newsletter

- Again, as during the last war, we are laying up trouble for ourselves in the orderly progress of architectural practice by the gap in the training of architects which appears ahead. How long it will last this time no one can foretell, but the peak enrollments which all schools have gone through since World War II have now been replaced by student-body drops that are alarming many of the schools.

- Production of building materials and equipment in 1950 exceeded all past records. What will happen in 1951 depends, of course, on how much of vital base products is diverted into channels other than construction. Producers' Council president A. Naughton Lane points out, however, that in some lines the cutback will be less than the reduction in building volume, because low year-end inventories will be built back. Aluminum production, according to authorities like Richard S. Reynolds, president of Reynolds Metals, will climb to more than 1 1/2 billion lbs., this year (double 1946 production).

- Moss Rose Mfg. Co. announces a competition for textile designs, limited to students. Inquire through your school. Entries are due May 31. The jury, a good one, includes architect Abel Sorenson.

- American Standards Ass'n. has published a new edition of A.S.A. Abbreviations for Use on Drawings. Of interest primarily to engineers--somewhat to architects--the revised edition can be had from A.S.A., 70 E. 45 St., N. Y. 17, N. Y., for $1.00 a copy.

- M.I.T. announces establishment of a new School of Humanities and Social Studies, to be of equal rank with the present Schools of Science, Engineering, and Architecture and Planning. Dean will be John Ely Burchard, architecturally trained former director of Bemis Foundation and director of the college's libraries. M.I.T.'s other architect-dean, Pietro Belluschi, is now a Doctor of Laws, having received the degree from Reed College in Oregon.

- Frank Montana, until now partner of Suren Pilafian in Detroit, is new head of the Department of Architecture at Notre Dame.

- A.I.A.'s survey of the architectural profession, concerned primarily with education, has received a new financial boost through an additional grant of $40,000 from the Carnegie Corporation of New York. Returns from the questionnaire sent out were good, and preliminary statistics are about ready to be released. Now the Survey Commission is holding a series of conferences around the country and seeking more specialized information from school faculties.

- A plan of city-wide improvements for Sao Paulo, Brazil, was announced last month by Ibec Technical Services, Corp., an organization formed in 1948 to assist foreign countries in technical development, of which Wallace K. Harrison is president. In the Sao Paulo study Ibec called on Robert Moses and a staff of his specialists from New York.

- Associated General Contractors are urging recreation of the War Damage Corporation and legislation offering war damage insurance. Idea is protection of uncompleted building projects in case of enemy attack.

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PROGRESSIVE ARCHITECTURE

newsletter

FEBRUARY 1951

- NPA order banning practically all types of commercial construction until February 15 has left the construction industry in a complete state of confusion. What buildings have been actually "started"? What happens to capital investments in land? How flexible will be the definitions of "emergency cases" after the preliminary ban is lifted? How soon will it be before other categories of building are similarly restricted? Industrial expansion, certain types of housing, schools and hospitals, certain classes of public buildings seem safe fields for the moment. This checks well with P/A's survey of the most active fields published last month, and one wonders how much actual tonnage of essential materials is being saved by the new ban.

- Heavy construction, according to Engineering News-Record, reached a volume in December, 1950, that made it the record month of all time, and boosted the year's total to a record 12 1/3 billions in this construction field. Public building (including public housing) and industrial contracts rose sharply; private building (including privately-financed mass housing) dropped.

- $3 billion Federal housing program announced in January should offset some of the fears that this field of practice will slump in 1951. There will be continuing arguments as to how much of this the government should and will construct (Senator Maybank says it will be the intent of the bill to leave construction and operation to private enterprise "wherever possible") but it seems clear that this will be architect-designed work, whoever the client. Push, of course, will be on housing for defense areas, which means that many localities will be anxious to prove themselves vital to the defense production activity.

- The program which was announced by Sen. Maybank and Rep. Spence is in effect a newborn, lusty but not yet articulate relative of the Lanham Act of recent memory. Schools, hospitals, and community facilities are envisioned as recipients of part of the proposed appropriation. One- and two-family units, row-housing and "particular assistance" to rental housing are contemplated. Again, a push will be given prefab units, and Lustron, forsaken by RFC last year, is already seeking more capital to add to its $37 1/2 millions debt.

- Twist on the present housing situation is that war possibility, which is causing the curtailment in private house building, is also producing a greater need for houses due to increasing marriage rate. Marriage license rise in last half of 1950 caused an increase in this commodity over 1949, a shift in the downward trend in "doubling up" on living accommodations, and thus a need for additional housing units.

- Architects still seem to be busy, although more and more are turning their eyes--and their feet--toward Washington and the agencies handling defense contracts. Present rush of jobs to beat further limitation orders cannot continue indefinitely and more solid future planning than opportunistic approach of some firms is going to be needed. This will be a tough year for the marginal firm and the firm that has not gotten itself firmly established. Architect-engineer combinations are beginning to blossom again, as are amalgams of smaller offices into more effective and more rounded large groups, which stand a better chance of surviving the peculiar times ahead.

(Continued on page 2)

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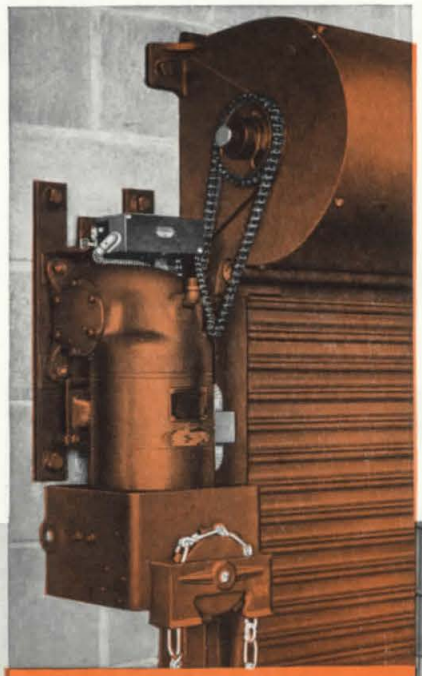

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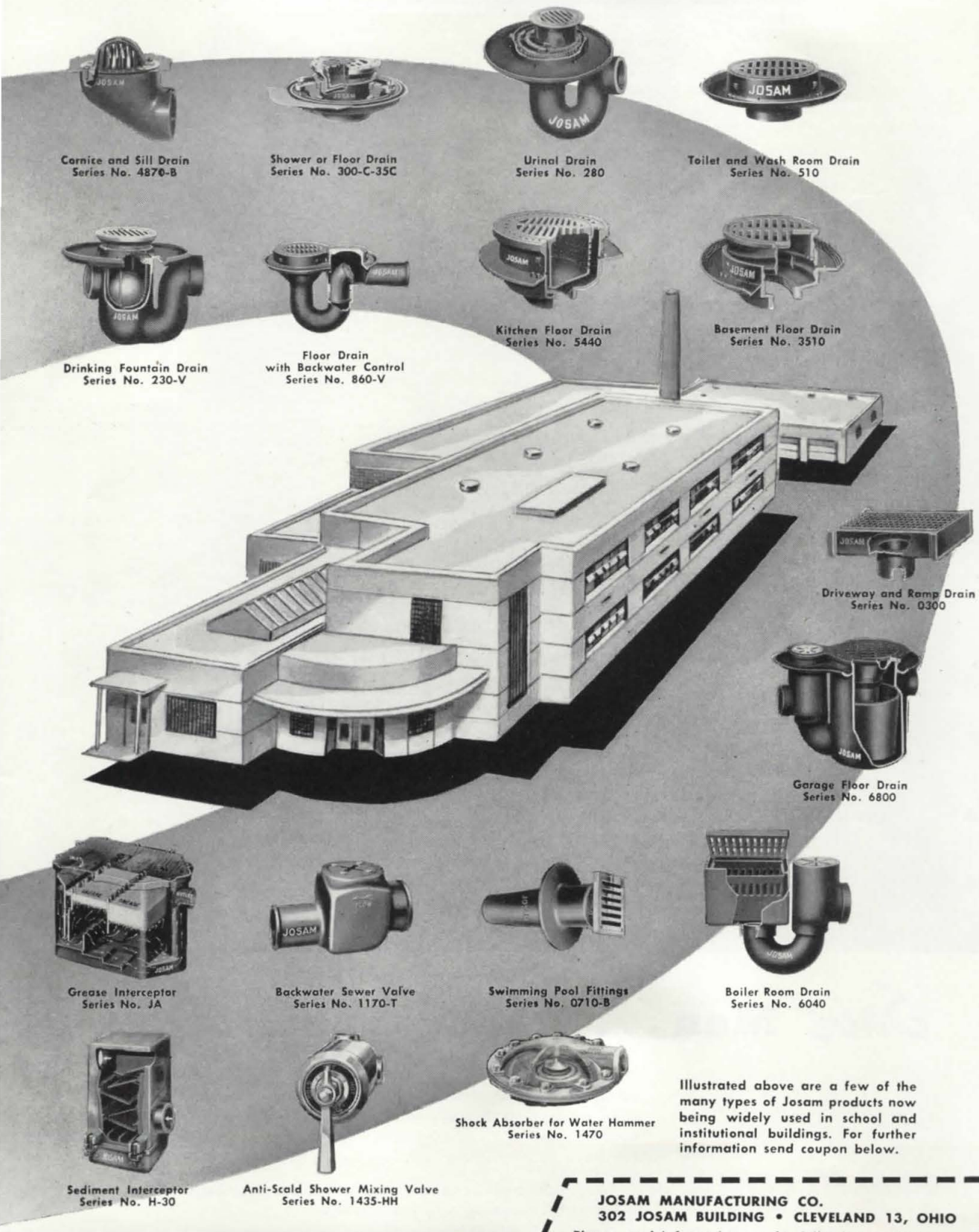

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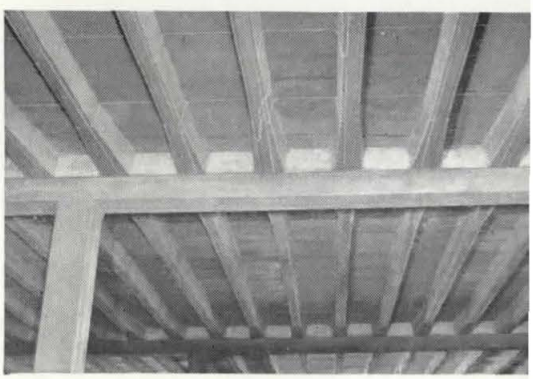

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P/A VIEWS

MORE READERS COMMENT ON TOMSON COLUMN

Dear Editor: IT'S THE LAW of November and December should make every thoughtful architect ashamed of himself, of his profession, and of the industry of which he is a part. The cases Tomson describes constitute a vote of *no confidence* in those responsible for our physical environment. Furthermore, it is almost a foregone conclusion that laws such as these will increase in number and comprehensiveness. They are the inevitable result of the way architects and particularly builders have exercised their responsibilities. The building industry is behaving in the same way the food dealers did who sold poisonous food, the drygoods dealers who sold worthless medicines, the advertisers who made false claims. Like these industries, building will soon have its own version of a Pure Food and Drug Act clamped on it—hard! Houses are a national resource. As such the people who design and build them have a public responsibility. Architects and builders have not accepted it voluntarily. One result is esthetic zoning, with all it entails in restrictions, red tape, rigidity, appeals, politics, and the like. Undoubtedly there is much more, and worse, to come.

Every sensible architect knows that the very idea "esthetic zoning" is ridiculous. There is, therefore, no point in belaboring the point here. But as one indication of the failure of building as a whole it deserves the closest analysis. Obviously such laws are invoked to stop abuses against the public interest. They would not have been thought of, let alone written, had the building business displayed professional competence. For the knowledge and skill required to make a good subdivision, like those required to perform a good appendectomy, or write a good will, are just that. Such laws are silly, we say. But without a competent profession to fall back on, how could the lawyers, city fathers, and city planners who write them do any better? They have, almost literally, no place to turn for advice. There are no standard texts such as the medical profession affords, no systematic system of reference such as the legal profession enjoys, no analysis of existing streets in the full context of their physical and social development paralleling the studies the social sciences have made of half a hundred whole societies. The architectural profession, unlike any other, is without a literature, without a body of knowledge, literally without any comprehension of what it is doing and why it is doing it. It sponsors no research worth mentioning, and no comprehensive thinking at all. These are the hallmarks of a bankrupt human enterprise.

Had the people of Scarsdale Village been writing a public health law they could have obtained from the USPHS, from several universities, and from thousands of books, a tremendous body of knowledge, observations, and informed speculation on trends. Because they were writing a public "beauty" law, they had nothing to fall back on but their own limited experience. Had they gone to the profession of architecture, they would have found it divided against itself; its schools without money or sufficient background to make thorough research studies of all the factors which go to make up good streets. Its president has recently, in any case, blasted its schools in public, more it would appear from an "old guard" point of view, than from any comprehension of the real issues at stake. And this professional bankruptcy, be it noted, is of what the architects fondly believe, and which sadly enough really is, the elite wing of the building industry.

The inexpensive excuse that speculative builders are the real villains of the piece cannot be of much comfort. True, they reject architects. True, their only interest is money. Also true, the profession has never given them any indication of how to do better. In the face of an intolerable situation, without leadership from the one profession which might have helped, the public itself has decided to tell the builders how to do it, and incidentally, the architects too.

The people of Scarsdale Village have my sympathy. They have been more sinned against than sinning.

ROBERT WOODS KENNEDY
Boston, Mass.

●

Dear Editor: In commenting on the subject of "esthetic zoning," my first reaction is to call attention to the so-called Shipsted Act, enacted by Congress in 1928, which brings under the jurisdiction of the National Commission of Fine Arts private buildings fronting on certain Government holdings in the national capital. Without any such specific stipulations as included in the Scarsdale regulations, it has functioned satisfactorily for more than two decades.

With similar objectives, the Washington architects operated an "Architects Advisory Council" for 10 years of the '20's and '30's. With no powers other than moral suasion, a rotating jury viewed all plans filed for building permit and graded them according to their general fitness. Operative builders, who first opposed the procedure, came to seek the jury's approvals and commendations. One very definite result of the experiment was abandonment of the filing of a single plan for endless repeats of mediocre house fronts.

These developments were covered in some detail in an address which I delivered at the 23rd annual meeting of the National Conference on City Planning: published in the *Octagon* for February or March 1929, under the title, "Architectural Guidance in Relation to City Planning and Development." As the title indicates, I have favored general *guidance* rather than specified *controls*.

Of current interest and application to the subject of esthetics is a law, adopted by this Congress, which establishes an "Old Georgetown District." All plans for new buildings or alterations in this district must clear the Fine Arts Commission: but, in this instance, the Commission operates through a cooperating committee of architects. This set-up combines the guidance feature of the one-time Advisory Council with the authority of the Shipsted Act. It has the flexibility needed to adjust the delicate balance between the preservation of an old town "atmosphere"—intangible but definitely affecting property values—and the modifications or compromises required by modern residential and commercial requirements.

With the gradual adoption of adequate laws relating to the practice of architecture, and the realization that good design adds dollar value to operations, it would seem that now, more than ever, the principle of co-operative guidance rather than of imposed controls is the best *modus operandi*. The negative provisions of the Scarsdale requirements could be enforced in every respect—with no two buildings alike and all equally bad: whereas merely general but positive objectives constructively interpreted in give-and-take exchanges between architects (with due allowances for the reasonable requirements, as well as the eccentricities, of clients) could well lead to far happier results.

