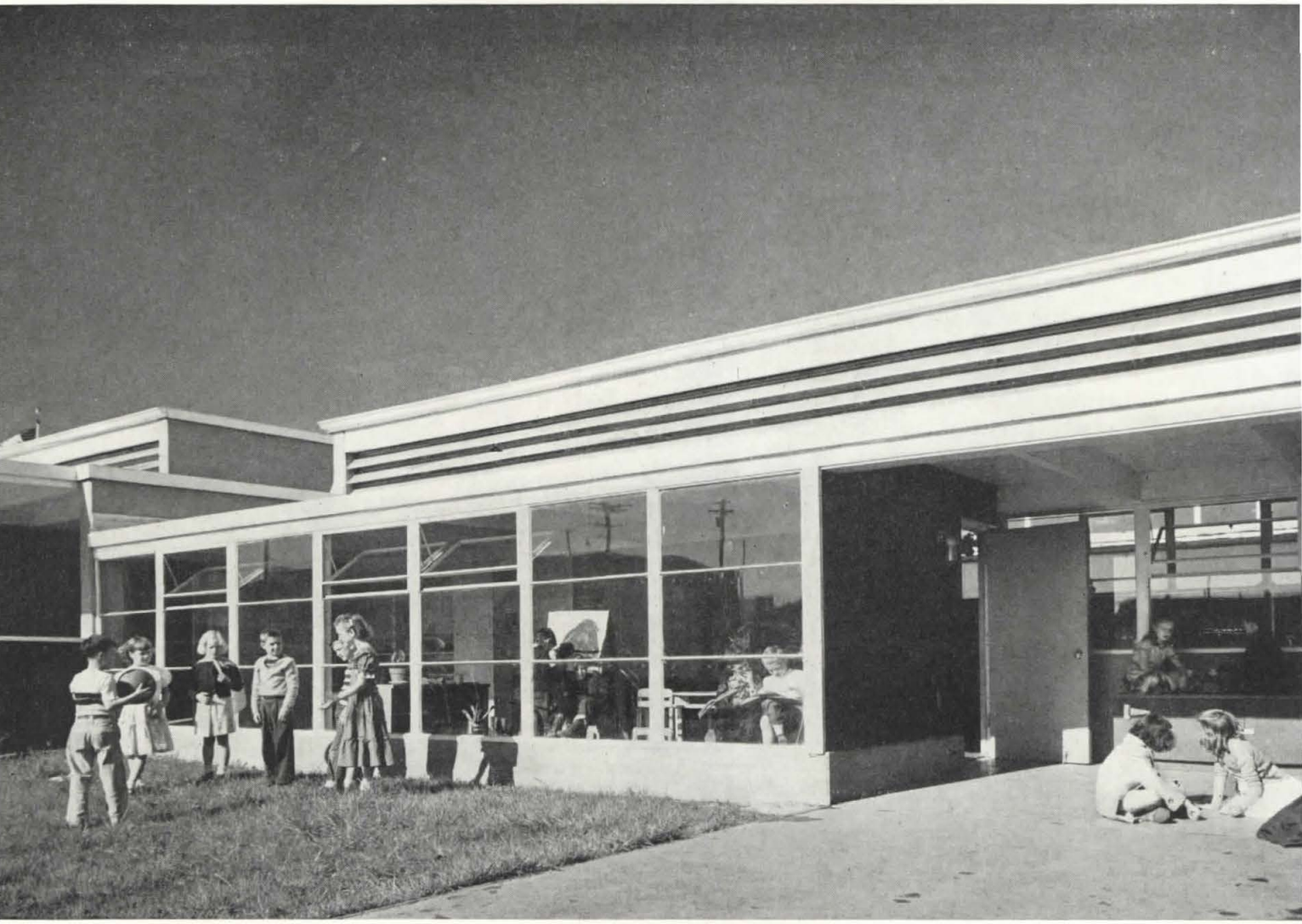
structure

The structural frame is of lightweight steel, so designed that the entire frame was erected and completed before any wood-framing started. According to the architect, this resulted in a speedy erection procedure (approximately three and a half days). With the exception of the concrete end walls, dry finish was used throughout, with walls of plywood and ceilings of acoustical tile. The only plaster used is in the kitchen and toilet units.

Below—detail of main entrance with cafeteria unit (left) and administrative offices (right). The exterior redwood boards and bats which form the greater part of exterior wall surfacing are stained New England Barn red; concrete wall areas are light gray and window trim is white.

Right—in-wall tables in the cafeteria permit conversion of the dining room to a playroom in a matter of minutes. ***Photos: Phil Fein***

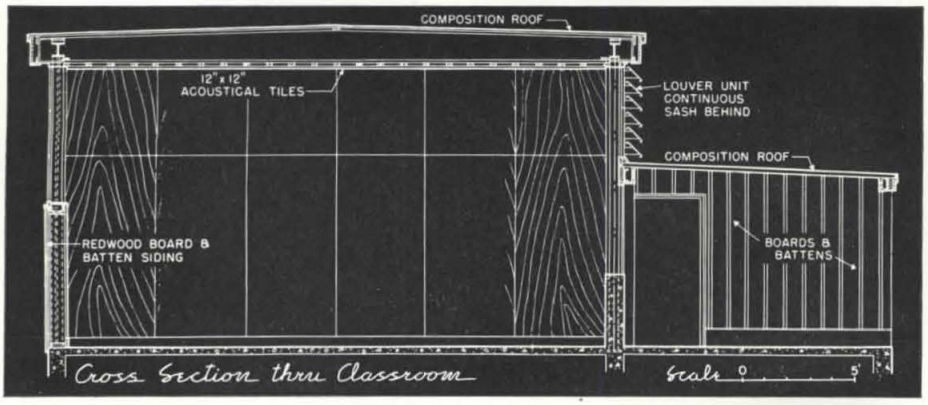


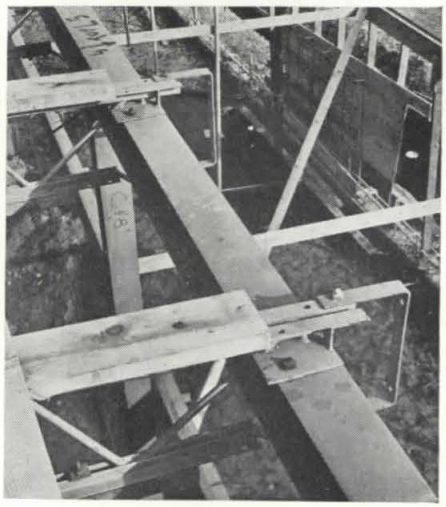


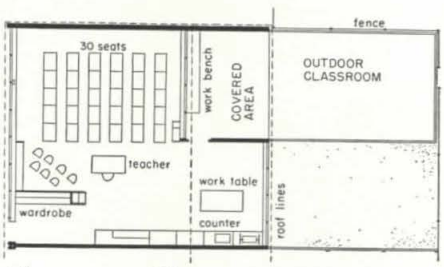
Room photographs and the section and plan on the facing page detail the unusual L-shaped classroom developed to meet the particular kind of activity teaching program that the school conducts. The alcoves provided by this shape facilitate the grouping of children who are doing different things. All furnishings, including the bright-colored cabinet units, are movable, providing yet further flexibility of use. The lower ceiling height of the south-extending alcove allows a clerestory band along the inner wall; a continuous louver unit (see section) outside the clerestory sash is provided for control of sunlight.

The progress photos at left and below highlight the economical and speedy structural system—quickly erected light-steel frame; concrete end walls. Except for the latter, dry finish was used throughout.

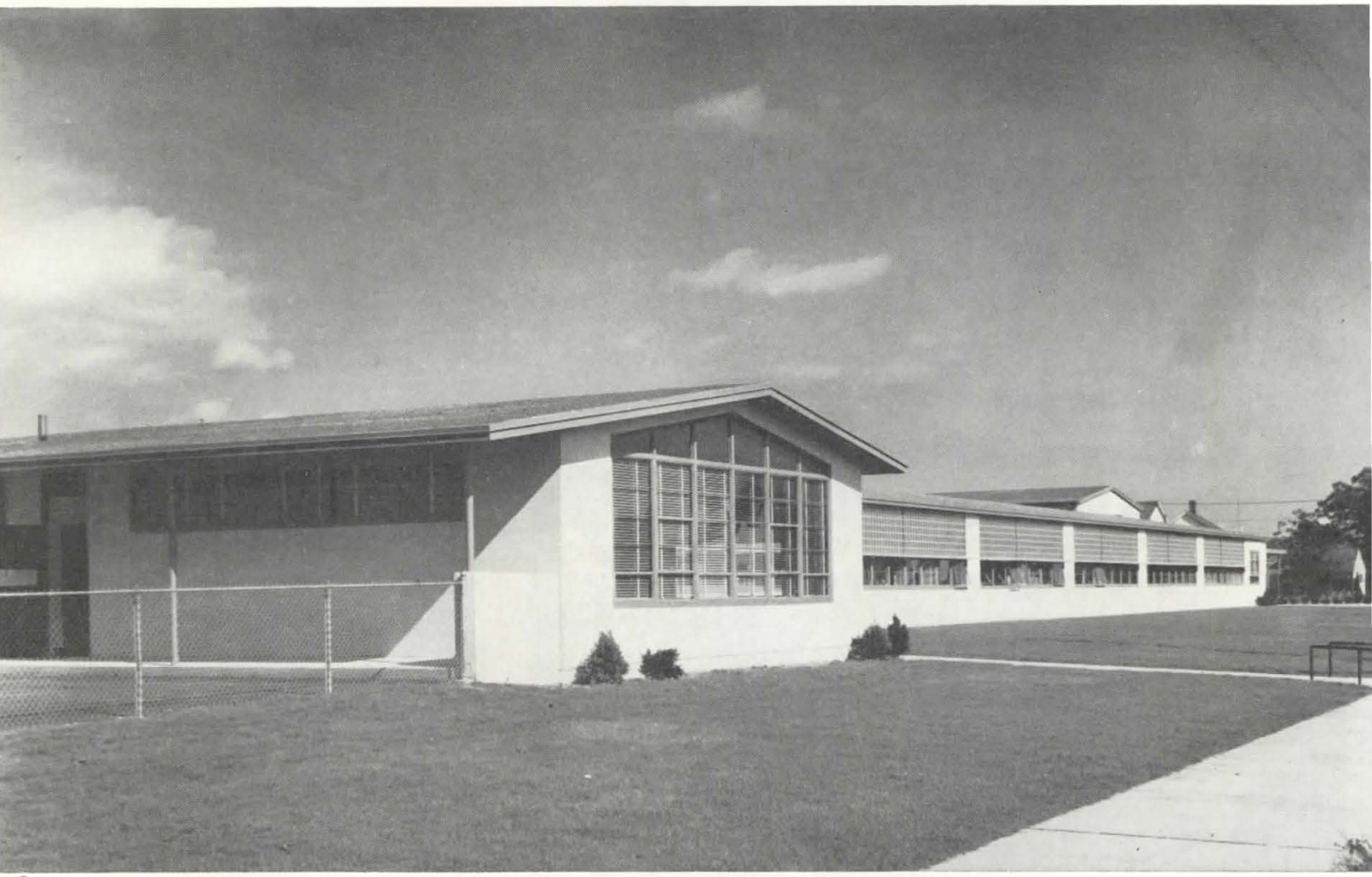
At the time this school was designed, the architectural firm was Bamberger & Reid, but the office name was changed after Sid Bamberger's death in 1948.







LOS CERRITOS SCHOOL: SOUTH SAN FRANCISCO, CALIFORNIA



Randall Holden School: Warwick, Rhode Island

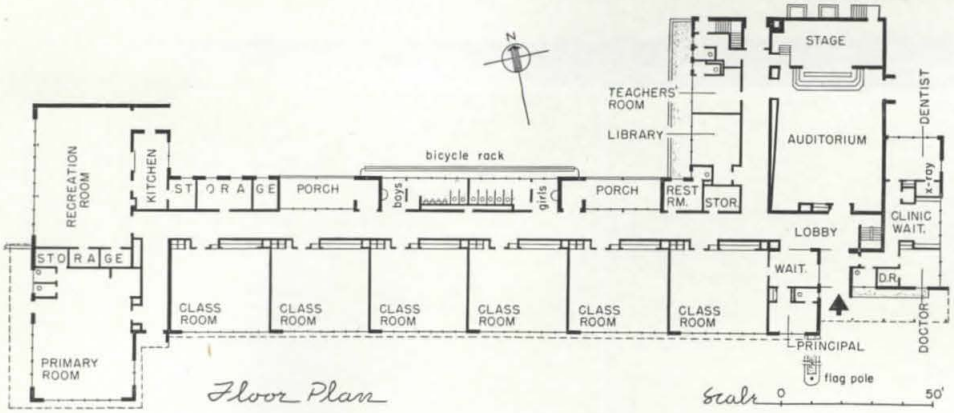
MACCONNELL & WALKER, ARCHITECTS
WILLIAM CARPENTER, STRUCTURAL ENGINEER
A. EHRENZELLER, HEATING ENGINEER

program A school with six classrooms; a primary room; an all-purpose room with kitchen for the use of P.T.A. meetings and an anticipated school lunch program; a small auditorium with stage; office for a teaching principal; library; health room; teachers' room with kitchenette; storage rooms, and a medical clinic. Part of an extensive, school-expansion plan for Warwick (a rapidly growing suburb of Providence) whose aim is to provide an elementary school in the center of each neighborhood of approximately one-half mile radius, thus cutting need for bus transportation to a minimum. The medical clinic in the Randall Holden School to be one of two planned for the city's elementary schools.

site Rectangular, level lot of 4.3 acres in the center of a newly developed area and bounded by secondary streets on three sides and partly by a cul-de-sac street on the fourth.

solution A long L-shape scheme, located at the southeast corner of the property to give maximum free playground area and allow room for future expansion to the north and along the east property line. This organization also places the auditorium and clinic nearest the principal traffic artery and keeps finished lawn areas to a minimum. As to exterior design, the architects tell us that their purpose was "to keep the building in scale with the children and the residential neighborhood."

Heating of the building consists of a floor-panel system using



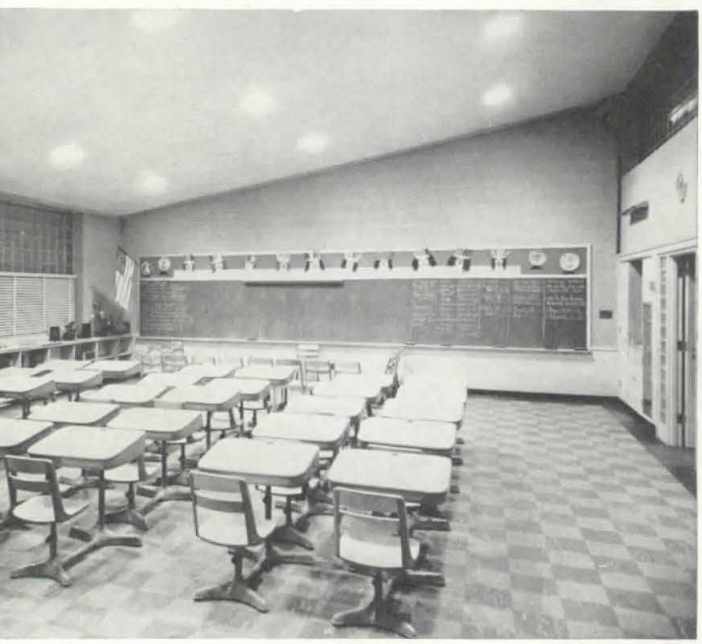
wrought iron coils, with room thermostats and a manually controlled blender. A manually operated exhaust fan takes air from classrooms through a duct system with grilles in the wardrobe ceilings; toilet rooms have separate exhaust fans. The auditorium is equipped with a system that has exhaust fans and a unit to supply tempered air.

Directional glass block areas in both sides of the classrooms provide glareless light, with venetian blinds installed (where needed) for light control. Flush incandescent lighting units with prismatic lenses provide supplementary lighting only, since the classrooms are not adapted for evening adult education, and the artificial lighting is needed only on dark or cloudy days.

The school was built complete (furnishings and architectural fees) for $14.24 per square foot—or $12.79 for the building alone.

structure

The school is framed with steel-welded rigid frames, 16 feet on centers; exterior walls are of cavity construction (4″ painted brick; 2″ air space; 8″ cinder block) with the cinder-block interior wythe left exposed and painted.

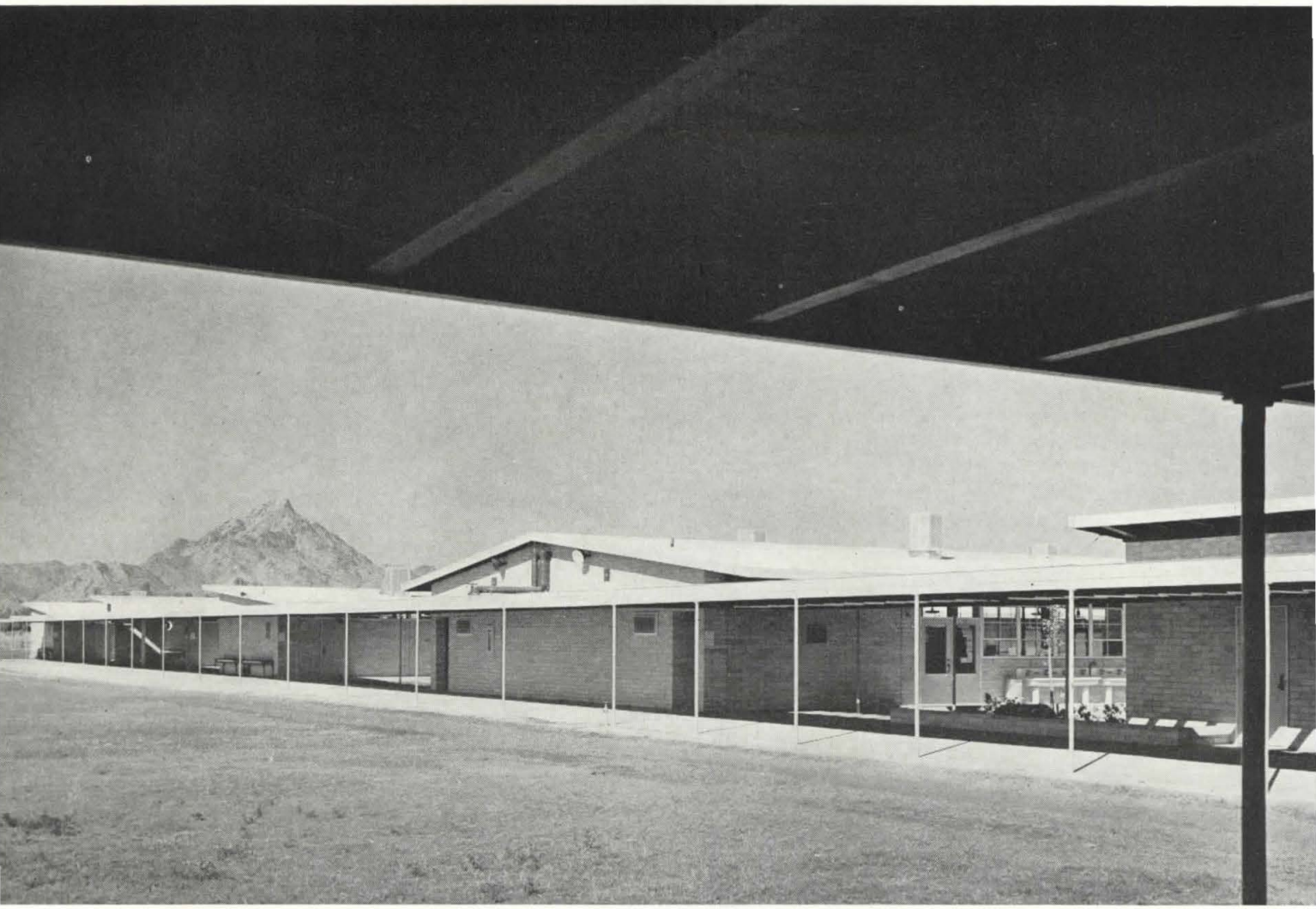


Acrosspage — general view from southwest with mass of primary room (foreground) and classroom wing (beyond).

Above—typical classroom with painted cinder-block walls; acoustical-tile ceiling; cross-lighting, with directional glass-block panels in each side wall; asphalt-tile floor surface.

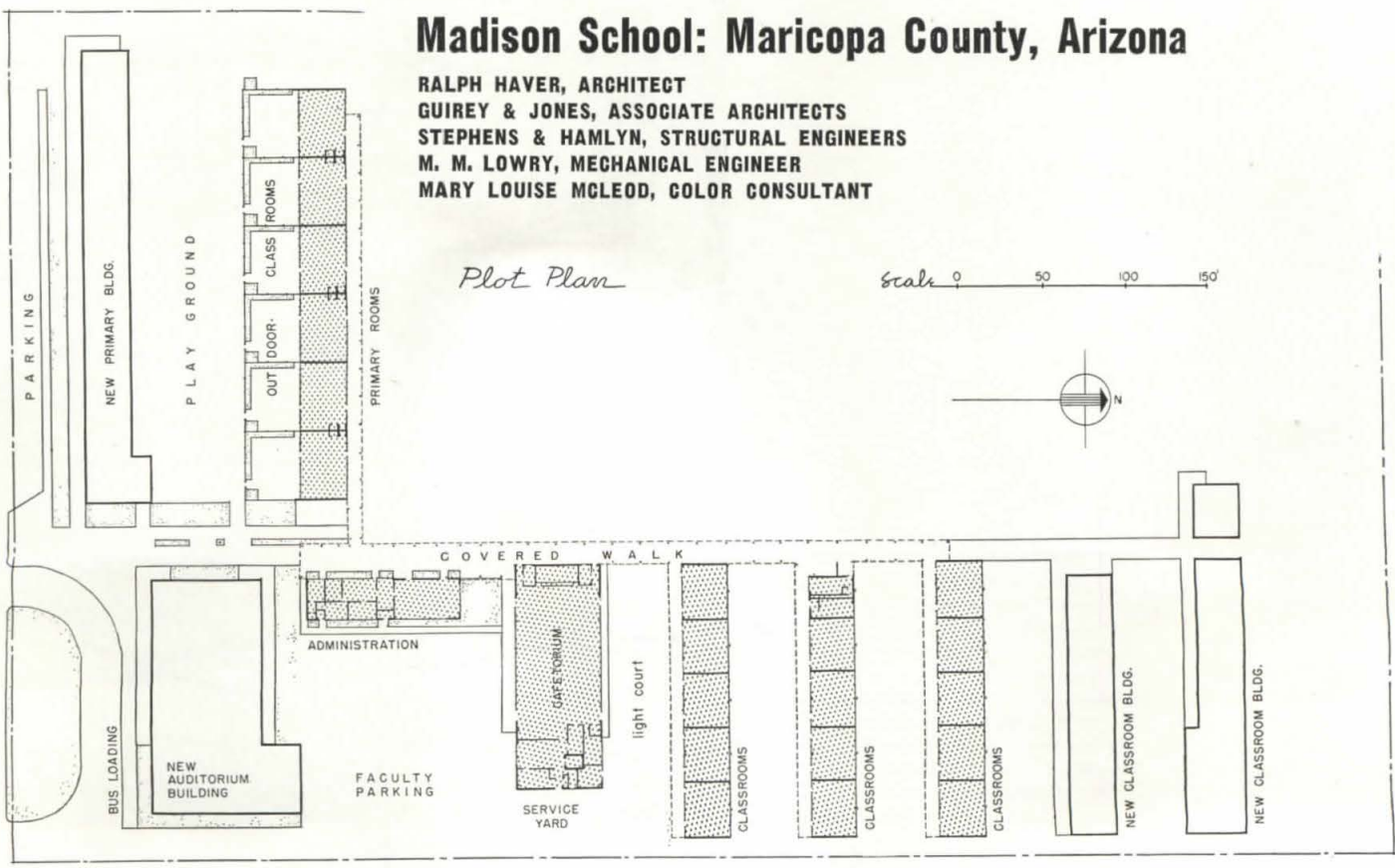
Two photos at right—progress photos showing steel-welded rigid frames used 16 feet on centers in the auditorium (upper view) and in the classroom wing (below).

Photos: Laurence E. Tilley



Madison School: Maricopa County, Arizona

RALPH HAVER, ARCHITECT
GUIREY & JONES, ASSOCIATE ARCHITECTS
STEPHENS & HAMLYN, STRUCTURAL ENGINEERS
M. M. LOWRY, MECHANICAL ENGINEER
MARY LOUISE MCLEOD, COLOR CONSULTANT



program A school for 600 kindergarten-through-fourth-grade students. Plant to be designed to facilitate later expansion to a school for 1000 students through eight grades (additional classroom wings and auditorium, marked "new" on plot plan, now under construction). Complete separation between primary rooms and upper grades, a must.

site Ten-acre, fairly level site, with avenue along south border.

solution A series of pavilions, connected by covered walks—the six primary rooms in a block at the west side of the group, the upper-classroom blocks, cafetorium, administration building, and future auditorium, aligned along the east side of the site. The architects state their design goal as a wish "to provide good natural light, good air conditions," and the buildings to be "economical to maintain and esthetically pleasing." All classrooms are oriented to receive north and south bi-lateral lighting. In the primary wing, the access sidewalk is along the north wall, with a deep overhang on the lower, south wall, providing sunlight control in the big windows. In the classroom pavilions, the access walk runs along the south wall of the units, with the roof extension forming the shelter above the walk; the roof slopes up to allow large wall-to-wall windows along the north wall. All classrooms have thermostatically controlled individual heating units, as well as individually controlled evaporative coolers.

Color is an important factor in the scheme, though not apparent in the black-and-white pictures. Exterior walls are natural light gray; fascias, lime yellow; trim, azalea; doors, persimmon; pipe columns, acacia green; and soffit of roofs and covered walks, laurel green.

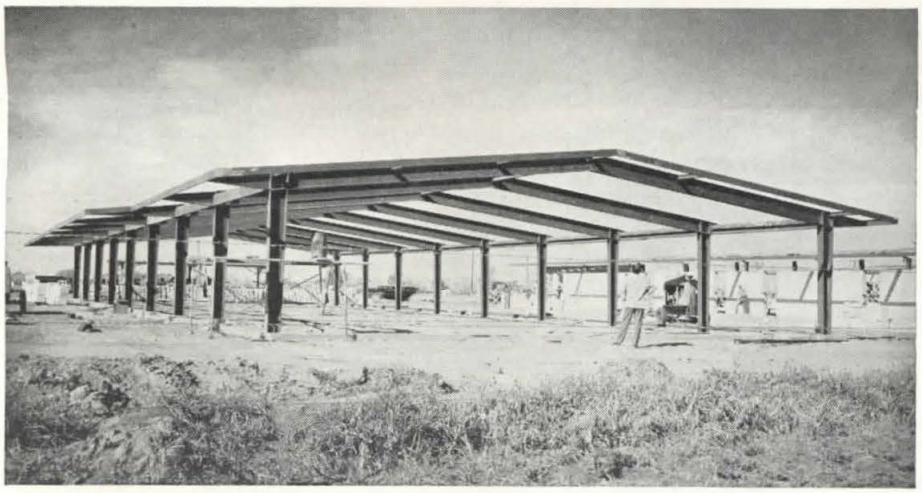
The construction contract was $203,297.12, including site improvement, paving, landscaping, and utility connections (a half mile away). Cost per foot, counting covered walks as half area, came to $5.90.

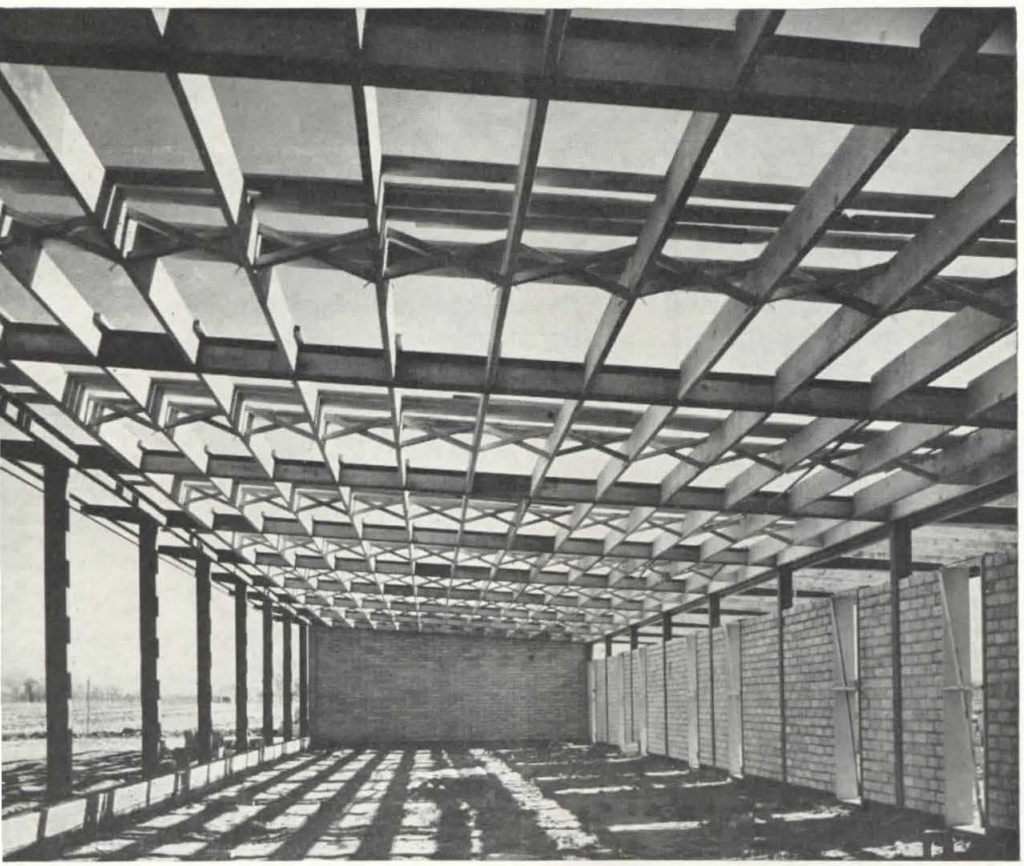
structure A simplified rigid-steel (welded frames, 16 feet on centers) and wood-purlin system was employed for economy. All classrooms have asphalt-tile flooring and ceilings of acoustic tile.

Acrosspage—view from rear of primary-room building, showing a corner of the administration building, the cafetorium, and the three initial classroom pavilions, bordered by the covered walkway.

At left—one of the primary rooms, with roof sloping up to the clerestory, northern windows.

Below—a typical upper-grade classroom, with the wall-to-wall windows on the north wall; a narrow clerestory band occurs on the south wall, just under the sloping roof overhang. ***Photos: Stuart A. Weiner***

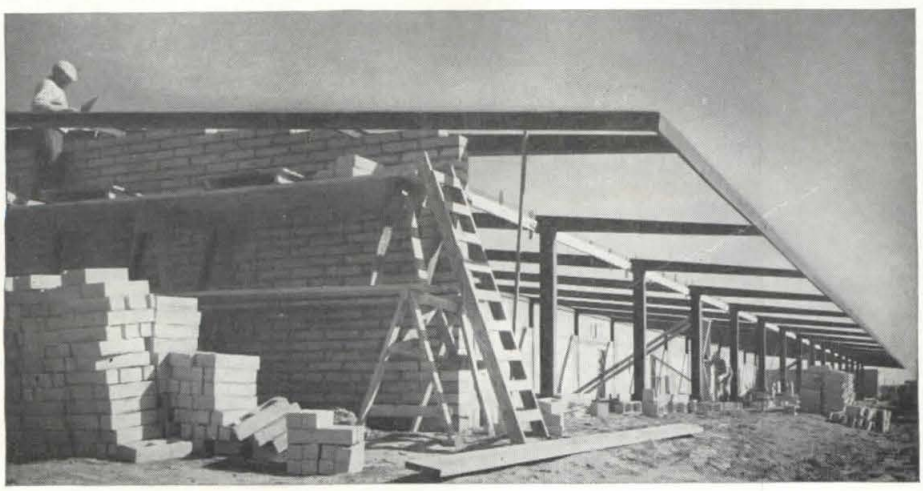


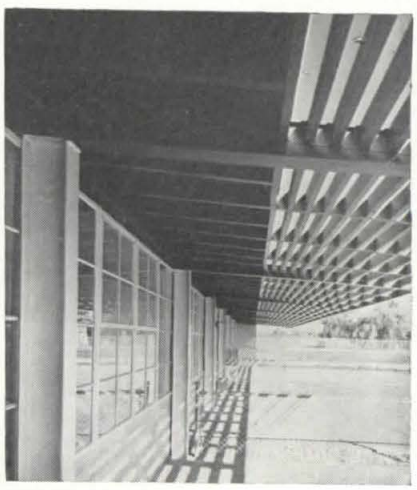


Top—under-construction shot of the cafetorium unit, with frames 16 feet on centers.

Center—typical classroom-pavilion framing with high north wall designed to receive wall-to-wall windows (left) and lower south wall (right) with door openings to lead to outside corridor. The architect describes this as "a simplified rigid-steel and wood-purlin system."

Bottom—frame of the primary-room building and (immediately below) the finished building along this same wall, showing the exposed steel-frame units and roof louver provided to control sunlight in the large southern windows. Fencing defines the individual outdoor classrooms.





School Construction—1951

This is a period in which to be ingenious and economical in school design. On the preceding pages we have shown four examples of steel construction systems, designed during a period when steel was not as closely allocated as it is now. We do not believe that the experiments and studies made between the end of the last war and the beginning of the current crisis need be lost; none of these is an extravagant system; each was designed with maximum school space for fewest taxpayers' dollars, as a major criterion. But the emphasis undoubtedly will be, for a time at least, on the lightest possible steel members, and perhaps an increasing use of reinforced concrete, and even wall-bearing masonry construction for fireproof schools. The projects we have shown must be considered a starting point: the successful school architect must now find ways to keep the advantages of open space, wide spans, good light, and at the same time use less steel tonnage, less aluminum, less copper.

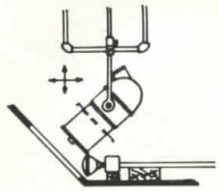
The present situation is this: the United States Office of Education has been named the "claimant agency" for the government, authorized to present to NPA the needs for school building. Plans must be submitted for approval to the Office of Education, an agency which, unfortunately, has had no staff experienced in this sort of processing, and no data to tell it what the reasonable requirements are in the presently scarce materials or those that are likely to become scarce. At the moment, as the result of a meeting called by the A.I.A. Committee on School Building Construction (at the request of the Office of Education, with the assistance of the Building Research Advisory Board), a building industry group is attempting to gather data on typical schools—how much steel, copper, and aluminum it is reasonable to expect and to request for a single-story, fire-resistive rural elementary school, a multistory urban high school, and so on through five school building types in six regions.

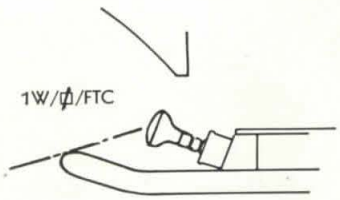
Many questions remain to be answered, of a very practical sort. For instance, will school architects be permitted to specify aluminum windows during the remainder of 1951? Perhaps not, because aluminum is *now* a scarce material. And yet, by the time the plans now being drawn reach the stage of actual construction, the problem of the scarcity of aluminum may be solved (the aluminum-window industry claims that it will be) and some totally different material may be on the scarce list—one that today is beyond reproach in specifications.