HORACE W. PEASLEE
Washington, D. C.

●

Dear Editor: Tomson's articles, IT'S THE LAW, which appeared in the November and December issues of **P/A**, should be read and thoroughly digested by architects, city planners, and municipal governments. In my opinion it is evident that our cities, counties, etc., should adopt zoning regulations. However, whatever regulations are adopted must in some way be flexible with social and economic conditions, and in time, the possible changing of these conditions. With an expanding popula-

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p/a VIEWS

(Continued from page 9)

tion, and in turn expanding communities, it is often necessary to change stringent zoning regulations to those of lesser degree.

Although I am not a frequent visitor nor a resident of Scarsdale, I think the community will eventually be an architectural monstrosity. Architecture, esthetically, economically, and practically, is not a static thing. The Scarsdale legislation reminds me of certain areas in and around the District of Columbia where the deeds to property prohibit flat roof houses, prohibit one-story houses, and insist that the architecture conform to a certain period. To my way of thinking, this is the complete reverse of progress. It appears, on the surface, that the architectural profession had little influence on the basis of the Scarsdale legislation.

Many ordinances, regulations, deeds, etc., at one time or another restricted construction to certain costs. It has been proven that with a changing economy these costs restrictions became meaningless. In the "Flower Hill Building Corp." case, it appears that the zoning regulations involved a square foot area requirement, and nothing else. What has this to do with esthetics, public health, safety, etc., of the building of homes? Perhaps the Building Departments of all communities should establish a "Fine Arts Commission" to study and approve all structures. A commission of this nature would have to be trained, open-minded, and not appointed due to political affiliations. We should have more of Tomson's articles.

LEON BROWN
Washington, D. C.

●

Dear Editor: Esthetic zoning as discussed by Bernard Tomson in the November and December issues of **P/A** considers converting into law the standards for residential neighborhoods, which in Southern California have generally been incorporated into deed restrictions by the sponsors and developers of new tracts. If "esthetic zoning" is to embrace design features, which in our best local tracts are passed upon by an architectural committee, then zoning is much too permanent a device. *Time* is of the essence in any kind of zoning.

Because of its terrific population increases, Southern California offers unusual opportunities for a study in "Time, Restrictions, and Architecture" —to paraphrase Sigfried Giedion. Esthetic zoning restrictions suitable for a small, horse-drawn city, such as Los Angeles was at the turn of the century, would be grotesque and preposterous for the hub of the great metropolitan area which now 50 years later surrounds it. Land-use zoning which was made law only 23 years ago is causing much hardship along the boundaries which separate residential neighborhoods from the expansion of the strip commercial districts. Many lots along famous Wilshire Boulevard which lie between business sections are restricted to single-family dwellings, and as such are of little value to their owners. Such hardships would have been tremendously increased with all of the additional restrictions of esthetic zoning. In a city not subject to growth pressures, esthetic zoning could be successfully established.

Certainly in any community it would be highly desirable to put a low-level thermostat under minimum standards for size and appearance. The danger, however, comes in also putting in a high level thermostat, the setting of which would be in the hands of conservative people, who might shut off new ideas in space-planning, construction techniques, and design.

Living customs in this area are far from static, and the 20-30 year limitation of deed restrictions enables one generation to protect its own standards of living and property values, without imposing them on the next. Esthetic zoning then, would seem to be a welcome innovation for those who would

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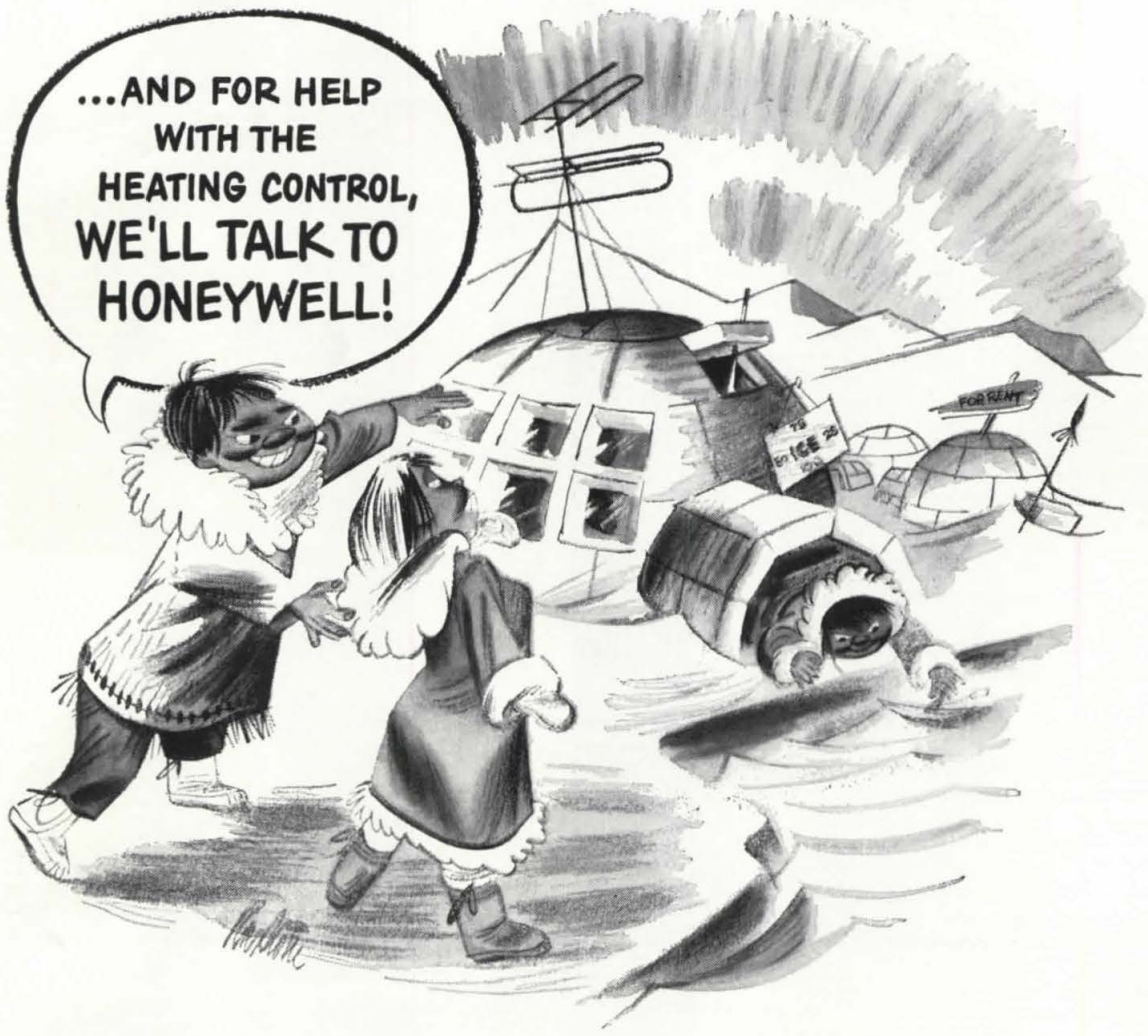

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p/a

VIEWS

(Continued from page 10)

maintain the status quo, but one which could prove a deterrent to the continuous re-evaluation of our residential standards and requirements, which is *basic* to genuine progress.

PAUL R. HUNTER
Los Angeles, Calif.

●

Dear Editor: In analyzing the cases presented by Tomson, i.e., "Gignoux vs. Village of King's Point" and "Matter of Flower Hills Building Corporation," it seems to me that the zoning in question is a matter of land coverage and usage rather than "esthetic zoning." Zoning based on use, land coverage, etc., can be based on very sound planning principles and can be judged impartially and impersonally on such basis. When you speak of esthetic zoning, I am always fearful of the type of academic and dogmatic opinions and the perpetuation of the forms of antiquity such as arose to combat the building of Saarinen's Smithsonian Institute on the Mall in Washington. The fact that our communities architecturally have frequently degenerated into environments which are completely uninspiring, if not depressing, cannot, in my opinion, be corrected by esthetic zoning. It may seem far from the point, but it seems to me significant of the quality of taste, which seems to be general in our country, that soap operas, murder mysteries, and give-away programs flourish, while programs such as the Boston symphony and C. B. S. symphony, which were sponsored by major corporations a few years ago, are now going off the air for want of public support. It may sound like sour grapes, but it seems to me that nothing is so profitable as mediocrity and bad taste. A few bright spots in the architectural world such as the General Motors Technical Center, Drake University, and a few other isolated examples are about the only evidence we have going up today that refinement and good taste in design is being supported by our major corporations and financial interests; I sincerely believe that the bad taste exhibited in radio programs, auto designs, etc., is simply a direct manifestation of the general public attitude toward esthetics.

However I do believe that the architectural profession cannot wash its hands and say that public bad taste is to blame for all the monstrosities and ill-planned designs which we have built every day. It is sometimes appalling to realize that a great many of the architectural horrors which cover the country have architects' names proudly attached.

CHARLES GRANGER
Austin, Texas

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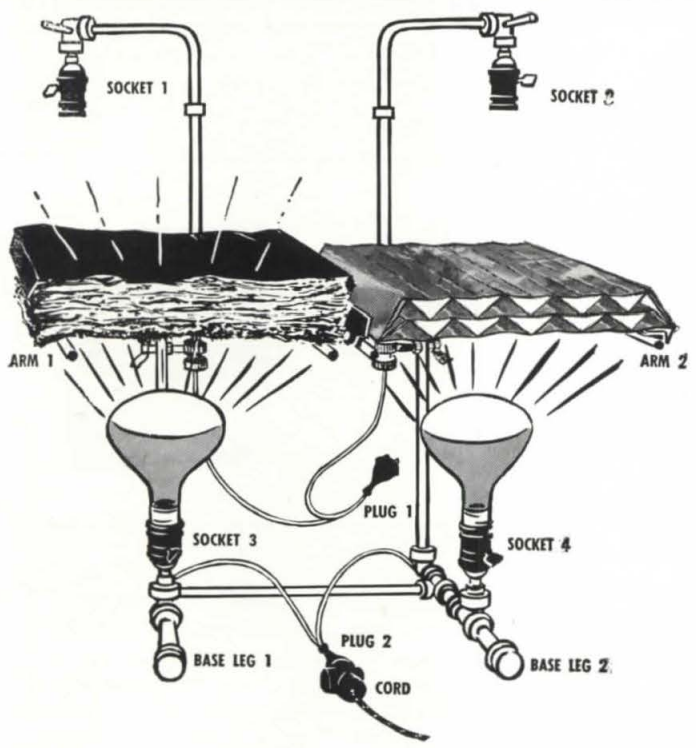

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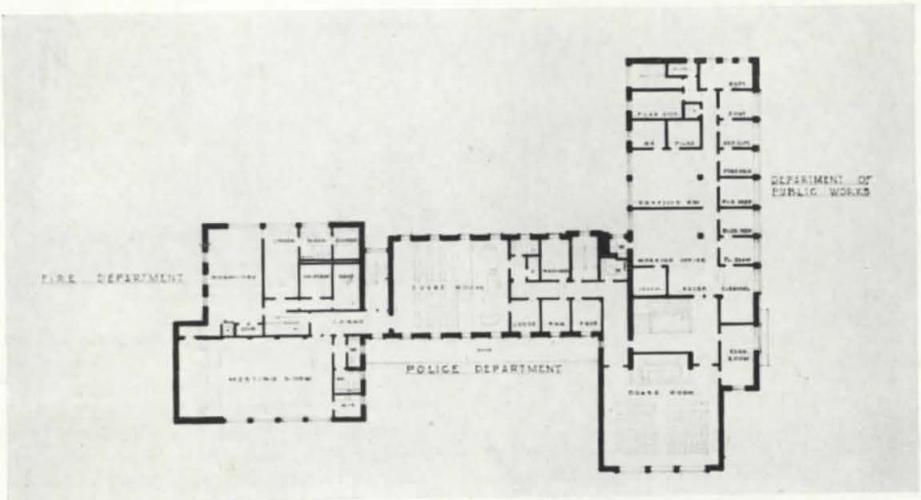
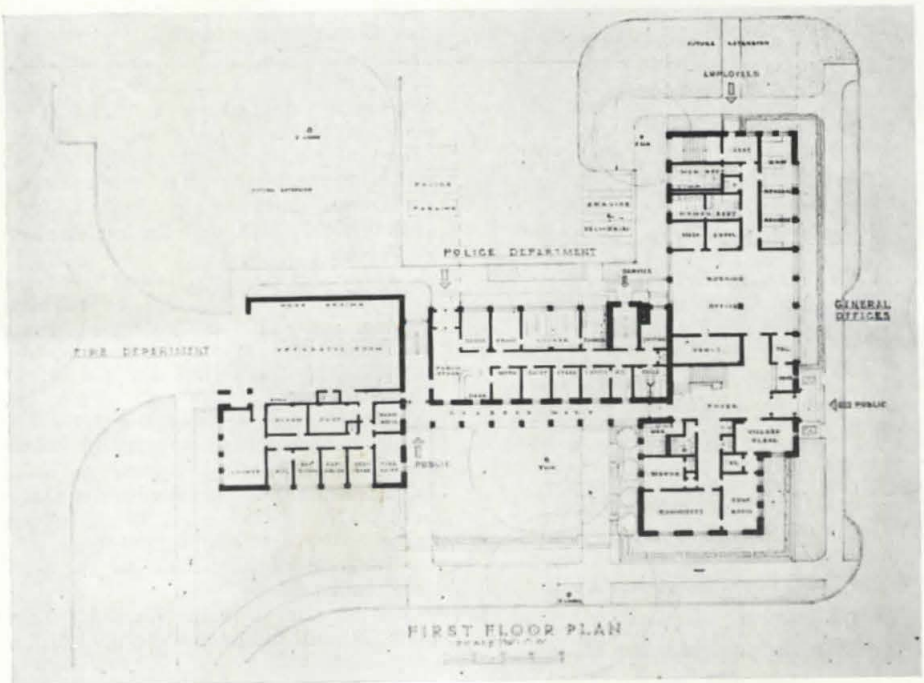
village hall for pioneer garden community





Moore & Hutchins, New York architects who won the recent "Competition for Village Hall: Garden City, New York," now are preparing plans of the $400,000 building that will contain the town offices and the fire, police, and public works departments. The Long Island garden community was founded in 1869 by A. T. Stewart, merchant prince and civic leader of that era, who paid $55 an acre for a large tract of land now occupied by Garden City and Mitchell Field. The municipality was incorporated in 1919.

Eight architectural firms were invited to participate in the design competition, for which Edgar I. Williams, F.A.I.A., New York, was the professional advisor. Their designs were judged by Arthur Loomis Harmon, Thomas Harlan Ellett, and Philip L. Goodwin, all of New York. The competitors included: Gugler, Kimball & Husted; Cameron Clark; Adams & Woodbridge; Gillette & Bell; John S. Burrell & Greville Rickard; Clay, Potter & Coulter; and Charles L. Nutt. Five cash prizes were awarded by the jury.

In a statement addressed to those interested in the awards, the jury commented on the problem of designing a public building for a community of established character as follows:

"The proper solution of a structural problem requires a careful balancing of many factors and the exterior appearance, however beautiful it may seem to its creators or might appear to the passer-by, should not be more important than the sum of all the factors—such as suitability, use, a proper relation of the various parts and their relative importance, and the possibility of erecting the building within the funds available, and maintaining it within the yearly budget . . . An extravagant plan and/or one which, to be completed, requires the diversion of considerable sums for nonessential elements, becomes as impossible of realization as though it were too large. And the owners, having asked for bread, would be given cake.

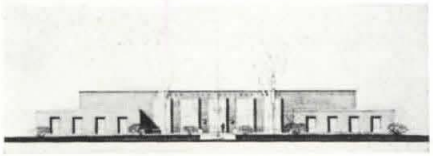
"A private owner may dispose of funds as he wished, but the proper use of municipal funds is a public trust . . . Never have these considerations been of more importance than they are today."

(Continued on page 16)

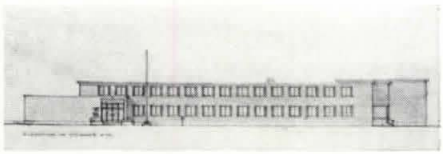
PROGRESS REPORT

(Continued from page 15)

Fifth prize: Gugler, Kimball & Husted



Second prize: Gillette & Bell



Third prize: Charles L. Nutt

Fourth prize: John S. Burrell, Greville Rickard

Comments of the jury on the five designs awarded prizes were as follows:

First prize: Moore & Hutchins. "The majority jury feel that this design is definitely the best solution of all the basic factors stated above. The disposition of the parts is excellent, as is their inter-relation and relative importance. The plan is well integrated and the circulation throughout is good. The evidence of judgment and logical thinking is apparent. The exterior is eminently suitable to its locality and this period. It is in scale with its surroundings in mass and composition, in harmony with its plan, and in its details is contemporary with today's thinking without being offensive to yesterday's precedents. It bears the evidence of competence.

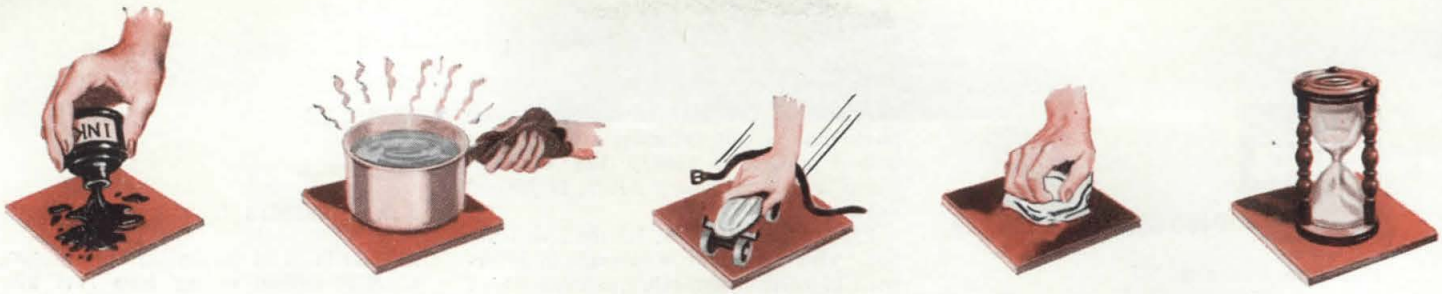
"In one detail, the jury suggests that the Board Room and its dependent areas would be improved by placing the Platform on the east end. This will provide a side light and, in its judgment, improve the planning."

Second prize: Gillette & Bell. "This was the runner-up and the minority preference because of its excellent symmetrical mass and its monumental character.

"The majority agreed that the mass is excellent but that it was perhaps too monumental, and that certainly too much had been sacrificed to that end. It seems to them that the five great windows shown on the exterior are not an *honest* expression of the numerous small two-story spaces behind them, and that while they appear as units on the drawing they would not be so in actuality, because of the spandrels between the first and second floors and the location of partitions on the window muntins."

Third prize: Charles L. Nutt. "The plan is well integrated and it fulfills

(Continued on page 18)



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THE MODERN STYLE IS CLAY TILE

PROGRESS REPORT

(Continued from page 16)

many of the requirements, but the long, narrow corridors are unfortunate and the exterior is judged to be an unsatisfactory solution."

Fourth prize: John S. Burrell & Greville Rickard. "In spite of meeting the requirements in many ways, the plan lacks proper intercirculation and the partly enclosed court seems unnecessary under the plot conditions. More particularly, the exterior, although an honest effort to marry the Colonial Style to contemporary needs, is judged unsuccessful."

Fifth prize: Gugler, Kimball & Husted. "This was awarded a prize in deference to certain esthetic qualities which are evident. However the majority felt that it is unrealistic in the dispersion of its parts, in its extravagant use of nonessentials, and in its over-emphasis on a past age. It is, for instance, illogical to suppress both the entire Police and Fire Departments to the status of enclosing walls. The jury decided, that if selected it could not possibly be realized."

NOTICES

NEW ADDRESSES

In order to avoid suspension of subscription or other mishap arising from Post Office failure to deliver P/A regularly, all subscribers contemplating change of address are urged to advise us at least 30 days in advance, sending notice to: Miss Sue Feldman, PROGRESSIVE ARCHITECTURE, 330 W. 42nd St., New York 18, N. Y.

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SOUTHWEST RESEARCH INSTITUTE, Revere Quality House Program, 33 W. 42 St., New York 18, N. Y.

GERHARD E. KARPLUS, Architect, 33 E. 75 St., New York 21, N. Y.

SKIDMORE, OWINGS & MERRILL, Architects, 575 Madison Ave., New York 22, N. Y.

F. H. WELLS, Structural Engineer, 173 W. Madison St., Chicago 2, Ill.

DEWITT C. GRIFFIN & ASSOCIATES, Consulting Engineers, 525 Central Bldg., Seattle, Wash.

ROTHWELL & LESTER, Architects and Engineers, 821 Alaksa St., Rm. 201, Honolulu, Hawaii.

FRANCIS PALMS, JR., Architect, 3 Dupont Circle, Washington 6, D. C.

BLUESTONE & BLUESTONE, Structural Engineers, 316 Fifth Ave., New York, N. Y.

FRANK J. STEPNOSKI & SON, Architects, 25 E. Merrill Ave., Fond du Lac, Wisc. W. E. BURK, JR., Architect, 512 S. Yale Ave., Albuquerque, New M.

HOMER A. SHREWSBURY, JR., Designer, 238 E. Las Olas Blvd., P.O. Box 1599, Fort Lauderdale, Fla.

ELEANOR PEPPER, Design Consultant, 150 E. 35 St., New York, N. Y. (not 55 St., as announced on page 10, November 1950 P/A).

AMERICAN INSTITUTE OF DECORATORS, New York Chapter, 211 E. 49 St., New York, N.Y.

JOHN HANCOCK CALLENDER, Architect, 33 W. 42 St., New York, N.Y.

REISNER & URBAHN, Architects, 654 Madison Ave., New York, N.Y.

ROY A. LIPPINCOTT, Architect, 3275 Wilshire Blvd., Los Angeles 5, Calif.

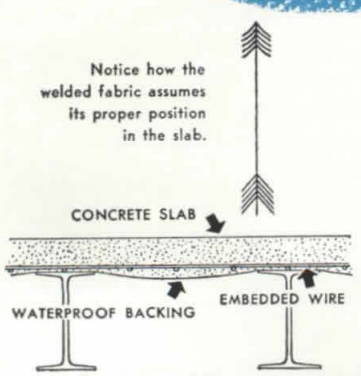
P. ARTHUR D'ORAZIO, Architect, 712 Union National Bank Bldg., Youngstown, Ohio.

JAMES A. BRITTON, Architect, 315 Federal Street, Greenfield, Mass.

JOHN H. GRAHAM, Architect, 2430 Pennsylvania Ave., N.W., Washington, D. C.

MILLARD P. BUCK, Architect, Johnstone Bldg., Bartlesville, Okla.

You speed construction and cut costs with Pittsburgh Steeltex Floor Lath



Pittsburgh Steeltex Floor Lath speeds construction and cuts costs because it permits you to pour your floors while continuing complete operations on the floor below. You get a stronger slab because it is properly reinforced with welded wire mesh—properly cured because the moisture is retained by waterproof backing. For further detailed reasons for specifying *Steeltex,* see Sweet's or write for catalog D. S. 133, Dept. PA, Pittsburgh Steel Products Co., Grant Building, Pittsburgh 30, Penna.

Pittsburgh Steel Products Company

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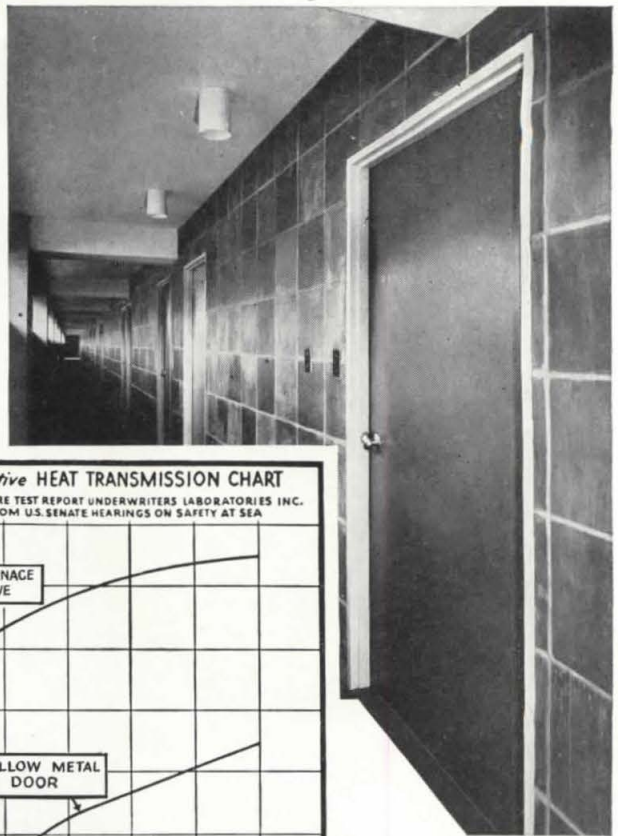
When you're considering doors...

Here are some COLD FACTS about a HOT PROBLEM

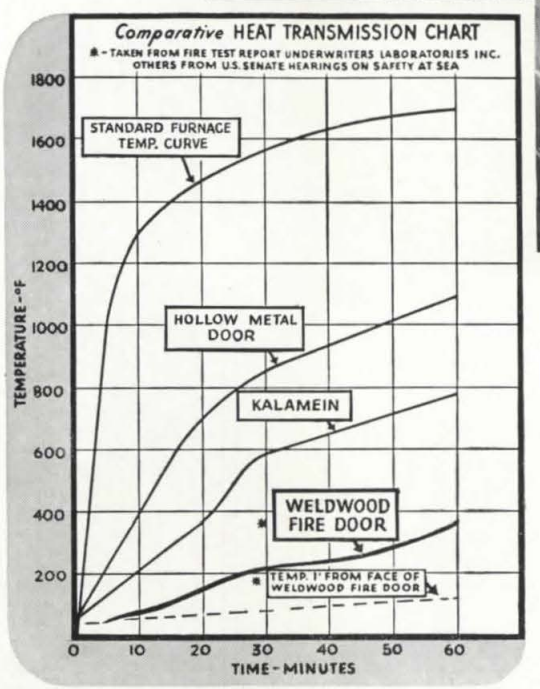


Low Heat Transmission is another reason why you should choose Weldwood Fire Doors

Fire protection has two sides to it. Of course, it's necessary to block passage of the flames. Another requirement . . . and more difficult to meet in the past . . . is the maintenance of reasonably low temperatures in the protected area, so that *heat* can't damage contents (or even start a new blaze).

In a word, the ideal fire door should *insulate.*

Weldwood® Fire Doors (Underwriter-labeled for Class "B" openings) do just that. In a recent test, the temperature one foot away from the unexposed side of a Weldwood Fire Door stayed down to only 102°F., after one hour's exposure to flame. Indeed, the temperature of this unexposed face of the door was well under 400°!



The chart shows you how that compares with both Kalamein and hollow metal doors...*cold facts* that prove the superiority of Weldwood Fire Doors.

And when you consider the bonus of beauty you get in the wide variety of faces of imported and domestic hardwoods . . . you'll start reaching for your fountain pen to o.k. the order.

Now you'll get a pleasant surprise. For the price on that order is astonishingly low . . . so low that no modern building can afford to be without the protection these doors give it.

Weldwood Fire Doors are now available in standard sizes up to 4′ wide. If desired, they can be furnished with a 10″ x 10″ glazed light.

You owe it to yourself to get complete information on this Underwriter-labeled Fire Door. Write today, and ask us to send you full details.

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THE WELDWOOD STAY-STRATE DOOR

While this door has the same incombustible Kaylo Core material as the Fire Door, it doesn't carry the Underwriters' Label.

It does, however, offer extraordinary fire protection . . . as well as other advantages, such as dimensional stability, light weight, permanent resistance to vermin and decay, and modest cost.

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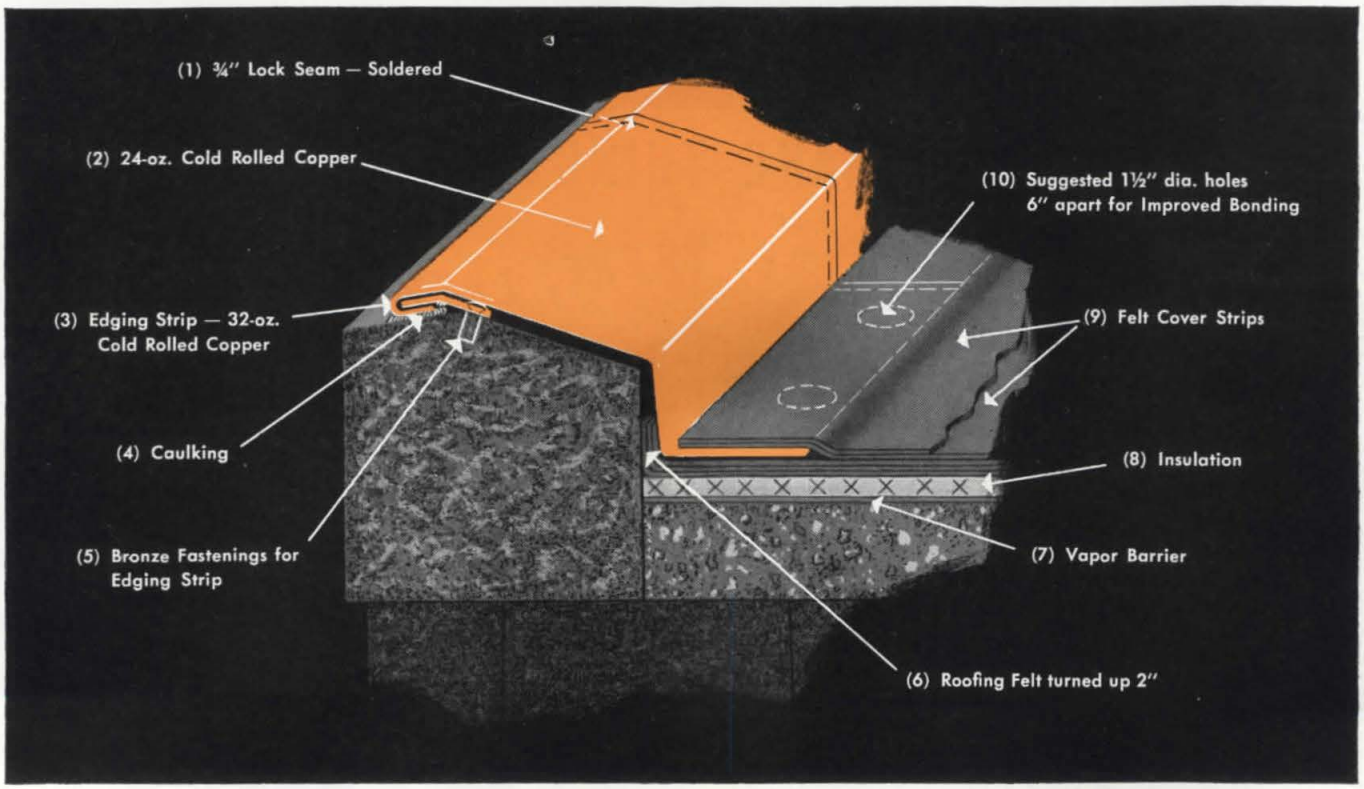