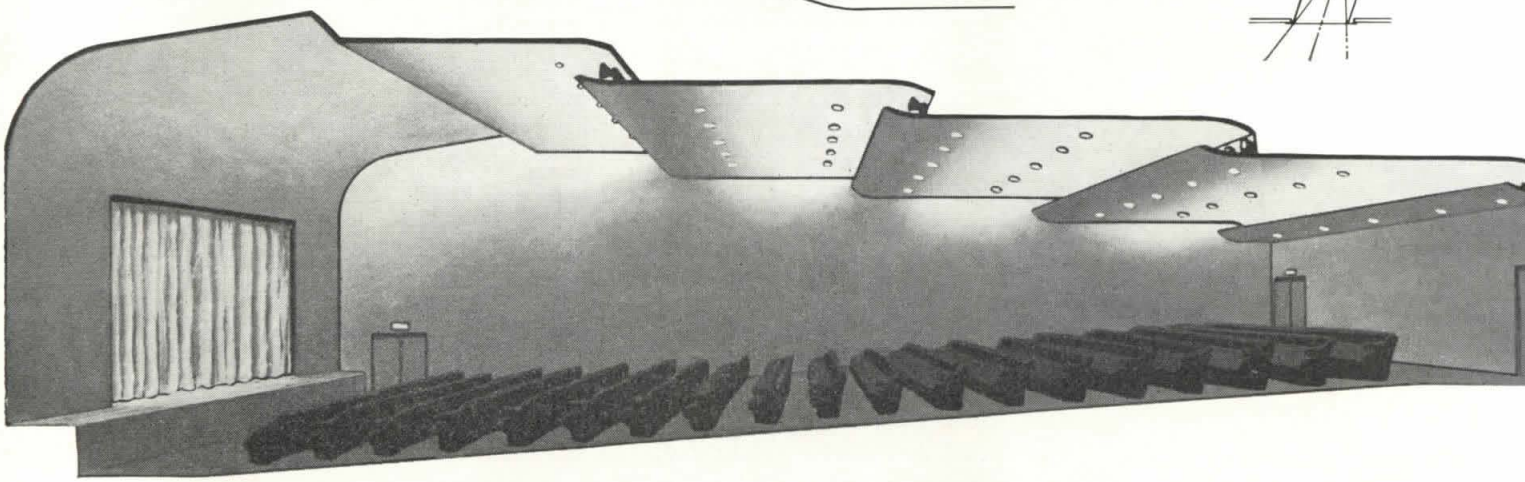
Let us hope that the designers will be sufficiently ingenious to make a virtue of a necessity. During the last war, the very problems of scarcities and allocations produced a number of new construction materials and methods; the value of the present situation may be that once more that will happen. In the meantime, there can be no stop to study and experimentation in every aspect of school design. No matter what the basic structure, the problems of acoustics and heating, lighting and special equipment remain important. Hence discussions such as the one on the following pages remain as pertinent as they ever were.

THE EDITORS

Lighting the School Auditorium and Stage





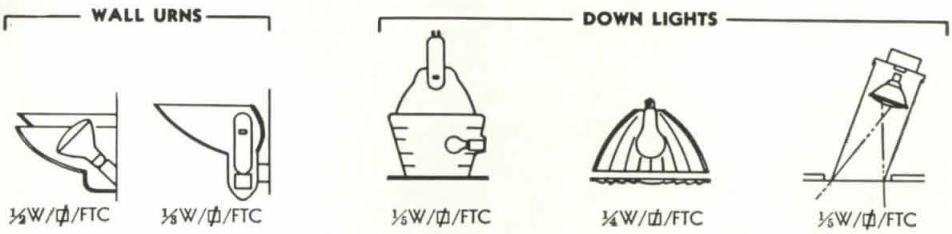


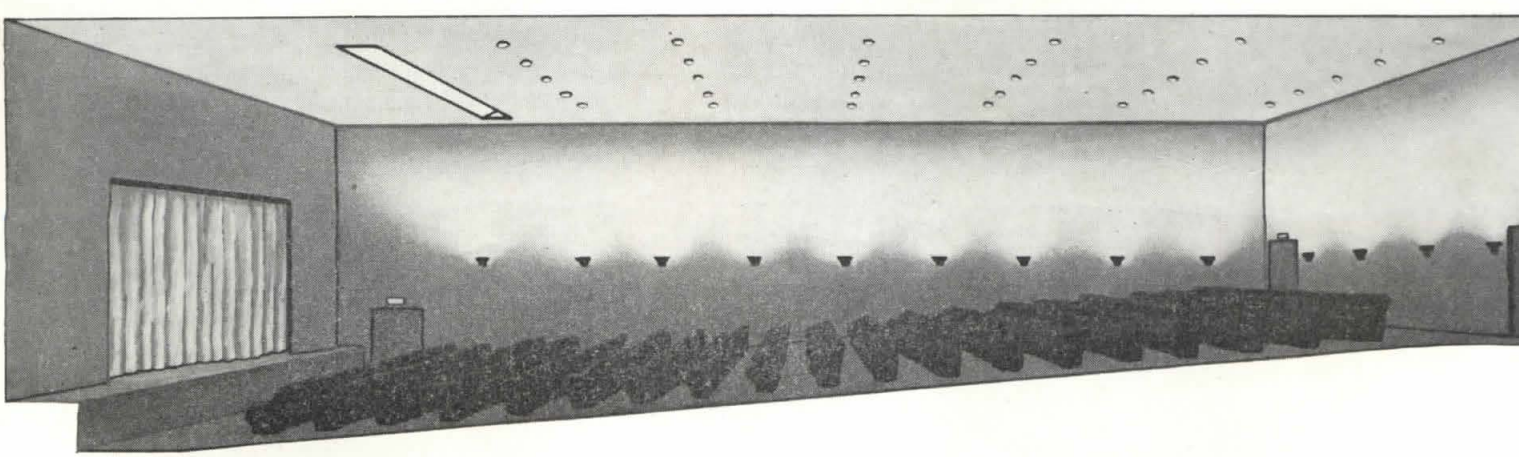

WALL OR MURAL
LIGHTING UNIT


FLUORESCENT
(BLUE AND GOLD
CIRCUITS)
⅓W/⌀/FTC

Now that most schools are providing good classroom-lighting conditions, considerable attention is being directed to the specialized problem of lighting the auditorium and stage. In this article, options for lighting the school auditorium and stage are presented, analyzed, and illustrated. The equipment reviewed ranges from that suitable for the more complete installation, to that which is specifically suited to a minimum-budget installation.

W/□/FTC: approximate wattage required per square-foot of floor area to produce one footcandle in service, assuming light room finishes. For specific cases, illumination level calculations should be based upon equipment manufacturer's data.





By CARL J. ALLEN*

The school auditorium is the school's, and in many cases, the community's only place of group assembly. It must serve the needs of amateur Thespians, the choral group, the school band and orchestra, and the guest speakers of the school and the community. In addition, it houses the school's educational and recreational motion picture programs. In total, there are more stage and dramatic presentations on the school stage than anywhere else in the country. The skyrocket growth of television and its needs for future stars and performers will stimulate an equal growth in student activities involving speech and dramatic training.

auditorium size

The auditorium and stage have been costly elements of a school plant in terms of capital cost per student-hour of use. The cost generally has been involved in the space required to seat the 1000 to 3000 individuals these rooms were expected to accommodate. Seating capacities of this size are being avoided, not only because of *their cost* but also because of the poor seeing and hearing conditions which too often result in such large auditoriums.

When an individual in an audience is seated much more than 75 feet from a speaker, the details of the speaker's expression are generally lost. This is tied in with the fact that the critical angle of detail which an average individual can discern is about one minute of arc. A quarter-inch movement of eyes or lips represents one minute of visual angle at 75 feet. This appears to be a valid reason for limiting the depth of the auditorium seating to about this distance.

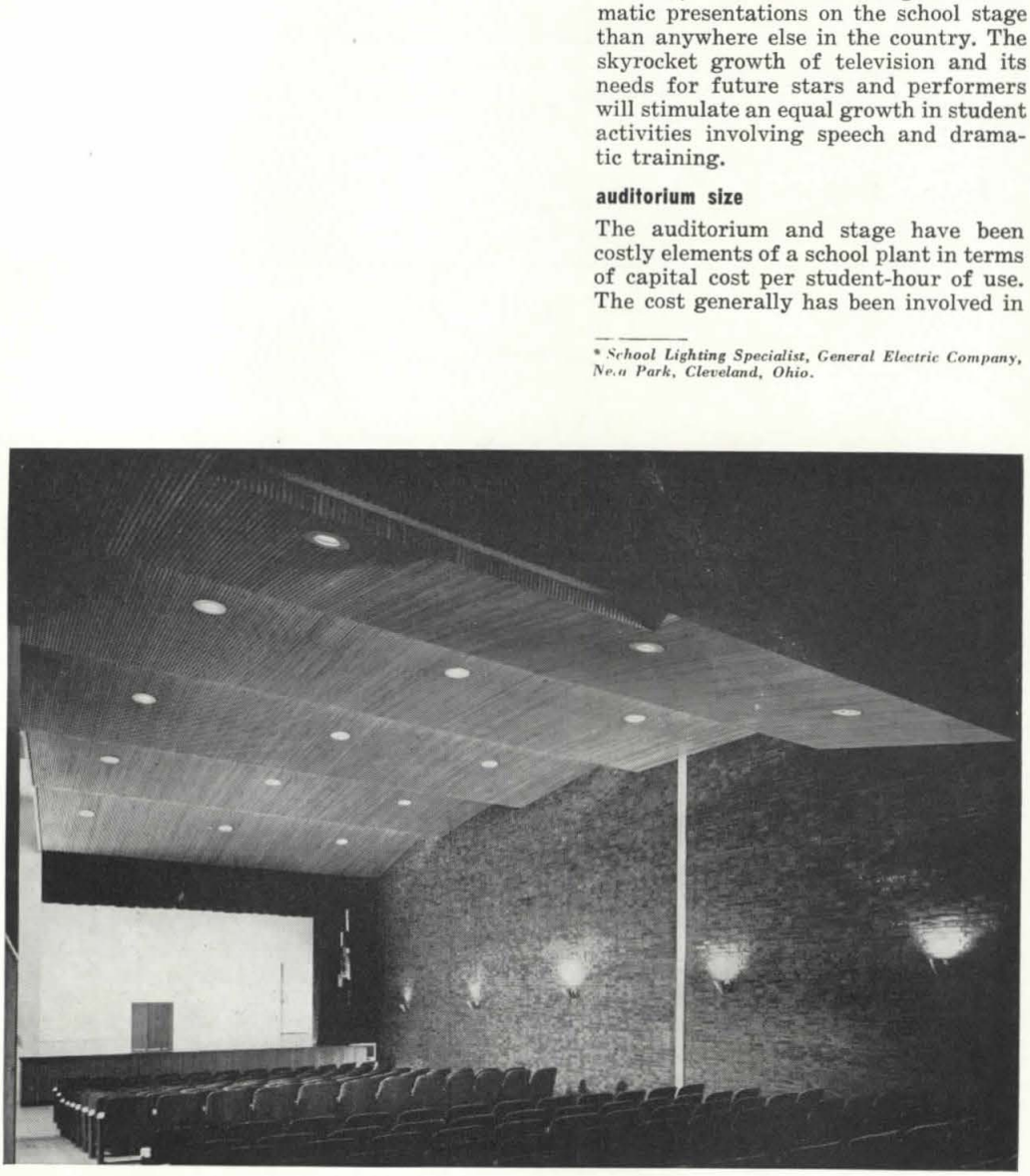
The width of an auditorium is indicated partly by the results of surveys which show that individuals will not voluntarily choose seats further to the side than 100° from the face of the stage opening (plan on page 90). The width is also restricted by the fact that in viewing motion pictures it is desirable to be seated within a 30° angle from the centerline of a matte screen or within 22°, in the case of a beaded screen. Outside this zone the screen brightness drops off markedly. These visual requirements tend to limit the capacity of an auditorium to less than 1000 seats—even with a balcony. Where larger assemblies are necessary a few times a year, as in the case of commencements, they frequently can be housed in the school gymnasium, where large seating capacities on folding bleachers can be provided. This leaves the auditorium to its role of being an intimate theater, where good seeing and hearing conditions can be expected.

The initial plans for nearly all schools call for an auditorium; yet the building budget frequently demands something less. The auditorium-gymnasium is one compromise. In large secondary schools, this type of dual-purpose room generally has not been completely satisfactory, because of time and usage conflicts between the major athletic and dramatic events. On the other hand, in smaller elementary schools the play-area, assembly-type room equipped with a simplified stage is reasonably successful. Flat floors naturally do not provide good seeing conditions. Folding bleachers at the rear of the room can help this situation. In some schools, the only assembly area initially provided may be the cafeteria-study hall with a raised platform at one end. Whichever type is used, proper lighting can improve the effectiveness of the room.

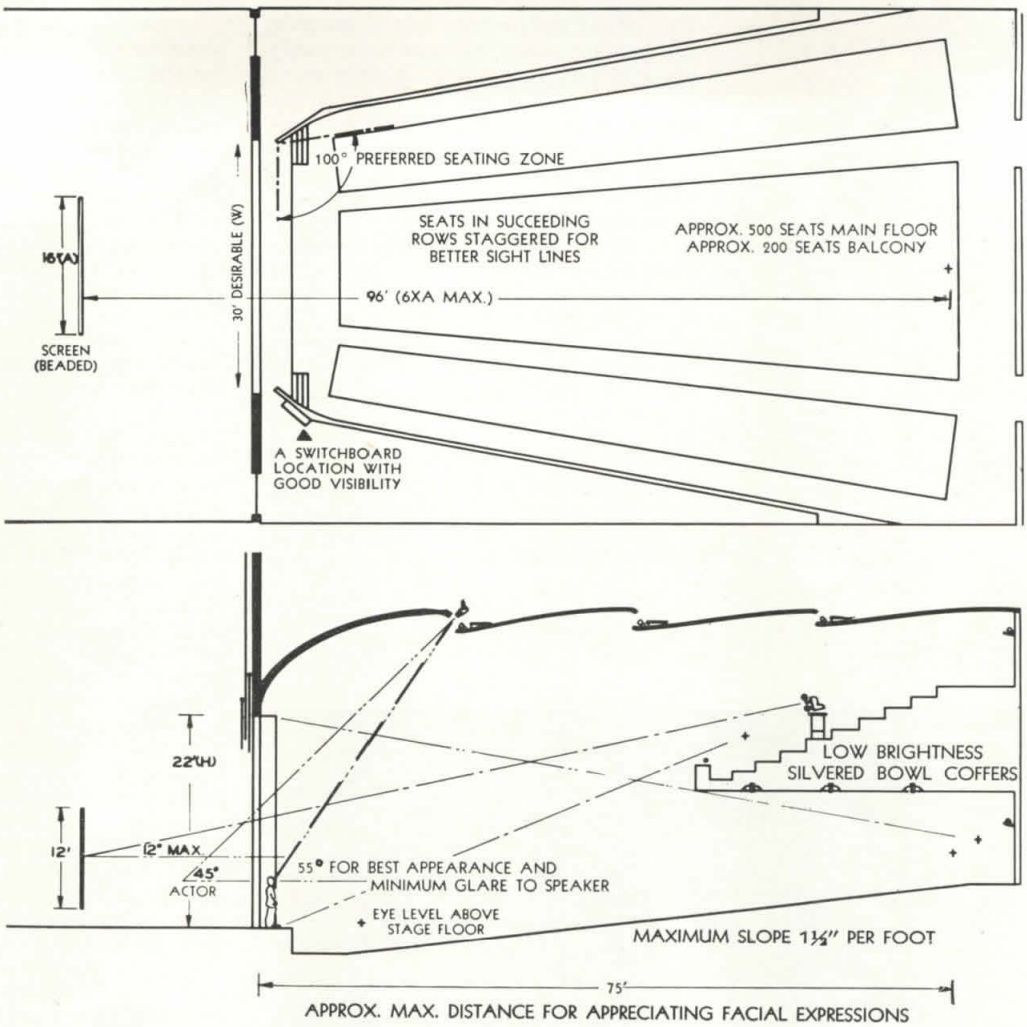
auditorium lighting

The lighting requirements of the auditorium may be approached in two ways. First is the need to provide general atmosphere illumination, wherein suitable brightness patterns are created to give the visual impression of a well-lighted, esthetically pleasing room. The second is to provide supplementary audience illumination: i.e., controlled light over the seating area in an amount ade-

* *School Lighting Specialist, General Electric Company, Nela Park, Cleveland, Ohio.*



Above—cove lighting, downlighting, and wall lighting enhance the design of this auditorium in the Fitchburg Youth Library, Fitchburg, Massachusetts. The step-back ceiling cove provides a soft, low level of atmosphere lighting; downlights produce the major part of the illumination over the seating area; wall urns give a brightness pattern relief to the unbroken expanse of the brick wall.
Photo: Ezra Stoller©Pictor



quate for reading programs, notes, papers, etc.

Flexibility in the lighting installation is desirable. For general assemblies, or before curtain time when programs are being read and friends recognized, a level of 10 footcandles is recommended. For stage and motion-picture presentations, about half a footcandle over the audience seating area is generally sufficient. None of this light should be allowed to strike a motion-picture screen directly. If the area is to be used for study purposes, a 30-footcandle level is recommended.

As the hours of use of the school auditorium in one year are generally not sufficient to justify the installation of fluorescent light sources—and because they cannot be easily dimmed to black out—the incandescent-type light source *is ordinarily used* for auditorium lighting. Fluorescent lamps do have the advantage of being a slender, extended source available in a variety of efficient colors and, hence, can be used where these features are desired.

atmosphere lighting

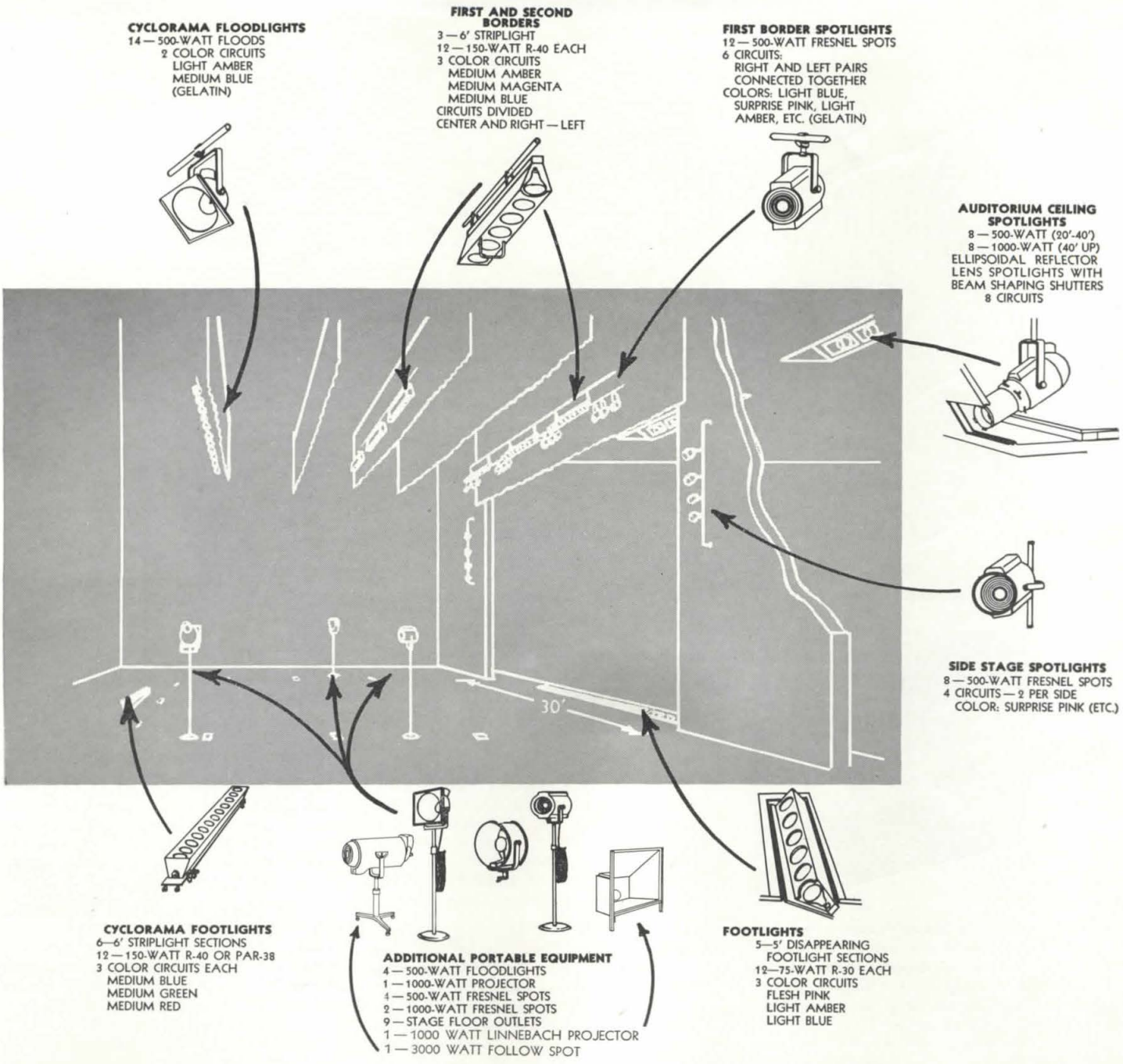
Atmosphere lighting in the auditorium may be accomplished in a variety of ways as shown (see pages 88-89). One trend is toward the use of step-back ceiling coves in which the light is directed forward, with the light sources concealed from the normal view of the audience. Color may be incorporated in these coves by using reflectors or lens units with individual lamps, or by the use of reflectorized lamps with color roundels. Various levels of illumination and mixtures can be obtained by operating the circuits on dimmer control. One possible color combination is a light-blue and light-amber circuit. With these, either a warm or cool character can be introduced; in addition, by a balanced mixture of these two, a near white can be obtained. The surfaces to which the light is directed should be light and fairly neutral in color, if a full range of color effects is desired.

Indirect lighting provided by suspended fixtures, or from wall urns or coves, can be pleasing in quality and suitable for auditorium lighting purposes. As it is generally desirable to reduce the number of suspended luminaires to a minimum in the larger auditoriums, specially designed luminaires may be used, which incorporate a number of fairly high-wattage lamps. In such equipment, or in wall units, the reflector-type lamps have been used to minimize the light depreciation, due to dust settling in the lighting equipment. Where maintenance is difficult, due to the mounting height, lowering hangers are useful. Suction-cup lamp changers on extension poles, used from moderate height step ladders can facilitate lamp replacements, when the lamps can be reached from directly below.

The area beneath the balcony may be lighted by large coffers of low brightness. Where equipment cannot be recessed in the balcony soffit, a cove located across the rear wall containing reflector lamps directed out over the underside of the balcony may be employed.

audience lighting

The atmosphere-lighting system may be very effective in building a pleasing brightness pattern in the auditorium, yet deliver relatively few footcandles over the seating area. The needed additional lighting over this area may be accomplished by direct lighting from large elliptical reflectors, lens plate units with opaqued risers, silvered-bowl-lamp louvered coffer units, or reflector-lamp downlights. This lighting should be so controlled in distribution that, even under darkened room conditions, a reasonable level can be produced without the audience being unduly aware of the light sources. One means of minimizing the presence of the light source is by



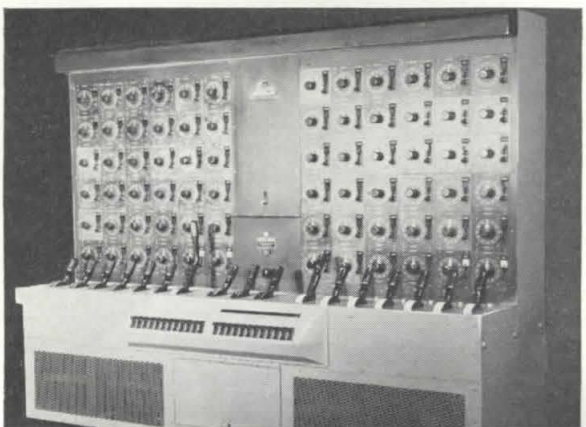
location	circuits	5 kw dimmers	2 kw dimmers
auditorium-ceiling ports (left)	4	1	
auditorium-ceiling ports (right)	4	1	
first-border spotlights	8	2	
first borderlights	6	3	
second-borderlight batten	8		
cyclorama-floodlight batten	4	1*	1*
side-stage spotlights	4		2
floor pockets	9	2*	
footlights	3		3*
	50	10	6

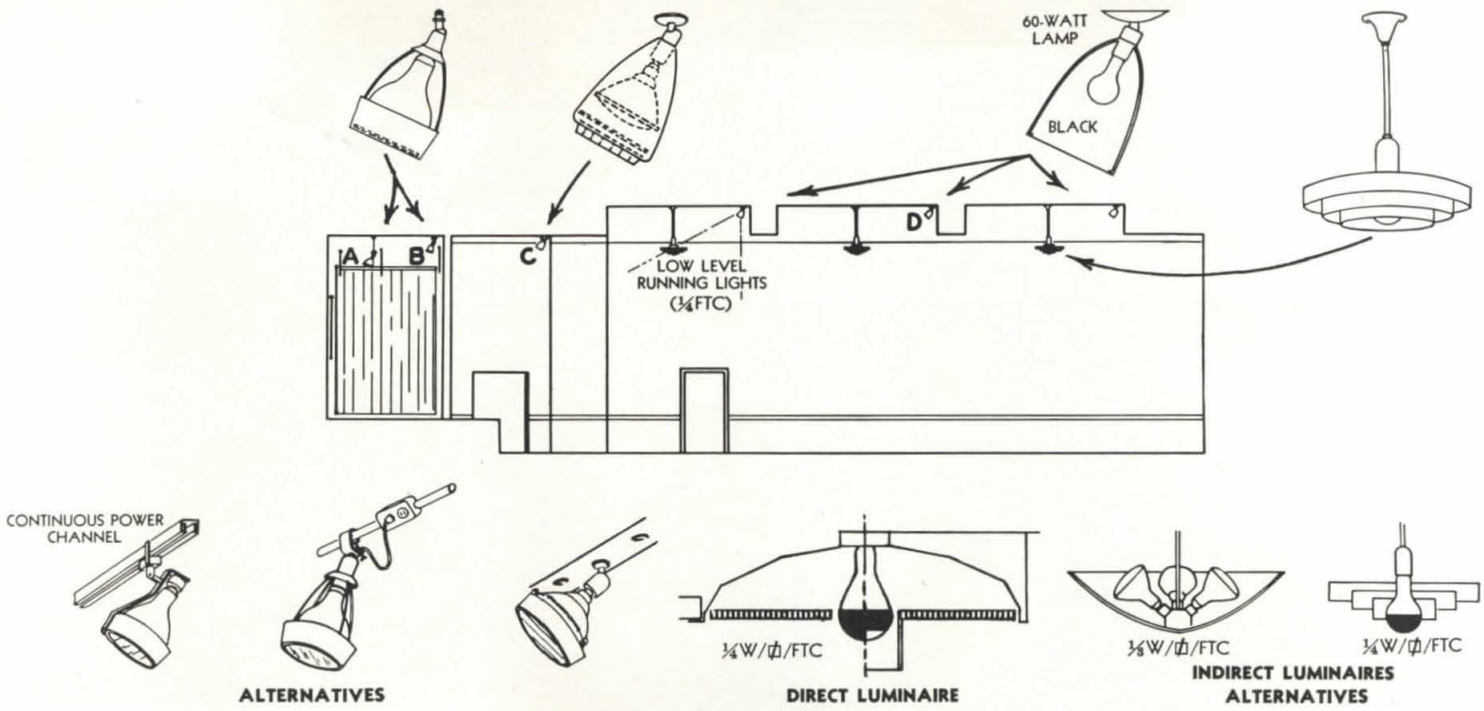
* frequently available for miscellaneous use.

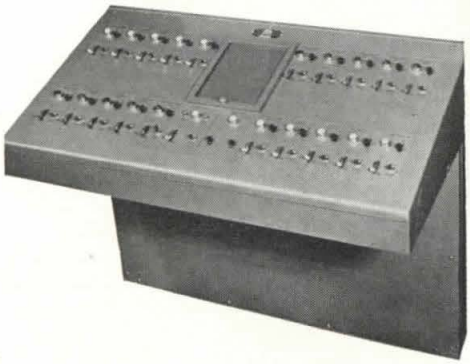
Above—for this stage layout, a control board with 50 12-step rotary switches, 10 5KW dimmers, six 2KW dimmers, and eight non-dim switch controls is suggested as a minimum arrangement.

Below—within this autotransformer control board, each stage circuit terminates in a rotary switch; by this method the individual load circuits can be connected to any one of a number of dimmers, or directly to a line switch.

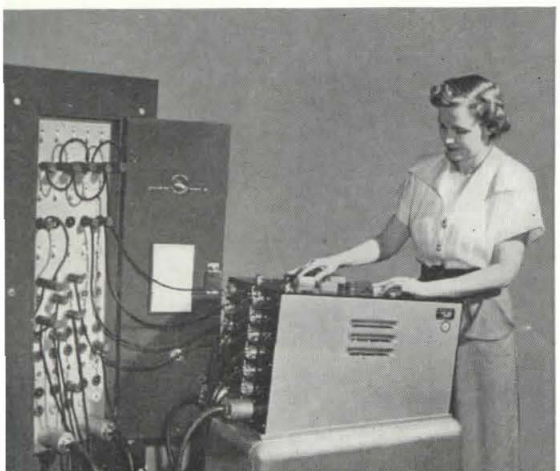
Photo: courtesy of Kliegl Bros.







Above—a minimum-budget installation using reflectorized lamps. Projector and reflector lamps are available in a variety of spot and floor-beam patterns and range from 75 to 300 watts. Color filters, available in a wide assortment of hues, may be snapped into the adjustable lamp holders.



Above—miniature potentiometers in this console board control the postion of remotely located motor driven dimmers. After the dimmers have reached a given position, the potentiometers may be preset for the next cue.

Below—finger-tip operation of 12 dimming circuits is obtained with this autotransformer type control board. The plug-and-jack panel permits the circuits to be grouped together and allows this portable board to be used at several locations. Total capacity is 12,000 watts; individual circuit capacity is 2400.

Photo: courtesy of Superior Electric Co.

Photo: courtesy of Ariel Davis Manufacturing Co.

the use of narrow beams of light tilted forward from overhead units in which the source brightness is concealed from view. The tilted unit, using a 150-watt PAR-38 projector spot lamp, is an example of this type of directional lighting.

combination areas

Recessed or surface-mounted coffers, using either fluorescent lamps or silvered-bowl incandescent lamps—equipped with metal louvers which shield the brightness and also protect the lamps from accidental breakage—are possible solutions for lighting the elementary school play-area, assembly-type rooms. Some indirect lighting, for example, from protected wall urns, also is desirable. For combination areas which are primarily gymnasium, typical industrial-type fluorescent or incandescent equipment with guards offer the simplest answer.

stage lighting

The requirements of stage lighting are varied, hence the equipment and controls should permit as great a degree of flexibility as possible. A typical complement of stage-lighting equipment for a moderate-size school stage is shown (preceding page). For most school-stage purposes, the order of importance of the various kinds of stage-lighting equipment is: (1) auditorium-ceiling spotlights, (2) first-border spotlights, (3) first-border striplights, (4) intermediate-border striplights and spotlights, (5) supplementary portable equipment —spots, floods, and projectors, (6) side spotlights, (7) rear-stage cyclorama footlights and overhead floodlights, (8) footlights. Items (1), (2), (3), and (4) represent the minimum, initial equipment usually required.

AUDITORIUM-CEILING SPOTLIGHTS. These units light the speakers on the stage apron and provide the necessary frontal lighting for actors on the stage. Controlled-beam spotlights are recommended for this service. One of the most effective ways of accomplishing this is by the use of ellipsoidal reflector-lens spotlights equipped with beam-shaping shutters. With such units the beams can be confined to a specific acting area, and stray light can be kept off the proscenium arch by means of the framing shutters. Another suggestion is to use sealed-beam spot lamps in housings designed to absorb the direct, stray light. Auditorium spotlights are usually located in the auditorium ceiling so that their beams form a 45° angle with the horizontal when aimed at an actor standing slightly behind the first-border lights. For spotlighting speakers on the stage apron, the vertical angle should be about 55° to minimize the effect of glare on the speaker. Two such units, located about 60° apart horizontally, give pleasing facial shadows and, at the same time, produce minimum disturbances to the speaker. The front face of the balcony frequently provides a convenient location for spotlights. In this location they give good vertical illumination for stage presentations, but should

not be used for lighting speakers, because of the high glare they produce.

FIRST-BORDER SPOTLIGHTS. Because of their forward locations, these spotlights can direct light from a favorable angle onto the acting areas. As the equipment is relatively close to the areas being lighted, fresnel-type spotlights are desirable because of their soft-edge beams. The trend in stage lighting is to the use of more spotlights of this type over the acting area rather than multi-rows of borderlights. An average stage is frequently divided into six acting areas —three across and two deep; each area generally is lighted from two spotlights —one from each side of the stage.

While the incandescent light source is well matched and quite flattering to the human complexion, in stage lighting it is frequently desirable to further enhance the appearance of the actors. It is general practice to light an acting area with a warm-tinted light from one direction and a cool-tinted light from an opposite direction. This simulates the pleasing and natural lighting effect produced when a person is illuminated by the warm rays of the sun and the cool light of the sky. Light scarlet, light flesh pink, and light straw color filters are commonly used for the warm effect; light steel blue and special lavender are used to produce the cool lighting effect.

BORDER STRIPLIGHTS. The purpose of these continuous strips of lighting units is to tone the set and fill in those areas not illuminated by the individual spotlights. They are usually arranged on several color circuits. Amber, magenta, and blue colors in the medium transmissions are suggested. Each color circuit needs its own dimmer control for flexibility in mixing colors. Provisions for interchanging these colors with other color filters are desirable. The secondary borderlights should be equipped with outlets for the use of additional spotlights, the same as used on the first border. Short ladder-like frameworks suspended from the ends of the borderstrip battens provide means of supporting spotlights used for cross-stage lighting purposes. Lazy-tong devices, as used in television studios, are also useful in this same application. Such provisions help keep the stage floor free of spotlight stands and towers.

SUPPLEMENTARY PORTABLE EQUIPMENT. The most useful auxiliary type equipment for use on the stage is the fresnel-type spotlight which can be adjusted to narrow or wide soft-edge beams. Where a broad flood of light, creating a soft shadow, is desired, the open reflector floods, with color filters or diffusing screens, are used. The brackets on these units should be such that they can be used on pipe stands or fastened to the back of stage scenery for illuminating doorways, background, scenery, etc. Where sharp-edge beams of various shapes are needed, the ellipsoidal reflector-lens spotlights are particularly useful. For illuminating backgrounds from the floor, portable striplights are used. They are similar to the border striplights, but used in an inverted position. Where it is desirable to attain the dramatic effect produced by a narrow-beam, follow spot operated from the balcony, the 300-watt incandescent spotlights may be used. Such units can produce up to 75 to 90 footcandles at 100-foot distances.

The Linnebach lantern should be included in the supplementary equipment. It is an open front, black enclosure, equipped with a concentrated light source which projects any cut-out or transparent pattern placed in front of it. This type of scenic projector gives the stage crew and the school art department valuable experience in shadow and transparency projection, and permits considerable saving in cost and time in preparing painted backdrops.