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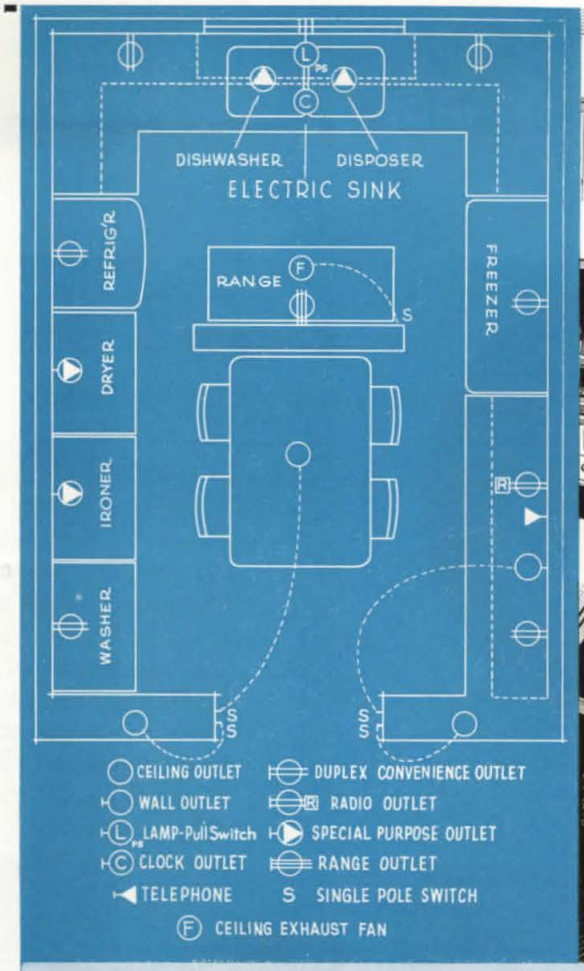

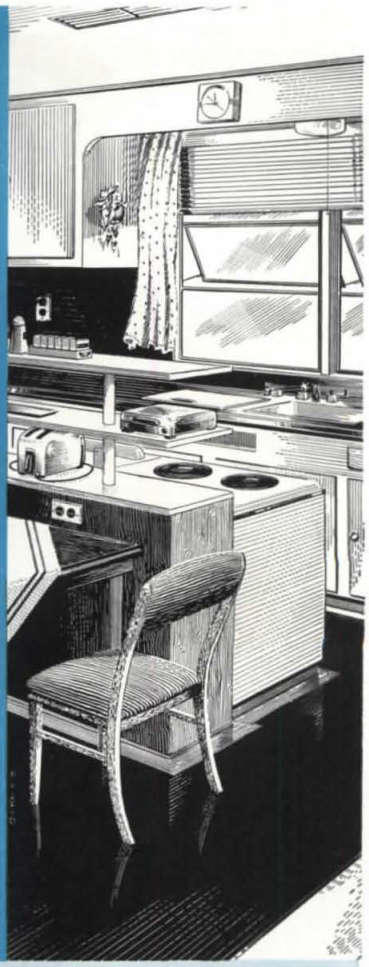

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A: Because this metal-to-glass seal is *airtight*—hermetically sealed. The clean, dry insulating air between the panes of *Thermopane** is not subject to changes in moisture content. No desiccant is necessary to absorb excess interior moisture. The sealed air space has a uniform ability to insulate against the loss of heat.

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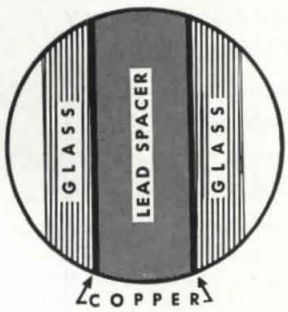
Q: WHAT'S THE SEAL MADE OF?

A: Of a lead spacer and a special copper alloy we developed after more than 2,000 tests with all sorts of organic and inorganic materials. These durable metals will not corrode or rust under normal conditions. They are flexible to withstand strain.

Q: HOW IS THIS SEAL PUT ON?



A: A continuous strip of copper is bonded to the inner surface along the edge of each pane . . . then the lead spacer is heat-bonded to the copper alloy. Glass, copper band and lead spacer are joined into one strong, solid unit.

Q: HOW DO WE GET THE AIR DRY AND ASSURE AN AIRTIGHT SEAL?

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Cutaway view of *Thermopane* Unit

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D	Lead spacer	

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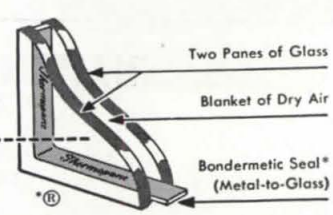
FOR BETTER VISION SPECIFY THERMOPANE MADE WITH POLISHED PLATE GLASS



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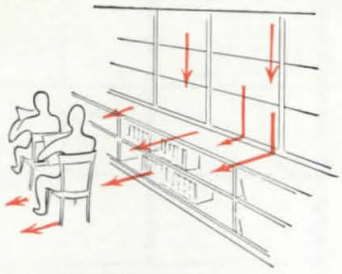
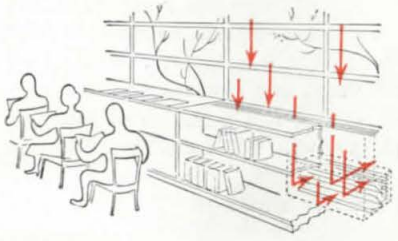


YESTERDAY'S PROBLEM *of drafts is shown in this classroom. Above you see how cold air travels unhindered, presents a cold front problem of discomfort and possible illness.*



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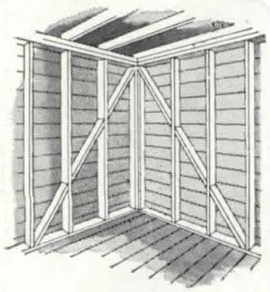
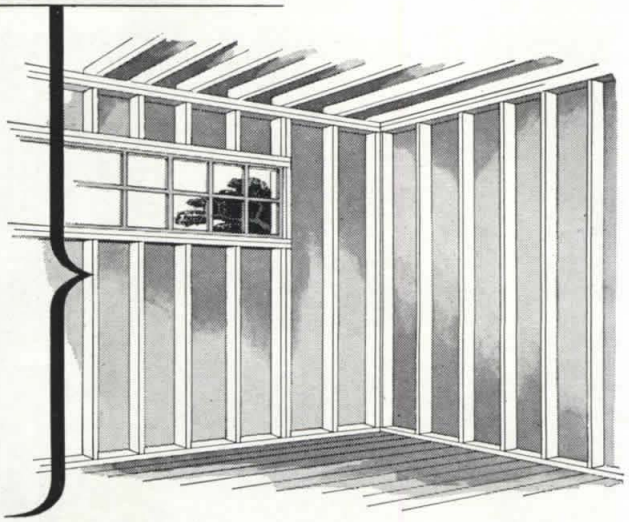


WITH NO CORNER BRACING



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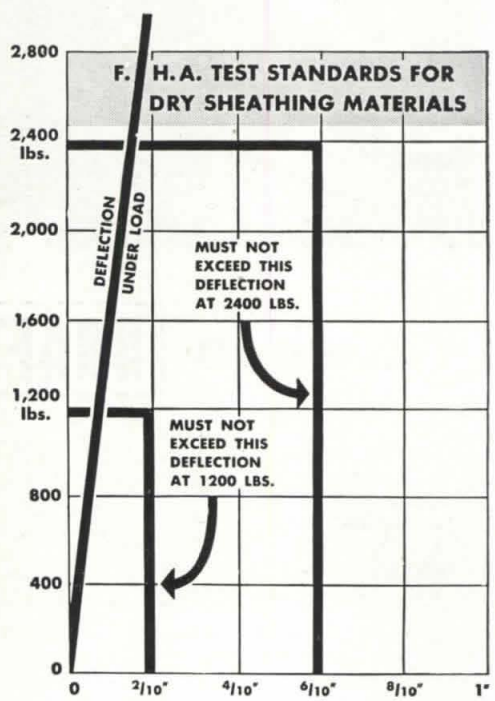
. . . surpasses *corner-braced*, horizontal wood sheathing

SINCE 1937, Homasote has been eligible for F.H.A. Mortgage Insurance—*with no corner bracing*—as used in Precision-Built Construction. The F.H.A. standards require bracing strength equal to horizontal wood sheathing *with corner bracing.* Racking tests—by an independent laboratory—showed that Homasote, without corner bracing, has a 150% margin of safety at 1200 lbs. and a 300% margin at 2400 lbs. over these requirements. Many another test has repeatedly shown Homasote to be the strongest insulating and building board on the market.

No corner bracing is required when Homasote—in 4′ widths or in greater widths up to 14′—is used on jobs under F.H.A. supervision.

Homasote is weatherproof—tested for more than 30 years under every weather condition—from the tropical to the antarctic. With its unusually low moisture absorption, low air infiltration and high resistance to water-permeability, Homasote provides the maximum in lasting insulation values and full protection against dampness.

Homasote's Big Sheets require only one third as many nails as do 4′ materials. With this lower application cost and the additional savings through the elimination of corner bracing, architects and builders can safely specify Homasote sheathing for *the strongest house at the lowest cost.*



THIS CHART shows the results of racking tests made by an independent laboratory, using 8′ x 8′ Homasote sheathing on standard wall framing *without corner bracing.* At 1200 lbs. pressure, deflection could not exceed 2/10 inch; at 2400 lbs. pressure, *6/10 inch.* . . . The diagonal line shows that Homasote *without corner bracing* had a margin of safety of 150% at 1200 lbs. and 300% at 2400 lbs.

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The heavier the washroom traffic for which you must plan, the more vital it is to make sure the plumbing fixtures will give long years of service with a minimum of maintenance. Case fixtures are molded of the finest vitreous china, highly lustrous and unsurpassed in permanence, sanitation, and resistance to acids and discoloration. Fittings are specially designed for the needs of the fixture in which they are used—a factor of great importance in long service life. The fixtures are available with chair carriers—a necessary safeguard in many installations. For the name of your Case Distributor, see your local Classified Telephone Directory—or write W. A. Case & Son Mfg. Co.,
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Part of the *Thrill* of making the team

To many a first-year school athlete, much of the thrill of "making the team" is his assignment to personal space in the team locker room. His private Berger Steel Locker is real evidence that he "belongs". It's part of his introduction to the comradeship and good-fellowship that typify American competitive sports.

Berger Steel Lockers are strong and rugged . . . built to stand up under the wear and tear of generations of exuberant athletes. By specifying this safe, convenient, well-ventilated storage, the school architect has helped make uniforms and equipment serve through several seasons . . . helped protect them against loss and unauthorized use.

Chances are that Berger may have helped the school architect work out the details. Berger offers architects and builders a thorough factory engineering and installation service based on many years experience in solving school equipment problems. See Sweet's Architectural File for more details, or write:

154 free-standing single tier Berger Steel Lockers are installed in the boys' locker and dressing rooms at Euclid Senior High School, Euclid, Ohio. Harry A Fulton, Architect.

Berger REPUBLIC STEEL

Manufacturing Division

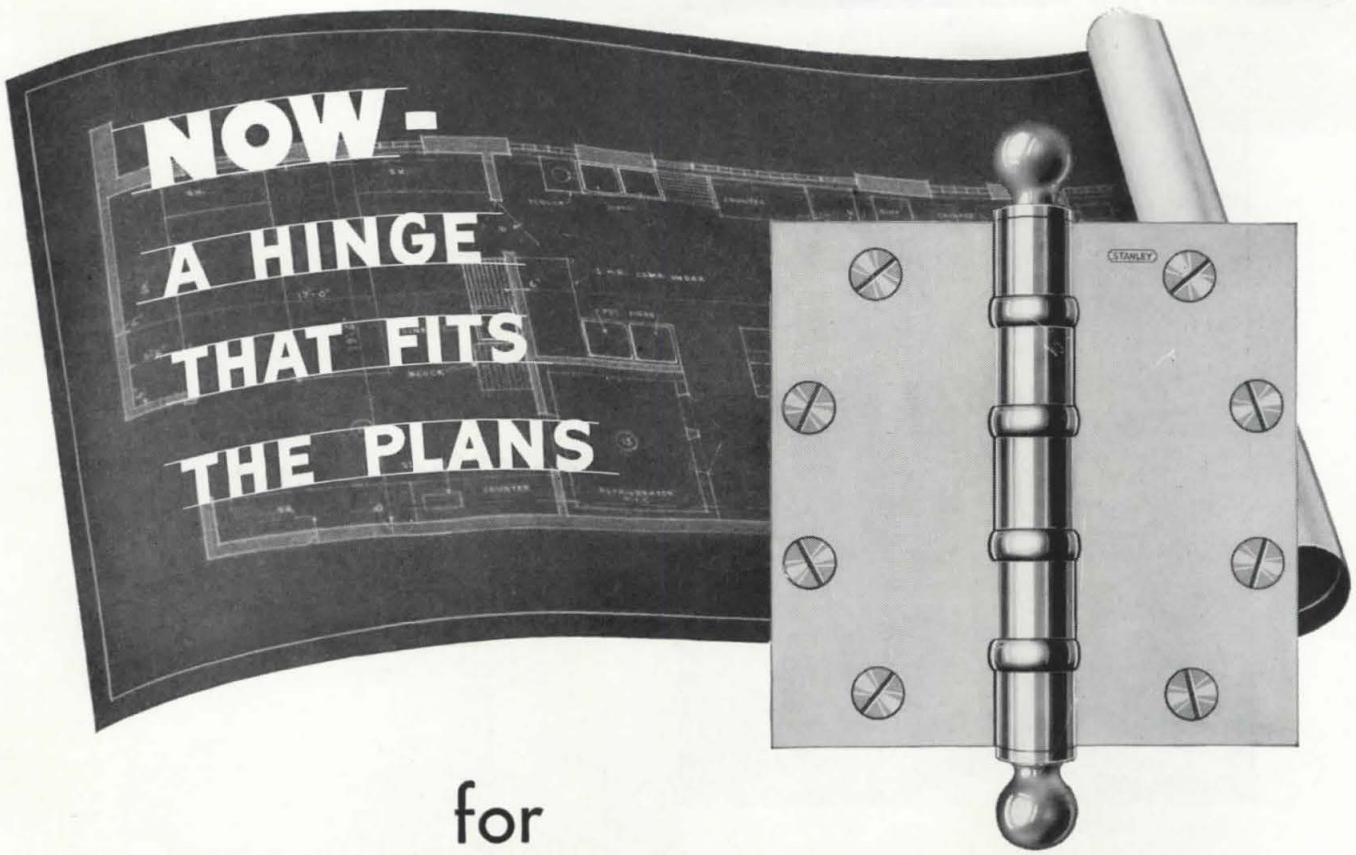
REPUBLIC STEEL CORPORATION • CANTON 5, OHIO

A COMPLETE STEEL EQUIPMENT SERVICE FOR THE SCHOOLS OF AMERICA

steel

Lockers • Wardrobes • Storage Cabinets
Office Equipment and Furniture
Cabinets for Kitchens • Laboratories • Dispensaries
Shop Equipment • Shelving • Book Shelf Units

BERGER *Steel School Equipment*



for

HEAVY DUTY SERVICE

Full-Jeweled
Ball Bearing Butt Hinge

takes lateral as well as vertical thrust

Exclusive Full-Jeweled Ball Bearing assembly consists of a movable and fixed raceway. When lateral thrust occurs, the movable raceway transmits the force directly to the bearings, which, in turn, are held firmly by the fixed raceway. Thus, the weight of the door is supported both laterally and vertically on ball bearings.