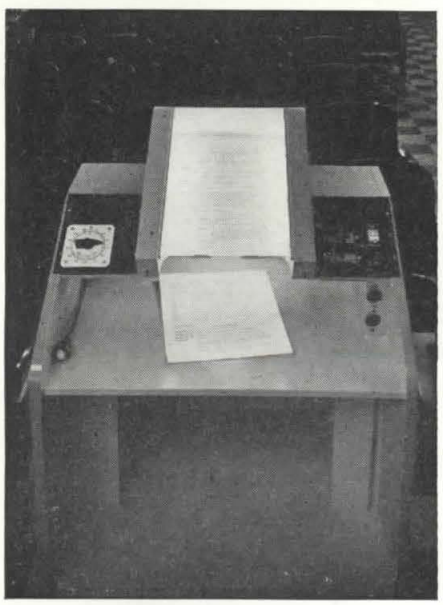
REAR-STAGE OVERHEAD FLOODLIGHTS. These units may be of the border-striplight type or large reflector floods. They are generally used to light a sky-effect cyclorama or the background scenery in outdoor sets. Color is obtained by gelatin in frames which slip into the units. For good uniformity, and to minimize emphasizing any wrinkles or irregularities in the cyclorama surface, they should be placed well forward, preferably about ten feet in front of the surface to be lighted. Rough, sand-floated, white cement plaster on the rear stage wall provides a reasonably good cyclorama. Thin, theatrical scrim hung in front of such surfaces can greatly enhance the illusion of depth.

the small school stage

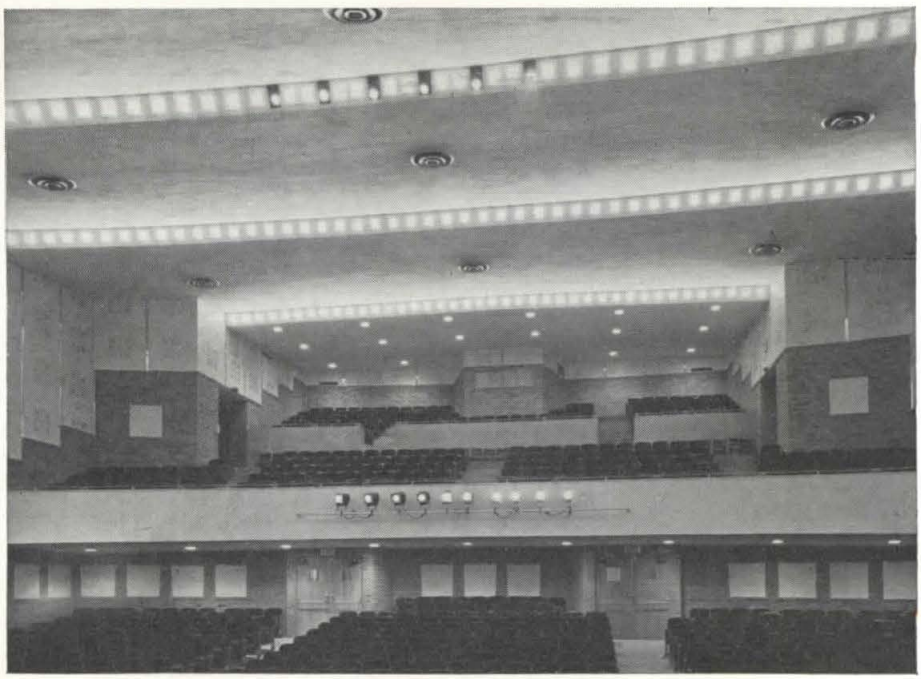
A minimum-budget auditorium and stage relighting installation is shown (top acrosspage). The reflector and projector lamps are employed for the stage lighting as they give a suitable degree of control, are convenient, and represent a low original cost. In suitable accessory equipment with provision for aiming and a means for holding color filters, they serve for many applications which do not require the flexibility attainable with the regular stage-lighting equipment. As many presentations on even a small elementary-school stage require beams of light whose size can be varied, a few good theatrical spotlights should also be provided.

control equipment

The goal in stage-lighting control equipment is to obtain the maximum flexibility for a given investment. One way of attaining this is through the use of autotransformer dimmers which can be selectively connected to the various stage circuits. The autotransformer will satisfactorily dim any practical load up to its rated capacity. While lower in cost, the resistance-type dimmer is generally limited to a given wattage, thus it does not permit the flexibility possible with autotransformer dimmers. The electronic and saturable-reactor type dimmers permit remote control board operation, and are ideal where their higher cost can be justified. Remote operation is also possible with motor-driven dimmers. Motor drive is valuable on house-lights circuits as the control points may be conveniently located at a number of locations such as in the projector booth,



Above and below—a well lighted rostrum is a needed accessory for any auditorium. In this rostrum, two 8-watt miniature fluorescent lamps illuminate the speaker's notes and cast a pleasing glow on his face. A silent, electric timer paces his presentation and turns on an illuminated warning when the time is exhausted. A switch card on a retracting reel permits the speaker to signal the slide operator, even if he walks away from the rostrum. In this custom-built rostrum, a motorized elevating system raises or lowers the stand to suit the speaker's height.



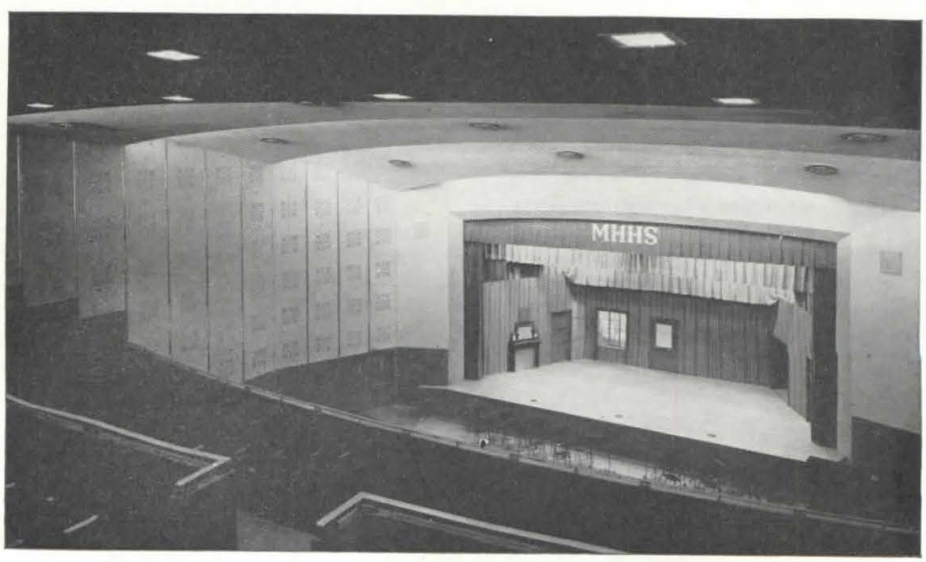
at the rear of the auditorium and on the stage at the control board.

Three general types of interconnect devices are used to obtain flexibility; they are: (1) heavy duty rotary switches, (2) flexible-cord plug-and-jack panels, and (3) cross-grid interconnect panels. The rotary switches provide easy and convenient interconnections. The plug-and-jack system is lower in cost, but not quite as convenient to operate. The cross-grid interconnect system permits maximum flexibility, but should be used only by experienced personnel, if it is not of the dead-front type. Silent-type magnetic circuit-breakers are now widely used for on-off control, and for providing the necessary overload protection for both stage circuits and dimmers.

Each control board should be provided with a drawing showing all stage circuits, interconnect facilities, and capacities of the dimmers. Unfortunately for the students, this is seldom done and an air of unnecessary mysticism frequently surrounds the board.

In considering the lighting equipment for a school stage, it is well to establish a complete master plan. Frequently all the equipment may not be obtained initially. With a definite goal in mind, the most useful equipment should be installed first and the additional equipment obtained in the order of their usefulness.

Above and below—176 100-watt lens plate units in five stepback coves provide comfortable general lighting in this high school auditorium at Maple Heights, Ohio. Dimmers are used for gradual transition. Spotlights are located in the ceiling and balcony front to furnish frontal lighting for dramatic presentations.



Causes and Remedies of Plaster Cracks

By V. H. NOBLE*

For the past few years, more than one and one-half million yards of gypsum plastering work has been finished daily on the walls and ceilings of buildings throughout the country. In the greatest majority of jobs, this plaster work has performed its intended purpose of providing a hard, smooth, monolithic surface that is sanitary and fire-resistant. Further, it has either provided its own decoration in the finish coat or has been ready for any subsequent decoration an architect or owner wished to employ. On a minor percentage of this vast acreage of plastering finished each day, however, some cracking has occurred—generally as a result of job conditions. These conditions may be structural weakness of the building, incorrect lathing, improper proportions or application of the plaster, atmosphere, or other causes. Such cracking requires spackling prior to final decoration, or other special cutting and repairing of the crack to eliminate it visually and to restore the monolithic appearance of the surface.

When cracking occurs, there is often a tendency to blame the gypsum-cement plaster, without considering that the gypsum cement comprises only about a quarter of the component materials in a plaster mix and without giving full consideration to either the base over which the plaster was applied or the conditions under which each was applied. Quite often, when plaster cracks occur in a unit, the plaster will be blamed because cracking did not occur in a similar unit. No two buildings, or parts of buildings, though alike in design and materials, can be built at the same time, under the same atmospheric conditions, and by the same mechanics.

plaster slab will not crack of itself

In considering the reasons for plaster cracks and determining methods which may be employed to avoid them, it should be understood that a plaster slab cracks only when some excessive external force is applied to it or when some excessive internal strains are produced within it. The stresses that are conducive to cracking may be introduced by movement in the building frame, by movement of other components of the building over which the plaster is applied, variations in atmosphere surrounding the slab, or a combination of these factors. It should also be understood that, quite generally, plaster slabs become more susceptible to cracking from such stresses as thickness is reduced, or aggregate ratio increased, thus creating a weaker plaster. As a corollary, the plaster can be cracked more readily if excessive stresses are encountered before the plaster is dry and has attained its full strength. With these important factors in mind, some of the problems and conditions that are conducive to cracking in plaster will be examined.

specifications

It would be well to start with the job specifications under which the lathing and plastering are to be performed. A few questions regarding them would furnish interesting information:

a. Do they clearly set the standards intended?
b. Do they show the lathing and plastering contractors what kind of materials shall be used and how they shall be installed?
c. Do they tell the contractor what proportion of gypsum-cement plaster to aggregate he shall use, to what thickness the plaster mix shall be applied, and so on?
d. Assuming that the specifications are clear and definite, is the job inspection of such a caliber that one can be sure that the materials being used, proportions, workmanship, and application are in accordance with the specifications?

Affirmative answers to these questions are important, for these factors can make the difference between a good plaster job and one which could result in objectionable cracking.

plaster bases

Unit masonry—gypsum block, clay tile, or porous cement block—must be sound, well laid in full mortar joints, properly anchored to door bucks at jambs and heads, and provided with good lintel support. Cement block should be well cured and stable, as green blocks are susceptible to shrinkage, often producing cracking within the block construction which can go through the plaster and become apparent as cracks in the plaster surface.

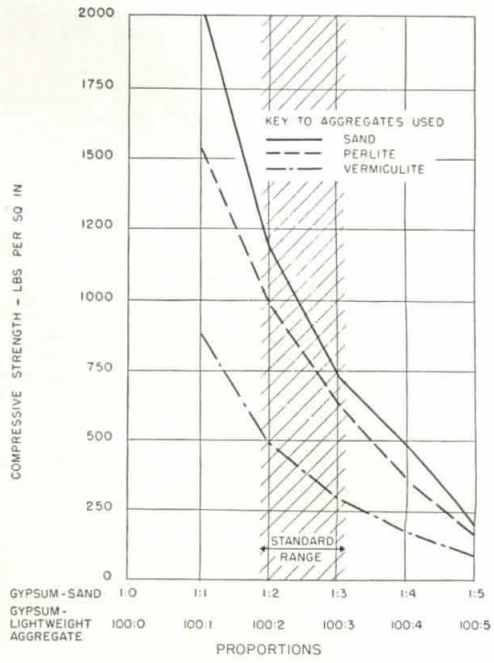
All metal and gypsum lath, the two most common plaster bases, should be properly installed. Improper nailing, poor tying, and excessive spans for the lath can easily result in cracking of the plaster slab. The American Standards Association in its Standard A42.4-1950, Specifications for Interior Lathing and Furring, describes the proper installation methods for all standard lathing; this data is supplemented by manufacturers' detailed specifications for standard lathing as well as special lathing systems.

Poor foundations or poor structural framing, whether in wood, steel, or concrete, often result in plaster cracks. These are structural defects and cannot be corrected in the lath and plaster work. The remedy is proper design and installation of the structural parts of the building.

care in mixing

When one understands that the gypsum plaster is a cement that is intended to weld the aggregate into a monolithic unit, the fallacy of spreading the cementing agent too thin can readily be seen. Normally, the scratch coat of plaster is proportioned with one part of gypsum-cement plaster (by weight) to two parts of aggre-

* *Products Engineer, Lath and Plaster, United States Gypsum Company.*



Right—chart of typical test results on dry plaster cubes, showing decrease in compressive strength as ratio of gypsum to aggregate decreases. Tensile strengths similarly decrease as aggregate ratio increases.

gate (weight of sand or cubic feet of lightweight aggregate); the brown coat is composed of one part of gypsum-cement plaster to three parts of aggregate. The scratch and brown coats together form the base coats of plaster, and are the backbone of the plastered surface. The finish coat is a thin veneer to provide surface leveling or texture only, and as such, does not add crack-resistance strength to the wall or ceiling.

If excessive quantities of aggregate are used, for example when the aggregate is porportioned to the gypsum in ratios of 4, 5, or 6 parts instead of 2 to 3, the gypsum-cementing agent will be spread so thin that it cannot adequately coat and bind the particles of the aggregate. Such a proportion materially decreases the strength of the plaster slab *(see chart)* and makes it more susceptible to failure under stress, thus less crack-resistant.

Lightweight aggregates used in proportions similar to those of gypsum-sand plaster—that is, 100 pounds of gypsum to 200 pounds of sand, as compared to 100 pounds of gypsum to 2 cubic feet of lightweight aggregate—typically obtain up to 85 percent of the set dry strength of the usual gypsum-sand mix. Although it is not possible to make a direct comparison of strength in crack resistance between two plasters having different aggregates, considerable caution should be used in permitting more than the normally specified amounts of aggregate, if a reasonable degree of safety against weak plaster surfaces is to be insured. Lightweight aggregates are generally satisfactory for use with gypsum plaster. With increased availability, both perlite and vermiculite are being used more frequently in small homes as well as in larger projects which often require higher fire ratings than sand aggregate will effect. Lightweight aggregates are particularly adaptable for this field.

Each type of lightweight aggregate requires job handling strictly in accordance with its particular characteristics. Perlite and vermiculite both require more mixing water than sand to bring the mortar to the proper application consistency. Vermiculite requires approximately twice as much water as sand to achieve the same plasticity; therefore, careful attention must be paid to heat and ventilation to remove the additional excess moisture from the plastered areas of the building. The same is true of perlite, but to a much lesser degree.

Both aggregates develop a higher degree of suction in the basecoat than sand, if allowed to dry completely. This condition often necessitates a light spraying of the basecoat with water in order to reduce the suction immediately before applying the finish coat of plaster.

Gradation of lightweight aggregates, as with sand, must be observed, and in addition, the lightweight aggregates must meet a weight specification. The standards for plaster aggregate are set forth in the American Standard Association's and manufacturers' specifications, and conformance to them will help materially in insuring quality plaster work.

thickness of plaster

There are definite standards established for the thickness of plaster over the various plaster bases: in no case can it be less than one-half inch. The allowance for the finish coat is approximately 1/16", which requires the base coat to be 7/16" for ½" grounds. This is a minimum thickness for plaster over gypsum lath and gypsum tile. The standard for other masonry units and metal lath is ⅝", including the finish over the surface of the plaster base.

Certain types of construction or fire ratings may require an increase in plaster thickness (and/or an increase in the gypsum to aggregate ratio) but never a thinner application of plaster than the standards established. Job experience indicates that thin applications of plaster often evidence cracking where normal applications to standard grounds do not. This condition is a direct result of the inability of thin sectional areas to resist external forces as adequately as thicker, normal applications of plaster. Thinner than normal applications of plaster are not conducive to good plastering.

heating and ventilating

Among the most frequent causes of plaster cracks are improper heating and ventilating conditions. Although the subject will not be discussed in this review, because of space limitations, the architect must, through specification and supervision, see that the subcontractor observes the proper heating and ventilating requirements for quality plastering.

other precautions for better jobs

Other precautions must be taken, as dictated by special job conditions.

steps to good plastering

major

1. sound structural frame
2. good plaster bases correctly installed
3. proper proportions of gypsum and aggregate
4. application to full standard thickness
5. adequate heat and ventilation

minor

1. set of base-coat plaster in normal range of 2 to 4 hours
2. trowel cutting base coat prior to set around openings

Radiant-heating systems present their own problems. Those systems with the heating medium embedded in the plaster slab require special provisions. The heating system should not be used for heating during or after plaster installation until the plaster is normally dry, thus having attained its full strength. Other means such as portable, "temporary" heat circulators should be employed during this period if weather conditions are cold enough to require heating to maintain an indoor temperature of over 55F.

To minimize cracking in those jobs having embedded tubing, it is also important to have at least a $\frac{3}{8}$" thickness of plaster below the pipe or tubing. As the embedded tube decreases the sectional area of the plaster, this $\frac{3}{8}$" minimum thickness below the coil is required to enable the plaster to resist stress adequately. The total thickness of plaster will be $\frac{3}{8}$" minimum plus the outer diameter of the coil and its spacing from the plaster base which will vary depending on its alignment with the base.

Cracking at the corners of openings in plastered areas, such as doors, windows, access panels, recessed lighting fixtures, and so on, is often seen. Research and job experience have indicated that such cracking can be minimized by cutting the base coat plaster around these frames with the edge of the trowel after the plaster has been rodded level and before it sets. Cutting around the opening with the edge of the trowel to the plaster base, leaves a small space for expansion, so that a slight movement in the frame can be absorbed without exerting an excessive stress in the plaster slab. The application of the finish coat will conceal this cut space; it must be applied after the base coat has obtained greater strength.

Wherever wood window frames or door jambs serve as a plaster ground, it is well to prime coat the back adjacent to the plaster with a sealing type of paint which will minimize the absorption of moisture from the plaster. In addition, it is also well to trowel cut around them to provide some room for expansion.

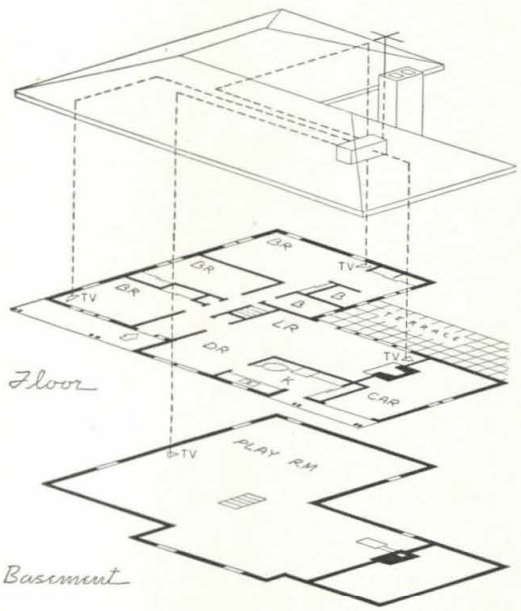
This type of corner cracking has been equally troublesome at windows. Today, window frames are quite often metal, and provisions are made for radiators or convectors below the frame. The heat from the radiator or from the sun striking the metal sill or jamb can raise the temperature sufficiently to cause expansion and to induce a force in a plaster slab that has been brought up tight against it. By trowel cutting the base coat plaster along the edge of the frame at least 12" from each corner, space will be provided within which the sill or jamb can move somewhat without inducing a serious stress on the plaster slab. Here again, the finish coat will fill the surface of such a cut and bring the finished plaster surface tight to the metal frame. Where plaster is detailed flush with the face of the jambs, however, it is common practice to form a "V" groove in the finish coat to relieve a possible chipping of that surface.

In thin-partition construction, such as solid plaster partitions, struts with excessive cross section are frequently used to fasten heads of bucks to the slab above. These struts can contribute much to the occurrence of "ear" cracks as they weaken the plaster surrounding them.

It is generally good practice to have all wires pulled through rigid electric conduit before plastering. Occasionally a wire may be difficult to pull, and if done after plastering, particularly when the plaster still contains free moisture and has not gained its full normal strength, sufficient force may be employed in pulling to cause cracking in the plaster.

This discussion has dealt primarily with plaster cracks that are through the base coat and the finish. In white coat finishes (gypsum gaged-lime putty trowel finish), a frequent complaint is craze cracking, an interlocking series of surface cracks in the finish somewhat resembling a net. This type of cracking, which often becomes evident at the time of painting, is usually due either to a low percentage of gaging plaster or lack of troweling. Lime putty does not set and it shrinks on drying. Gypsum-gaging plaster, in the proportion of about one part gypsum to two parts lime on a dry-weight basis, is blended with the lime putty to furnish a definite set and early hardness to the finish coat. By virtue of its characteristic of expanding on setting, it helps to eliminate "checking" due to shrinkage of the lime. When the amount of gypsum-gaging plaster is reduced below the recommended proportions, additional troweling, with water to lubricate the trowel on the surface of the finish, is required to avoid this check cracking. Thus, the remedy for this type of cracking is relatively simple: either use the proper amount of gaging plaster or trowel the finish more.

tv outlets for the home



Above—isometric plans show suggested locations for television outlets and distributor; each outlet receives signals from the same antenna. Moss & Sons, Long Island builders, have included this equipment in a 140-unit housing development designed for them by Dominick Salvati & Sons, Architects.

Right—this device distributes four output signals of equal strength to locations shown in plans above.

Far right—a short length of coaxial cable and a special plug which fits into this wall outlet connect television set with antenna.

It is considered probable that most families will eventually have from two to four television receivers installed at various locations within the home. In anticipation of this condition, a signal distribution system has been developed which permits four television sets to be operated simultaneously from one antenna. Installed at the time of construction, all wires are concealed within the walls; thus, this equipment eliminates the unsightly, inconvenient, and inefficient antenna installation common today and its attendant "afterthought" wiring. The over-all cost of the home is increased by only the slightest margin. Antenna signals are fed to a built-in distribution device, known as a four-set coupler, by standard television lead-in cable. Four cables plugged into receptacles in the coupler are led to points where receivers are most likely to be installed.

Rigid specifications have been established for this system and its component parts. The more important of these are:

(1) The antenna shall receive all signals present in the area with sufficient efficiency to provide good pictures on all receivable channels. It shall be constructed of 3S Hard aluminum seamless tubing with dowel-supported elements. All insulators shall be nonhygroscopic and all parts shall be noncorrosive.

To satisfy this specification, the antenna must be of a much better quality than is usually installed by a service firm for the individual set buyer.

(2) The distribution device shall furnish four output signals of equal strength. A receiver connected to any output shall not interfere with those connected to other outlets through the antenna system. A short circuit or other incorrect condition placed deliberately or accidentally across one outlet shall not affect the efficiency of the other three. All outputs shall be designed for coaxial cables. The device shall contain no vacuum tubes nor require any electric main power for its operation. It shall require no maintenance or adjustment.

The provision for coaxial cable output insures that the cables can be installed in the walls or partitions with a minimum of interference. As this equipment carries no power, Underwriters' rules need not be considered when making layouts.

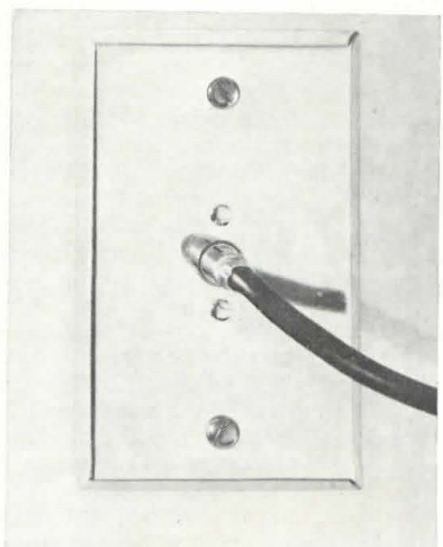
(3) The coaxial cables shall conform to Joint Army-Navy specifications.

The commonest coaxial cable used with this system is RG-59/U which has an outside diameter of 0.343".

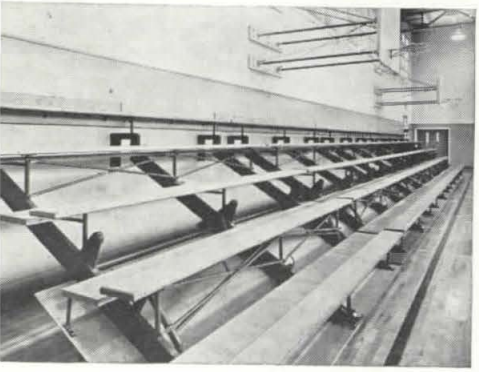
(4) Outlets shall be single-gang plates suitable for use with standard outlet boxes of the type ordinarily used for main receptacles. They can be provided with coaxial fittings which are highly efficient at television frequencies. They shall be painted to conform with the decor of the room in which they are installed.

This system, as manufactured by the Brach Manufacturing Corporation, Division of the General Bronze Corporation, Newark, New Jersey, is now available from many radio and electronic parts jobbers throughout the country and may be installed by any electrical contractor with a minimum of time.

Moss & Sons, Long Island builders, are using this equipment for the first time in a development of 140 homes now under construction. It is their contention that the installation of a television antenna and outlets in private homes deserves the same careful consideration and planning that is given to heating, lighting, and ventilating.



p/a products



Left and above—formed of welded-tubular steel and Douglas fir, each grandstand section seats 55 spectators. Can be pulled out or folded back by one person. Folded assembly is protected by plywood panels. Beatty Safway Scaffold, Inc., Tunnel Ave. & Beatty Rd., San Francisco, Calif.

Right—stack chairs designed for classroom use by Architect J. Robert F. Swanson. American Seating Co., Grand Rapids, Mich.

air and temperature control

Dehumidifier Model DMS 4: compact, portable unit will dehumidify any closed area of tight construction up to 8000 cu. ft. Plug installation; weight 55 lbs.; baked, crackle-green finish. Abbeon Supply Co., 58-10 41st Dr., Woodside, N. Y.

Economy Oil Furnace: forced warm-air furnace features full-size blower, gun-type burner, and heavy-duty, built-in precast refractory chamber; compact dimensions for installation in utility room and small basement; 90,000 Btu output. Delta Heating Corp., 85-07 Northern Blvd., Jackson Heights, New York, N. Y.

RST-EA-A Electronic Amplifier: all control panels for Dunham steam-heating systems now equipped with amplifier; indicates and controls temperature changes, replaces former galvanometer on panels. Fewer parts, less to maintain; tubes will be its chief replacement need. C. A. Dunham Co., 400 Madison St., Chicago 6, Ill.

Convect-O-Base: new improved baseboard radiation, easily installed on rough framework of building while all piping is accessible for testing. Unit consists of back cover, heating element, and front cover. Doweled cover-ends assure perfect fit and alignment; universal end-stop provides matching closure for either end. No dirt-catching space below, or vents in top to cause soiled walls or drapes. Minimite Co., 3700 W. Roosevelt Rd., Chicago, Ill.

Self-Contained Air Conditioner: new 8-ton model cools, dehumidifies, circulates, and filters air for summer comfort in homes, factories, offices, and other commercial establishments; winter conditioning provided by addition of steam or hot-water heating coils and outside air-duct connection for ventilation supply. In four sizes: 24,000, 36,000, 60,000, and 96,000 Btu per hour. Westinghouse Electric Corp., 200 Readville St., Hyde Pk., Boston 36, Mass.

construction

Built-Up Roofing Selector: cardboard device assists in determining, quickly and easily, correct specification for various types of built-up roofing. Precise, conveniently small for desk use, operates somewhat like slide rule; includes working drawings showing correct methods for dealing with problems of low parapets, flush or open eaves. Free to architects. Ruberoid Co., 500 Fifth Ave., New York 18, N. Y.

Expanded Wing-Base Screed: rigid, flush-type screed, with extra-heavy diamond strands next to nose, for use as dividing strip or between plastered surfaces and cement or terrazzo surfaces; wider expanded flanges make it suitable for uneven surfaces. Available in 10′ lengths, for ½″ grounds only. U. S. Gypsum Co., 300 W. Adams St., Chicago 6, Ill.

doors and windows

Residential Aluminum Door: flush-panel, side-hung, interior aluminum door and vise-grip jamb. Easily installed, warp-free, highly resistant to fire, sound and thermal transmission. Steel hinge-pins prevent possibility of electrolytic action and provide squeakless operation. Available in all standard sizes for all types of residential construction. Weather-Vane Corp., 611 S. Flower St., Burbank, Calif.

electrical equipment, lighting

Glo-Ray: small, flush light fixture provides "night lighting" for corridors, halls, theater lobbies, stairways, etc. Uses one 15w or 25w frosted incandescent bulb; black-enameled housing is 4″ x 6″ and requires only 3″ recessing depth. Shutter arrangement controls amount of light desired to pass through cover glass. Curtis Lighting, Inc., 6135 W. 65 St., Chicago, Ill.

Mid-Century Spotlight: compact, white-enameled-steel spotlight unit for individual or in-line mounting with commercial fluorescent luminaires. Gimbal ring mount permits adjustment of beam in all directions. Mitchell Mfg. Co., 2525 Clybourn, Chicago, Ill.

finishers and protectors

Multi-Clean Asphalt Tile Preserver: anti-slip, penetrating, surface sealing preserver claimed to reduce floor maintenance by 65 percent and to save 50 percent in floor maintenance materials. Single treatment may be applied four times yearly, replacing frequent wax applications. Multi-Clean Products, Inc., 2277 Ford Parkway, St. Paul 1, Minn.

insulation (thermal, acoustic)

Acoustical Plaster: highly fire-resistant acoustical plaster retains sound-control efficiency even after several paintings; attractive heavy texture, with no mechanical pattern, may be finished by stippling or perforating (joining marks practically eliminated by stippling). Useful wherever frequent cleaning and periodic decorating are required. U. S. Gypsum Co., 300 W. Adams St., Chicago 6, Ill.

interior furnishings

Lumite Fabric: new upholstery material, made of synthetic and plastic filaments, combines durable, hard-wearing qualities of woven-plastic fabric with soft texture of natural upholstery fabric; water-soluble soils and grease stains easily removed with damp, soapy cloth or cleaning fluid. Comes in three patterns and three weaves. Chicopee Mfg. Corp., Lumite Div., 47 Worth St., New York 13, N. Y.

Wood Hospital Furniture: functionally designed, constructed of solid birch parts and 5-ply birch-faced plywood, group pieces consist of bed (accommodates all hospital-size springs), chest and cabinet with Formica tops, lounge chair and ottoman, straight chair, arm chair, screen, and footstool. Special finishes may be ordered on contract work. Hard Mfg. Co., 117 Tonawanda, Buffalo 7, N. Y.

sanitary equipment

Commercial Dishwashing Machine: pump type, with rackless, all-nylon molded conveyor. No exposed metal to mar or chip dishes; nylon rollers afford smooth, quiet rolling of conveyor over extruded brass rails. Three standard models, varying in length from 15′ to 17′-7″, built to handle from 6000 to 18,000 pieces per hour. G. S. Blakeslee & Co., 1844 S. Laramie, Cicero, Ill.

Foot-Pedal Soap Dispenser: constructed of stainless steel, eliminating danger of contamination within dispenser; no corrosion or discoloration possible. Complete dispenser head easily dismounted for sterilization. Units are lent to hospitals for use with manufacturer's surgical soap, or may be purchased outright. Huntington Laboratories, Inc., Huntington, Ind.

Revolving Door Drains: made with heavy cast-iron body, dura-coated for protection against corrosion, designed to prevent slush and dirty water tracked into lobbies and entrances of all public buildings where revolving doors are used. Drain is set flush with floor surface around entire circuit of doors; moisture is wiped into grating by squeegee action of rubber stripping at bottom of revolving door wings. Non-skid carborundum top minimizes personal injury by slipping. J. A. Zurn Mfg. Co., 1801 Pittsburgh Ave., Erie, Pa.

La Mode: combination lavatory and vanity, constructed of steel with baked enamel finish, provides generous size basin, storage cabinet, and utility drawer; top and back splash covered with laminated Formica. Unit fastens to wall for support, eliminating necessity for leg under lavatory; compact enough for smallest bathroom yet provides storage for linens and bathroom supplies. U. S. Porcelain Enamel Co., 4635 E. 52 Dr., Los Angeles, Calif.

surfacing materials

Sta-Tite: self-aligning asphalt shingles for application over old roofs; only two nails required for each shingle; no stapling necessary. Available in four colors. Celotex Corp., 120 S. La Salle St., Chicago 3, Ill.

Wall Covering: 54″-wide material, finished with alkali-resistant paint, simulates ceramic tile, with actual, grooved mortar lines between tiles. Available in six colors. Sloane-Blabon Corp., 295 Fifth Ave., New York, N. Y.

MANUFACTURERS' LITERATURE

★ *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

1-111. Pittsburgh Gas Unit Heaters, AIA 30-C-43, 6-p. illus. folder. Gas-fired unit heaters with cast-iron heat exchangers, for heating, ventilating, and drying commercial and industrial buildings. Models, sizes, capacities, safety features, measurements for installing. Automatic Gas Equipment Co., 301 Brushton Ave., Pittsburgh 21, Pa.

1-112. Manufacturers Ventilatıng & Heating Equipment, 1951. Portfolio of data sheets describing window ventilators, floor-air circulators, filtered blowers, and various types of fans. Suggested price list for dealers. Berns Mfg. Corp., 3050 N. Rockwell St., Chicago 18, Ill.

1-113. Refrigerating Machines, AIA 30-F-22 (30B1), 6-p. illus. folder on packaged refrigeration machine for cooling water or brines for air-conditioning and industrial process applications; adaptable to electric motor, gas or diesel engine, and turbine drive. Advantages, general specifications, typical installations. Carrier Corp., Syracuse 1, N. Y.

1-114. Heating, Air Conditioning, AIA 30-F-1. Portfolio of illus. folders containing general and technical data on both gas- and oil-fired winter air conditioners, furnaces, and burners. Specifications for all equipment, thumb index. Meyer Furnace Co., Peoria, Ill.

1-115. Norman Three-Sixty (360-12-N), single data sheet describing gas-fired overhead heater, circular in design, for close ceiling mounting in commercial and industrial buildings; 360° horizontal heat distributed through seven diffusor rings. Advantages, operating principle, cutaway view. Norman Products Co., 1150 Chesapeake Ave., Columbus 12, Ohio.

★ **1-116. The Story of Perimeter Heating** (D51-6), 20-p. illus. booklet. General information on nature, proper use, and application of perimeter insulation for standard heating systems. Installation method illustrated by diagramatic sketches. Types of glass-fiber insulation. Owens-Corning Fiberglas Corp., Toledo 1, Ohio.

1-117. Practical Pointers on Air Conditioning (1059 FC), 16-p. illus. booklet covering phases of air treatment, properties of air, and application of diversified types of equipment to solve air-control problems. U. S. Air Conditioning Corp., 3300 Como Ave., S.E., Minneapolis, Minn.

construction

3-97. Steel and Aluminum Building Panels, AIA 17 A (BP-1), 40-p. illus. catalog on building panels for use in floors, walls, roofs, and partitions. Detailed panel selection tables, fire-resistance ratings, panel-electrification data, specifications, recent installation photos. Detroit Steel Products Co., 3209 Griffin St., Detroit, Mich.

★ **3-98. A Portfolio of Architectural Designs for Plywood Built-Ins** (51-50), 16-p. portfolio containing over 50 achitectural drawings of indoor and outdoor built-in units designed for all residential areas. Built-ins include storage units in living rooms, breakfast-bar and dining-room partitions, closets, garden-tool storage bins, etc. Plywood grade-use information, finish data, contents table. Douglas Fir Plywood Assn., Tacoma Bldg., Tacoma 2, Wash.

3-99. Cool Beauty for Modern Homes, 4-p. illus. folder on built-up roofing material made of pure crystalline white limestone granules, said to have unusually high heat reflectivity. Advantages, typical applications. Kaiser Aluminum & Chemical Sales, Inc., 1924 Broadway, Oakland, Calif.

3-100. Metlwal, 12-p. illus. booklet. General data on movable steel partitions and paneling for all commercial and industrial interiors; also steel doors and accessories. Elevation and section drawings, construction and method of installation, specifications. Martin-Parry Corp., 1455 Alexis Rd., Toledo, Ohio.

3-101. Summary of Metal Lath and Plaster Fire Resistive Ratings, 4-p. folder. List of 85 fire-resistance ratings, ranging from one to four hours, for commonly used types of metal lath and plaster partitions. Summary gives thicknesses required in providing metal-lath and plaster fire-protection for columns, steel beams, girders and trusses, steel floor and roof deck assemblies. Metal Lath Mfrs. Assn., Engineers Bldg., Cleveland 14, Ohio.

3-102. Is Your Roof Cracked, Bulged or Wrinkled? 6-p. bulletin illustrates almost every type of roof damage; patching and leak-stopping methods are given, also means of resurfacing and renewing old roofs. Photos. Monroe Co., Inc., 10703 Quebec Ave., Cleveland, Ohio.

3-103. Engineered Timbers, AIA 19-B-3 (T5R), 8-p. pamphlet describing forms and uses of glued laminated timbers. Table of sizes and properties; dimensions, sizes, and weights of typical roof trusses with dimensions of bearings. Photos of applications. Timber Structures, Inc., 3400 N. W. Yeon Ave., Portland, Ore.

doors and windows

★ **4-109. Complete Wood Window Units,** AIA 16L. Portfolio file folder containing installation and specification data sheets for gliding windows, casements, and other types of wood window units. Details, elevation and plan sections; two booklets illustrating residential installations of window units are also included. Andersen Corp., Bayport, Minn.

4-110. Door Butts and Hinges, AIA 27 (ASAHC Section EB), 24-p. illus. handbook providing information on different types of hinges and hinge parts used for ordinary full-sized doors. Construction and finish data, drawings, miscellany. National Contract Hardware Assn., 420 Madison Ave., New York 17, N. Y. ($1 per copy; make check or money order payable to National Contract Hardware Assn.)

4-111. Pittsburgh Data Sheet Handbook, 72-p. catalog. Technical data on plate glass, Twindow insulating units, Herculite tempered glass doors, structural glass, mirrors, sash, moldings, etc. Details, other drawings. Pittsburgh Plate Glass Co., 632 Duquesne Way, Pittsburgh, Pa.

electrical equipment, lighting

5-71. Lighting Guide to Better Drafting (LS-137), 8-p. illus. leaflet recommending types of lighting systems for better drafting, correct illumination for tracing tasks and other drafting operations. Helpful suggestions for proper positioning of drafting boards, drawings, photos. General Electric Co., Nela Park, Cleveland, Ohio.

5-72. 9300 Series (9300). 6-p. folder describes new fluorescent ceiling fixture with low brightness, high output; is easily installed for continuous runs or as single units. Specifications, average brightness data, installation procedure, coefficients of utilization, advantages, applications. Holophane Co., Inc., 342 Madison Ave., New York, N. Y.

5-73. Coolite, AIA 25A-3-5-6, 12 p. illus. booklet on heat-absorbing and glare-reducing glass, blue-green in color, designed to give comfortable working light in commercial and industrial buildings. General information, specification data, typical installation photos. Mississippi Glass Co., 88 Angelica, St. Louis,

★ **5-74. Color is How You Light It** (FL-420), 24-p. booklet. Simplified lighting guide for commercial

and home decoration analyzes appearance of 40 popular colors under eight white light sources (seven fluorescent tubes and incandescent bulb) now available. Color definitions, samples and applications, bibliography. Sylvania Electric Products, Inc., 1740 Broadway, New York, N. Y. ($1 per copy; make check or money order payable to Sylvania Electric Products, Inc.)

finishers and protectors

6-37. Pre-Harmonized Wall Paints (A-305), color chart containing color samples of oil-base paints that are self-sealing and washable. Eagle-Picher Co., American Bldg., Cincinnati 1, Ohio.

6-38. Modern Maintenance, 48-p. illus. catalog presenting over 100 maintenance, floor treatment, and sanitation products, for ceiling-to-floor coverage in every kind of building. Products include floor finishes, calking compounds, paints, polishes, disinfectants, roof coatings, maintenance equipment, etc. Drawings, photos, two indexes. Hillyard Co., St. Joseph 1, Mo.

6-39. Liquid Raw-Hide, AIA 25-B-17, 4-p. brochure on resin-free, sun- and mildew-resistant redwood and cedar finishes. Advantages, general instructions, specifications. Linseed Oil Products Co., 359 Del Monte St., Pasadena 3, Calif.

6-40. Skybryte, 4-p. folder illustrating uses of heat resisting, interior and exterior aluminum paints, both of which may be brushed or sprayed. Drawings. Skybryte Co., 3125 Perkins Ave., Cleveland 14, Ohio.

insulation (thermal, acoustic)

9-52. Alumi-Coustic Grid System, AIA 39-B-1, 4-p. folder describing non-combustible, acoustical, thermal-insulating ceiling, formed by suspending from either structural members or existing ceiling, a supporting grid system of interlocking, T-shaped aluminum extrusions that provide flanges for support of ceiling board. Properties, illustrated installation data, details, short specification. Cupples Products Corp., 2650 S. Hanley Rd., Maplewood, St. Louis 17, Mo.

9-53. Kilnoise Acoustical Tile, 4-p. illus. brochure on lime base, mineral type acoustical tile with highly porous body through which sound may penetrate until thoroughly absorbed; moisture-resistant, incombustible. Properties, specifications. Kelley Island Lime & Transport Co., 1122 Leader Bldg., Cleveland, Ohio.

9-54. The Story of Kaylo, 24-p. booklet discussing research and development of hydrous calcium silicate building and insulating material, its various forms, properties, and uses. Photos, drawings. Owens-Illinois Glass Co., Kaylo Div., Toledo 1, Ohio.

sanitation, water supply, drainage

19-161. Watrous Flush Valves, AIA 29-H-21 (449-A), 20-p. catalog. Illustrations of wide range of flush valves for toilets, urinals, and service sinks. Typical installations, cutaway drawings, accessories. Imperial Brass Mfg. Co., 1200 W. Harrison St., Chicago 7, Ill.

19-162. Fibre Pipe (49080), 24-p. bulletin on development, advantages, and applications of pipe made of cellulose wood fiber, recommended for such uses as house to street sewer connection, farm and muck land drainage, irrigation, septic tank filter bed, etc. Typical installation drawings and photos, specifications, shipping information, brief descriptions of fittings and other accessories, index. McGraw Electric Co., Line Material Co. Div., 800 N. 8 St., Milwaukee, Wis.

19-163. Ball-O-Matic, 4-p. illus. folder describing water softener system with single-control valve that combines all operation — backwash, drain, regeneration, soft water service — in one unit, with one moving part. Construction, operating principle, specifications. Reynolds-Shaffer Co., 12100 Cloverdale, Detroit 4, Mich.

19-164. Electric-Aire, AIA 31-L, 8p. catalog. General information and technical data on hand and hair dryers for public and private washrooms. Specifications, installation procedures. Electric-Aire Engineering Corp., 209 W. Jackson Blvd., Chicago 6, Ill.

specialized equipment

19-165. General Electric Appliances for Better Living (1-980), 24-p. booklet illustrating domestic kitchen and laundry equipment, including refrigerators, food freezers, electric ranges, water heaters, dishwashers, etc. Dimensions, electrical ratings. General Electric Co., 1285 Boston Ave., Bridgeport 2, Conn.

19-166. Transitubes (105), 4-p. folder. Pneumatic-tube communication systems for transmission of messages, money, legal files, and even small machined parts, traveling at speed of 40 ft. per second for fast and accurate service; carriers and tubes available in different shapes to carry required materials or objects. Uses, advantages. Grover Co., 25525 W. Eight Mile Rd., Detroit 19, Mich.

19-167. Swimming Pool Manual, 12-p. illus. booklet discusses planning of steel pools for municipalities, communities, hotels, clubs, and for private use. Design, construction, erection details. Koven Steel Swimming Pools, Inc., 155 Ogden Ave., Jersey City, N. J.

surfacing materials

19-168. Floors of Ceramic Mosaic Tile, AIA 23-A (139), 16-p. booklet presenting assortment of ceramic mosaic-tile floor patterns, either in solid or combined colors. Types of texture, trim shapes, 4-color plates illustrating typical installations. Mosaic Tile Co., Dept. PA, Zanesville, Ohio.

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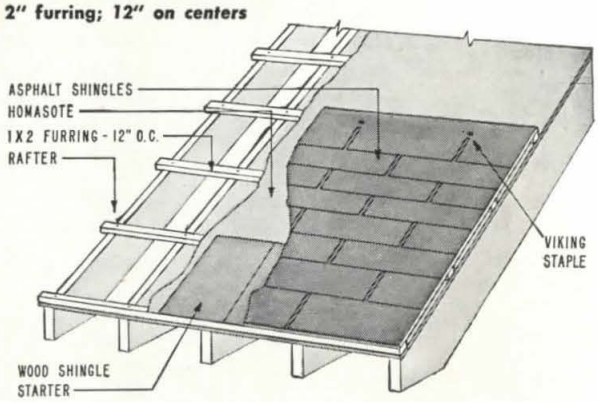
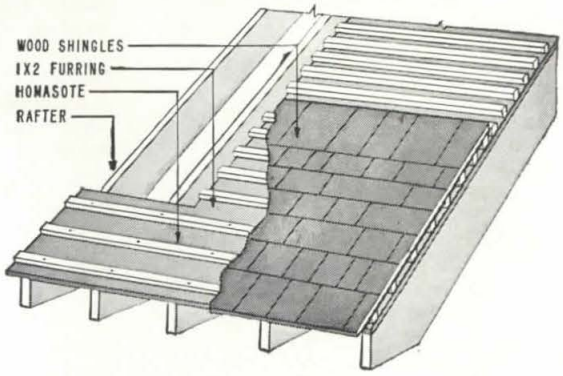
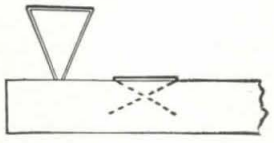


With WOOD SHINGLES

1" x 2" furring *on centers determined by shingle size*





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HOMASOTE COMPANY, Trenton 3, N. J.

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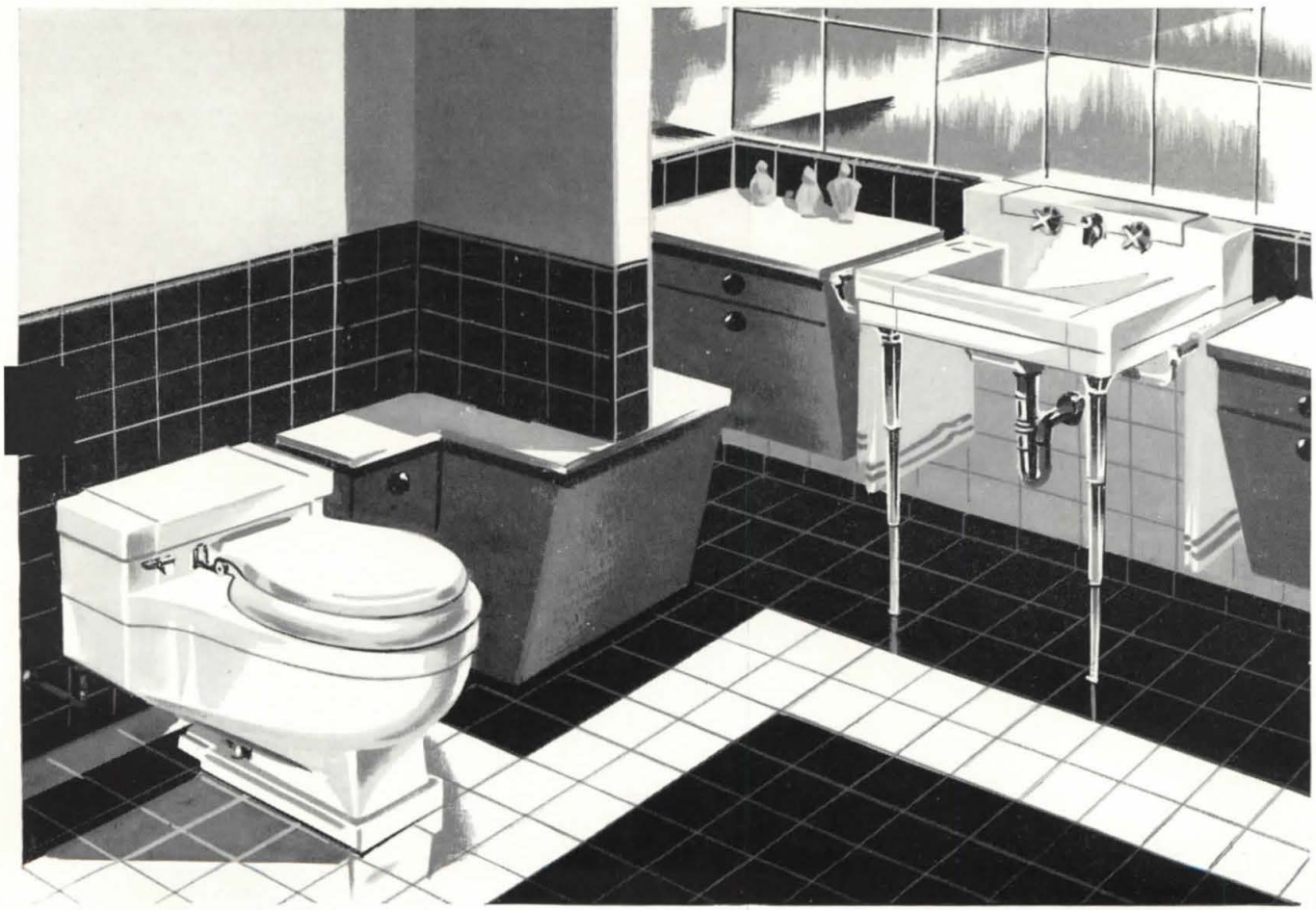
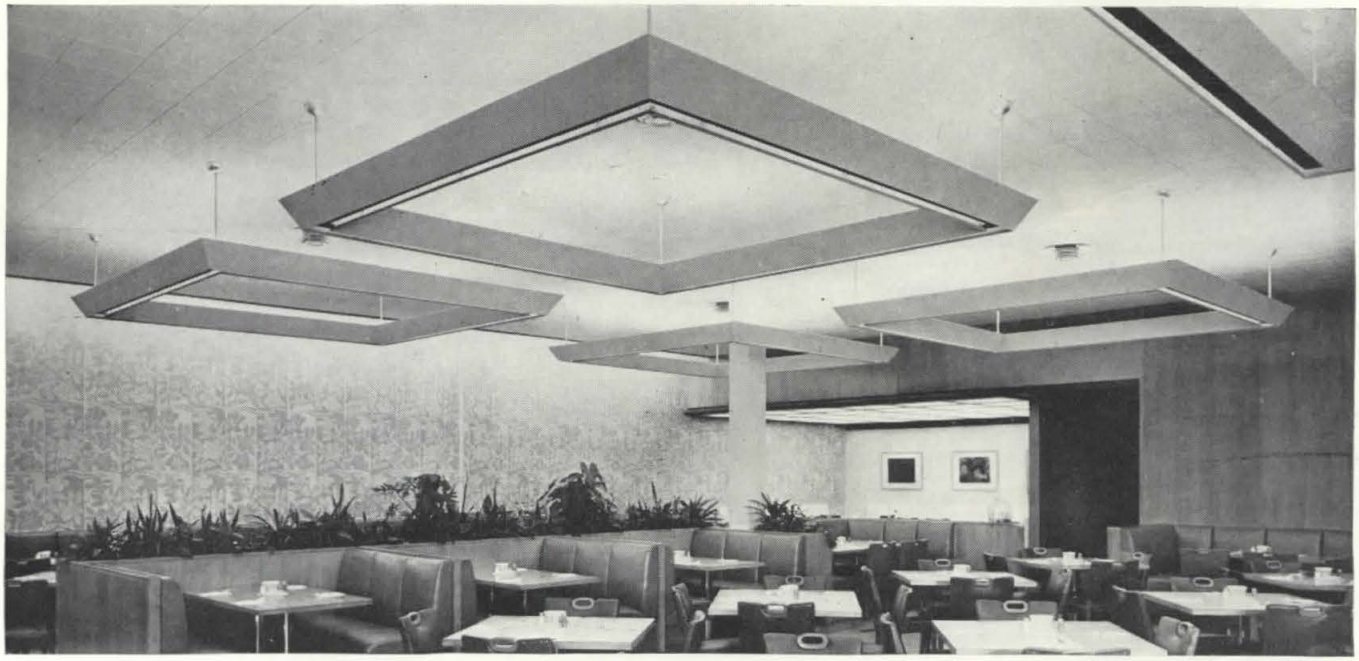


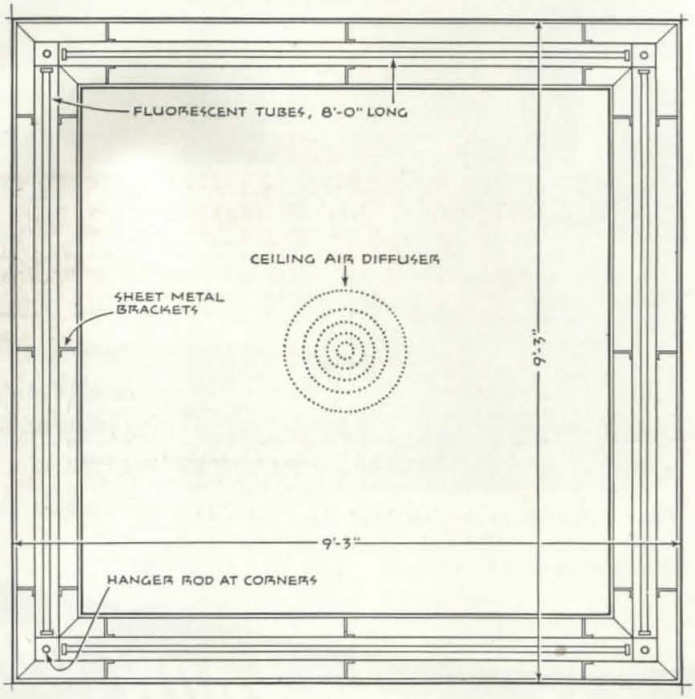
Case *Fine Vitreous China*

*PATENTED ®

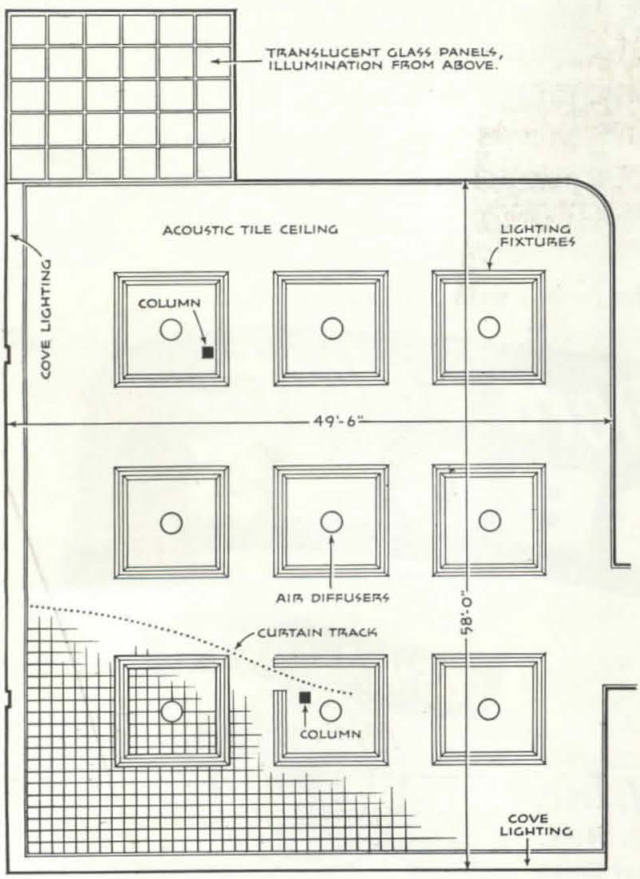


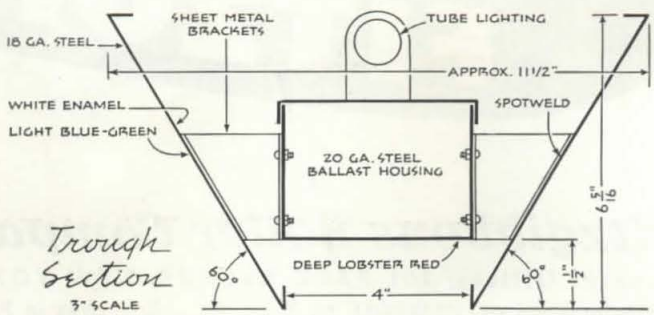
RODNEY McCAY MORGAN

Plan of Fixture
1/2" SCALE



Reflected Ceiling Plan 1/16" SCALE

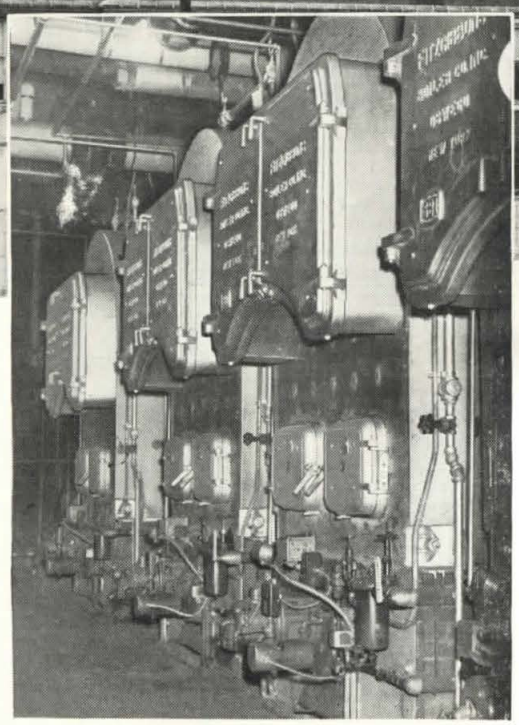




Trough Section
3" SCALE

HOWARD JOHNSON RESTAURANT, Cleveland, Ohio **ERNST PAYER and WILBUR RIDDLE, ASSOCIATED ARCHITECTS**

"We've been amazed...



Four Fitzgibbons boilers heat the Lockland High School. Heating contractor: B. A. Walterman Co., Cincinnati.

. . . at the efficient, economical performance of our Fitzgibbons boilers" writes M. T. C. Berger, Treasurer of the Lockland (Ohio) City School District. For two seasons, three Fitzgibbons 18,200 sq. ft. (steam), oil fired, "D" Type boilers have been piling up savings in heating the beautiful Lockland High School. With the recent completion of a new addition to the school, another Fitzgibbons "D" Type boiler was installed.

Get all the facts — write for Bulletin PA-8.

Men who know boilers select... FITZGIBBONS

65th Anniversary

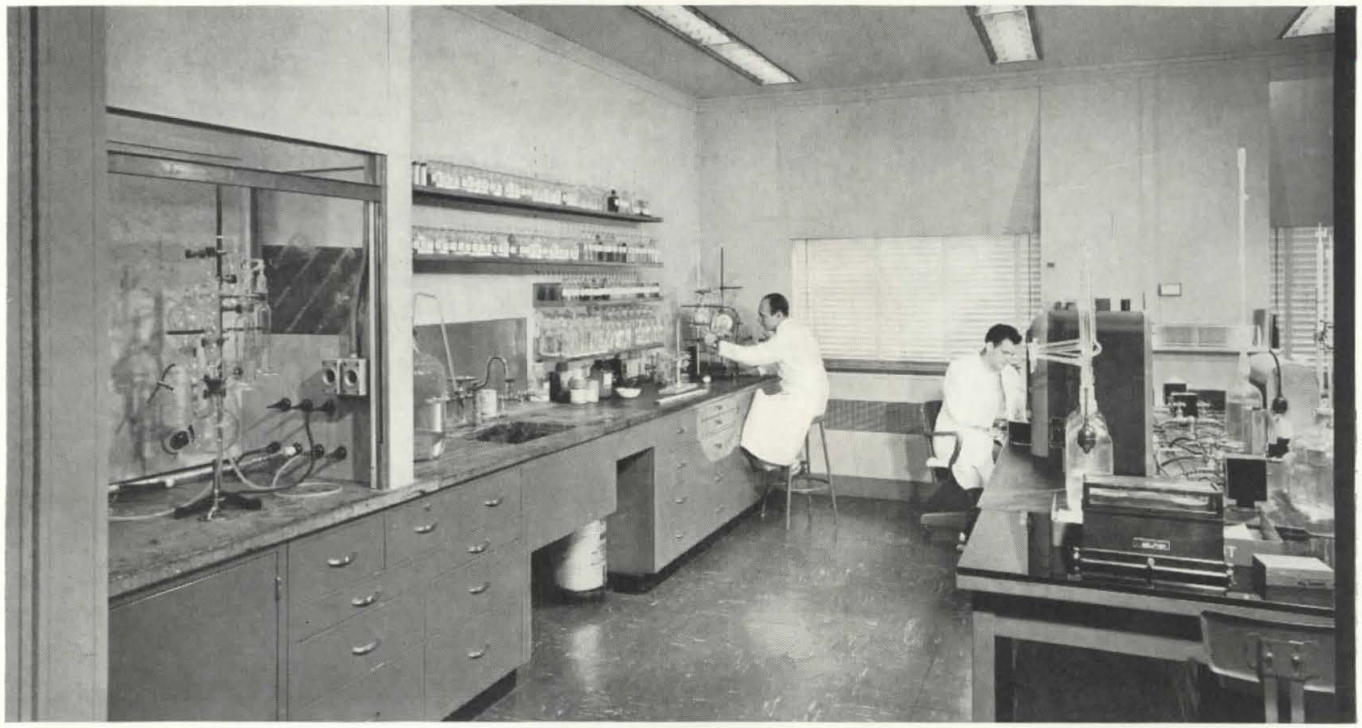
MOST ECONOMICAL IN FUEL — 1886 — THE FITZGIBBONS BOILER

1886 - 1951

Fitzgibbons Boiler Company, Inc.

General Offices: 101 PARK AVENUE, NEW YORK 17, N. Y.

Manufactured at OSWEGO, N. Y. • *Branches in Principal Cities*



HEDRICH-BLESSING

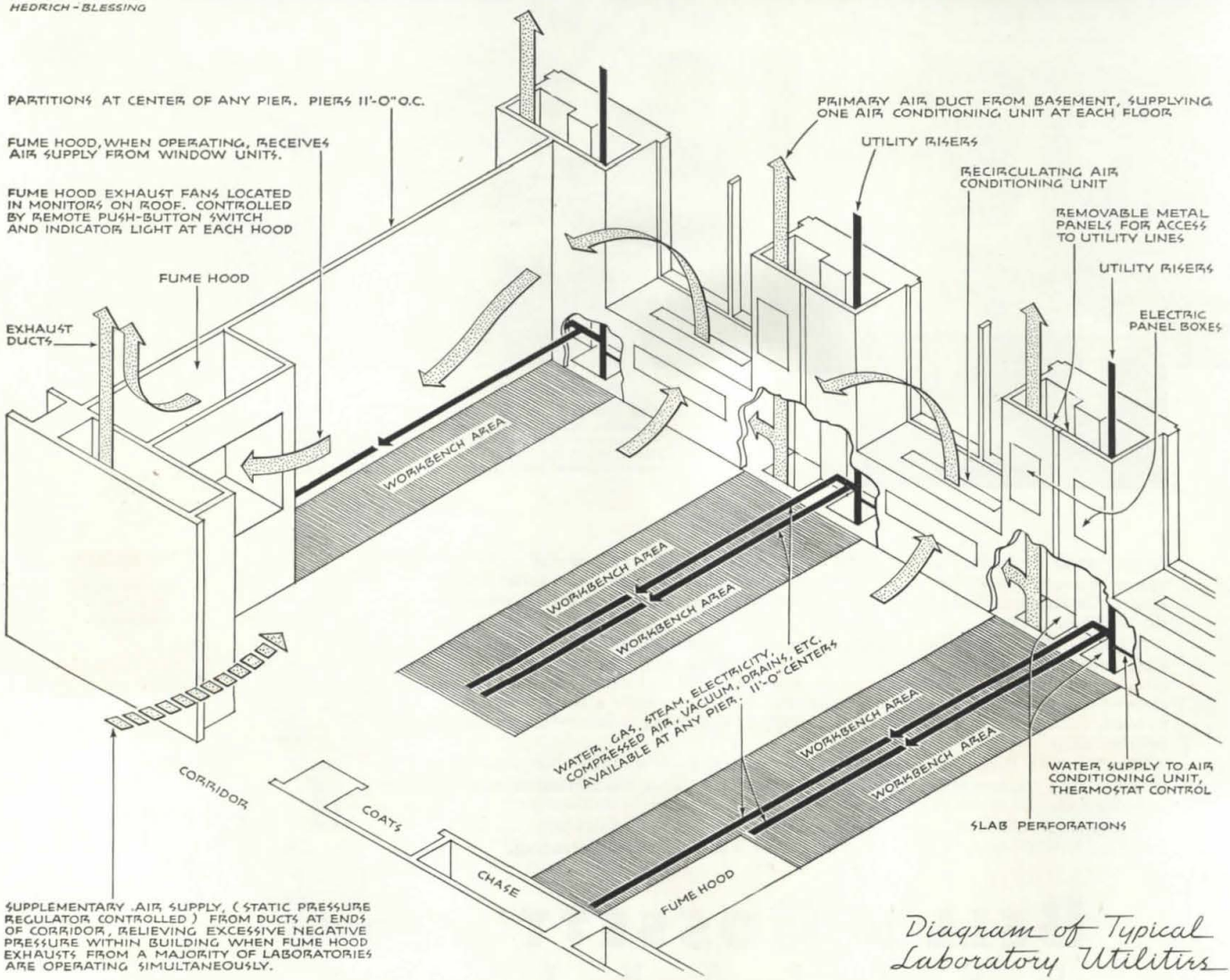
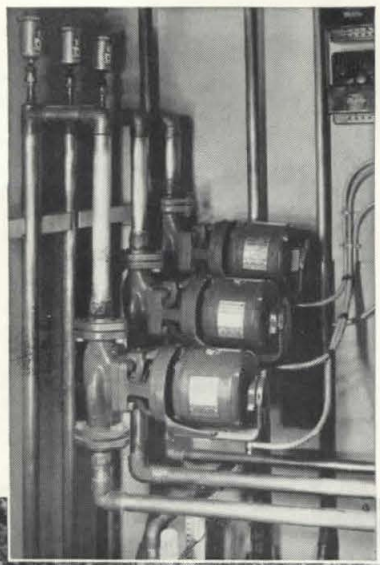


Diagram of Typical Laboratory Utilities

STANDARD OIL COMPANY (INDIANA), Hammond, Ind. **HOLABIRD & ROOT & BURGEE AND ASSOCIATES, ARCHITECTS**

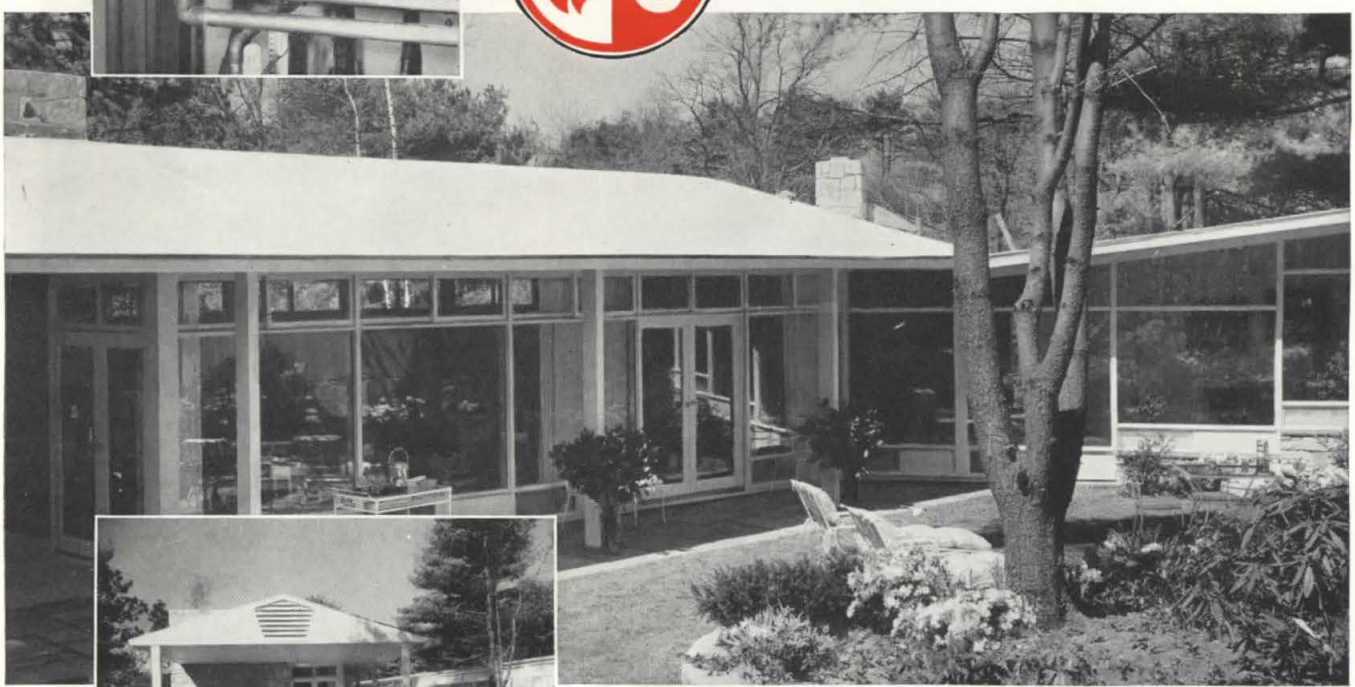


"House of Ideas"

Sponsored by House & Garden

Selects

*Hydro-Flo** Heating



Zoned for better heat control

The heating system of the "House of Ideas" is divided into three zones, individually controlled by the B & G *Hydro-Flo* Booster Pumps illustrated above. Zoning provides compensation for varying exposures and, if desired, permits different temperatures in different parts of the house.

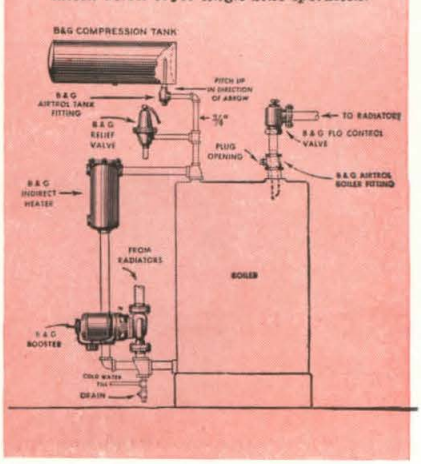
In the "House of Ideas", sponsored by HOUSE & GARDEN, beauty and convenience are fully supplemented by winter comfort. A *completely concealed* B & G *Hydro-Flo* Radiant Panel Heating System distributes radiant sunny warmth throughout.

B & G *Hydro-Flo* Heating is a *forced hot water system* . . . which means that the heat supply is always under positive control. The temperature of the water circulating through the system is automatically raised or lowered to meet every change in the weather. Even in spring and fall, when only a little warmth is needed, indoor temperature is kept exactly at the comfort level—no wasteful overheating.