Now Stanley provides the Full-Jeweled Hinge—with new ball bearing construction for carrying *lateral* as well as *vertical* thrust. It fits the plans that require *a hinge that won't wear out.*

The Full-Jeweled Hinge is the result of exhaustive laboratory and field tests. You can specify it for heavy doors, exterior doors or for doors receiving high frequency service—with full confidence that it will last longer than any other hinge made.

Now all Stanley Extra Heavy Ball Bearing Hinges have Full-Jeweled Bearings.

REMEMBER  THREE HINGES TO A DOOR

STANLEY

Reg. U.S. Pat. Off.

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HARDWARE • TOOLS • ELECTRIC TOOLS • STEEL STRAPPING • STEEL

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beautiful doors...

durable doors...

for better residential construction

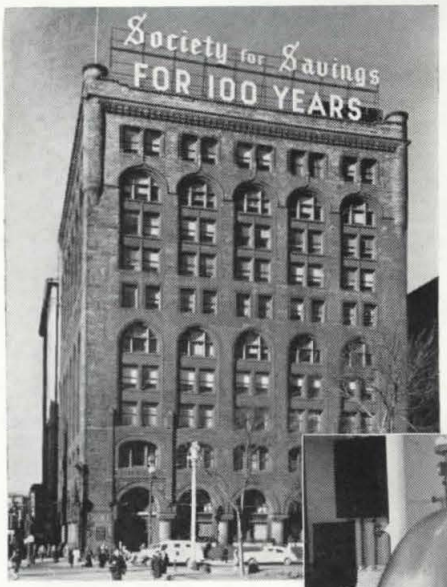
For the first time the builder may procure from a single source a steel door frame, flush swing door and choice of four types of high quality hardware. These new Truscon Residential Steel Doors are smart . . . strong . . . modern. Precision engineered and carefully manufactured. Smooth, quiet, trouble-free in operation.

Outstanding economy of labor and material for installation is a major feature. Steel construction protects against warping, shrinking or sagging during the life of the structure. Efficiency of space and operating convenience are special advantages of the sliding closet doors.
See SWEET'S for complete details on Truscon Residential Steel Doors, and all other Truscon Steel Building Products.

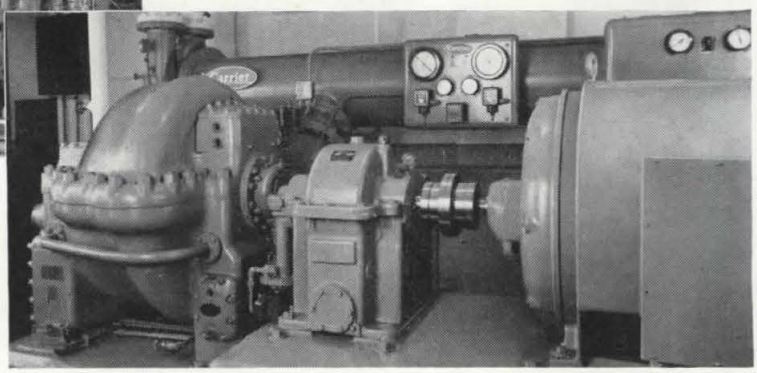
TRUSCON MARK OF MERIT PRODUCTS

TRUSCON® STEEL COMPANY YOUNGSTOWN I, OHIO

Subsidiary of Republic Steel Corporation



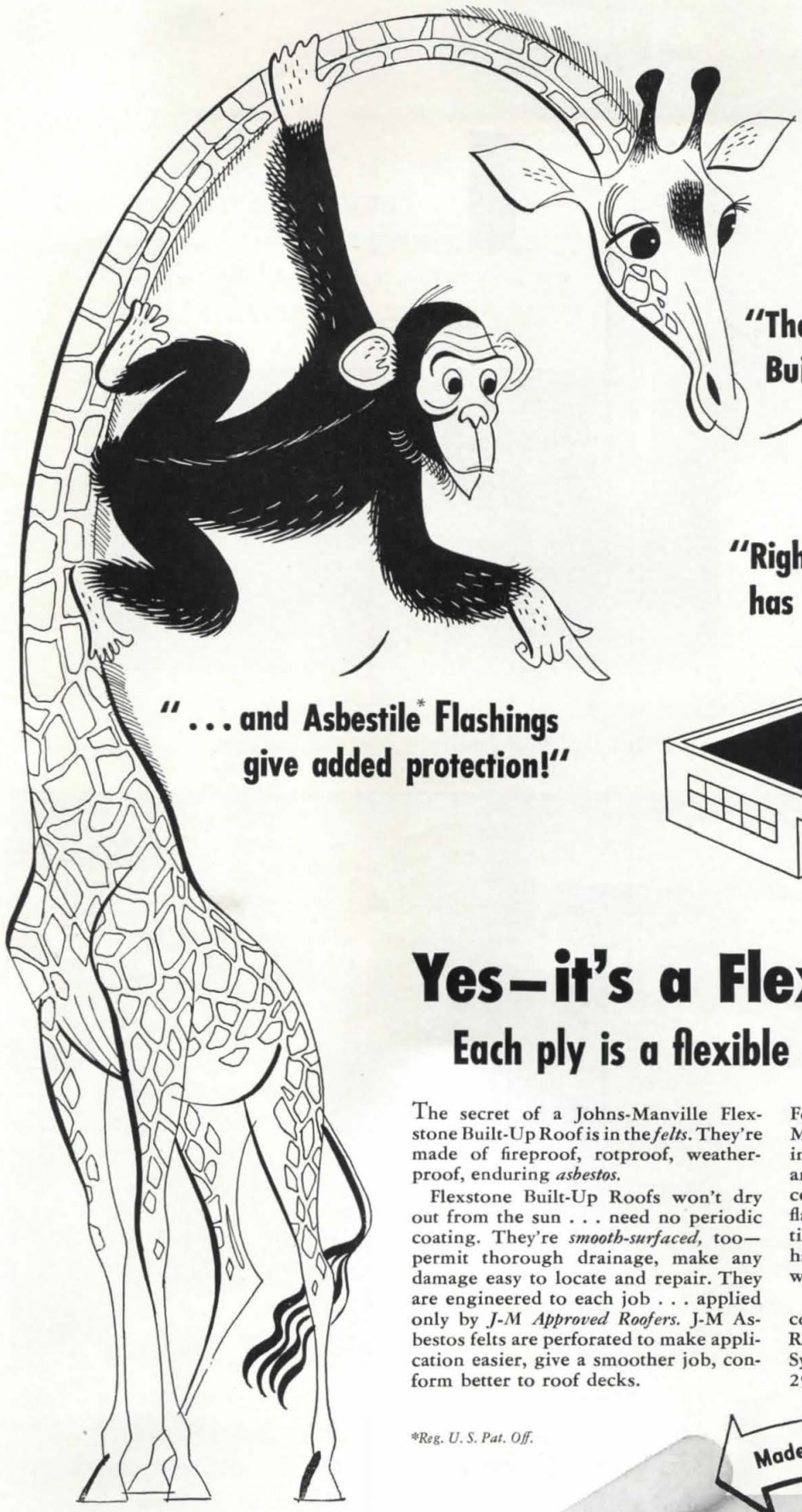
1 This is the Society for Savings in the City of Cleveland. To begin their second century this large mutual savings bank completely modernized the building interior—and installed Carrier air conditioning.



2 This is the Carrier Centrifugal Refrigerating Machine. It provides refrigeration for both the Carrier Weathermaster System (individual room controls at the turn of a dial) and a central zone system.

3 This is where they put the Carrier Centrifugal Refrigerating Machine. It's right next to the School Savings Department. Yet the Society for Savings says: "While in full operation it has never caused any distraction or inconvenience." Carrier Corporation, Syracuse, New York.

Carrier **Air Conditioning · Refrigeration · Industrial Heating**



Yes—it's a Flexstone* Roof

Each ply is a flexible covering of stone!

The secret of a Johns-Manville Flexstone Built-Up Roof is in the *felts*. They're made of fireproof, rotproof, weatherproof, enduring *asbestos*.

Flexstone Built-Up Roofs won't dry out from the sun . . . need no periodic coating. They're *smooth-surfaced*, too—permit thorough drainage, make any damage easy to locate and repair. They are engineered to each job . . . applied only by *J-M Approved Roofers*. J-M Asbestos felts are perforated to make application easier, give a smoother job, conform better to roof decks.

For your added protection, the Johns-Manville Asbestile* System of Flashing insures proper treatment of all critical areas. Asbestile is a heavy-bodied plastic cement designed for use with asbestos flashing felts to give thorough watertightness. As it sets, Asbestile becomes hard and forms an integral part of the wall itself.

Send for brochure BU-51A. Contains complete specifications for Flexstone Roofs and Asbestile Flashing System. Johns-Manville, Box 290, Dept. PA, N.Y. 16, N.Y.

JOHNS-MANVILLE JM PRODUCTS

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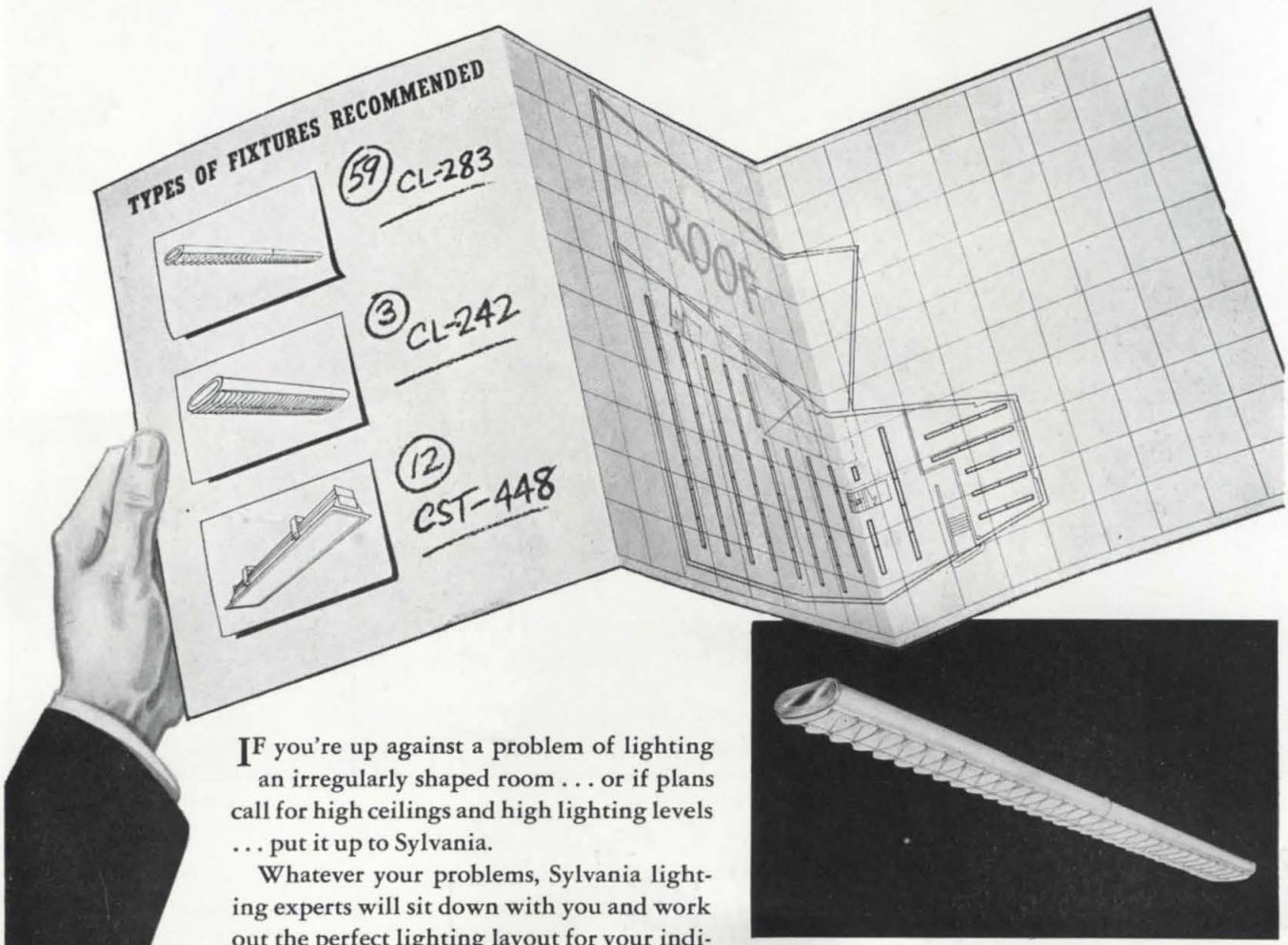
Made of ASBESTOS

Johns-Manville *FLEXSTONE** Built-Up Roofs

ASBESTOS CORRUGATED TRANSITE* • ACOUSTICAL CEILINGS

DECORATIVE FLOORS • MOVABLE WALLS • ETC.

See how SYLVANIA solves your lighting layout problems



IF you're up against a problem of lighting an irregularly shaped room . . . or if plans call for high ceilings and high lighting levels . . . put it up to Sylvania.

Whatever your problems, Sylvania lighting experts will sit down with you and work out the perfect lighting layout for your individual requirements.

With Sylvania you get assurance of correct all-over lighting, from a leader in the fluorescent lighting field. You'll get smart, attractive fixtures that harmonize with any interior . . . win client approval.

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The Sylvania Trimline Series offers you fluorescent fixtures easily adapted to the needs of any office, store, or school. Made with plastic or metal shielding. Equipped with 2 or 4 Sylvania tubes . . . standard start or instant start . . . in 4-foot or 8-foot lengths.

CL-283. This handsome Sylvania Trimline Fixture is equipped with two 96-inch, T-12 instant-start Fluorescent tubes. Luminous side panels add to the overall efficiency and attractive lighting effect.

Get this FREE Lighting Data Folder

Here's the information architects have long needed. Here are detailed charts for calculating proper illumination . . . determining types of Sylvania fixtures. Handy as a slide rule. For free copy mail the coupon now.