That's why a B & G *Hydro-Flo* Heating System costs so little to operate—it matches fuel consumption to weather conditions. This ultra-modern system permits a choice of *baseboard panels, convectors, radiators or radiant panels.*

B & G *Hydro-Flo* Heating adds plus value to any home—increases saleability. Send for free booklet, "Capture the Sun with B & G *Hydro-Flo* Heating."

Any hot water boiler can be equipped with B & G Hydro-Flo Heating units. Installation below is for single zone operation.

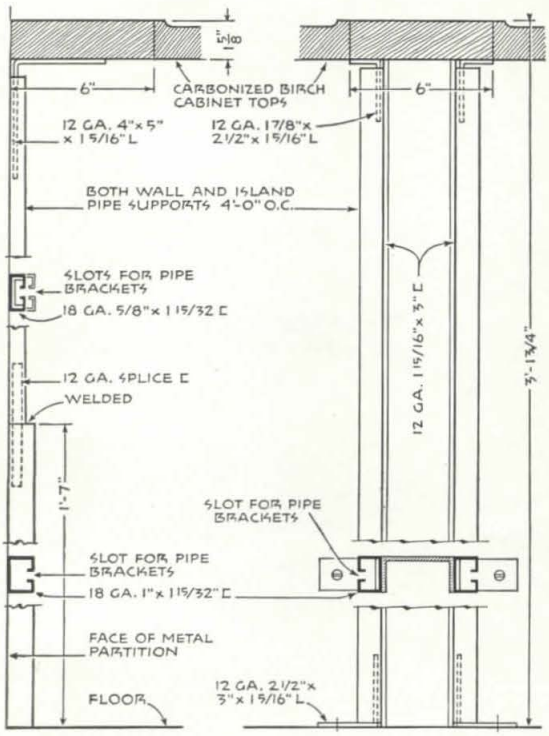


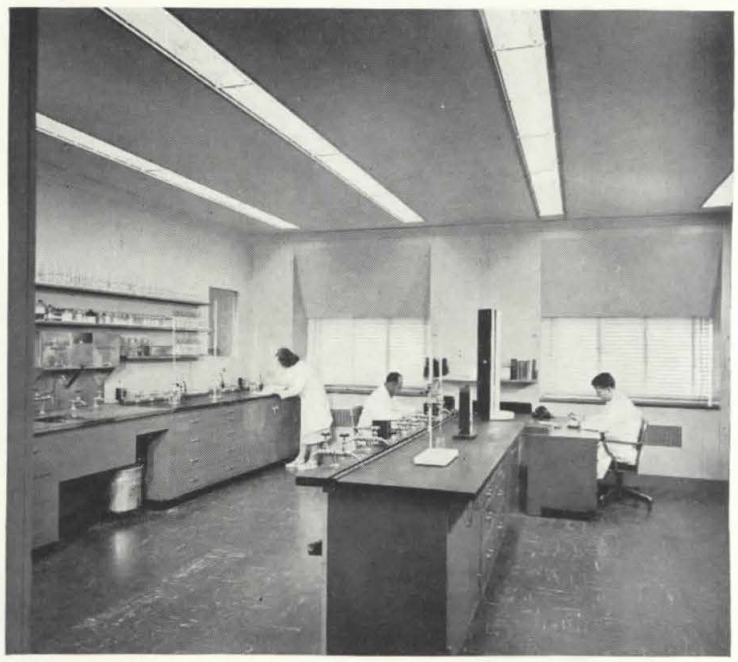
BELL & GOSSETT
COMPANY

Dept. CD-37, Morton Grove, Ill.

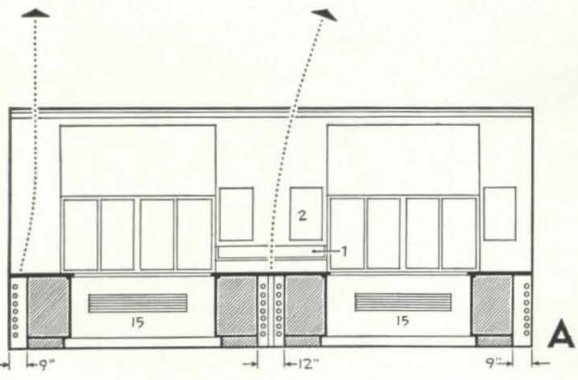
Canadian Licensee: S. A. Armstrong, Ltd., 1400 O'Connor Drive, Toronto, Canada *Reg. U. S. Pat. Off.

Pipe Bracket Standards 1 1/2" SCALE

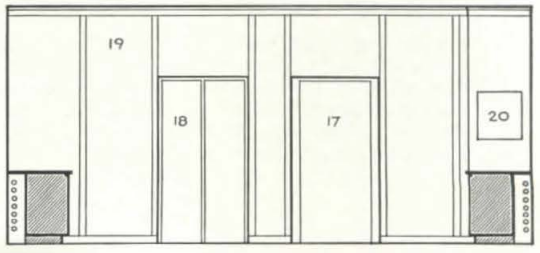




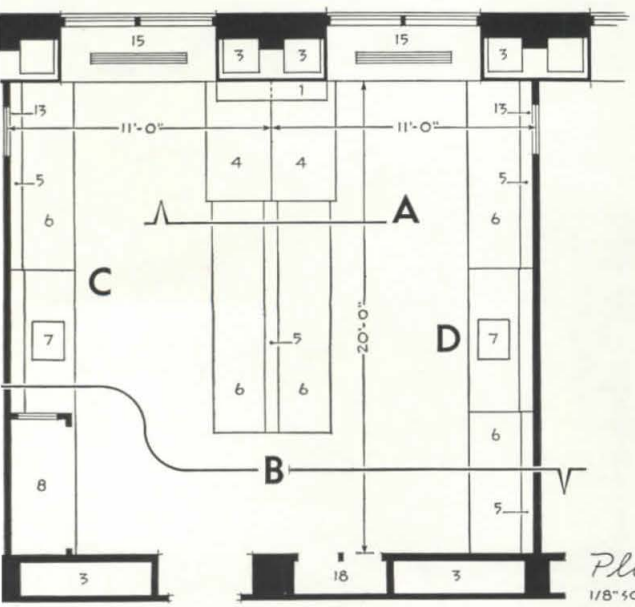
HEDRICH - BLESSING



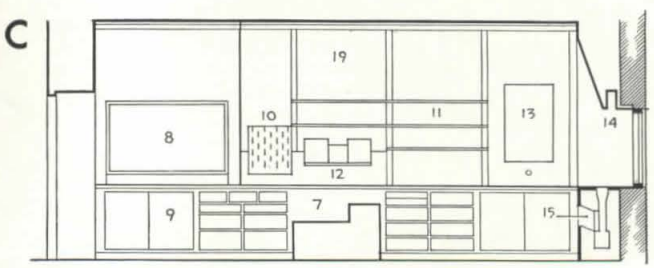
Elevations 1/8" SCALE

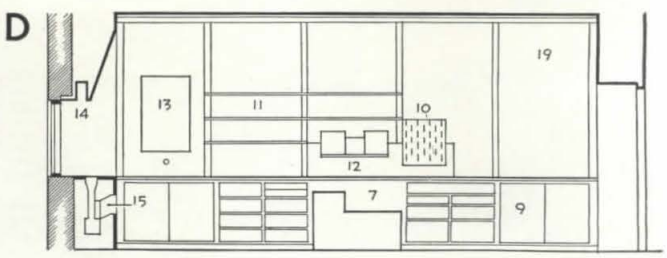


1 BOOK SHELF
2 ELEC. PANEL BOXES
3 PIPE CHASES
4 DESK
5 SERVICE TUNNEL TOP
6 CARBONIZED BIRCH TOP
7 SOAPSTONE SINK AND TOP
8 FUME HOOD
9 METAL CABINETS
10 PEG BOARD
11 METAL SHELVING
12 ST. STEEL SPLASH PANEL
13 DROP SLIDE CRASH PANEL
14 VENETIEN BLIND POCKET
15 AIR CONDITIONING UNIT
16 SERVICE PIPE TUNNEL
17 ENTRANCE DOOR
18 COAT CLOSET
19 PREFAB. METAL PARTITIONS
20 FUME HOOD WINDOW



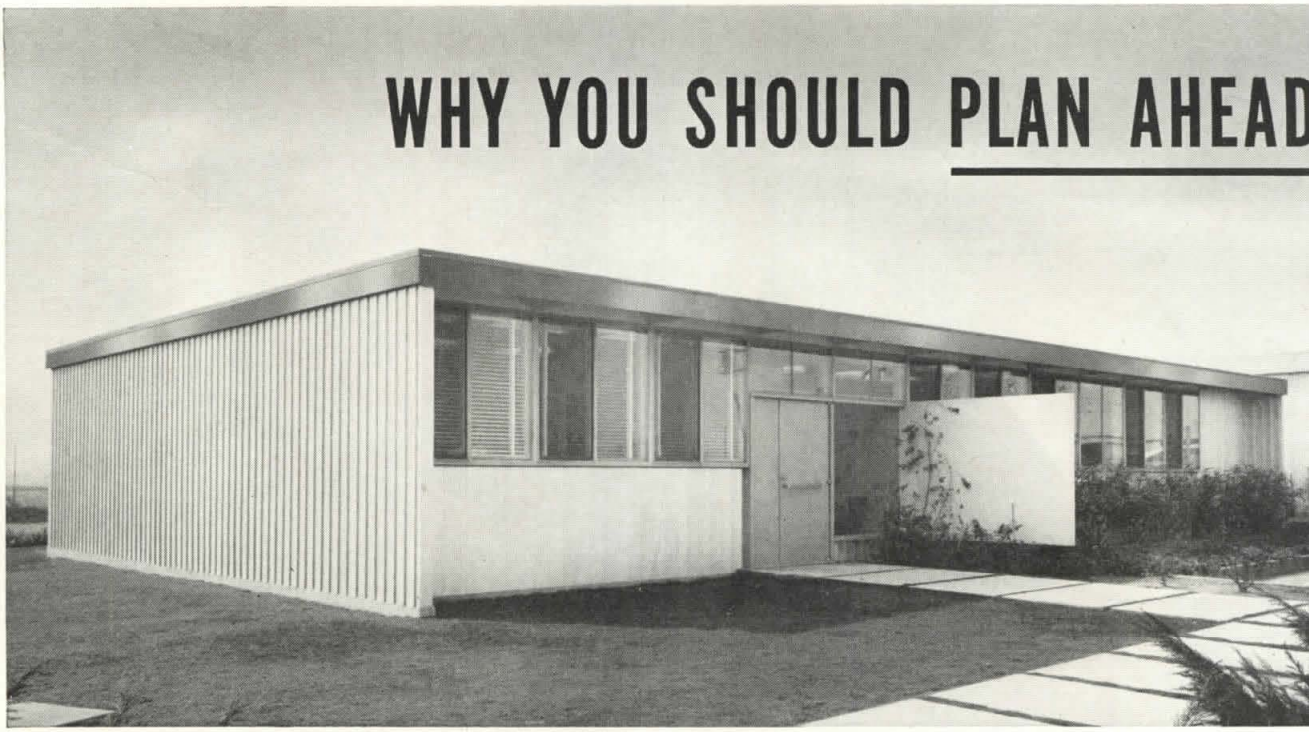
Plan 1/8" SCALE



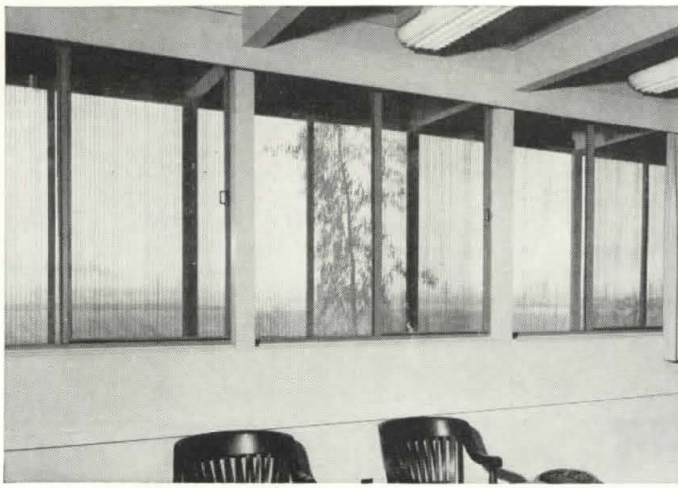


STANDARD OIL COMPANY (INDIANA), Hammond, Ind. **HOLABIRD & ROOT & BURGEE AND ASSOCIATES, ARCHITECTS**

WHY YOU SHOULD PLAN AHEAD

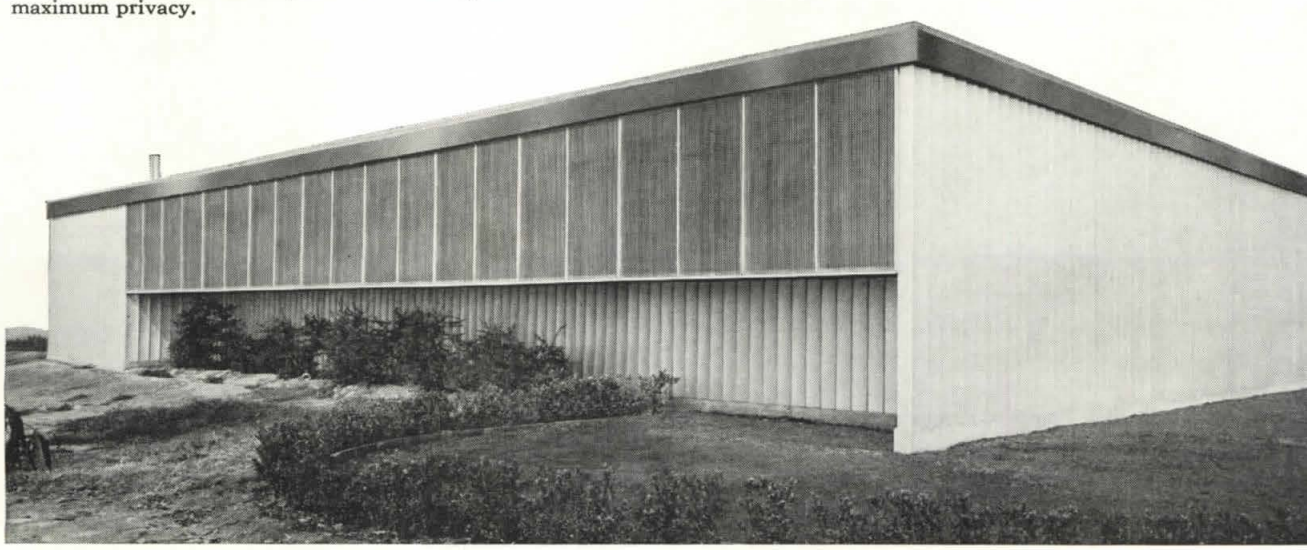


KAISER ALUMINUM SIDING, applied vertically, gives an effect of added height to the Lane-Wells Company executive offices in Los Angeles. Installed under tension, the curved surface of Kaiser Aluminum Siding is rigid, sound-deadening, insulating. Maintenance costs are low, for the lustrous enamel finish is baked on.



KAISER ALUMINUM SHADE SCREENING on the southwest windows of the Lane-Wells offices cuts glare and heat by stopping the sun's rays outside the glass. Comfortable light and air are freely admitted and visibility to the outside is unobstructed.

THIS LOW-COST industrial structure combines the advantages of Kaiser Aluminum Shade Screening and Siding. The Shade Screening screens out insects and the direct rays of the sun responsible for fading, insures maximum privacy.



VITH ALUMINUM

AST expansion of production facilities will make alumi-
ım among the most plentiful of building materials!

Kaiser Aluminum alone is increasing its production of
imary aluminum by 80 per cent.

This plentiful supply of aluminum will encourage many
w uses of this strong, light, rustproof metal in the build-
g fields.

By keeping aluminum in your plans, by using it when-
er and wherever you can—*by planning ahead with alu-
inum*—you'll be better prepared to use it in a wider
riety of applications in the future.

You may have to substitute for aluminum

aiser Aluminum is helping to meet the needs of national
curity—supplying vast amounts of aluminum to manu-
cturers of essential items.

But Kaiser Aluminum building products are still avail-
le.

So check with your suppliers before you specify any
bstitute materials. There's a good chance you'll be able
give your clients the best: *Aluminum!*

Aluminum is the building material of tomorrow

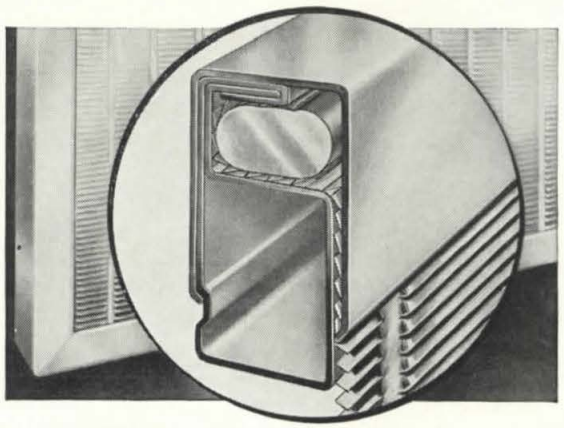
ilding materials made of Kaiser Aluminum offer exclu-
e advantages in design, beauty and quality. Representa-
e applications of Kaiser Aluminum building materials
use today are shown on these pages.

For full information about Kaiser Aluminum building
oducts—and for AIA files—write: Kaiser Aluminum &
emical Sales, Inc., Oakland 12, California. Sales offices
principal cities.

Kaiser Aluminum

A major producer of
building materials for home, farm and industry

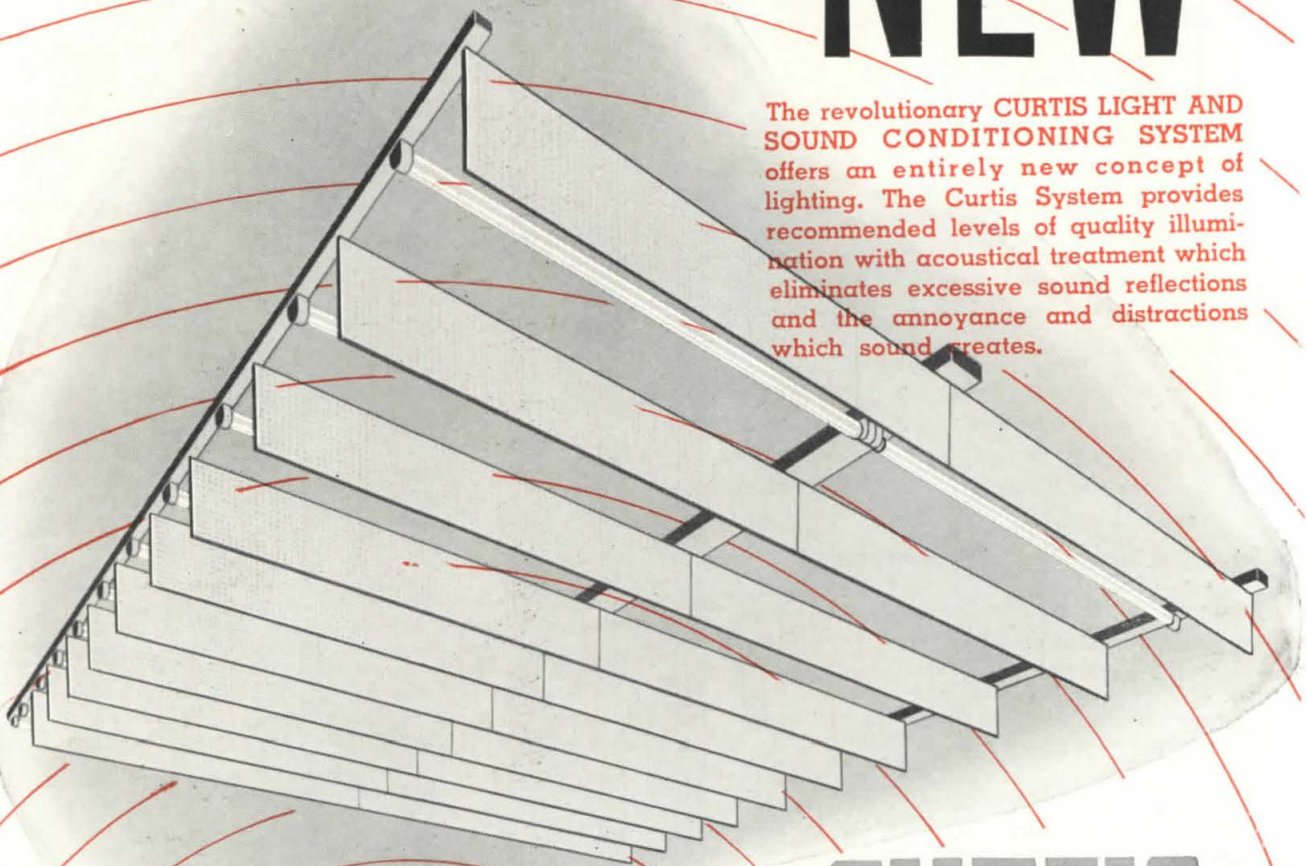
KAISER ALUMINUM was used in the ductwork of the John Hancock Mutual Life Insurance Company building at Boston. Because of its lightness, crews were able to install ductwork faster, with less worker fatigue. Easily fabricated on the jobsite, Kaiser Aluminum Utility Sheet cut handling and scrap costs. Never requires painting. Uninsulated, it delivers as much heat as insulated galvanized material.



KAISER ALUMINUM SCREEN FRAME is readily assembled from framing sections, trim cover sections and cast aluminum corners. When framing Kaiser Aluminum Shade Screening the spline is used only at the top and bottom of the screen. No screws are needed. The frame may be used with conventional wire cloth screen as well as Kaiser Aluminum Shade Screening.

THIS FISH NET SHED, covered with Kaiser Aluminum Roofing, is designed for a seaside location in a hot climate. The roof is highly resistant to the corrosive action of salt spray from the nearby ocean because Kaiser Aluminum Roofing is *solid* aluminum—not clad or veneered. And Kaiser Aluminum Roofing reflects up to 60 per cent of the sun's rays, which means a reasonably uniform, cool temperature is maintained under the shed.

NEW



The revolutionary CURTIS LIGHT AND SOUND CONDITIONING SYSTEM offers an entirely new concept of lighting. The Curtis System provides recommended levels of quality illumination with acoustical treatment which eliminates excessive sound reflections and the annoyance and distractions which sound creates.

CURTIS

LIGHT SOUND CONDITIONING

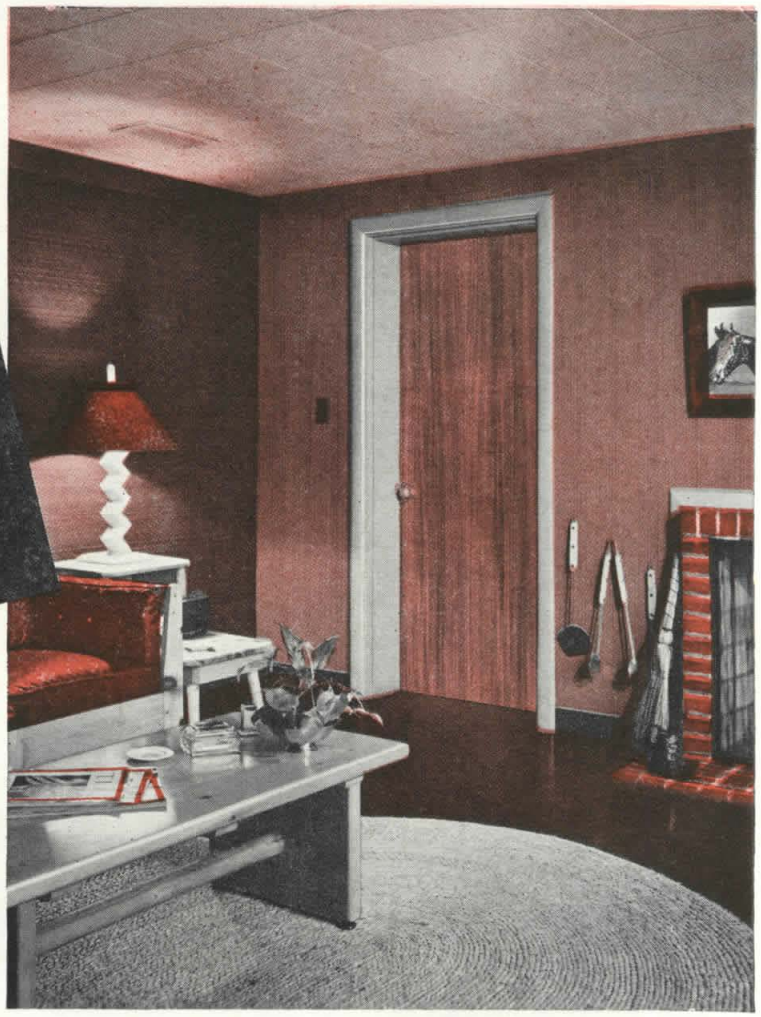
SYSTEM

PAT APPLIED FOR

CURTIS LIGHTING, INC.

Write Dept. H34-05 for information about the Curtis Light and Sound Conditioning System's unlimited applications.

6135 WEST 65TH STREET, CHICAGO 38, ILLINOIS



MENGEL MAHOGANY *Flush* DOORS

add Greatly to House Values—

YET COST LESS THAN MANY DOMESTIC WOODS!

Everyone knows the sales magic of "Mahogany". The very *word* means extra luxury, extra quality, extra value. . . .

Now Mengel offers you *Mahogany* Flush Doors at remarkable savings.

You can equip any building with these beautiful African Mahogany doors for *less* than comparable doors faced with *many domestic* woods!

Why? Because The Mengel Company operates its own logging concession and mill in the best Mahogany section of Africa, and imports this King of Woods in tremendous volume. Then Mengel manufactures its famous doors in two of America's greatest factories, geared to the mass production of highest-quality doors.

Choose Mengel Mahogany Doors and you get doors of unbelievable beauty. In both Hollow-Core and Solid-Core types, they are the *greatest door values in America!*

Enlist the Magic of Mahogany in your own projects. Mail the coupon for all the facts, *now!*

The Mengel Company . . . America's largest manufacturers of hardwood products • growers and processors of timber • manufacturers of fine furniture • veneers • plywood • flush doors • corrugated containers • kitchen cabinets and wall closets

THE MENGEL COMPANY
Plywood Division, Louisville 1, Ky.

Gentlemen: Please send me full information on Mengel Mahogany Flush Doors—Hollow Core and Stabilized Solid Core.

Name_____

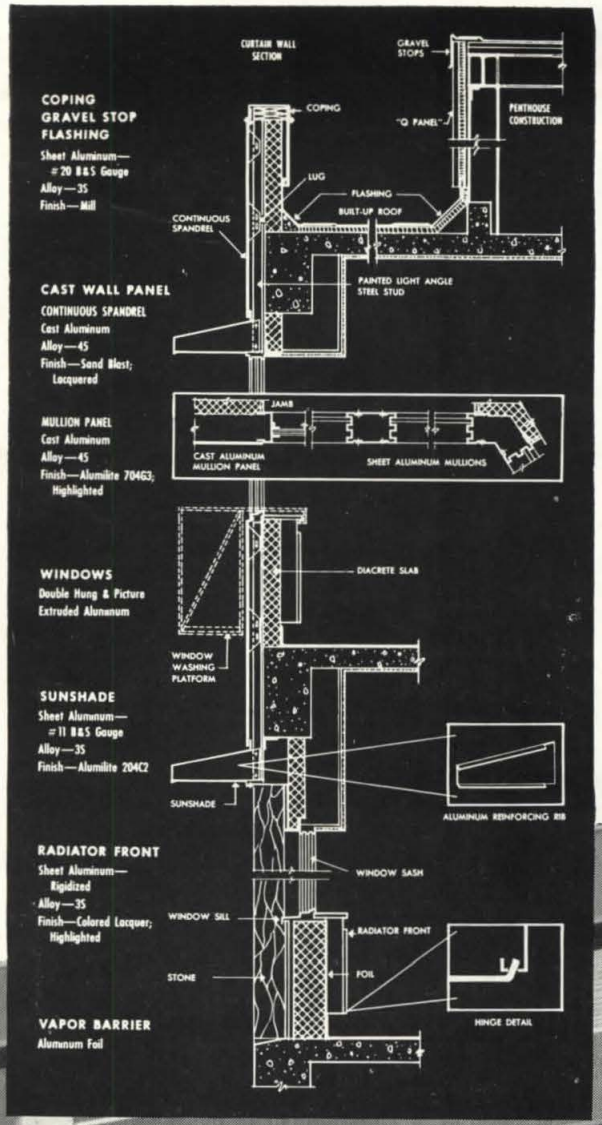
Firm_____

Street_____

City_____ State_____

THESE WALLS

Aluminum panels



Bradford Hospital, Bradford, Pa. Thomas K. Hendryx, A. I. A., Architect. Ertel Construction Co., General Contractors. Alcoa Aluminum used for wall panels, windows, sills, sunshade, coping, hardware and trim.

WENT ON FROM THE INSIDE

speed construction . . . . eliminate scaffolds

HERE is a new type of construction that you will see more of in the future. These walls of Alcoa Aluminum panels, extending from one course of windows to the next, were installed from inside the building. Then backed up with insulating slabs of lightweight aggregates. Only platforms required were the building's floors. Materials were moved up on interior elevators.

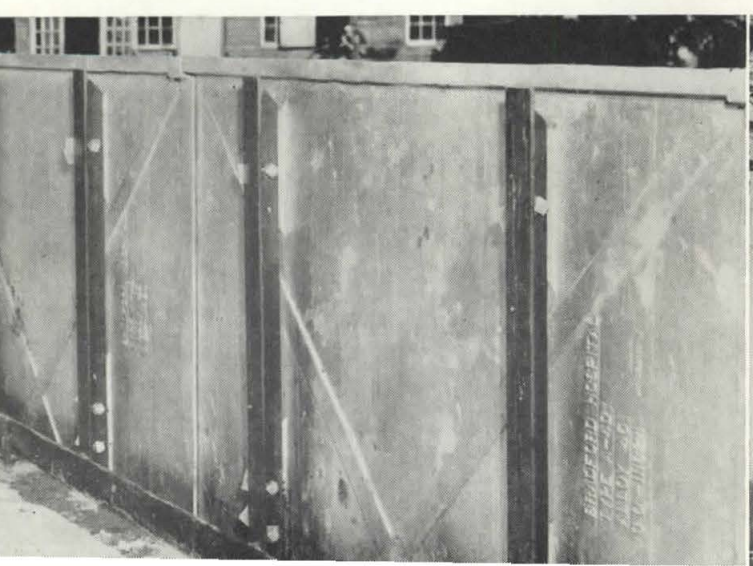
And because the exterior walls, windows, sills, sunshade and copings are long-lasting, weather-resisting Alcoa Aluminum, exterior painting costs were eliminated from the hospital's budget—forever.

Many of the aluminum application methods used here were pioneered by Alcoa. Today, although the supply of aluminum is limited by rearmament needs, Alcoa engineers are continuing to work with forward-looking architects on more efficient, more economical building for tomorrow. For information on any application of aluminum, call your nearby Alcoa sales office or write, ALUMINUM COMPANY OF AMERICA, 1890H Gulf Bldg., Pittsburgh 19, Pa.

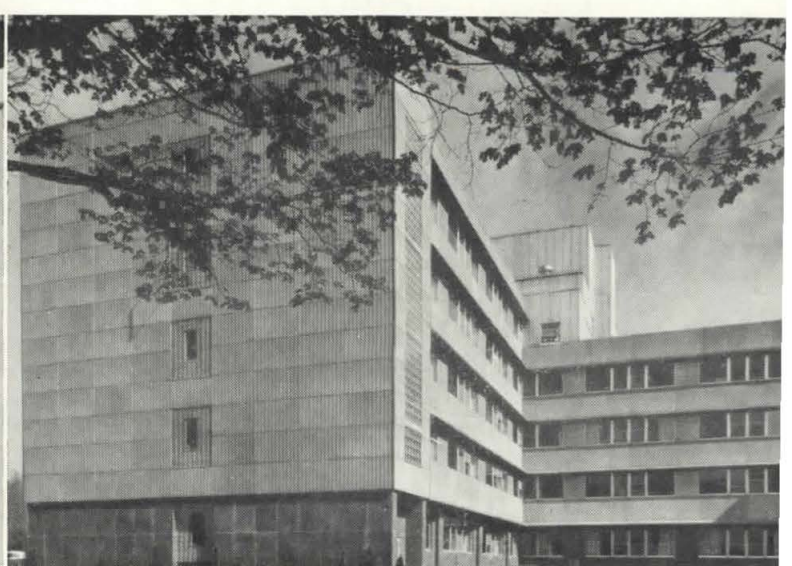
ALCOA

FIRST IN ALUMINUM

Large, light (4 lbs. per sq. ft.) aluminum panels are installed easily by two men. Anchor lugs inside the panels are bolted to light, angle steel studs and wall is ready for backup.

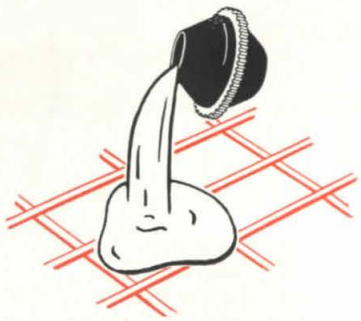


The variety of finishes available with aluminum, permitted the designer to achieve variety and harmony by blending aluminum sheet, extrusions, and sandblasted and polished castings.



Reinforcing famous buildings

American Welded Wire Fabric



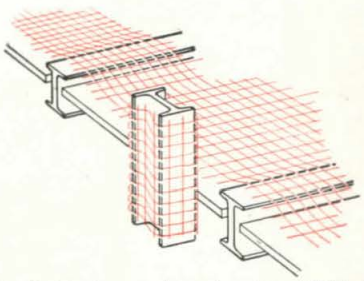
ITS efficiency, adaptability and economy have made American Welded Wire Fabric the most widely used reinforcement for concrete.

In famous skyscrapers, hotels, terminals and other well-known buildings all over the country, American Welded Wire Fabric provides concrete reinforcement that has proved structurally superior to other forms. You use less concrete, less metal, for slabs of comparable strength, with this high-strength steel reinforcement. It is easy to handle, readily takes a flat lay, stays put during pouring without ties or braces.

These are the main reasons why American Welded Wire Fabric effects worth-while savings in construction time, in material and labor costs — especially important now, when every hour, every dollar saved contributes to the all-out mobilization effort.

When you are planning any kind of concrete construction, our technical staff will be glad to supply complete data on specific designs and standard styles of U·S·S American Welded Wire Fabric that are available. Write to our nearest sales office today, you incur no obligation.