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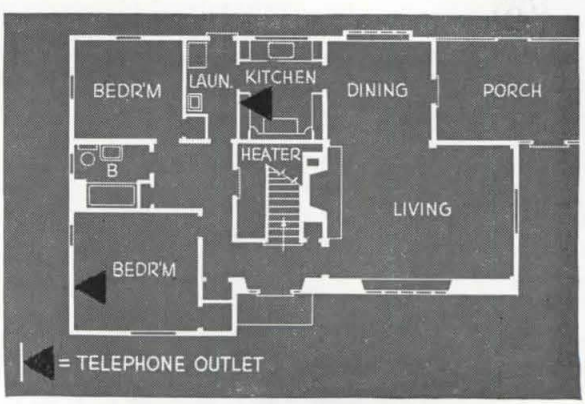
*Street*_____

*City*_____ *Zone*___ *State*_____

GEORGE R. PAUL, *Architect*

Plan a "disappearing act" for telephone wires



Hidden telephone wiring helps protect the beauty of carefully planned interiors. It helps, too, in selling quality-conscious prospects. For telephone raceways are a sign of thorough planning and thoughtful construction.

It's easy and inexpensive to build in telephone raceways. First, select convenient locations for telephone outlets. Then, during construction, have a few lengths of rigid or flexible conduit placed inside the walls and connected to the outlets. These provide "hidden passages" for wires when telephones are installed later on.

Your Bell Telephone Company will be glad to help you. Just call the local Business Office for assistance in planning telephone service in the homes you build.

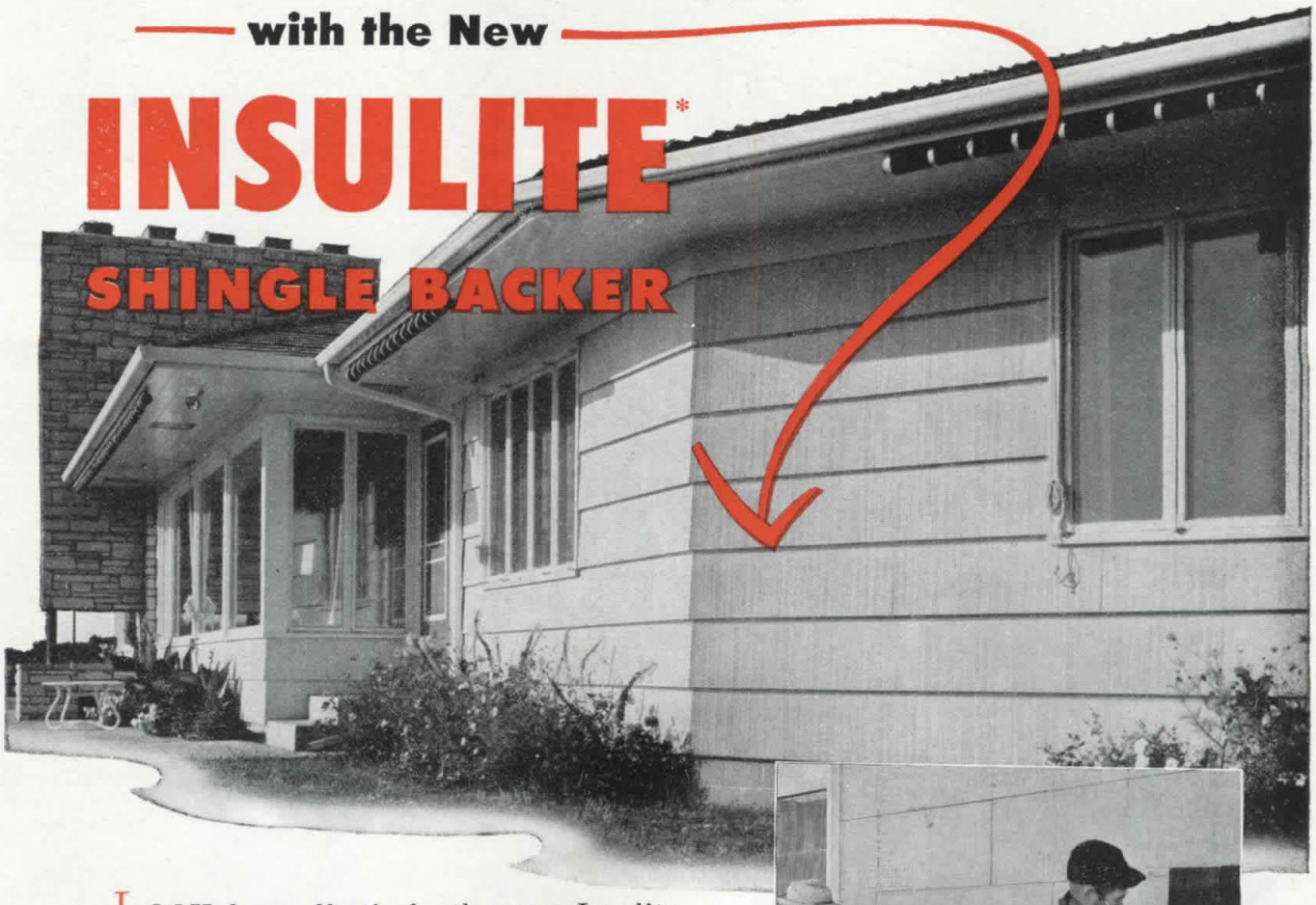
BELL TELEPHONE SYSTEM

Now! Shadow-Line Beauty...Faster, Easier!

with the New

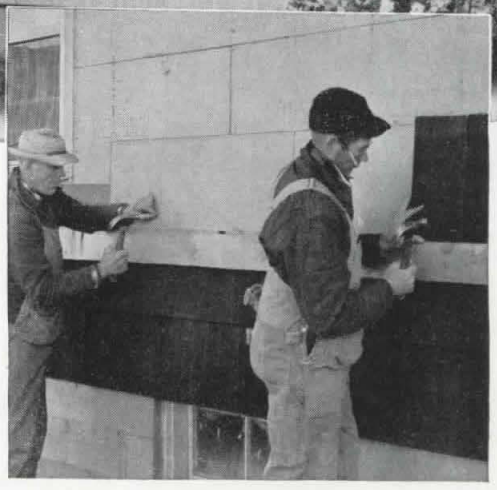
INSULITE*

SHINGLE BACKER



LOOK how effectively the new Insulite SHINGLE-BACKER achieves rich, new beauty for shingled exteriors! See how easily it solves the problem of uniform exterior shingle application! The long 48-inch panels cover a lot of space — *fast* — and provide a firm, smooth undercourse that makes it easy to match the outside processed shingles with uniform deep-line shadow beauty.

Only a few seconds time and just 4 nails give you a strong, wind-resistant, uniform undercourse that ordinarily requires many miscellaneous shingles, many nails and much longer time to apply. It saves man-hours, eliminates waste . . . and in many cases the total applied cost is surprisingly less than the cost of standard double-coursing procedure. Insulite SHINGLE-BACKER is made of genuine waterproofed Graylite—asphalt-impregnated throughout. It is equally effective for shingling on wood sheathing or Bildrite Sheathing. Ask your Insulite representative to give you all the facts.



RESISTS WINDS BEYOND 250 M. P. H.

Complete instructions show how to use the new Insulite application system for applying shingles over Bildrite Sheathing with the new SHINGLE-BACKER. Test panels, using this system with "Stronghold" grooved nails, have resisted air blasts of more than double hurricane velocity in laboratory wind tunnels—without the loss of a single shingle. Holding strength with plenty to spare!—plus extra insulation, plus assurance of uniform, attractive, exterior beauty.

2-51

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

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USE WINDPROOF BALSAM-WOOL Wind infiltration through Balsam-Wool® in a frame wall is less than .000203 cubic feet per square foot per hour. For complete information about Balsam-Wool application, send for free A.I.A. file folder containing informative data sheets. Wood Conversion Company, Dept. **117-21,** First National Bank Building, St. Paul 1, Minnesota.

balsam-wool

Sealed Insulation — A Product of Weyerhaeuser

Robert S. De Golyer, *Architect*

MODERN DOOR CONTROL BY *LCN* · CLOSER CONCEALED IN HEAD FRAME

THE BROCKTON, CHICAGO, ILLINOIS

LCN CATALOG 11-E ON REQUEST OR SEE SWEET'S • LCN CLOSERS, INC., PRINCETON, ILLINOIS

FACTORIES, hotels, hospitals and other structures and buildings erected now will require much less maintenance in years to come — if effective *rust control* with RUST-OLEUM is written into the original specifications.

Protection against costly rust is particularly important in structural beams and columns, metal deck ceilings, crawl spaces, metal sash, etc., where manufacturing processes, industrial fumes, and condensation due to ventilation difficulties increases serious rust damage that threatens the structural strength of the metal.

RUST-OLEUM effectively retards rust because its tough, pliable, moisture-resisting film combats the causes of rust — even under many of the most difficult conditions.

25 years of superior service to industry is proof that RUST-OLEUM gives excellent results in protection of rustable metal. RUST-OLEUM is highly resistant to water, dampness, brine, heat, industrial fumes, general weathering, and many other rust producing conditions.

In drawing up specifications that involve the use of rustable metal, consider the extra protection that RUST-OLEUM provides. Specify RUST-OLEUM as the shop coat on all new steel. Remember, the first primer coats are the foundation on which your plan for future protection must stand. It's a profitable, *worthwhile* investment for your client!

When you deal with rust problems, we'll gladly help you with specific recommendations. See the complete RUST-OLEUM catalog in Sweets Architectural File, or write for a copy. RUST-OLEUM can be obtained promptly from Industrial Distributors' stocks in principal cities of the United States and Canada.

RUST-OLEUM CORPORATION
2522 Oakton Street, Evanston, Illinois

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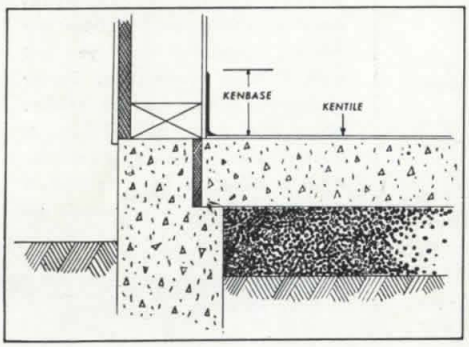
RUST-OLEUM
Stops Rust

Available in many **COLORS,** aluminum and white.

Beautifies AS IT PROTECTS

Recommended and Not Recommended uses for KENTILE Asphalt Tile Flooring



KENTILE IS MADE OF asbestos • coumarone-indene resins • plastisizers • color pigments.

KENTILE CAN BE INSTALLED over any smooth floor that is free from spring, oil, grease lumps or foreign matter • **metal • wood concrete • radiant heated concrete floors • concrete in direct contact with the earth.**

KENTILE COSTS about 25c per sq. ft. for standard 1/8" thickness for a minimum of 1,000 sq. ft. depending on size and condition of floor, colors chosen and freight rates. For an accurate estimate, consult your Kentile Dealer. His name is listed in your classified phone directory under FLOORING.

RESIDENTIAL USES							
KITCHENS	BATHROOMS	BEDROOMS	NURSERIES	LIVING ROOMS	FOYERS	BASEMENT ROOMS	
R	R	R	R	R	R	R	can be installed below grade over concrete in direct contact with the earth (see diagram)
COMMERCIAL USES							
OFFICE WORKING AREAS	PRIVATE OFFICES	CORRIDORS	SCHOOLS AND PUBLIC BLDGS.	LIBRARIES	STORES	RESTAURANTS	FACTORIES
R	R	R	R	R	R	R SPECIAL KENTILE* is recommended for preparation areas	* SPECIAL KENTILE is recommended

SPECIAL GREASE-PROOF KENTILE

* Standard Kentile is not recommended where constantly exposed to grease, oil and cooking residues. Use SPECIAL KENTILE for areas such as:

- **industrial plants**
- **laboratories**
- **machine shops**
- **food preparation areas**
- **cafeterias and restaurants**

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The Asphalt Tile of Enduring Beauty

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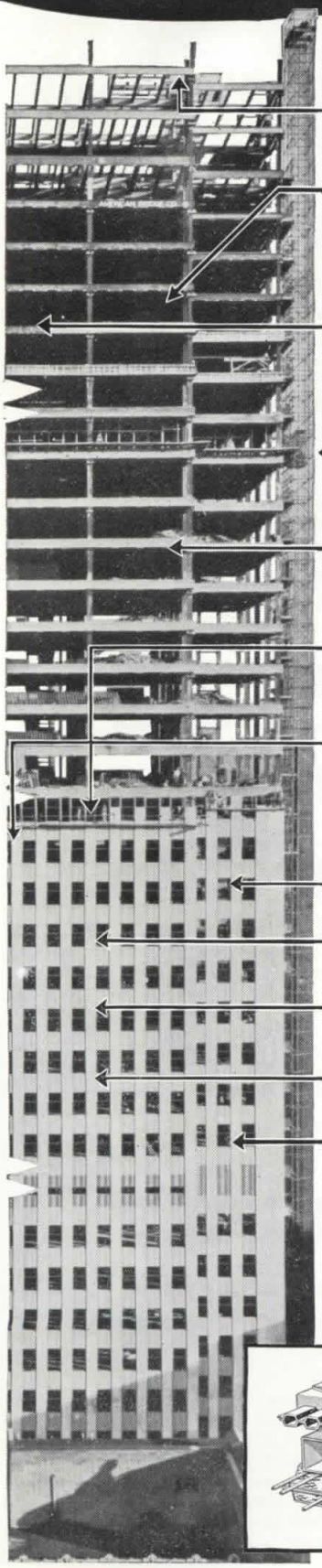
40 FLOORS IN 4 MONTHS WITH Q-FLOOR



STRUCTURAL STEEL WORKER
says he was able to place riveters' forges close to crew on each floor without temporary platforms.

SPANDREL FIREPROOFERS
claim the work was greatly simplified by carpenter shop moved to each floor. Formwork fabricated near where used. Transporting concrete from material hoist to where it was poured was made much easier by smooth Q-Floors.

ELECTRICIAN
was able to time work to his own convenience, roughing-in anywhere in the building, without waiting for other sub-contractors to vacate floor space.

MATERIAL ELEVATOR
could work to every floor, increasing the tower height with the framework. Every floor was available for material storage. There was no double handling.

PASSENGER ELEVATOR
was helped by convenient storage. Several miles of rails were stacked close to where needed but never in the way of other workers.

STONEMASON
saved time on storage. Only one handling of materials from truck on the street to within 20 feet of where used.

BRICKLAYER
unhampered by forms or shoring, worked safely and quickly with materials and equipment loaded onto floor immediately behind the men. Streets and sidewalks not needed for storage.

CARPENTER
moved his shop from floor to floor, with power equipment always nearby.

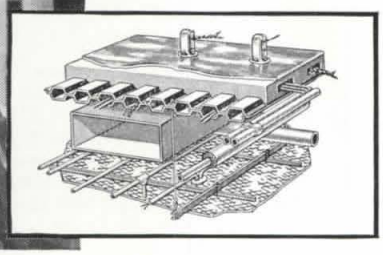
SASH CONTRACTOR
had same storage convenience as masons; only one handling of material, every floor being a warehouse.

HEATING CONTRACTORS
could work on any floor without delay. Every floor was convenient for on-the-spot fabricating.

PLUMBERS
also had complete flexibility of storage and assembly areas.

AIR CONDITIONING
was speeded by needing no preset inserts for duct hangers. When changes of layout were called for, the flexibility especially was an asset.