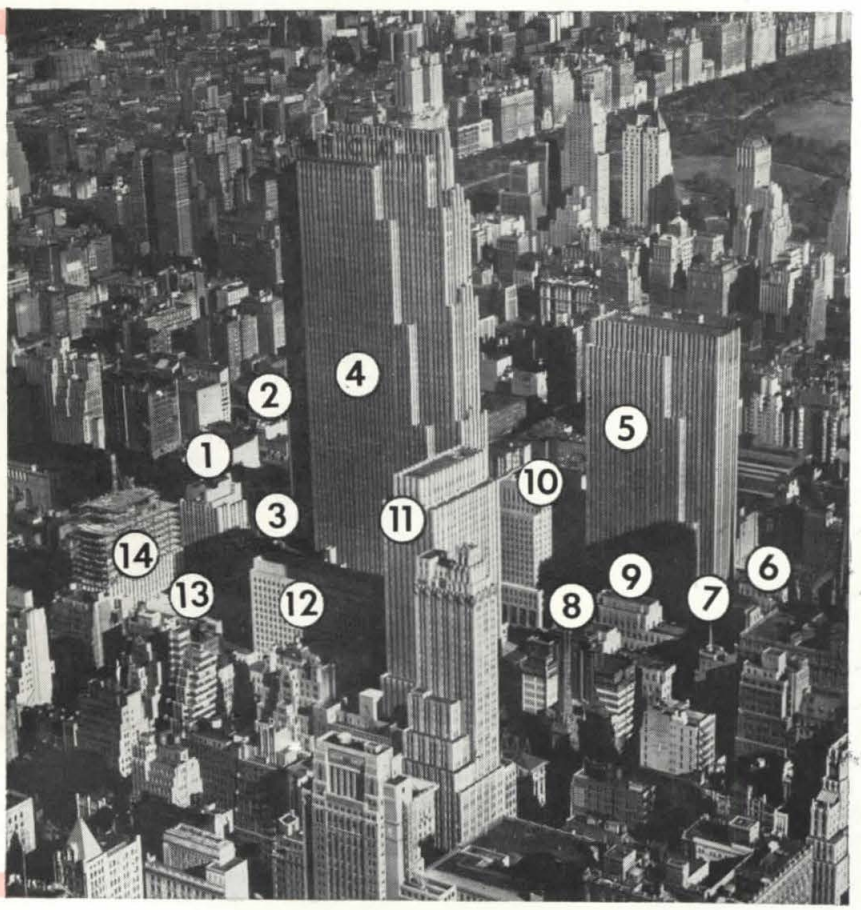
AMERICAN STEEL & WIRE COMPANY
GENERAL OFFICES: CLEVELAND, OHIO
COLUMBIA STEEL COMPANY, SAN FRANCISCO
PACIFIC COAST DISTRIBUTORS
TENNESSEE COAL, IRON & RAILROAD COMPANY
BIRMINGHAM, SOUTHERN DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK



This sketch shows where American Welded Wire Fabric is used in modern steel and concrete buildings. It reinforces walls, floors and roofs, can be draped over beams and girders and wrapped around pillars. Many uses of concrete in irregular shapes are made practical by American Welded Wire Fabric reinforcement.

All 14 buildings of Rockefeller Center, New York City, utilized American Welded Wire Fabric in their floor constructions. The buildings at right are keyed for easy identification:

(1) RCA Building West. (2) RKO Building. (3) Radio City Music Hall. (4) RCA Building. (5) International Building. (6) International Building North. (7) International Building South. (8) La Maison Francaise. (9) British Empire Building. (10) Associated Press Building. (11) Time and Life Building. (12) Eastern Air Lines Building. (13) Center Theatre. (14) United States Rubber Company Building.



Every type of concrete construction needs

AMERICAN WELDED WIRE FABRIC

reinforcement

USS TRADE MARK

UNITED STATES STEEL

p/a

REVIEWS

HOUSES AND SITES

Neutra Residences. *With a foreword by P. M. Bardi. Museu de Arte de Sao Paulo, Brasil, and Todtmann & Cia. Ltda. Architectural Book Publishing Co., Inc. 112 West 46th Street, New York 19, N. Y. 1951. 71 pp., illus. $2.00*

A selection of Neutra's residential work was the subject of an exhibition at the Museu de Arte in Sao Paulo, Brasil, and consequently it became the theme of this elegant little book. P. M. Bardi, museum director, in a lengthy introductory text not only presents his reflections on the present-day uses and abuses of architecture but also makes a just appreciation of Neutra's contribution to residential design as "simple, positive, and essential" and of Neutra himself as "disciplined, coherent, and logical."

Bardi develops a thesis, however, which profoundly disturbs this reviewer: "the aim of our architectural exhibitions is precisely to separate this art from the others," "the autonomy of architecture . . . ," "we insist upon an architecture self-contained, upon its refounding in a purity independent from the other arts," etc. Even Elie Faure's contention that in time of communal preoccupation, architecture takes the lead among the other arts, could not be constructed so as to mean that architecture is performing in an esthetic vacuum, or that the arts of imagery and fantasy do not produce the very climate in which architecture grows. The interpretation of the site, the disposition of the spatial elements, the use of the materials, and the choice of the structural performance cannot be understood in the light of social and technical data alone; and the "science of man" which Neutra, in a short essay appearing in this book, calls rather arbitrarily "Physiology", can only suggest some general directions in the development of the human shelter.

The residential accomplishments of Neutra are represented here by seven houses and a beach hotel, dating from 1936 to 1948—the selection presumably being made by the museum staff to illustrate the average mature work of the architect in this particular field. If we exclude Neutra-the-Planner and Neutra-the-Designer of complex architectural themes and focus our attention on the examples presented in this book, we may be able to trace a definite pattern manifesting itself in today's shelter for men. Furthermore, if we apply Michelet's "such nest, such bird," we may be able to define the contemporary man for whom Neutra builds; or, to phrase it in a different way, what particular human needs are presently satisfied.

Under the benevolent sky of the American Southwest and in the most favor-

(Continued on page 118)

BOOKS RECEIVED

Hospitals. Integrated Design. Revised Second Edition. Isadore Rosenfield, Reinhold Publishing Corp., 330 W. 42 St., New York 18, N.Y., 1951. 398 pp., illus. $15

Toward New Towns for America. Clarence S. Stein. The University Press of Liverpool, Public Administration Service, Publications Div., 1313 E. 60 St., Chicago, Ill. 1951. 245 pp., illus. $5

Technion Yearbook. American Technion Society. 154 Nassau St., New York 38, N.Y. April 1951. 351 pp., illus. $3

Opportunities in Architecture. William Thorpe. Vocational Guidance Manuals, Grosset & Dunlap, 45 W. 45 St., New York, N.Y., 1951. 112 pp., paper bound. $1

Roman Sources of Christian Art. Emerson H. Swift. Columbia University Press, New York, 1951. 248 pp., 48 plates. $10

(Continued from page 117)

able ecological circumstances, Neutra develops a building for family life which is neither rural nor suburban; that is to say, not a self-contained unit like a farm house, nor a dormitory with elementary facilities for puerculture like the dwellings on the periphery of cities.

Man, as we understand him today, is a triadic being—biological, social, and spiritual—and, therefore three distinct groups of needs are evident; for the maintenance of the body of each individual member of the family; for the development of children, as the first social task on the house level, as well as for inter-family groupings; and for the conditions of an emotional and spiritual life. In addition, it is known that man, while maintaining himself, develops energy in excess of his immediate needs, so there is "play activity" on the physical and/or intellectual planes.

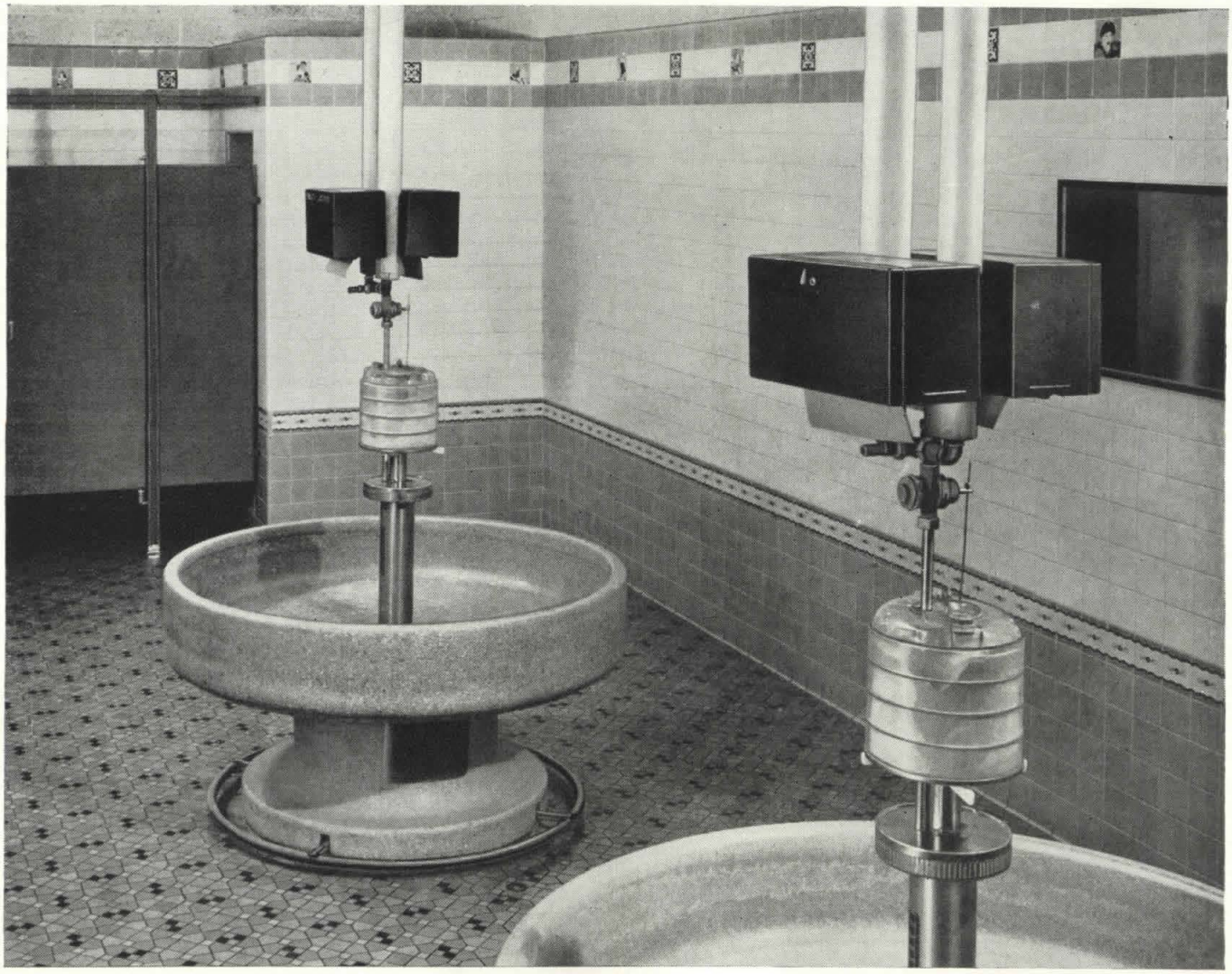
Because man reconciled himself long ago with his natural environment, it is logical that all the houses in this book present a minimum of shelter from the outdoors. The natural environment here mixes freely with the man-made one. Thus the "complexes of the natural elements," which Gaston Bachelard defined so clearly in a series of books, are here amply satisfied. The complex of Prometheus or Empedocles: four houses are provided with one or more fireplaces and some of them have an additional outdoor fireplace. The complex of Narcissus or Ophelia: five houses are endowed with dormant waters in pools, ranging from a moat to lily ponds. The complex of Persephone: perhaps the one most generously satisfied in all seven houses, as in every planned area there is some awareness of the earth and its growth. The views are predominantly fragmentary, scarcely extending to include the treetops. The most frequent view is the one showing the lower branches and the beginning of the foliage; but often it is of the ground alone extending toward an unknown horizon. Only the cells of the beach hotel face unlimited expanses. While Neutra is aware of the cloud formations, as he points out in another recent book, clouds hardly become a part of his interiors. He would have to detach the house from the ground instead of having it cling to the earth.

In all seven houses, adequate facilities for nutrition, sleep, and hygiene are provided. But it should be noted that, with the exception of one house, food preparation becomes again a social activity. Dining is not any longer a time-consuming function in secluded, undisturbed quarters. Dining space here is always an extension of the living room and often situated at a critical circulation center. Also individual sleeping quarters become fewer. There are five single bedrooms in all seven houses, out of a total of eighteen.

There is not a definite quarter for puerculture and, with the exception of one house, there is not play space for children. It is not unfair to assume that the main day activities of the children are taking place outdoors, or outside of the home. Living rooms offer adequate facilities for conversation groupings for the family members and intra-family meetings; they all have outdoor built-up extensions so as to make possible large social gatherings beyond, perhaps, the capacity of the family kitchen.

But the main characteristic (with the exception of one house having two studies and another one a space labeled "books") is the absence of all facilities for the individual to retreat, if he is to study or dream. Life is a group life, recuperation is group recuperation and those, perhaps very few, who still desire to retire and meditate at the close of the day have to do so under the cloister of trees that have been so generously pro-

(Continued on page 120)



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Write us for the names of good tile contractors in your area.

AMERICAN-OLEAN TILE COMPANY

Executive Offices, 950 Kenilworth Avenue, Lansdale, Pennsylvania

It's Real Clay Tile

(Continued from page 118)

vided. Gardening and dancing appear to be the most available outlets for play activity.

It is not difficult to conclude that the contents of the house, the very meaning of its spatial elements, are in constant evolution; that the social being in the man has taken now a preponderance upon the biological, and the spiritual even within the family scale. And since the house ceased to be a refuge, to recall a term of the poet Lucretius, it will appear as crowded with survivals, paradoxes, and contradictions.

Mystery & Realities of the Site. *Richard Neutra. Morgan & Morgan, Publishers, High Point Road, Scarsdale, N. Y., May 1951. 64 pp., illus. $3.75*

> . . . Phoebus is without a shield, without the divining laurel. The singing spring has dried out.
> *Pythia to Julian the Apostate*

This is a small book written with love and compassion, beautifully produced and addressed to that indescribable, mythological being called Consumer. It is made in two concurring parts, one of text and another of vivid photographs with captions. Each part could be enjoyed separately.

Neutra describes the attitude of early man towards the landscape as one of pious respect, in contradistinction to present day vandalistic practices. He also describes, in no vague terms, the influence of the physical environment upon the inhabitant and how the former could be a valuable asset for a sensitive house designer.

He deplores the present-day bulldozer technics, the FHA way of life, the bleak side of technology. But he seems to believe that they are unrelated symptoms, clouds that one day will be dissipated; that clear thinking and love will heal the wounds. And we should be grateful to him for his faith. Feeling deeply the impact of this era of continually increasing depersonalization through mass-produced education, information, and entertainment, we can hardly see unrelated phenomena or think that technology is incapable of leading towards a biological dead-end. We are not surprised that the "physiognomy" of the land becomes also the victim of "bulldozing and paving."

STAMO PAPADAKI

GRAND, NOURISHING STUFF

Architectural Graphic Standards. *Charles George Ramsey and Harold Reeve Sleeper. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N. Y.; Chapman & Hall, Ltd., London, England. Fourth Edition, 1951. 566 pp., illus., tables, details. $10*

The new *Ramsey & Sleeper* is colossal. It's the same book alright, with enough of the familiar drawings and arrangements to retain the confidence we all have had in it for nearly a score of years, PLUS thorough revision and great enlargement of scope. It is like the circus—always the same and always new—"Bigger and Better!"

A few comparisons to give an idea of the really huge amount of work which went into this edition: 566 pages as against 315 for the third edition (an increase of 80 percent); 6¾ pounds vs. 4¼ pounds; about 80 percent of the original plates revised or replaced (the revised plates invariably offering a great deal more information packed into them, than previously). The index has been given special attention and now contains nearly twice as many items as before.

(Continued on page 122)

STOP RUST WITH RUST-OLEUM

Effective, long-range *rust control* must start in the plans and specifications for any structure — particularly when iron and steel are important structural materials. Architects and builders find that RUST-OLEUM offers excellent protection — particularly in hidden or inaccessible areas where damaging rust conditions can breed unchecked.

It's particularly essential to safeguard the strength and usefulness of structural columns and beams, metal deck ceilings, crawl spaces and many other details of construction. These are readily damaged over the years where fumes, manufacturing processes and condensation due to limited ventilation cause serious rust damage that may threaten the safety and life of the entire structure.

RUST-OLEUM'S capacity to stop rust has been proved in industrial applications for many nationally-known companies, and leading railroads for the past 25 years. Its tough, pliable, rust inhibiting film resists the basic causes of rust — dampness, brine, salt air, and general weathering — indoors and outdoors.

Discuss effective *rust control* with your clients. To solve your rust-in-construction problems, recommend RUST-OLEUM. Specify RUST-OLEUM as the primary or shop coat on all steel, metal sash, structural beams and bar-joists, fire escapes, etc. Your clients will readily recognize that future protection of sealed-in steel begins with the primer coat.

We're ready at all times to consult with you on rust problems and offer specific recommendations. See the complete RUST-OLEUM catalog in *Sweet's* Architectural File, or write for a copy. Industrial Distributors in principal cities of the United States and Canada carry large stocks of RUST-OLEUM for immediate delivery.

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Available in many COLORS aluminum and white

Beautifies as it Protects

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2523 OAKTON ST., EVANSTON, ILLINOIS

p/a REVIEWS

(Continued from page 120)

This book has earned a special place for itself in the fields of architecure and building. It has become established as the base from which the whole range of technical data is approached by most "Architects, Decorators, Builders, and Draftsmen" (the audience to which the first edition was addressed in 1932). From the first, emphasis has been on components: sizes, materials, detailing, layout of elements. It is a nice balance of "how big"and "how to put together," assuming always a reasonable competence on the part of the user.

This edition has several new features and much fuller information in several familiar areas where it will be greatly appreciated in the drafting room. For example: spandrels and curtain-wall panels in various materials; lintel tables for steel and concrete; expansion joints; flashing (very good); roofing; metal copings and window sills; light wood framing details; plank-and-beam framing tables; plywood and wallboard details; etc.

There is much more utilization than before of the standards established by manufacturers and trade associations. The metal details, especially, are greatly improved throughout, thanks to the National Association of Ornamental Metal Manufacturers and their *Architectural Metal Handbook*, which is the last word in useful presentation of technical material (reviewed in September 1947 P/A).

In general, the information taken straight from industry is the most useful and best presented. In this class must also be mentioned the excellent, brief presentation of "Modular Coordination" by Prentice Bradley, and several items by Andre Halasz, including a "Universal Sun Chart" with demonstrations of its application. Why the authors retained their old, inadequate "Orientation Chart" on the adjoining page is hard to explain, but there it is.

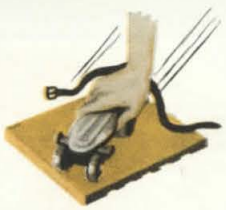
Naturally there is considerable irregularity in presentation. Some of the hand lettering is over-reduced; where schedules are reproduced by vari-typer they are less clear than a good hand-lettered job would have been; some of the clearest tabulations are set up in type; the newer plates are generally the more open-spaced and clear and generous. On the whole, there is less consistency of style than in previous editions. However, these are all minor quibbles; the main thing is the great amount of reliable information that is assembled here.

So long as all this huge miscellany can be contained within the covers of a single book, a certain amount of looseness of organization doesn't matter

(Continued on page 124)

TILE IS STAINPROOF

TILE IS WATERPROOF

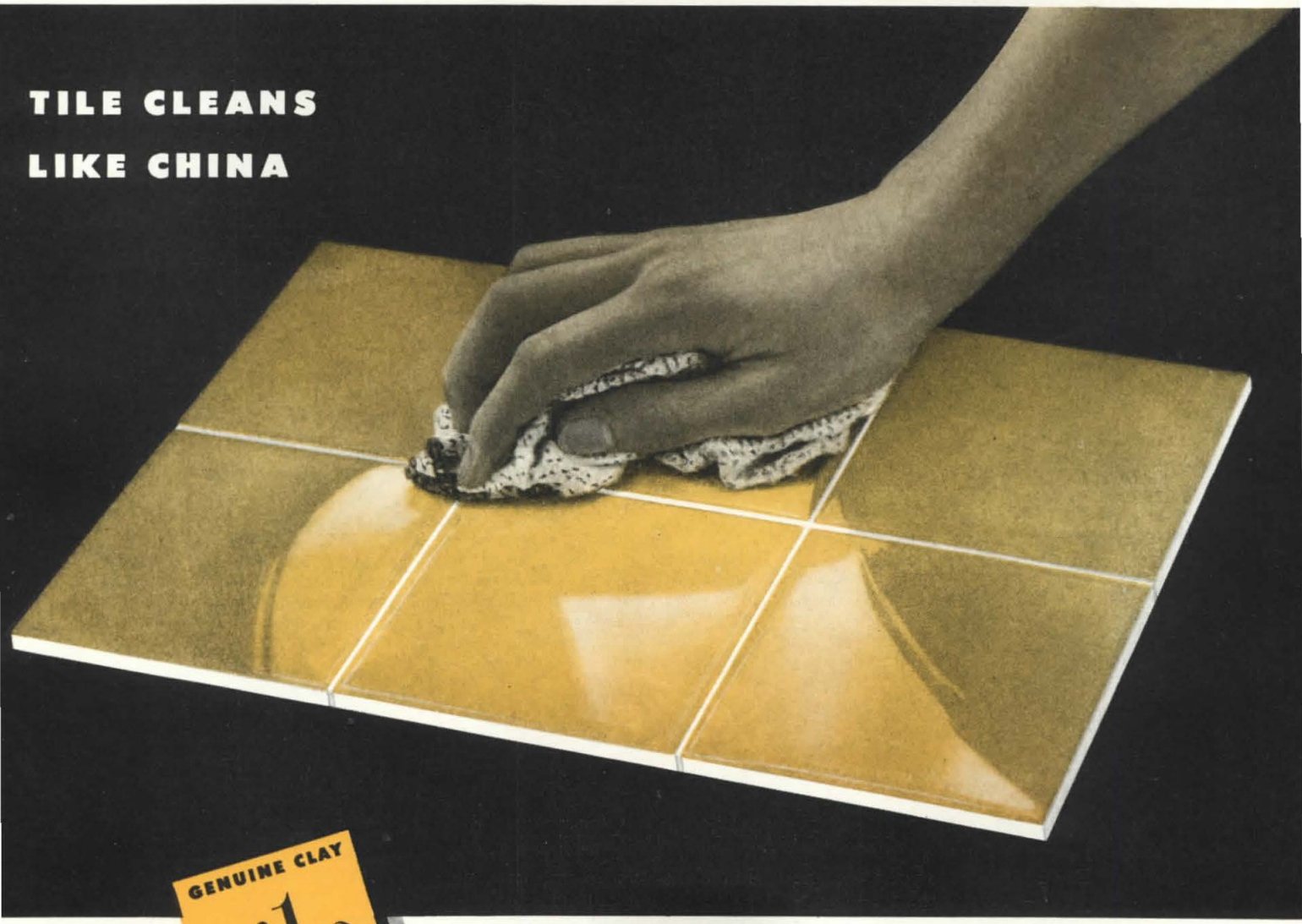


TILE DEFIES SCRATCHING

TILE IS FIREPROOF

TILE LASTS A LIFETIME

TILE CLEANS LIKE CHINA



ONLY GENUINE CLAY tile DEFIES ALL SIX!

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Have you considered the use of tile in the kitchen, utility room, powder room, or foyer? It is worth a fresh appraisal every time you design or build any type of building. Remember—whether it is for traditional or modern styling—tile is one of the most versatile materials you can use for distinctive color schemes.

Tile Council of America, Room 3401, 10 East 40th St., New York 16, N. Y. or Room 433, 727 W. Seventh St., Los Angeles, Calif.

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THE MODERN STYLE IS CLAY TILE

p/a REVIEWS

(Continued from page 122)

much. But this book is now approaching the limit of convenience in handling. Another revision or so and the authors will be faced with some tough decisions. For instance: whether to break it down into separate volumes; whether to cut down on number of details and make more reference to manufacturers' catalogs; whether to tighten up the organization of material by hanging it all on a framework which says "what for." ("What for" is an "understood" or "given" in the present set-up.) The second and third of these alternatives would make the book more of a guide than it is now, and less of a compendium.

Well, you can't have everything. As the philosopher in James Stephens' *Crock of Gold* says of his porridge, "Nothing is perfect. There are lumps in it." All the same, it's grand, nourishing stuff—the best of the kind we have.

JOHN RANNELLS

NEW FEATURES

Heating, Ventilating and Air Conditioning Guide, 1951. *American Society of Heating and Ventilating Engineers, 51 Madison Avenue, New York 10, N.Y. 1048 pp. $7.50*

Thirty-four engineers have contributed the most recent developments and research data in their respective fields to the *Heating, Ventilating and Air-Conditioning Guide*—the largest ever issued by the A.S.H.V.E. This completely revised edition incorporates a number of new features: a psychrometric chart based on the latest Goff and Gratch Tables of Thermodynamic Properties of Moist Air and of Water, printed in two colors for easy reading and use; a simplified method of designing panel heating systems, accompanied by new illustrations of panel construction; and new data on the determination of cooling load cost by heat gain through glass and glass block.

An entirely rewritten chapter on Panel Heating contains methods of obtaining surface temperatures and unheated mean radiant temperatures, with convenient charts to facilitate computation. Up-to-date tables in the Cooling Load chapter give data for transmitted direct and sky radiation, and for the heat gain caused by convective and radiative exchanges at the indoor surface for a single pane window glass. The Heat Transfer chapter has been augmented with new tables, charts, and brief summaries of available methods of analysis for transient and heat transfer problems.

(Continued on page 126)

p/a REVIEWS

(Continued from page 124)

Revised heat loss coefficients for doors, windows, and glass block are given in tables based on data obtained from the A.S.H.V.E. Research Laboratory, and will be found in the chapter on Heat Transmission Coefficients of Building Materials. The section pertaining to low height chimney and draft calculations has been revised and clarified. Descriptions and suggestions for design of warm air ceiling panel systems and warm air perimeter systems round out the chapter on Forced Warm Air Systems. In the amended chapter on Air Duct Design, results of the latest A.S.H.V.E. studies have been applied to duct elbow friction loss, and on the effect of vanes and splitters on duct elbows. The latest practice of the fan industry is used for the nomenclature and designations of fans and their components in the chapter on Fans. Throughout the book, in fact, symbols for use on drawing of heating, cooling, and air-conditioning system plans, have been brought into conformity with the symbols recently adopted by the American Standards Association.

In addition to technical data, the new Guide offers 400 pages devoted to the products of prominent manufacters who supply equipment for heating, ventilating, and air conditioning. This section is also cross-indexed for easy reference to any desired product to be used in the design of these systems. E. T.

NOTICES

Fulbright Awards

The Committee on International Exchange of Persons of the Conference Board of Associated Research Councils announces the opening of application for the FULBRIGHT AWARDS for 1952-53 for Europe and the Near East. Approximately 230 Awards are available, effective for the academic year commencing in the autumn of 1952. Application forms and additional information are obtainable from: Executive Secretary, c/o the aforementioned Committee, 2101 Constitution Ave., Washington, D. C.

Competition

THE ARCHITECTURAL LEAGUE OF NEW YORK has announced the opening of a competition for the BIRCH BURDETTE LONG Prize for Architectural Rendering. Renderings submitted must be prepared from architects' or engineers' designs and not be outdoor sketches, but may be executed in any technique and me-

(Continued on page 128)

p/a

NOTICES

(Continued from page 126)

dium. From the work submitted a selection will be made to form an exhibition at the Architectural League and from this exhibition the winning entry will be selected. The Exhibition dates are August 6 through September 14.

Award

BEN NASH, Fellow and past president, has been awarded the Medal for Achievement by the National Board of Industrial Designers Institute.

Degrees Received

JAMES KELLUM SMITH (FAIA), member of the firm of MCKIM, MEAD & WHITE, received the honorary degree Doctor of Humane Letters, from Bowdoin College, at its 146th commencement, June 16th, in recognition of his firm's services to the college.

LAWRENCE GRANT WHITE (FAIA), of the same firm, received the honorary degree Doctor of Fine Arts, from Union College, at its 156th commencement, June 10th, in recognition of his firm's services to the college.

Good Design 1951 Poll

Consumers and store buyers appear to be drawing closer together in taste, according to a poll just completed by GOOD DESIGN of several thousand consumers and buyers attending the Museum of Modern Art Merchandise Mart Good Design 1951 show at The Mart in Chicago. The poll revealed many more selections in common, though in a different order of choice, than in 1950, when there was considerable disparity.

First choice among consumers was a Chambers range, which ranked eighth with buyers. A walnut desk designed by George Nelson from the Herman Miller executive office group was the number one preference of buyers; number three choice of consumers.

Following is the listing of the first ten choices of each group:

Consumers

1. Chambers range
2. Edward Wormley natural cherry desk for Dunbar
3. George Nelson executive desk
4. Langbein's low-fold wicker chair with storage space
5. George Nelson round lazy-susan table with white plastic top, from Herman Miller
6. Edward Wormley oval walnut dropleaf table, from Dunbar
7. Italian floor lamp with colored enamel reflectors designed by Arredoluce, from New Design
8. English floor model radio
9. Edward Wormley bed-sofa
10. Thrifty-Thirty range by Frigidaire

Buyers

1. George Nelson executive desk
2. Lounge chair from Ron Fidler Associates; black steel frame, leather seat and back
3. Edward Wormley desk
4. Edward Wormley convertible bed-sofa
5. Edward Wormley oval walnut dropleaf table, from Dunbar
6. George Nelson lazy-susan table
7. English walnut and mahogany floor model radio by Murphy Radio, Ltd.
8. Chambers range
9. Saarinen armchair with aluminum swivel base
10. Arredoluce lamp.

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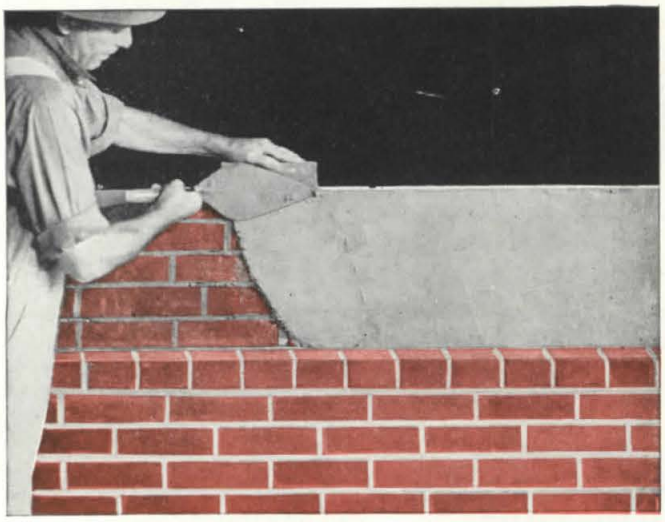
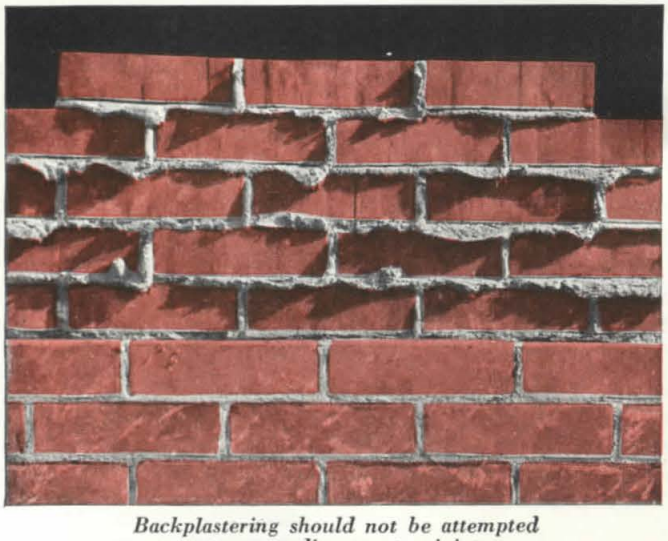


The face brick should be backplastered.

If the back-up units are laid first, the front of the back-up units should be plastered.



Backplastering should not be attempted over protruding mortar joints.

PARGING

WITH

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HELPS ASSURE

DRY WALLS

WE SUGGEST THAT—

The face brick should be backplastered with not less than ⅜ of an inch of mortar before the back-up units are laid.

Or, if the back-up units are laid first, the front of the back-up units should be plastered with not less than ⅜ of an inch of mortar before the face brick are laid.

Heavy rains don't make brick walls leak — they merely reveal the fact that the walls contain voids or passages through which the water may penetrate.

Dry brick walls are primarily the result of good design and good workmanship. Good materials are important, but still secondary. The more *plastic* the mortar used, the easier it is for the bricklayer to deliver good workmanship.

The photos at the left show some points of *good workmanship.*

Brixment mortar has greater plasticity, higher water-retaining capacity and better bonding quality. Because of this *combination* of advantages, architects, contractors and dealers all over America have for thirty years made Brixment the largest-selling mortar material on the market. Why not try it yourself?

LOUISVILLE CEMENT COMPANY, Incorporated, LOUISVILLE, KENTUCKY

ou of school

As I promised you in my column for June, we are publishing at the earliest opportunity excerpts from the *Progress Report* by Dr. Edwin S. Burdell, president of Cooper Union and chairman of the Survey of Educational Registration for the A.I.A. It should be noted carefully that this is only a *Progress Report* and that Dr. Burdell is not reporting the opinions or recommendations of the Survey Commission. The final report of the Survey, with opinions and recommendations, will be available to members of the profession and to the public by the end of this year. Space permits a selection of only the last half of Dr. Burdell's report here. It is the significant half, from the standpoint of *this* column, although many more of the important items are to be found in earlier parts of the Report. As you know, the Department of Education and Research of the A.I.A. has administered this project with Andrew Fraser as consultant on the organization, administration, and preparation of the questionnaire data.

My comments will appear in *italics* so that they may be distinguished from the body of the material: *I urge that all school men study this material with great care. It will also benefit advisory committees, trustees of schools of architecture, and the practicing profession. We have also used Report excerpts as captions for the illustrations, believing that this is the easiest way for you to comprehend the presentation.*

Dr. Burdell explains:
"With about half of my talk absorbed in dealing with topics directly concerned with your attributes as practicing architects, I shall devote the remainder of my time to topics selected from the two areas which, essentially, are the foundation stones to your practising years; namely, pre-registration experience and practice, and the educational facilities which serve the profession.

"The opinions of responding architects to the questionnaire on the adequacy of their pre-registration experience in architectural practice would seem to indicate complete satisfaction with draft-

Opinion of Pre-Registration Experience

	Adequate	Inadequate	No Experience
Drafting, work drawings and details	94	6	
Design, general architectural	90	10	
Direct experience on a construction job	68	25	7
Field supervision	66	29	5
Design, structural	59	35	6
Client relations	54	36	10
Preparation of specifications	53	38	9
Administration	46	36	18
Design, mechanical	36	51	13
Site planning	37	39	24

(Continued on page 132)

NORMAN JOHNSON, *Architect*

ANDERSEN Windowalls*

BREAKFAST WITH A VIEW is a daily pleasure in this dining nook, whose corner WINDOWALLS are formed by stock Andersen Casement Window Units.

These wood windows invite sunshine and fresh breezes to every meal—and all year long they also function as walls. They are more than windows, more than walls . . . they are WINDOWALLS. The wood of these windows lends beauty and color to both the room and the view, and in sub-zero weather, wood's insulating qualities are an added advantage.

Write for specification data or see Sweet's Architectural and Builders' Catalogs. Sold by millwork dealers.

The new Andersen WINDOWALL *Tracing Detail File will be sent on request to architects and designers at no charge.*

*TRADEMARK OF ANDERSEN CORPORATION

Andersen Corporation

BAYPORT • MINNESOTA

out of school

(Continued from page 130)

ing 94% and design 90%. At the other extreme, however, mechanical design and site planning experience was reported as being inadequate. Between these two extremes the gradation in proportions among the remaining subjects can only be interpreted as indicating that certain changes in emphasis appear to be desirable.

"By contrast, the opinion responses on the actual examination taken for registration are more clear cut. This is especially so with respect to the character, 90%, and length, 84%, satisfactory, of the examination; but the statements of examination questions apparently leave something to be desired. As to subject emphasis of the examination content, it is interesting to observe that inadequacies seem to exist in two widely different areas—facility in the use of English, and mechanical equipment. And in the fields of structural design and history of architecture the indications are that emphasis on these two subjects is excessive.

Opinion of Actual Examination

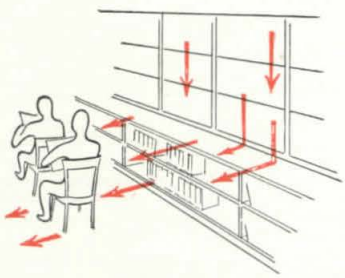
Examination was considered satisfactory	in character by	90%
	in length by	84%
	in statements of questions by	69%
Emphasis was considered adequate in	architectural design by	85%
	factual knowledge by	83%
	skill in draftsmanship by	83%
	facilities in use of English by	76% (22% inadequate)
	structural design by	76%
	mechanical equipment by	70% (23% inadequate)
	history of architecture by	67% (26% excessive)

"The Survey data also bring to light what you generally consider to be the best time when architects *should* be examined for registration. Only in the case of history of architecture is a majority opinion in favor of clearing this subject immediately after completion of college work. Truss design is a clear 50-50 proposition, as between examination on completion of college work or after office experience. Among the remaining nine subjects, opinions are less definite. In fact, among four of them, fully one-third show a divided preference in favor of examinations on completion of college work, as against two-thirds for examination on completion of office work. And in favor of this latter period, only in the case of three of the subjects may the opinions reported be considered unequivocal.

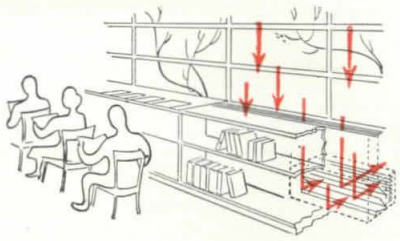
(Continued on page 134)

ohnny's been "DRAFTED"

Let DRAFT|STOP TRADE MARK Keep him In School



BAD WAY *for ventilation to function shows how chilling drafts threaten health of students. It isn't necessary any more.*



GOOD WAY *to solve the problem is illustrated by* DRAFT|STOP *which gets drafts at the start. Only Herman Nelson has* DRAFT|STOP.

ANOTHER day away from school. Drafts from today's large window areas that cause chilling discomfort continue to take their toll. How can they be prevented? The new DRAFT|STOP System introduced by Herman Nelson is the answer.

The modern design advantages of DRAFT|STOP mean the elimination of hazardous drafts . . . at the same time a classroom is automatically heated and ventilated. Assured uniform temperatures mean students in attendance . . . students with the opportunity to learn more readily.

Your school needs DRAFT|STOP. Be certain that this great advance in better heating and ventilating is a definite part of your school's plans. For further data and complete details, write Dept. PA-8.

AAF herman nelson moline illinois

HERMAN NELSON

Division of **AMERICAN AIR FILTER COMPANY, INC.**
MOLINE, ILLINOIS

out of school

(Continued from page 132)

Opinion of Time of Examination

	After College	After Office Experience	No Exam Needed
Selection and use of materials	3	94	3
Supervision	1	93	6
Counseling and administration	2	85	13
Mechanical equipment of buildings	8	85	7
Natural aptitude and theoretical and practical training	16	72	12
Design problem	29	70	1
Architectural composition	37	59	4
Structural design	39	57	4
Truss design	41	44	15
History of architecture	63	26	1

"These opinions data are, however, subject to at least one very severe qualification that stems from the fact that your profession, and especially the practitioner group, comprises only 54% who reported a first degree in architecture as against 60% and 46% among employee architects. The high proportion of teachers who are graduates, namely 86% is not surprising, nor is it surprising to find that 48% of them hold second degrees.

Graduate and Non-Graduate Status

	Grand Total	Individual Practitioners	Private Employees	Public Employees	Teachers
Attended one school	66	65	70	60	87
Attended two schools	22	21	23	24	45
Have one degree	56	54	60	46	86
Have two degrees	10	10	9	5	48
Degree from school of architectural engineering	9	7	11	13	12
Attended special courses	21	21	19	26	19

"Against these preceding statements, it merely needs to be noted that generally architects do not "float" around from school to school to complete their formal education; that on the average 10% of your profession hold second degrees in architecture; an almost equal proportion

(Continued on page 136)

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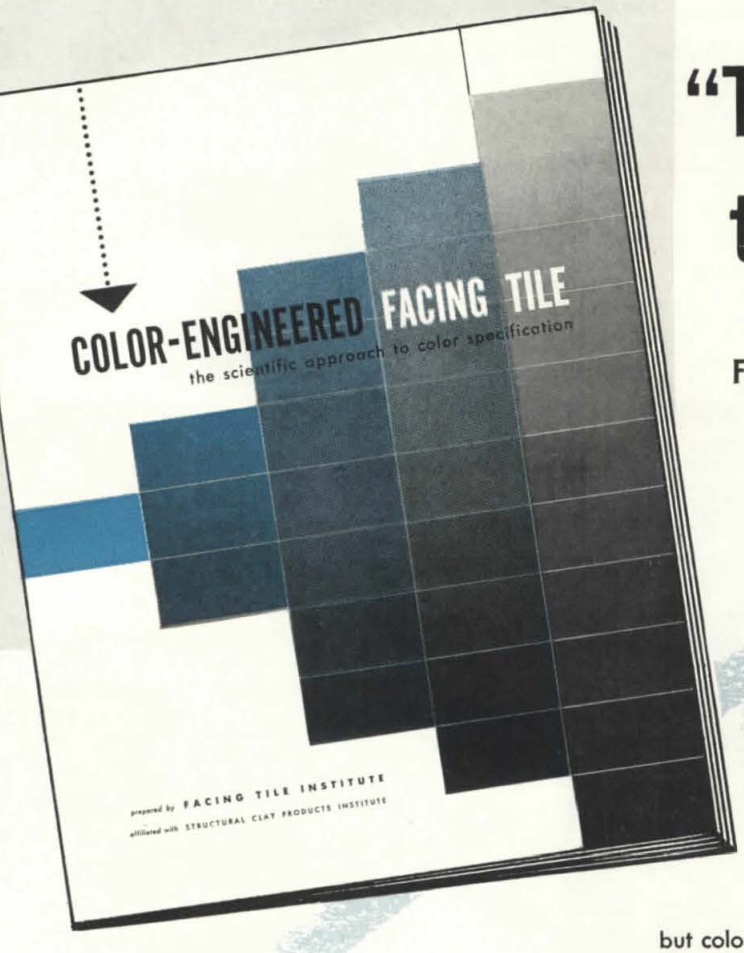

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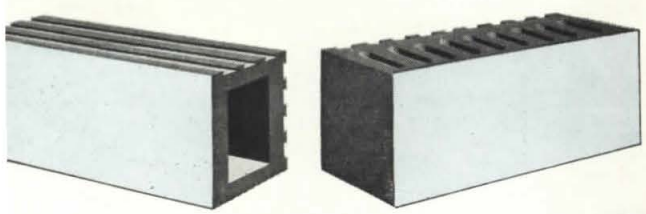

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City_____ Zone_____ State_____

out of school

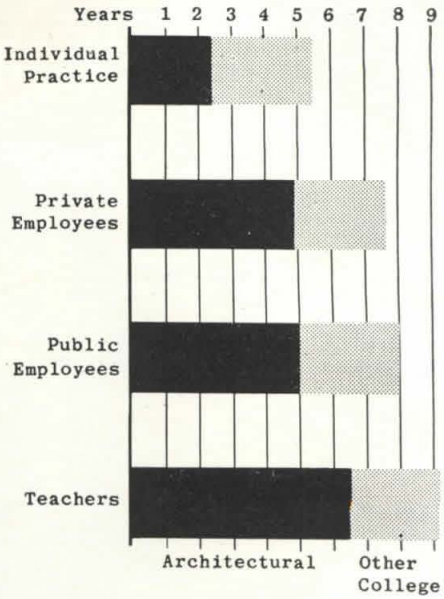
(Continued from page 134)

graduated with degrees in architectural engineering; and as much as 21% reported they had only attended schools for special courses.

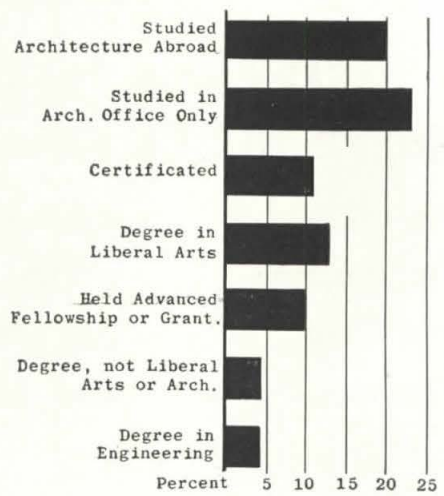
"What does all of this education require in terms of years? For the profession as a whole the averages read slightly over five years for practitioners, eight years for private and public employees, and for teachers nine years. And when these average periods are broken apart for architectural training and other college education it is interesting to observe that for the practitioners the division is almost 50-50 whereas among employee architects and teachers the other college education averages approximately one-third of their formal education.

"Coupled to this formal educational period are, of course, numerous other educational attributes. For example, we find that 20% of the profession studied architecture in a foreign country, including educational travel. Another 39% of the profession reported their entire training was obtained in architectural offices or that they were certificated from trade schools, technical institutes, or non-degree colleges. The two other main categories, that included 23% of the profession, refer to those architects who hold degree or degrees in liberal arts or were recipients of fellowships. The remaining 8% were equally divided among those of the profession who reported they held degrees in non-architectural fields, other than liberal arts, or held degrees in engineering, other than architectural engineering.

College-Level Education



Other Educational Attributes



"It is also gratifying to report that generally architects' education doesn't stop with a first or second degree and of those who reported supplementary education beyond this particular level, nearly 50% indicated they had taken courses: in engineering (22%), fine arts (14%), and business and economics (13%). City planning and liberal arts included approximately the same proportions and . . . another 21% indicated

(Continued on page 140)

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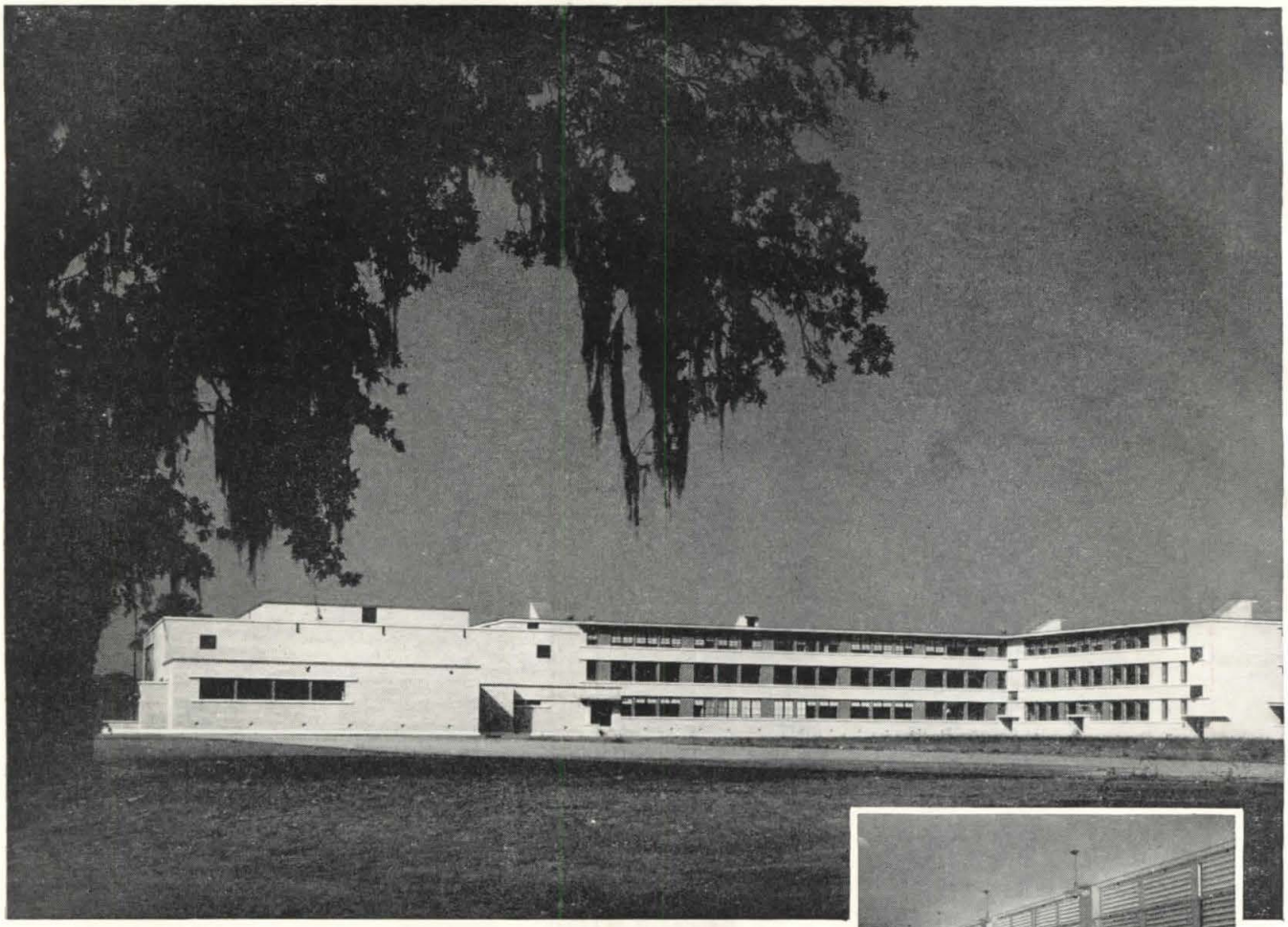

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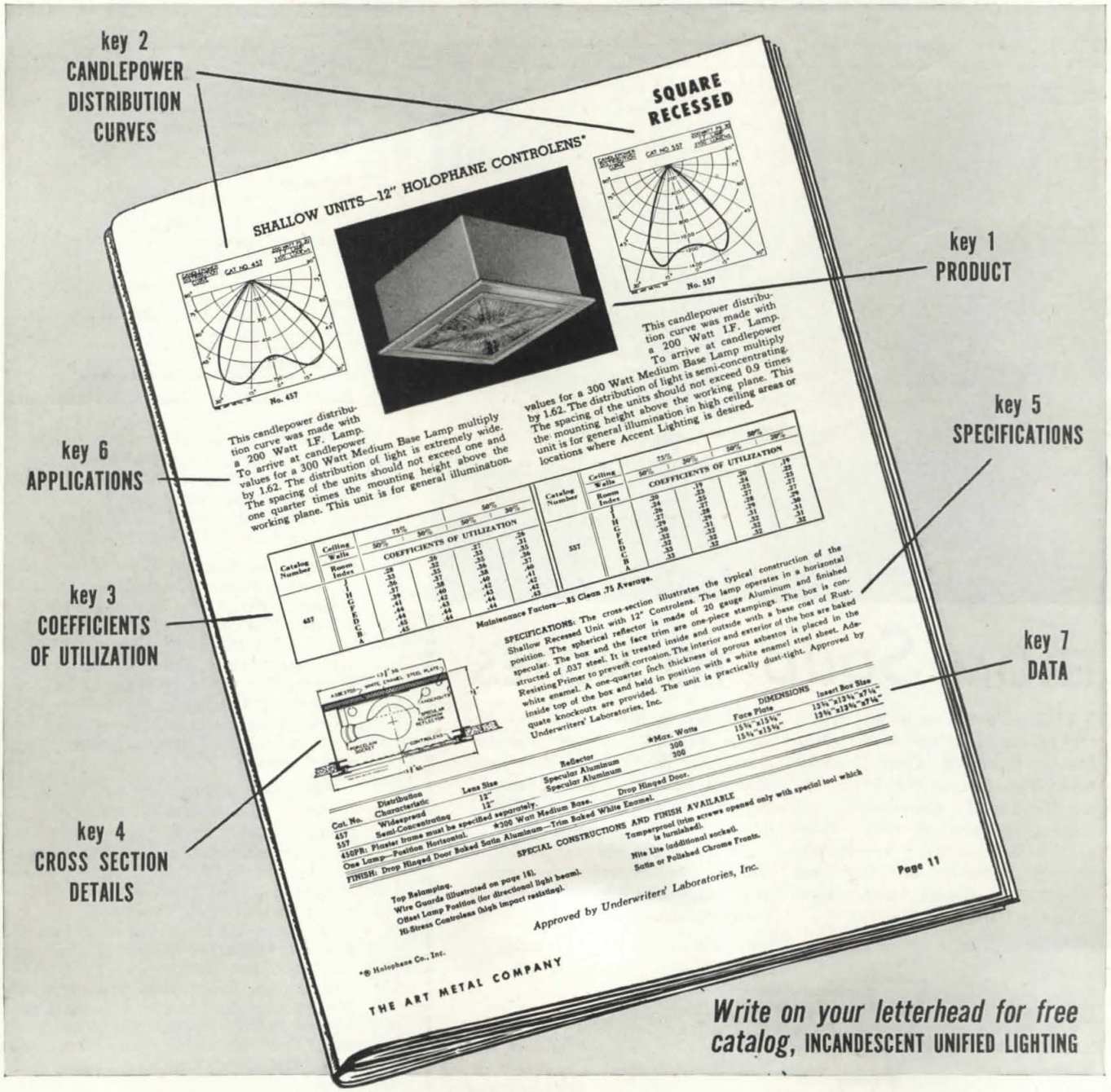

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out of school

(Continued from page 136)

an equal interest in four other fields; namely, social sciences, landscape architecture, real estate, and law

"Related to this matter of post-college supplementary education is the matter of preferences of architects in organized programs and selected fields of study. For each of these preferences over 90% of the individual architects responded. The distribution of their actual choices among the sub-topics shown is but one of the many indications from the survey data that your profession certainly does not consider that the educational process ceases with graduation. It is certainly significant to observe that for the organized programs 39% elected this area as against no less than 61% who were given a choice to elect from a series of suggested fields of study. Among the sub-topics under these two main captions you will also observe that a very narrow range in proportions does exist.

Supplementary Education

Engineering	22%
Fine Arts	14
Business and Economics	13
City Planning	9
Liberal Arts	8
Social Sciences	6
Landscape Architecture	5
Real Estate	5
Law	5
Unspecified	3

Desire for Supplementary Education

Printed courses of study	26%	Organized program
Visiting lecturers	22	
Seminars	18	
Refresher courses	16	
Two-week institutes	10	
Prefer no organized activity	8	
Advanced construction	20%	Suggested field of study
Building types	13	
New materials	13	
Contemporary esthetics	11	
Economics of construction	11	
Design for comfort and health	10	
Building construction law	10	
Atomic developments	7	
Real estate	5	

"Despite the information presented to you on numerous areas of education as it affects architects, it is the architectural curriculum itself that still remains the principal frame of reference on matters educational.

"It is clear that the opinions expressed on this topic cannot be presented in their entirety *(here)* . . . but you may rest assured that in its *Final Report* the Commission will come up with the best recommendations that stem from the distributions of the opinions shown . . . as well as those which it has available from individual members of architectural school faculties and their deans and directors.

"Although this *Report of Progress* . . . is based almost wholly on statistical techniques ably conceived and executed by our Washington consultant, Andrew Fraser, I want to make it clear that the *Final Report* will include a good deal of material that will have been derived from other sources. For instance, we have a wealth of comment from the Fellows of the Institute, from the honorary foreign secretaries, and from the ten regional conferences held this past winter in New York; San Francisco; Boston; Houston; Eugene, Oregon; Albany; Richmond, Virginia; Chicago; and Pittsburgh.

"These regional conferences were unique in that in each locality we invited ten or a dozen leading citizens (not architects) to speak on three specific questions at a conference which lasted from eleven o'clock in the morning

(Continued on page 142)

as fundamental as built-in storage space...

Eleanor Raymond, *Architect*

A good plan is always better when it includes symbols for telephone outlets.

Every house you design makes some provision for storage, much of it concealed. But unless provision is made for telephones, the wires may have to be exposed. Raceways built into the walls during construction keep wires out of sight, help protect the appearance of thoughtfully designed interiors.

Including telephone raceways in your plans and specifications is always sound planning. Your Bell Telephone Company will be glad to help you lay out economical raceway installations. Just call your nearest Business Office.

BELL TELEPHONE SYSTEM

out of school

(Continued from page 140)

Effective Content of an Architectural Curriculum

	Important	Desirable	Of minor importance
PROFESSIONAL	%	%	%
Architectural design	99	1	
Materials and methods	81	17	
Design theory	79	18	3
Structural design	76	22	1
Working drawings	74	20	6
Specifications	72	23	5
Graphics	61	32	7
Freehand drawing	60	32	8
Professional ethics	57	34	9
Mechanical, etc., installations	52	42	6
History of architecture	49	38	13
Landscape design	14	61	25
Interior design	28	58	14
Community planning	28	56	16
Applied science	32	54	14
Site engineering	34	52	14
Building codes, law, real estate	40	44	16
Office administration	39	41	20
ACADEMIC			
Mathematics	77	20	3
English	75	21	4
Fine arts	58	37	4
Physics	51	37	12
Social sciences and philosophy	21	50	29
Psychology and human relations	42	42	16
Foreign language	9	44	47
Chemistry	15	40	45

through dinner in the evening. A verbatim record was made of their discussion and the participants were invited later to edit their remarks and were promised protection from direct quotation without their authorization. No local publicity accompanied these meetings and it may even be news to some of you . . . that such a meeting was held in your community.

"The purpose of the questions was to ascertain what, in the opinion of the participants, would be the social and political frame of reference within which the architects of the second half of the 20th Century will move and have their being; what effect these apparent trends may have upon the physical pattern of our rural areas, towns, cities, and metropolitan communities; and finally, what should be the philosophy and content of the educational program best calculated to prepare a young man for the practice of architecture during the next twenty-five years . . .

"In closing, let me re-emphasize that the Commission will not confine its recommendations to those based on statistics of what is, or has been, nor even to the extrapolation of trends susceptible of charting. The Commission is committed to writing a report that is based on an evaluation of information and ideas from all sources. The broad ex-

(Continued on page 144)

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requires less steel...

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Permalite lightweight aggregates can cut dead-load by as much as 80%!

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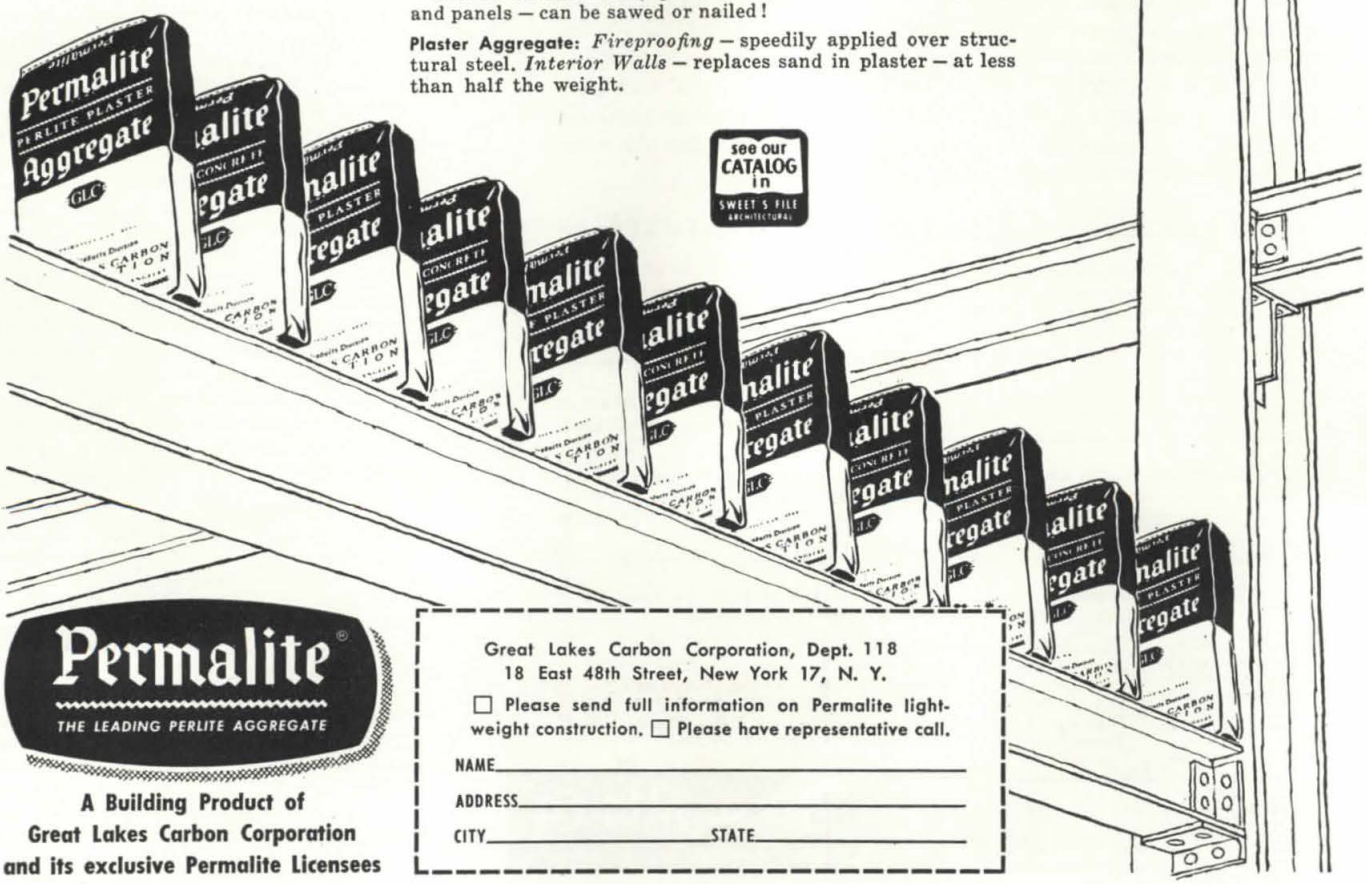

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(Continued from page 142)

perience and the keen *insight of* its members gives every assurance that this will be well done. My colleagues and I believe that a profession in a free democratic society need not be the helpless victim of circumstances or of forces outside of itself. We believe that however closely the practice of architecture is linked to its contemporary, social and technological frame of reference, fundamental objectives of that practice can be shaped and can be kept under control by the members of the profession themselves."

●

It is very difficult to make significant commentary on these preliminary facts that have been published here. They contain within them a great many ideas. As an example, let me show you what type of correlations might be obtained from a scrutiny of the material.

The last table indicates 28% of those questioned believe that community planning is an important part of architectural practice, while 56% felt that it was desirable and 16% felt that it was of minor importance. Also Figure 24 indicates that 9% of architects have added city planning to their education beyond the first and second degrees. But curiously, the previous table gave no indication of any desire on the part of architects in practice for post-college supplementary education in this field. It may during the long poll; but on the basis of the amount of planning which apparently is being considered important in the schools, my guess is that were this survey to be conducted 10 years from now this would be considered of major importance by the practitioner. Based largely on the change that is now taking place in instruction in the schools and the number of young men now graduating who have had some smattering of planning in their training programs, if there is any one thing which will come out of this important survey, now nearing completion, it is the fact that the schools teach architectural practice and that the schools have a major responsibility in the development of a successful architectural profession in this country.

While I have given here only one example of correlation, I hope that you who reads this will also attempt to make correlations. I shall be happy to hear from you, as I know will Dr. Burdell, on any questions that you may have, relating to this material published here.

As this issue of P/A goes to press, we note that American Institute of Architects has published a "Progress Report" summarizing the Survey described in the column above. Members of the A.I.A. will receive the document and non-member, registered architects who cooperated in furnishing information for the Survey may obtain a free copy on application to national headquarters. Others may obtain a copy of the brochure for 25c through the Department of Education and Research, American Institute of Architects, 1741 New York Avenue, N.W., Washington 6, D.C.

t's the law

By BERNARD TOMSON

In these days, when architects avail themselves of the services of structural, plumbing, heating, lighting, and every other known variety of specialist, it should be appropriate to determine how much reliance the architect can place on plans drawn for him by acknowledged experts and how much further reliance can be placed on specifications provided by reputable manufacturers. This of course becomes a matter of primary importance when the plans or specifications turn out to be inadequate—and the question of the architect's legal responsibility arises.

Discussions in terms of "reasonable skill and ability performed without neglect" may be of some help. More useful is a full exposition of the architect's duty, as is found in a case decided in New York, in 1889. There the precise question involved an architect's reliance on incorrect specifications supplied by a contractor for that then new-fangled device "steam heating". When the architect found it necessary to sue for his fee, the owner counterclaimed for damages. The court allowed the owner to deduct $1000 from the architect's fee with this interesting statement:

"The plaintiffs are architects of standing, who assume to be able to plan and superintend the construction of first-class apartment houses, to be heated by steam, and to be provided with every convenience demanded by the luxurious tastes of the day. They are not architects in a rural community, but in the first city in America. Steam-heating is, as we all know, common, if not a necessity, in all apartment houses of large size, and of a high class. It is true that houses of this description are of recent introduction; but they are now a very important part of our system of economics, for in some of the new streets they are more numerous than private residences, or tenements of the kind that formerly was in vogue. The architect who undertakes to construct a house that is to be heated by steam is groping in the dark unless he knows how large a chimney is required. It is as necessary that the architect should know what is needed to make the steam-heating apparatus serviceable, as it is that he should know how sewer gas is to be kept out of the house.

"No one would contend that at this day an architect could shelter himself behind the plumber, and excuse his ignorance of the ordinary appliances for sanitary ventilation by saying that he was not an expert in the trade of plumbing. He is an expert in carpentry, in cements, in mortar, in the strength of materials, in the act of constructing the walls, the floors, the stair cases, the roofs, and is in duty bound to possess reasonable skill and knowledge as to all these things; and when, in the progress of civilization, new conveniences are introduced into our homes, and become, not curious novelties, but the customary means of securing the comfort of the unpretentious citizen, why should not the architect be expected to possess the technical learning respecting them that is exacted of him with respect to other and older branches of his profesional studies? It is not asking too much of the man who assumes that he is competent to build a house at

(Continued on page 148)

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it's the law

(Continued from page 146)

a cost of more than $100,000 and to arrange that it shall be heated by steam, to insist that he shall know how to proportion his chimney to the boiler. It is not enough for him to say, 'I asked the steamfitter,' and then throw the consequences of any error that may be made upon the employer who engages him relying upon his skill. Responsibility cannot be shifted in that way.

"In the case of Moneypenny v. Hartland *(twice reported, once in 1 Car. & P. 352, and then in 2 Car. & P. 378)*, it was held that if a surveyor be employed to erect a bridge and form the approaches to it, he is bound to ascertain for himself, by experiments, the nature of the soil, even though a person previously employed for that purpose by his employer has made such experiments, and has given him the result at his employer's request; and if the surveyor makes a low estimate, and thereby induces persons to subscribe for the execution of the work who would otherwise have declined it, and it turns out that, owing to his negligence and want of skill, such estimate is grossly incorrect, and that the work can be done, but at a much greater expense, he is not entitled to recover for his services."

●

The owner was not satisfied with the result and requested a reargument of this determination, urging that since the contract had not been performed entirely without fault that the architect should be entitled to nothing. In its determination that *this* argument was without merit, the court incidentally engaged in a useful discussion of the specific standard of care required of an architect in supervision. This deserves extensive quotation:

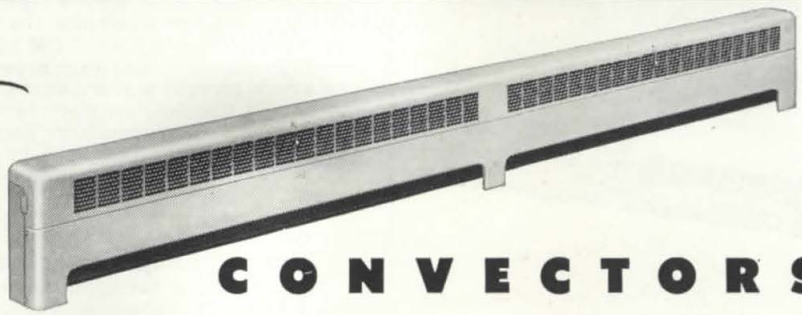
"With regard to the plans, it appears that the contract was completely performed. Drawings for the whole building were furnished, and it was actually constructed in accordance therewith. After the building was finished, it was discovered that the chimney flues, connecting with the boiler flues, were not large enough for the purpose for which they were designed. These flues were not omitted from the plans; on the contrary, they were set down with the same fullness of detail as the other parts of the building. It cannot, therefore, be said that plaintiffs did not entirely perform their contract in this respect; they completely performed it, but they performed it negligently.

"Similar considerations apply to the other branch of the case. The learned counsel would not claim that an architect is bound to spend all his time at a building which is going up under his professional care; so that no fraud or negligence can be committed by any of the contractors. The counsel would not contend that the architect is an insurer of the perfection of the mason work, the carpenter work, the plumbing, etc. He is bound only to exercise reasonable care, and to use reasonable powers of observation and detection, in the supervision of the structure. When, therefore, it

(Continued on page 150)

HOW TO ELIMINATE PICTURE WINDOW DRAFTS!

Specify YOUNG LOW-LEVEL CONVECTORS



Architects and heating contractors find the Young low-level convector-radiator line ideal for picture window installations. The streamlined, compact cabinets are just 12″ high—stand inconspicuously beneath the sill, or hide away in wall recesses. The generous selection of sizes range from 20″ to 112″ in length, and 4″, 6″, and 8″ in depth— meet any hot water or two-pipe steam system requirement.

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it's the law

(Continued from page 148)

appears that the architect has made frequent visits to the building, and in a general way has performed the duties called for by the customs of his profession, the mere fact, for instance, that inferior brick have been used in places, does not establish, as a matter of law, that he has not entirely performed his contract. He might have directed at one of his visits that portions of the plumbing work be packed in wool; upon his next return to the building the pipes in question might have been covered with brick in the progress of the building. If he had inquired whether the wool-packing had been attended to, and had received an affirmative answer from the plumber and the bricklayer, I am of opinion that his duty as an architect, in the matter of the required protection of said pipes from the weather, would have been ended. Yet, under these very circumstances, the packing might have been intentionally or carelessly omitted, in fraud upon both architect and owner, and could it still be claimed that the architect had not fully performed his work? The learned counsel for appellant is, in effect, asking us to hold that the defects of the character above named establish, as matter of law, that plaintiffs have not completely performed their agreement.

"An architect is no more a mere overseer or foreman or watchman than he is a guarantor of a flawless building, and the only question that can arise in a case where general performance of duty is shown is whether, considering all the circumstances and peculiar facts involved, he has or has not been guilty of negligence. This is a question of fact and not of law."

●

The general principles have been restated many times since, but never with more clarity. The above quotations are as useful today as they were in 1889, and although the rule varies in its precise application from state to state, the case referred to is as much an excellent guide to the expressed rule of law now as then.

NOTICES

New Practices

General Engineering Associates, Consulting Engineers: PAUL WEIDLINGER, 101 Park Ave., New York, N.Y.; and MORRIS SHAPIRO and CLAUDE R. ENGLE, 1928 I St., N.W., Washington, D.C.

BERNARD J. SABAROFF announces the opening of an office for the practice of architecture, 1179 Market St., San Francisco, Calif.

GEORGE FARKAS and DR. WALTER BAERMANN announce the formation of a partnership for the practice of industrial design, architecture, and interior planning, under the firm name of FARKAS-BAERMANN DESIGNERS, 954 41st St., Miami Beach, Fla.

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Sylvania Fluorescent Fixtures provide abundant, glare-free light in new Kaiser-Frazer plant, Portland, Oregon

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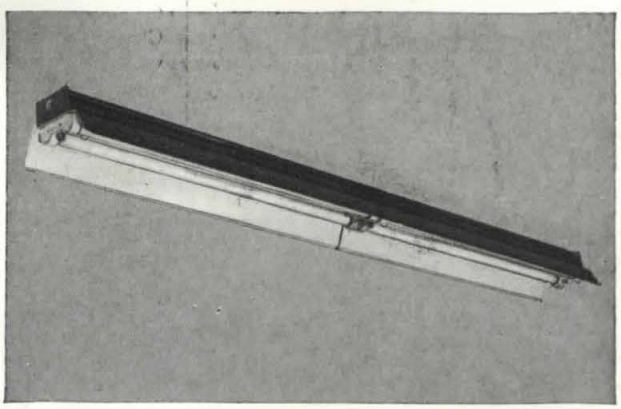
These fixtures are *engineered* for efficient lighting and trouble-free operation. The durable finish of either porcelain enamel or long-lasting "Miracoat" enamel provides a smooth surface of maximum reflectivity. Turned-down lip construction prevents accumulation of dust, lint, or moisture.