Steel Q-Floor is shown here with suspended ceiling and a condensed presentation of mechanical equipment needed in a modern building. No preset inserts.



LOOK BETWEEN THE LINES and you will see the evidence of how Q-Floors reduce the overall cost of a building. The subcontractors say their men were able to work faster. Materials were handled less.

Time saved is merely another way of figuring money saved. Another saving accrues from the earlier completion date you get with Q-Floor construction. Earlier occupancy brings revenue sooner. When the price of Q-Floors is quoted, these savings cannot be actually deducted from the cost of the Q-Floor, but they should be kept in mind.

The General Contractor, and others closely associated with the building found it hard to realize that there were 1,000 men distributed over the building at once. This type of construction permits all the trades to work at one time with smaller groups. This is one reason for the speed—hence the lower cost.

★ ★ ★

PICTURED—The Mellon U. S. Steel (525 Wm. Penn Place) Building, Pittsburgh, when steel frame was completed.

***Architects*—Harrison & Abramovitz, New York City.**

***Associate Architect*—William York Cocken, Pittsburgh.**

***Contractor*—Turner Construction Co., New York City.**

H. H. ROBERTSON CO.

2405 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in All Principal Cities in the U. S. and Canada

World-Wide Building Service

Control Room: Radio Station WFDR, New York, N. Y.
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Engineer: Fred L. Moesel Associates, New York, N. Y.
Mechanical Contractor: The J. M. Fink Co., New York, N. Y.

Twice beautiful to the engineer's eye...

kno·draft adjustable air diffusers

Beautiful to look at, of course...with an unobtrusive simplicity that is as much at ease amid the crystal chandeliers of a ballroom as in the stark severity of a broadcasting studio.

But the engineering eye sees also the functional beauty of Kno-Draft *Adjustable* Air Diffusers . . . the uncomplicated cleverness of engineering and design that assures an even distribution of air *without draft.*

Kno-Draft Air Diffusers are adjustable *after* installation. Both the volume of air and its direction can be screw-driver controlled to balance temperature and distribution *exactly as required* throughout the entire conditioned area.

Still a third "beauty" of Kno-Draft *Adjustable* Air Diffusers is the complete satisfaction they give on the job. Types and sizes to meet every need.

KNO-DRAFT DATA BOOK: Complete specifications, engineering and installation data on Kno-Draft *Adjustable* Air Diffusers. To get your copy, simply fill in and mail the coupon. No obligation, of course.

TRADE MARK "KNO-DRAFT" REG. U. S PAT. OFF.

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Dept. V-21, Danbury, Connecticut

Please send me, without obligation, my copy of the Kno-Draft Air Diffuser Data Book.

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Position .....

Company .....

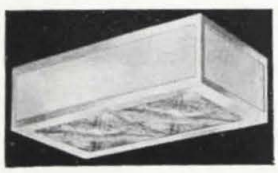
Street .....

City ..... **Zone** ..... **State** .....

ART METAL speeds Specification Writing and Installation Planning for all types of INCANDESCENT LIGHTING

. . . by detailing product performance and construction

SURFACE ATTACHED TWO-LIGHT—8½" AND 12" HOLOPHANE CONTROLENS*



No. 3325 No. 3324

These candlepower distribution curves were made with Two-light units using 2-200 Watt I.F. Lamps. Multiply by 1.62 for 2-300 Watt I.F. Medium Base Lamps.

The controlled widespread light distribution characteristic of Catalog No. 3325 provides even light distribution with units installed on spacings not to exceed one and one-quarter times the mounting height above the work plane.

The concentrating light distribution characteristic of Catalog No. 3327 provides even light distribution in high ceilinged areas with units installed on spacings not to exceed 9 times the mounting height above the work plane.

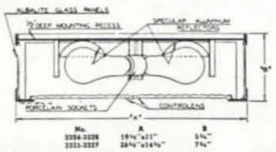
No. 3327 No. 3325

These candlepower distribution curves were made with Two-light units using Two-150 Watt I.F. Lamps.

The controlled widespread light distribution characteristic of Catalog No. 3324 provides even light distribution with units installed on spacings not to exceed one and one-quarter times the mounting height above the work plane.

The concentrating light distribution characteristic of Catalog No. 3326 provides even light distribution in high ceilinged areas with units installed on spacings not to exceed 8 times the mounting height above the work plane.

Coefficients of Utilization on Opposite Page for Nos. 3324 and 3325.



No.	A	B
3324-3326	18½"x11"	5¾"
3325-3327	30½"x14½"	7¾"

SPECIFICATIONS

The lamps operate in a horizontal position. The side panels are Ribbed Albalite Glass. The spherical reflectors are made of 20-gauge Aluminum, finished specular, and operate in correct design position with the Holophane Controlenses. These units are constructed of .037 steel. The box is constructed without cross mullion between the lenses. All parts are treated with a rust resisting primer to prevent corrosion. The Satin Aluminum finish is baked on. Adequate knockouts are provided. Units are practically dust-tight. The lens plates slip in from the bottom. A half-inch wiring recess is provided. Mounting to the ceiling is by means of expansion shields or toggle bolts through holes provided. All units approved by Underwriters' Laboratories, Inc.

OVERALL DIMENSIONS ON CEILING

Cat. No.	Distribution Characteristics	Lens Size	*Max. Watts	Length	Width	Depth
3324	Widespread	8½"	300 (2-150)	18½"	11"	5¾"
3325	Widespread	12"	*600 (2-300)	30⅝"	14⅝"	7⅝"
3326	Concentrating	8½"	300 (2-150)	18½"	11"	5¾"
3327	Concentrating	12"	*600 (2-300)	30⅝"	14⅝"	7⅝"

Two Lamp—Position Horizontal. *300 Watt Medium Base. Lens Plates slip in from bottom.

FINISH. Baked Satin Aluminum. Reflector Specular Aluminum.

Available with opaque solid metal sides.

UNITS CAN BE BUTTED TOGETHER FOR MULTIPLE INSTALLATION.

Approved by Underwriters' Laboratories, Inc.

*Holophane Co., Inc.

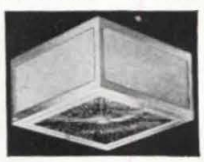
SURFACE ATTACHED ONE-LIGHT—8½" AND 12" HOLOPHANE CONTROLENS*

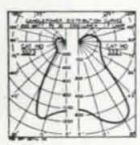
No. 3322 No. 3320

These candlepower distribution curves were made with One-light units using a 150 Watt I.F. Lamp.

The controlled widespread light distribution characteristic of Catalog No. 3320 provides even light distribution with units installed on spacings not to exceed one and one-quarter times the mounting height above the work plane.

The concentrating light distribution characteristic of Catalog No. 3322 provides even light distribution in high ceilinged areas with units installed on spacings not to exceed 8 times the mounting height above the work plane.



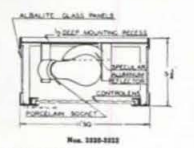


No. 3323 No. 3321

These candlepower distribution curves were made with One-light units using a 200 Watt I.F. Lamp. Multiply by 1.62 for 300 Watt I.F. Medium Base Lamp.

The controlled widespread light distribution characteristic of Catalog No. 3321 provides even light distribution with units installed on spacings not to exceed one and one-quarter times the mounting height above the work plane.

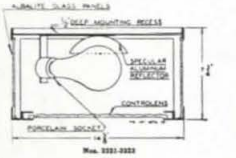
The concentrating light distribution characteristic of Catalog No. 3323 provides even light distribution in high ceilinged areas with units installed on spacings not to exceed 9 times the mounting height above the work plane.



No. 3320-3322

Ceiling Watts	150 W.			300 W.		
Catalog Numbers	3320 3321	3322 3323	3324 3325	3320 3321	3322 3323	3324 3325
	COEFFICIENTS OF UTILIZATION					
1	.50	.50	.51	.50	.50	.50
2	.50	.50	.51	.50	.50	.50
3	.50	.50	.51	.50	.50	.50
4	.50	.50	.51	.50	.50	.50
5	.50	.50	.51	.50	.50	.50
6	.50	.50	.51	.50	.50	.50
7	.50	.50	.51	.50	.50	.50
8	.50	.50	.51	.50	.50	.50
9	.50	.50	.51	.50	.50	.50
10	.50	.50	.51	.50	.50	.50

Maintenance Factors—.85 Clean .75 Average



No. 3321-3323

SPECIFICATIONS

The lamp operates in a horizontal position. The side panels are Ribbed Albalite Glass. The spherical reflector is made of 20-gauge Aluminum, finished specular, and operates in correct design position with the Holophane Controlens. These units are constructed of .037 steel. Boxes and Face Trim are completely die made. All parts are treated with a rust resisting primer to prevent corrosion. The Satin Aluminum finish is baked on. Adequate knockouts are provided. Units are practically dust-tight. The lens door is drop hinged. A half-inch wiring recess is provided. Mounting to the ceiling is by means of expansion shields or toggle bolts through holes provided. All units approved by Underwriters' Laboratories, Inc.

OVERALL DIMENSIONS ON CEILING

Cat. No.	Distribution Characteristics	Lens Size	*Max. Watts	Length	Width	Depth
3320	Widespread	8½"	150	11"	11"	5¾"
3321	Widespread	12"	*300	14⅝"	14⅝"	7⅝"
3322	Concentrating	8½"	150	11"	11"	5¾"
3323	Concentrating	12"	*300	14⅝"	14⅝"	7⅝"

One Lamp—Position Horizontal. *300 Watt Medium Base. Drop Hinged Door.

FINISH. Baked Satin Aluminum. Reflector Specular Aluminum.

Available with opaque solid metal sides.

UNITS CAN BE BUTTED TOGETHER FOR MULTIPLE INSTALLATION.

Approved by Underwriters' Laboratories, Inc.

*Holophane Co., Inc.

Explicit Catalog Data

- 99 Product Illustrations
- 51 Cross Section Details
- 47 Light Distribution Curves
- 24 Coefficient of Utilization Tables
- . . Detailed Product Specifications
- . . Applications
- . . Data
- . . General Engineering Information

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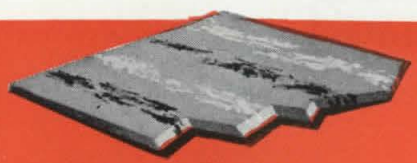

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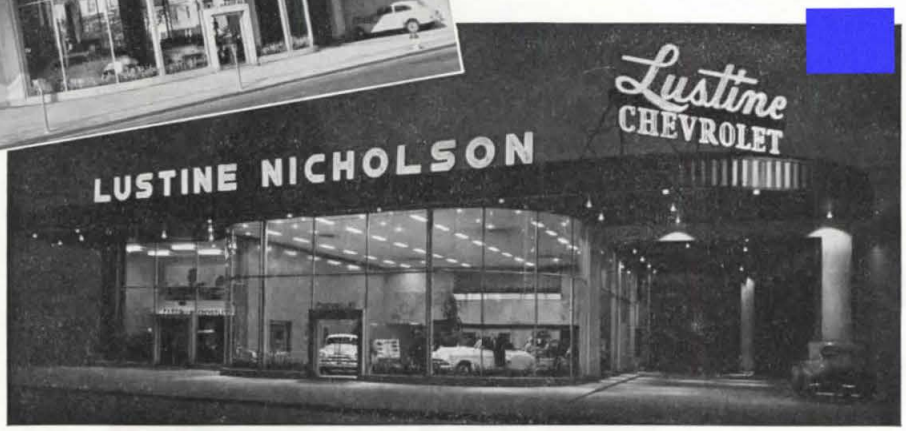
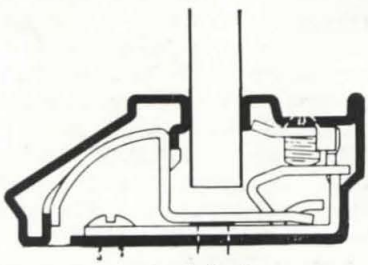
1-R32

for DAY and NIGHT SELLEVISION

Brasco
SAFETY-SET STORE FRONTS

Architect: F. Dano Jackley
Baltimore, Maryland





(actual size)
SAFETY-SET SASH No. 109
NOTE HEIGHT, ONLY 25/32"

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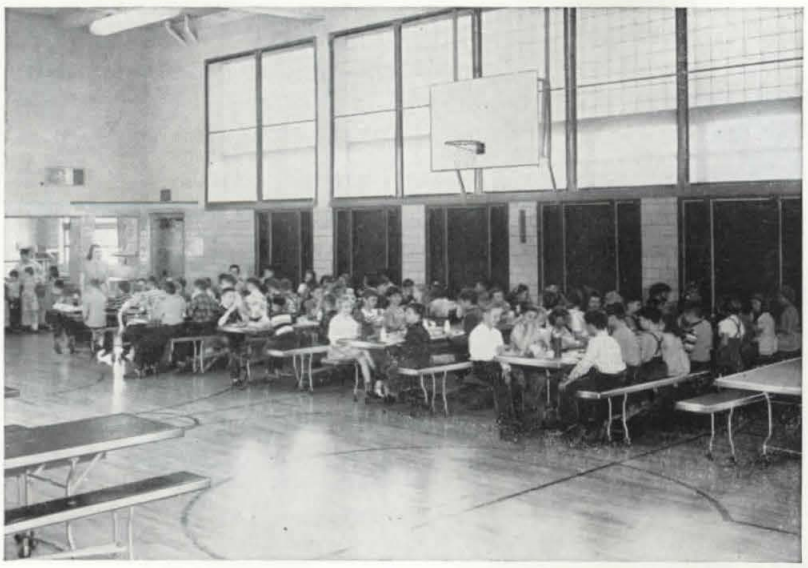