Easy installation and low maintenance costs are other good reasons why Sylvania fixtures *win and keep* your clients' good will.

Now you'll find Sylvania Industrial Fluorescent Fixtures available in sizes and types for every need. The coupon brings you new illustrated folder showing the entire line. Mail it NOW.



This is the Sylvania HFFS-440. The 1300 fixtures of this type in the K-F installation, (above) mounted in continuous rows on 9′ 6″ centers, provide a lighting level of 60 foot-candles.

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ELEMENTARY SCHOOL CONSTRUCTION OUTLINES

Monterey Park School

(SEE PAGE 72)

CONSTRUCTION

Foundation: reinforced concrete; bars—Kelly Sales Steel Manufacturing Company. **Frame:** structural steel—Kelly Sales Steel Manufacturing Company. **Walls:** auditorium and offices, brick—Wallapai Brick Company; classrooms, stud frame. **Floors:** poured concrete on grade. **Roof:** wood purlins and sheathing. **Waterproofing and dampproofing:** asphalt saturated felt. **Insulation:** rockwool batts. **Floor surfacing:** asphalt tile, waxed—Mastic Tile Corporation of America. **Ceiling:** cane fiber, perforated acoustical tile—Celotex Corporation. **Wall surfacing:** exterior: painted brick—Wallapai Brick Company; rigid asbestos shingle siding—Paraffine Company; interior: Douglas fir plywood—United States Plywood Corporation; painted brick. **Roof surfacing:** white asphalt-based paint applied over built-up roof —Flintkote Company, Pioneer Division. **Partitions:** Douglas fir plywood panels over studs —United States Plywood Corporation; metal toilet partitions—Mills Company. **Windows:** commercial projected steel—William Bayley Company. **Glass:** DSB window glass and tempered plate glass—Pittsburgh Plate Glass Company. **Doors:** hollow core birch—General Plywood Corporation; sliding doors—Arcadia Metal Products Company. **Hardware:** overhead door closers, mortise type locks for classrooms, panic exit—American Hardware Corporation, P. & F. Corbin Division; mortise hinges—Stanley Works. **Paint and stain:** redwood stain on exterior wood—W. P. Fuller Company; lead and oil on steel—Matthews Company; pigmented sealer—L. F. Laux, Inc., varnish—General Paint Corporation.

EQUIPMENT

Lighting: incandescent fixtures in auditorium, office and classroom areas—Edwin F. Guth Company. **Electric distribution:** service entrance switch and multibreaker—Square D Company. **Plumbing:** water closets, lavatories, toilet seats—American Radiator & Standard Sanitary Manufacturing Company; flush valves —Sloan Valve Company; wrought iron pipe—A. M. Byers Company. **Heating:** direct fired suspended unit heaters—Southwest Manufacturing Company; controls — Minneapolis-Honeywell Regulator Company.

Los Cerritos School

(SEE PAGE 77)

CONSTRUCTION

Foundation: reinforced concrete—Pacific Portland Cement Company and Permanente Cement Company; reinforcing bars—Broadhead Steel Products Company. **Frame:** steel frame, light steel joists—Bethlehem Pacific Coast Steel Corporation. **Walls:** wood studs and sheathing, concrete end walls. **Floors:** concrete floor slab on fill. **Insulation:** thermal:

(Continued on page 154)

CONSTRUCTION OUTLINES

(Continued from page 152)

rockwool—United States Gypsum Company. **Floor surfacing:** asphalt tile—Tile-Tex Company, Inc. **Ceiling surfacing:** perforated acoustical tile and gypsum board—Johns-Manville Company. **Wall surfacing:** exterior: redwood board and batts; interior: plywood—United States Plywood Corporation. **Roof surfacing:** asphalt-based paint applied over built-up roof—Flintkote Company, Pioneer Division. **Roof drainage:** galvanized iron gutters and downspouts. **Partitions:** plywood interiors—United States Plywood Corporation; metal toilet partitions. **Windows:** steel sash—Michael Flynn Manufacturing Company; double-strength clear glass—Libbey - Owens - Ford Glass Company. **Doors:** interior and exterior Douglas fir slab doors; aluminum roll-up overhead doors—Pacific Rolling Door Company. **Hardware:** locksets—Schlage Lock Company; door closers—American Hardware Corporation, P. & F. Corbin Division. **Paint and stain:** exterior: stain—W. P. Fuller Company; interior: stain wax—Samuel Cabot, Incorporated.

EQUIPMENT

Lighting: concentric ring fixtures—Kurt Versen Company. **Electric distribution:** panelboards and multibreaker—Westinghouse Electric Corporation; time clock system—International Business Machines Corporation. **Plumbing:** tubs and lavatories—Crane Company; water heater—American Standard Plumbing Supply Company; dishwasher — Crane Company. **Heating:** radiant floors, copper tubing; boiler—American Radiator & Standard Sanitary Manufacturing Company: controls—Minneapolis-Honeywell Regulator Company. **Miscellany:** folding cafeteria tables—Scheiber Company.

Randall Holden School

(SEE PAGE 82)

CONSTRUCTION

Foundation: reinforced concrete; bars—Truscon Steel Company. **Frame:** steel-welded rigid frame. **Walls:** brick veneer, cinder block with air space between. **Floors:** reinforced concrete. **Roof:** Steel, open-truss joists—Truscon Steel Company; welded steel deck—Wheeling Corrugating Company. **Waterproofing and dampproofing:** tar emulsion on exterior basement walls. **Insulation:** acoustical: ceiling tile—Armstrong Cork Company; thermal: cellular glass—Pittsburgh Corning Corporation. **Floor surfacing:** asphalt tile—Flintkote Company; quarry tile toilet floors—United States Quarry Tile Company. **Wall surfacing:** exterior: painted brick veneer; interior: birch plywood—L. Vaughan Company; glazed structural tile on wainscot, corridor, and toilet room walls—Stark Brick Company; painted cinder block. **Roof surfacing:** built-up, tar and gravel—Koppers Company, Incorporated; ventilators—Trane Company. **Partitions:** cinder block; pink Tennessee marble toilet partitions. **Windows:** projected sash—Truscon Steel Company; double strength glass—Pittsburgh Plate Glass Company. **Doors:** birch veneered, flush

(Continued on page 156)

O. H. Hutchings Steam Electric Generating Station, located on the Great Miami River 12 miles south of Dayton, Ohio. Engineers & Designers: Ebasco Service, Inc., New York, N. Y. General Contractor: Maxon Construction Company, Dayton, Ohio. Photograph courtesy Dayton Power & Light Company.

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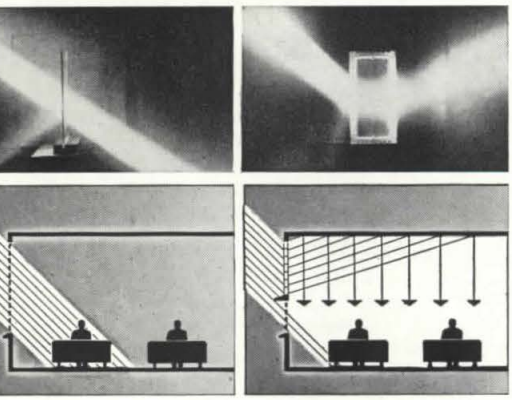

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INSULUX GLASS BLOCK

INSULUX FENESTRATION SYSTEMS

—by the leaders of Daylight Engineering

CONSTRUCTION OUTLINES

(Continued from page 154)

—L. Vaughan Company; main entrance door: flush solid core, wood-painted Kalamein—Dusing & Hunt, Incorporated. **Hardware:** dull, chrome finished locksets—Russell & Erwin Manufacturing Company. **Paint and stain:** exterior: waterproof coating—Standard Dry Wall Products, Incorporated; interior: wood finish—Breinig Brothers, Incorporated; masonry finish—National Chemical Manufacturing Company.

EQUIPMENT

Lighting: flush ceiling incandescent fixtures in office, classroom, lobby areas and recessed fluorescent units in auditorium—Holophane Company; incandescent border lights and disappearing footlights—Hub Electric Corporation. **Electrical:** panelboards—Westinghouse Electric Corporation; wiring devices—Arrow-Hart & Hegeman Electric Company; rubber-covered copper wire, steel conduit tube. **Plumbing:** wall-hung, vitreous china water closets and lavatories, black plastic toilet seats—Kohler Company; tankless water heater—Taco Heaters, Incorporated; chrome flush valves—Speakman Company; stainless steel washfountain—Bradley Washfountain Company; seamless copper pipe. **Heating:** wrought iron radiant floor coils—A. M. Byers Company; oil-fired forced hot water boiler—Almy Water Tube Boiler Company; automatic room temperature controls—Minneapolis-Honeywell Regulator Company. **Air conditioning:** ceiling diffusers in auditorium—Air Devices, Incorporated; ventilating grilles in auditorium, classrooms, toilets—Tuttle & Bailey, Incorporated; warm air supply and exhaust system in auditorium and classrooms.

Madison School

(SEE PAGE 84)

CONSTRUCTION

Foundation: reinforced concrete grade beams supported on concrete column footings; concrete—Arizona Portland Cement Company; reinforcing bars—Bethlehem Steel Company. **Frame:** rigid, welded steel frame—Bethlehem Steel Company, manufacturers and Acme Steel Company, fabricators. **Walls:** pumice block curtain walls. **Floors:** concrete with mesh on earth. **Roof:** wood purlins and sheathing. **Waterproofing and dampproofing:** asphalt saturated felt membrane — Johns-Manville Company. **Insulation:** acoustical: perforated fiberboard—Celotex Corporation; thermal: full, thick, glass fiber batts—Owens-Corning Fiberglas Corporation. **Floor surfacing:** asphalt tile in classrooms—Mastic Tile Corporation of America: floor hardener for "cafetorium"—Master Builders Company. **Ceiling surfacing:** perforated, cane fiber acoustical tile nailed on furring strips—Celotex Corporation. **Wall surfacing:** exterior unpainted pumice blocks; interior: painted pumice blocks. **Roof surfacing:** built-up, asbestos—Johns-Manville Company; white sealer—Flintkote Company, Pioneer Division. **Partitions:** interior: wood studs faced with Douglas fir plywood backed with gypsum board—United States Plywood Corporation and United States Gypsum Company; flush metal partitions—Sanymetal Products Company, Inc. **Windows:** commercial projected steel sash—Michael Flynn Manufacturing Company: SSB and auto safety glass—Pittsburgh Plate Glass Company. **Doors:** flush, hollow core interior and entrance doors—Mengel Company. **Hardware:** locksets, door closers, hinges, panic exit—American Hardware Corporation, P. & F. Corbin Division.

EQUIPMENT

Lighting: fluorescent fixtures in office areas; concentric ring fixtures with silver bowl light bulb—Vision Aids. **Electric distribution:** panelboards—Westinghouse Electric Corporation; galvanized steel conduit—National Electric Products Corporation; clock and bell system—International Business Machines Corporation. **Plumbing and sanitation:** water closets, lavatories, tubs—American Radiator & Standard Sanitary Manufacturing Company; toilet seats—C. F. Church Manufacturing Company; flush valves—Sloan Valve Company; incinerator—Morse-Boulger Destructor Company; galvanized iron pipe for water supply system; water softener—Red Jacket Manufacturing Company. **Heating:** central hot water system, gas-fired; forced hot air gas furnace in administrative building—General Electric Company; unit heaters in classrooms and "cafetorium"—Trane Company; galvanized iron pipe—National Tube Company; Ajax water heater and boiler. **Air conditioning:** evaporative coolers in rooms of all buildings—International Metal Products Company; diffusors.

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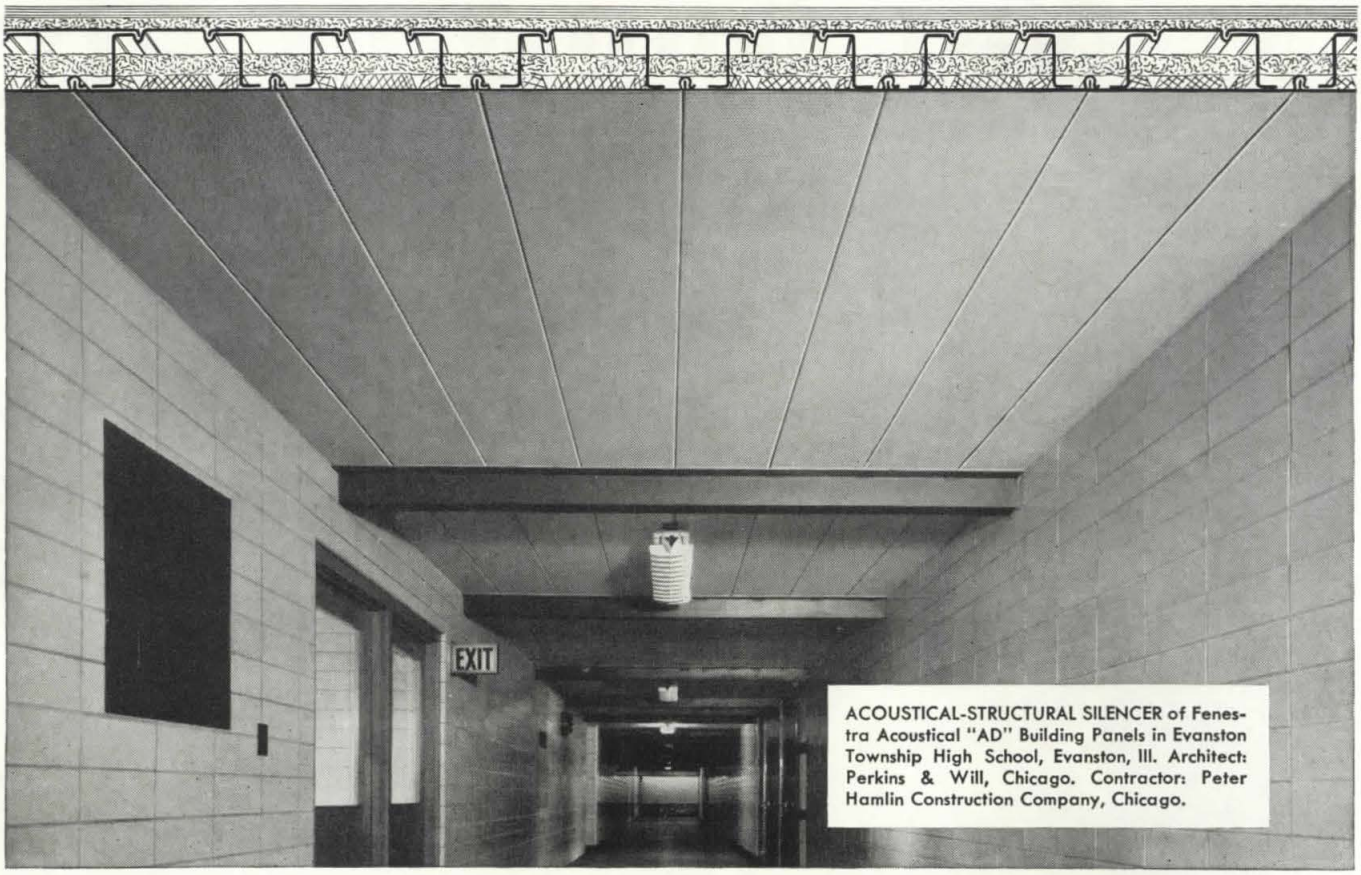

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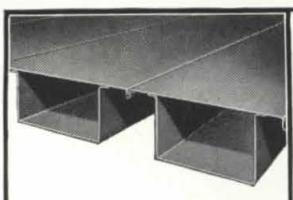

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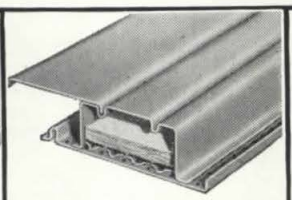

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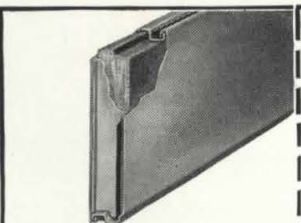

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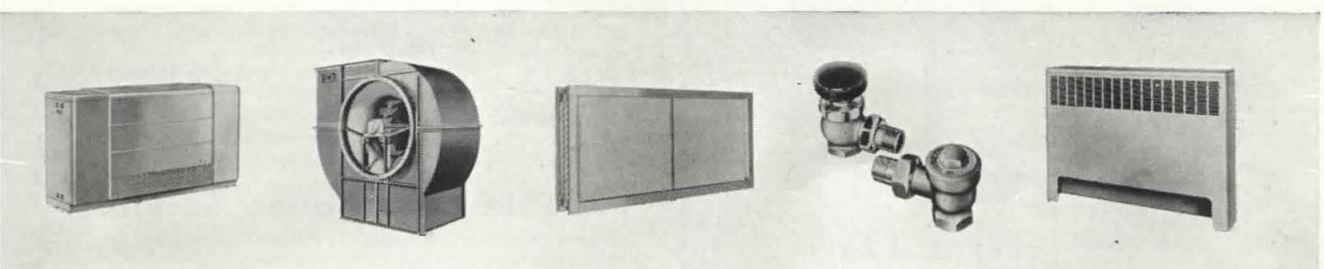

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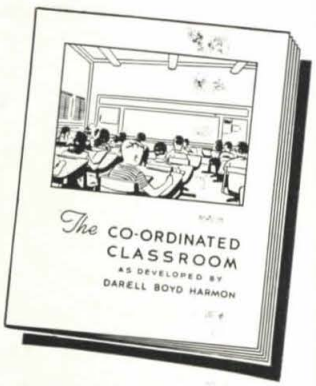

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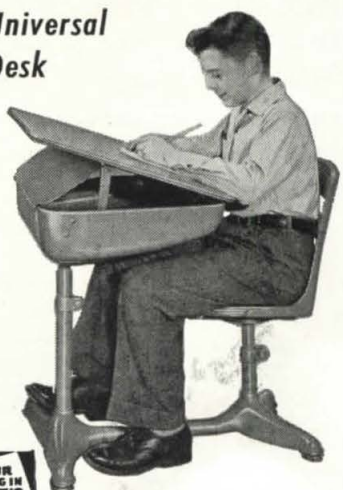

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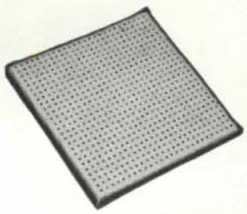

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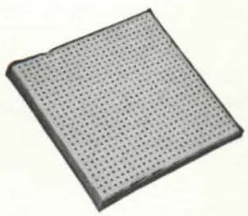

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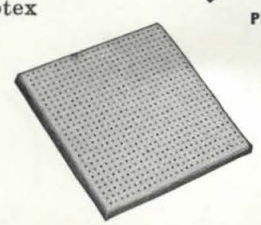

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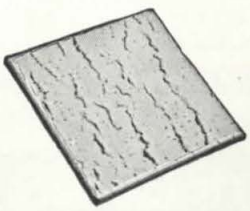

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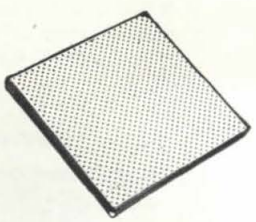

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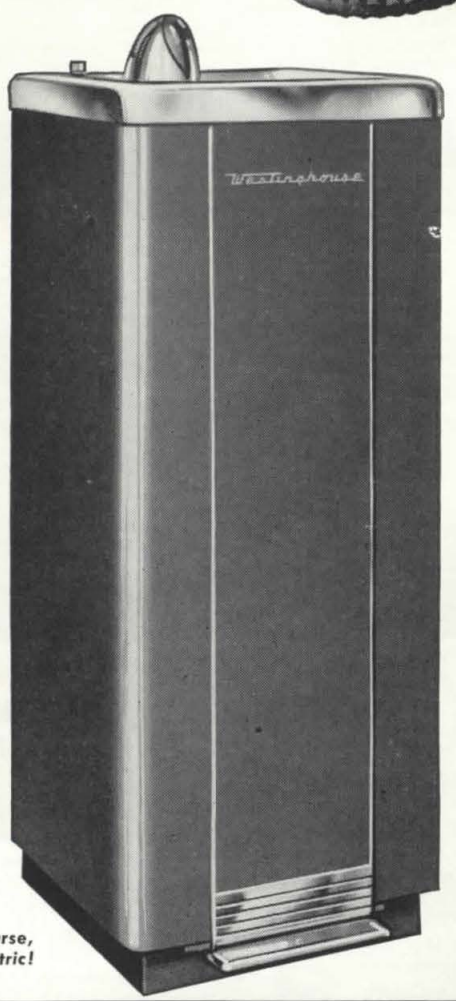

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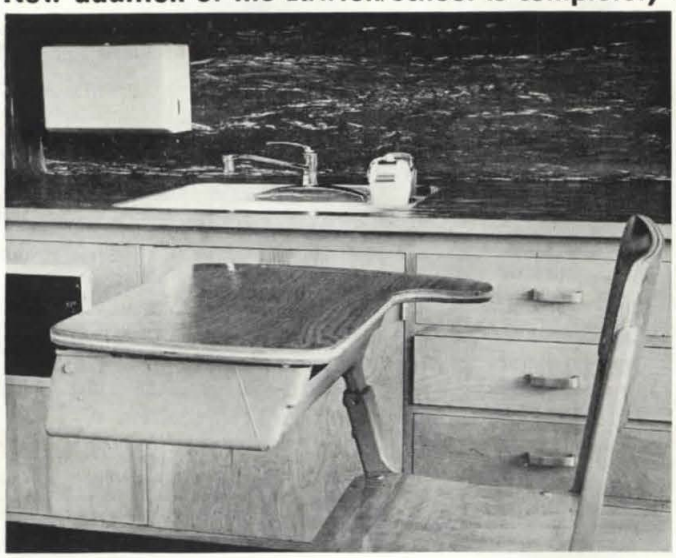

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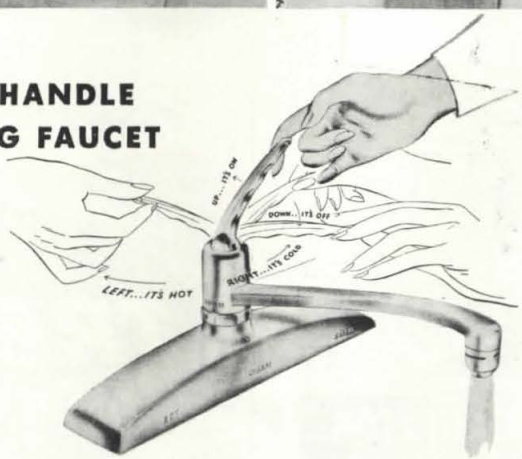

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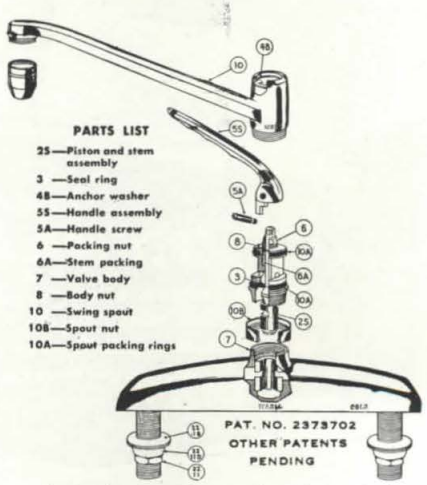

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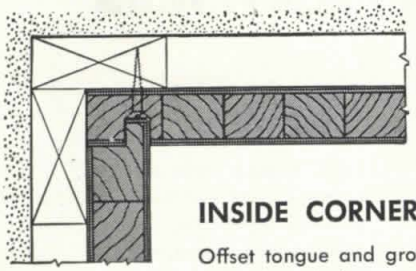
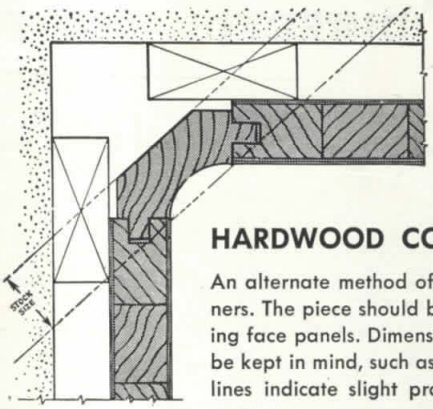


INSIDE CORNER

Offset tongue and groove is the preferred joint where flush treatment is desired. It provides positive locking and hides attachment screws.

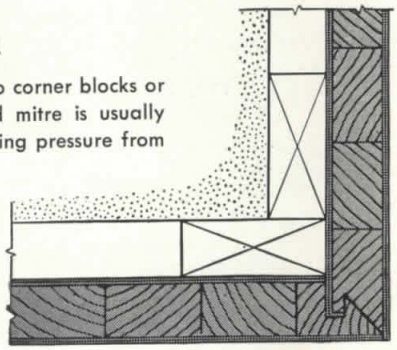


HARDWOOD CORNER

An alternate method of treating inside corners. The piece should be hardwood matching face panels. Dimensions of piece should be kept in mind, such as ⅞" or 1⅛". Dotted lines indicate slight projection often used.

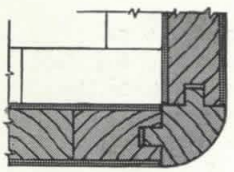
OUTSIDE CORNER

For a clean corner with no corner blocks or molding, this tongue and mitre is usually used. It needs glue-clamping pressure from one direction only.



HARDWOOD CORNER

Outside corner handled in same manner as inside corner (above).



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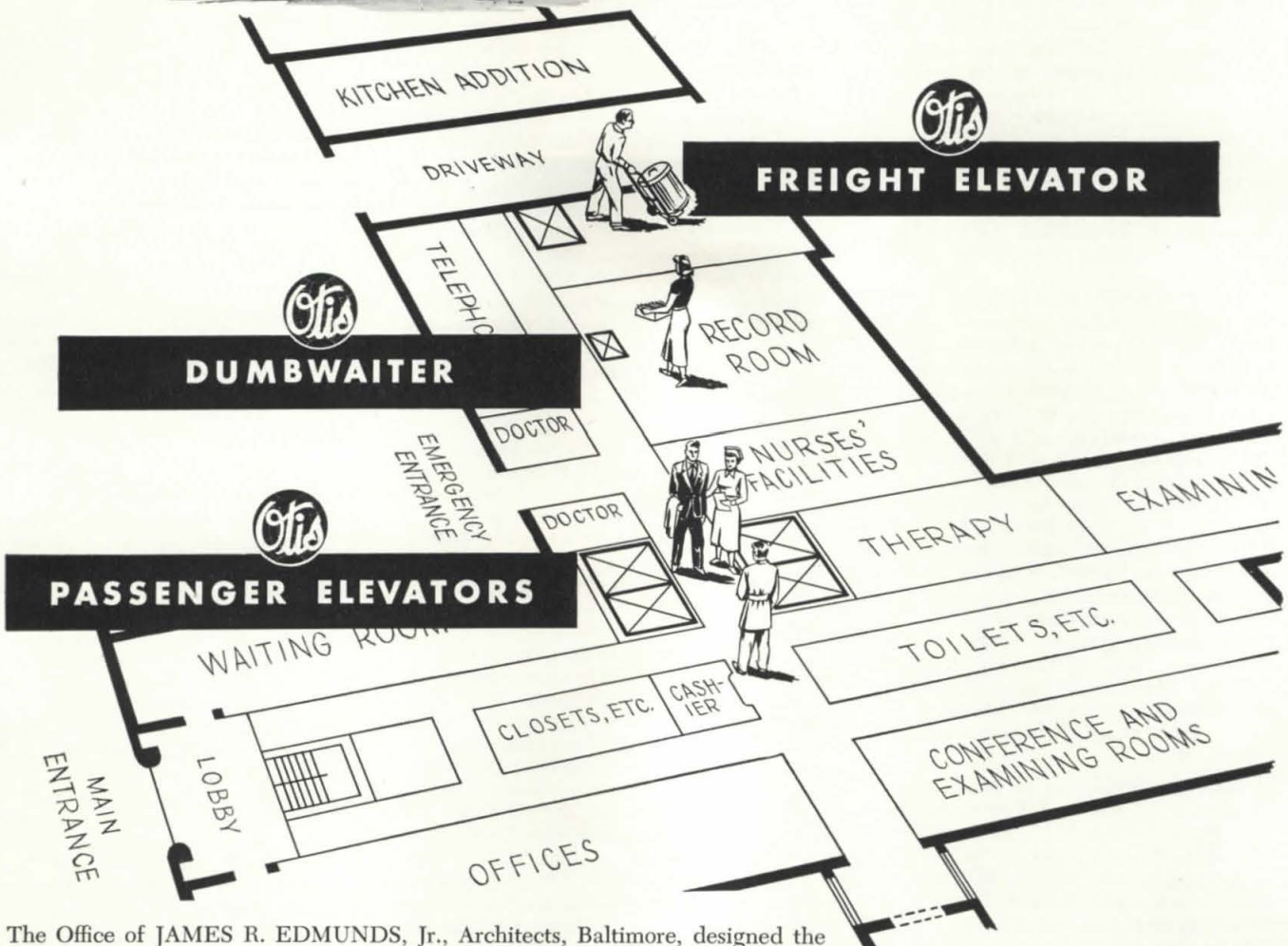

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P.S.

NEWS. I don't know what sort of an inner compulsion made me write, in an earlier column, that I was going to attend the Middle Atlantic Regional Convention of the A.I.A. in *Atlantic City*. Actually it was in *Asbury Park*. Anyway, I landed at the right place, perhaps only because Morris and Isabel Ketchum drove me down. The reason for this was that Morris wanted to know what I was going to say in introducing him the next day (at a symposium on "Trends and Techniques in Contemporary Design") and I wanted to know what he was going to say after I introduced him. As a matter of fact, we never got onto such serious subjects, being diverted by the lobster which we had at a "shore dinner" on the way down the coast, but the symposium went very well, anyway. Pietro Belluschi and Morris both did swell jobs, and the audience was attentive and responsive.

The American press is fascinating to me (not including the architectural press, as fascinating is hardly the correct word in that connection, I think). At the meeting, someone (I think it was John Harbeson of Philadelphia) asked how it was possible to justify such an "unfunctional" thing as a fireplace in a contemporary house. I replied, briefly, that it seemed to me just as pleasant to sit around an open fire as it ever had been; and Belluschi added that emotional needs were as important as physical, and a good fireplace satisfied them—hence it was more than justified. Just that, and then we passed on to another topic. I have been sent a clipping from the Newark *Star-Ledger*, datelined Asbury Park, N. J., (that's how I'm sure I got to the right place) which reads as follows:

A blazing argument was touched off at an architects' convention here yesterday with the question: Is the fireplace in the American home a thing of the past?

Fireplaces are "dirty, old, and the most costly and useless item in the home," declared one modernist.

Carrying the torch for the fireplace was Thomas H. Creighton, editor of the magazine, PROGRESSIVE ARCHITECTURE. *"Liking to sit around a fire is almost inherited," he said. "We shouldn't destroy it merely because we want to think as intellectuals."*

The defense was also sparked by Pietro Belluschi, Dean of the M.I.T. School of Architecture, who said visual and emotional beauty are as important as function.

The hot debate was touched off at the opening session of the Middle Atlantic District, American Institute of Architects, meeting together with two New Jersey architectural societies in a three-day convention.

That's architectural publicity! That's what was newsworthy in the convention, according to the papers.

What was newsworthy in a more serious sense? Primarily, I think, that a very successful well-attended regional conference was held (and what more scattered region can there be than one extending from New York's New Jersey suburbs to the hills of West Virginia?); that out of the meeting came a suggestion for a more regularized, more democratic regional structure for the Institute (Regional Councils meeting at stated times with the Regional Director, representing the membership of the Chapters and carrying back to the Chapters reports of regional and national problems); that an exhibit of New Jersey work was hung and judged in an interesting manner; that a manufacturers' exhibit was a well-planned, well-designed part of the convention; and that the national Brass of the Institute turned out in force to support this meeting, so soon after the Chicago national Convention.

●

GOSSIP. Karl Kamrath, being now a grown man and past the age of winning tennis championships by himself, is collaborating with his 16-year-old son on a team basis. They've just won the Texas father-son championship and are practicing-up on grass courts to go to Boston after the national title. Chuck Goodman came to town with a client to select some furniture; rumor is that they didn't see eye to eye. Tutomu Ikuta, of the Japanese architectural magazine, *Kokusai-Kentiku*, has been here cementing relations, and carrying around with him in a silk handkerchief some beautiful pictures of Japanese residential architecture ancient and current—all looking fresh and modern. Gwen Lux is doing the sculpture for the dining rooms of the fabulous new U. S. luxury liner, "United States," for rooms designed by Eggers & Higgins. O'Neill Ford is in Europe and is due back soon. Pietro Belluschi and family are going abroad for the summer. John Ely Burchard is leaving for Australia, to travel and speak.

●

SEMANTICS. I've just been looking at a copy of the Austrian magazine *Aufbau* (with Victor Gruen, who translated for me) where there is a very serious article on architecture in the Soviet Union and behind-the-Iron-Curtain countries—particularly the planning of apartment houses. The text explains, in much the same words as *we* would use, the move toward a contemporary style, the need for planning for people's requirements, the relationship of the wall to the interior, etc., etc. But then the illustrations show the stuffiest group of bad Renaissance adapations that I have ever seen, with plans which could not possibly work for any kind of living. Words can be made to justify anything.

Whenever anyone describes something he should be made to draw a picture of it. The architect is always in a much tougher spot than the writer, because he has to produce, ultimately, the thing that he has been talking about. (Until he does, though, he can hide in the fantasy of "renderings" just as the editor can take refuge in "descriptions.") I suppose it all comes down to the point that no one can express fully and satisfactorily a concept which he has in his own mind. The creative artist is always frustrated to a certain extent, because what comes out (in words, in drawings, in paintings, in sculpture, in the dance) is never as satisfactory as the thing that was struggling to be expressed.

I'm sure that architects of the Soviet Union have a desire to produce an architecture of Communism which will be bold and new and original. What happens when they put pencil to paper is pretty sad—and it must be most frustrating. Conclusion? I give up, except that I wish some people I know here would stop talking about the more severe examples of modern design as *communistic* architecture. This is the most unhappy semantic twist of all; nothing could be farther from expressing the truth.

●

JEALOUSY. I wish we didn't have to get into unpleasant tangles once in a while on the subject of which magazine is going to publish a given job. The only reason that I can see to want "firsts" and "exclusives" in the architectural press is that there is a certain overlap of circulation and it doesn't make sense for more than one magazine to use its editorial pages for the publication of the same Upper South Side Civic Swimming Pool. It's up to the architect to decide which magazine has the privlege, when more than one wants it; he must decide on the basis of his own preference, or on the basis of prior request, or for some other reason. All this used to be a pleasant, easy, gentlemanly thing, but recently it's gotten sort of nasty, in some cases. In several instances, when an architect has decided that he wanted an "important" job published in P/A (and I don't see how any other decision could possibly be made), he has been practically read out of the human race by one of our brother-journals. I just want you all to know that we'll keep on liking you and admiring you, even if you let one of your gems slip through our fingers, through some horrible error. The only difference in our relationship will be that from that point on we'll start signing our letters to you *Sincerely*, instead of *Cordially*.

Thomas H. Creighton