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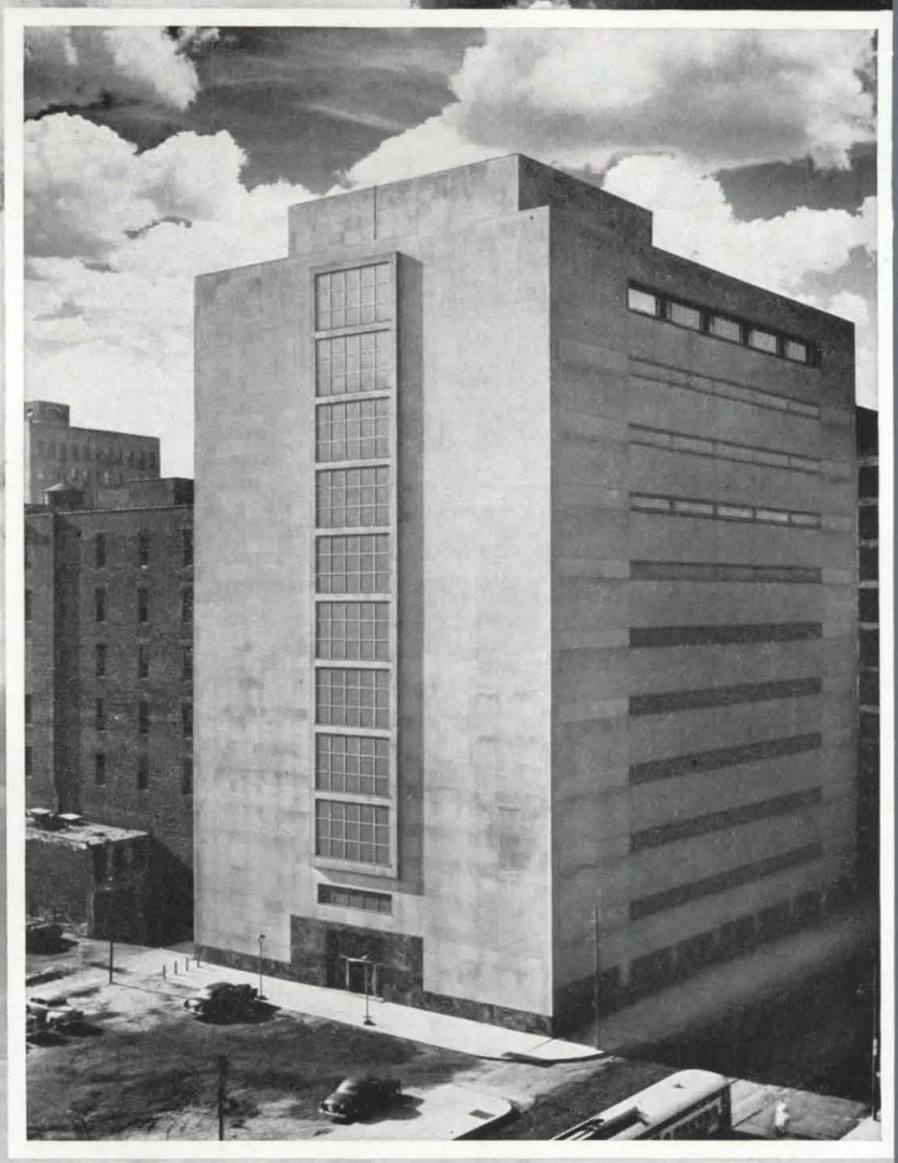
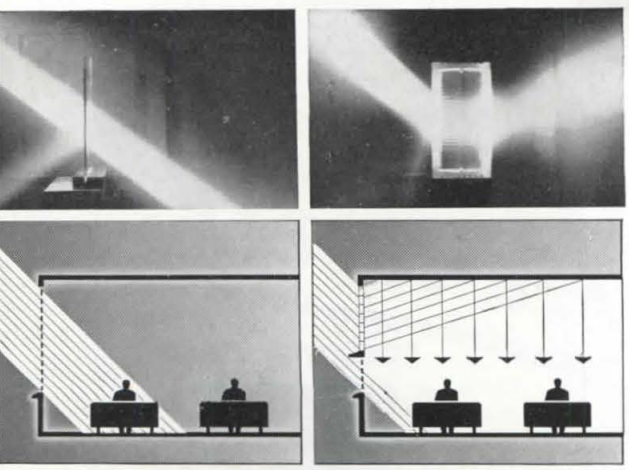


Illinois Bell Telephone Company's second long-distance switching center, Chicago. Architects: Holabird and Root and Burgee, Chicago.



Direct sun causes uncomfortable brightness near windows, extreme contrast in other parts of room. Insulux Fenestration (glass block plus vision strip) directs and spreads daylight to ceiling, keeps brightness at comfortable levels, provides vision and ventilation.

PUTTING DAYLIGHT TO WORK FOR YOU is the business of our Daylight Engineers. Your next problem may be careful designing for smooth operation and economical maintenance rather than of light control.

That was the chief problem before Holabird and Root and Burgee when they designed the Illinois Bell Telephone's second long-distance switching center in Chicago. While daylight was desirable, it was subordinate to good insulation for the air-conditioning system, exclusion of dust and dirt.

An Insulux Fenestration System provided this building with good insulation. It made possible lower cost air conditioning, heating and maintenance plus all the daylight needed. The Insulux glass panels will not rot, rust or corrode. No painting is necessary. Infrequent washing keeps the glass block sparkling.

Whenever you have a problem involving daylighting plus other building considerations, consult our Daylight Engineering Laboratory, **Dept. PA 2**, Box 1035, Toledo 1, Ohio. Insulux Division, American Structural Products Company, subsidiary of Owens-Illinois Glass Company.

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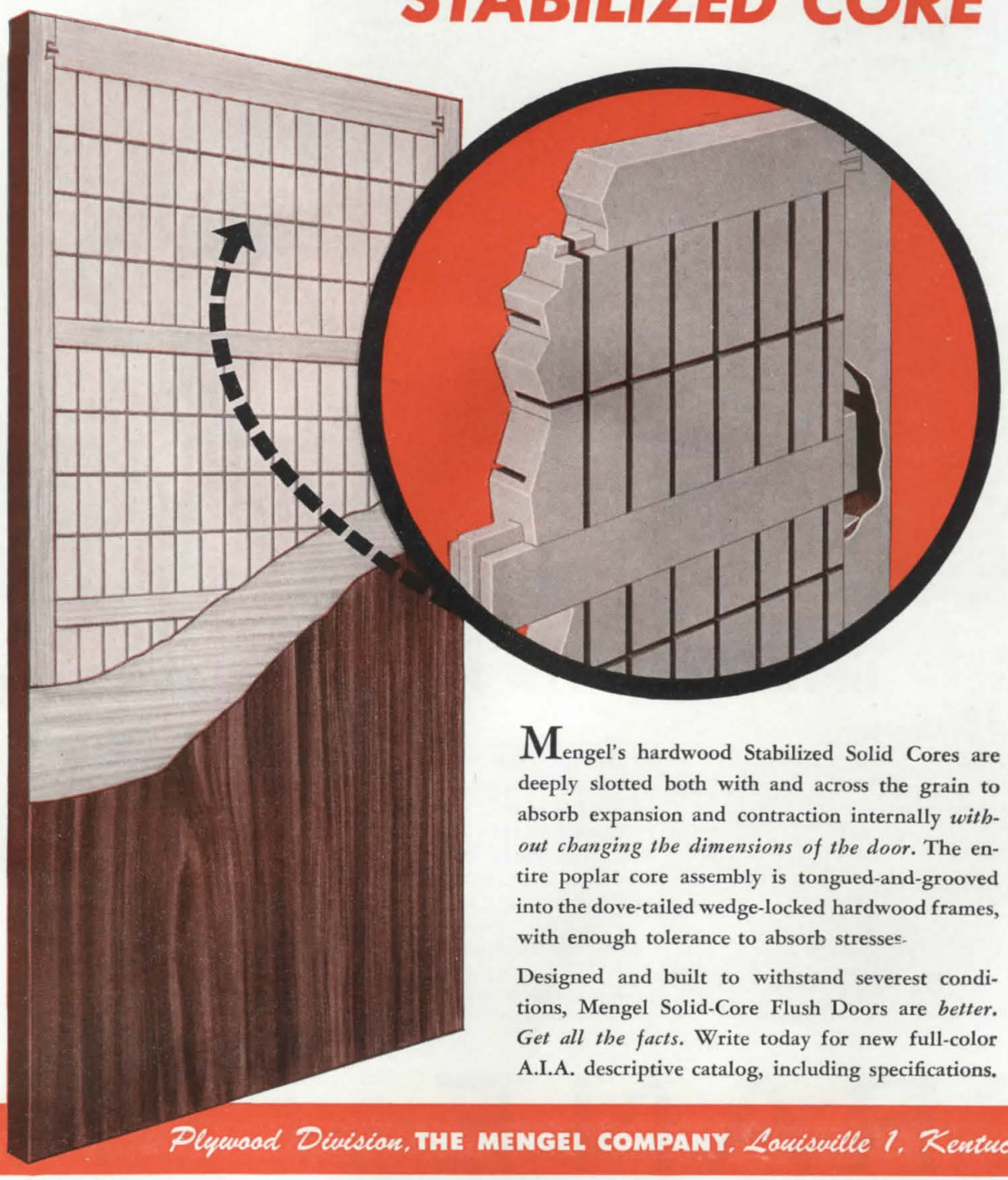

Mengel's hardwood Stabilized Solid Cores are deeply slotted both with and across the grain to absorb expansion and contraction internally *without changing the dimensions of the door.* The entire poplar core assembly is tongued-and-grooved into the dove-tailed wedge-locked hardwood frames, with enough tolerance to absorb stresses.

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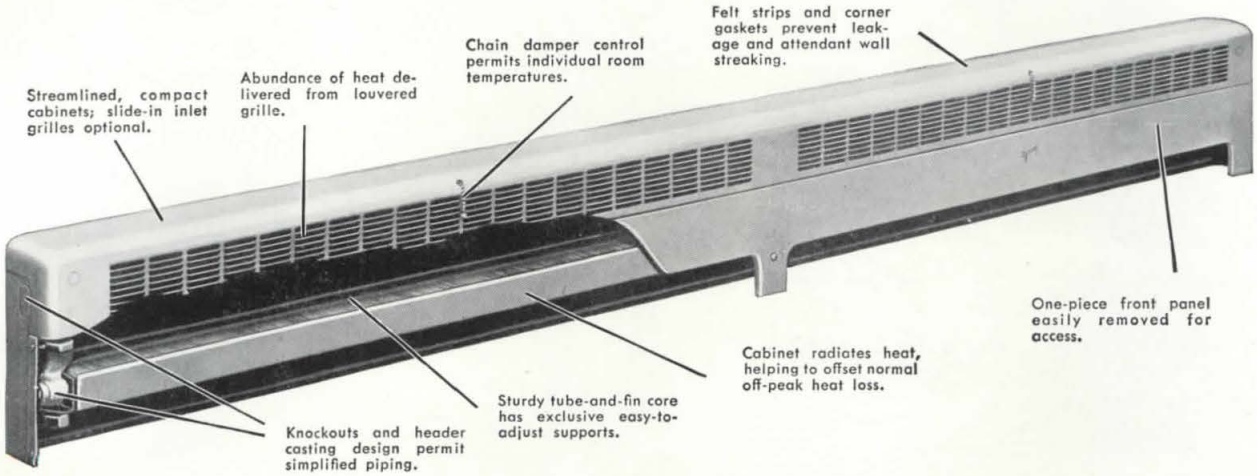
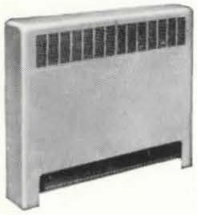


OTHER STANDARD TYPES



Free Standing Type "F"—Suitable for either free-standing or semi-recessed installation.

Wall-Hung Type "S"—Sloping top grille. Wall-hung model facilitates cleaning of floors.

Partially-Recessed Type "R"—Cabinet fits into wall recess conserving valuable floor space.

Type "FR," Fully Recessed Model. Designed for full utilization of room space.

Bathroom Type "B"—Compact wall-hung unit permits installation under average lavatory fixture.

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Catalog No. 4150, just released, gives roughing-in dimensions, ratings, etc. Write now for your copy.

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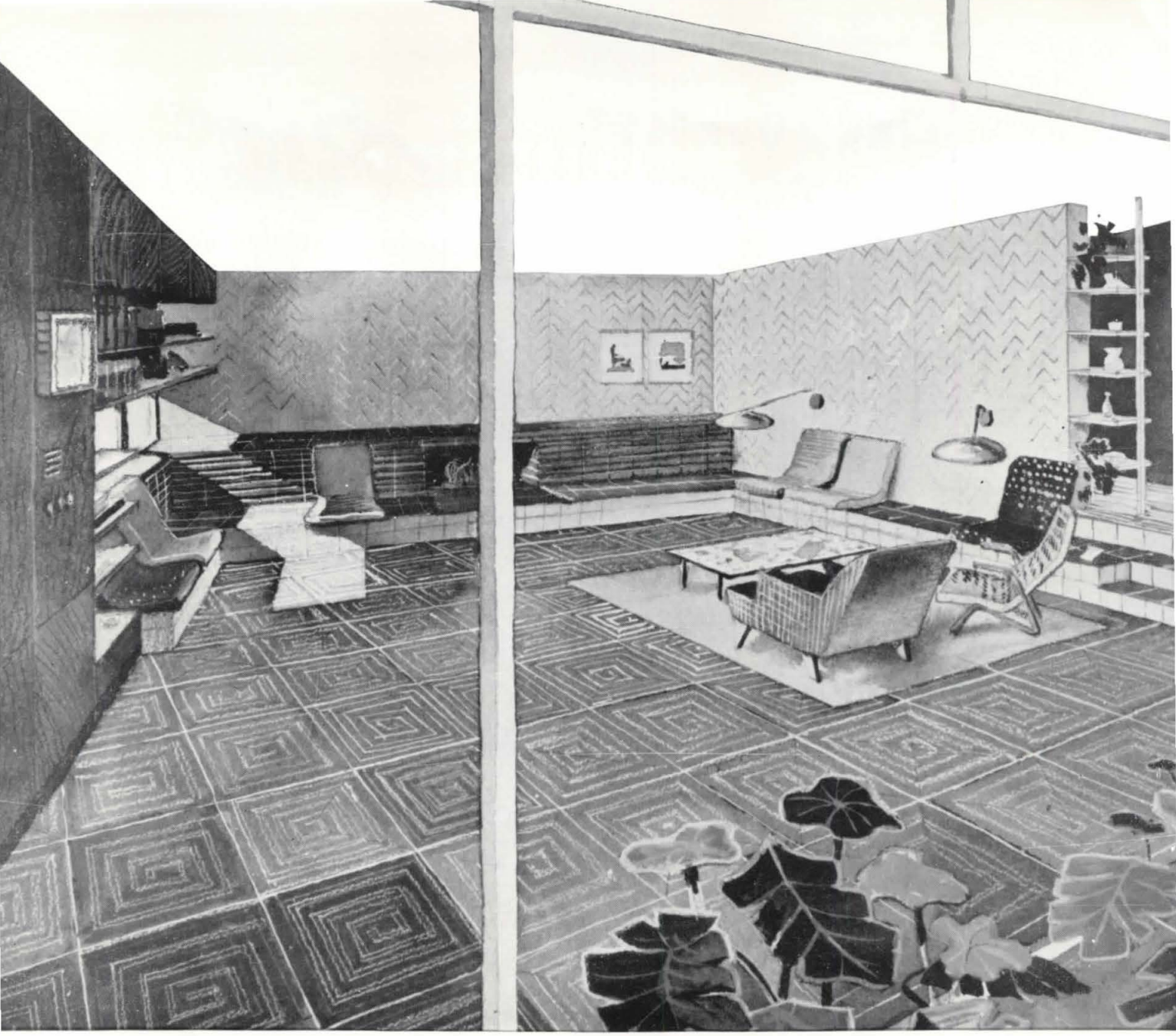


A design study for The Mosaic Tile Company to illustrate uses for ceramic tile in a contemporary house

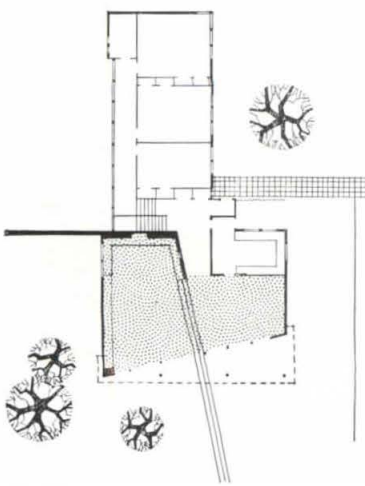
by Serge P. Petroff A. I. A. and Harvey P. Clarkson A. I. A.
132 E. 58TH STREET, NEW YORK 22, N. Y.

In the architects' search for materials which help to express the practical utility of functional design, Mosaic Ceramic Tile is finding wider and wider acceptance.

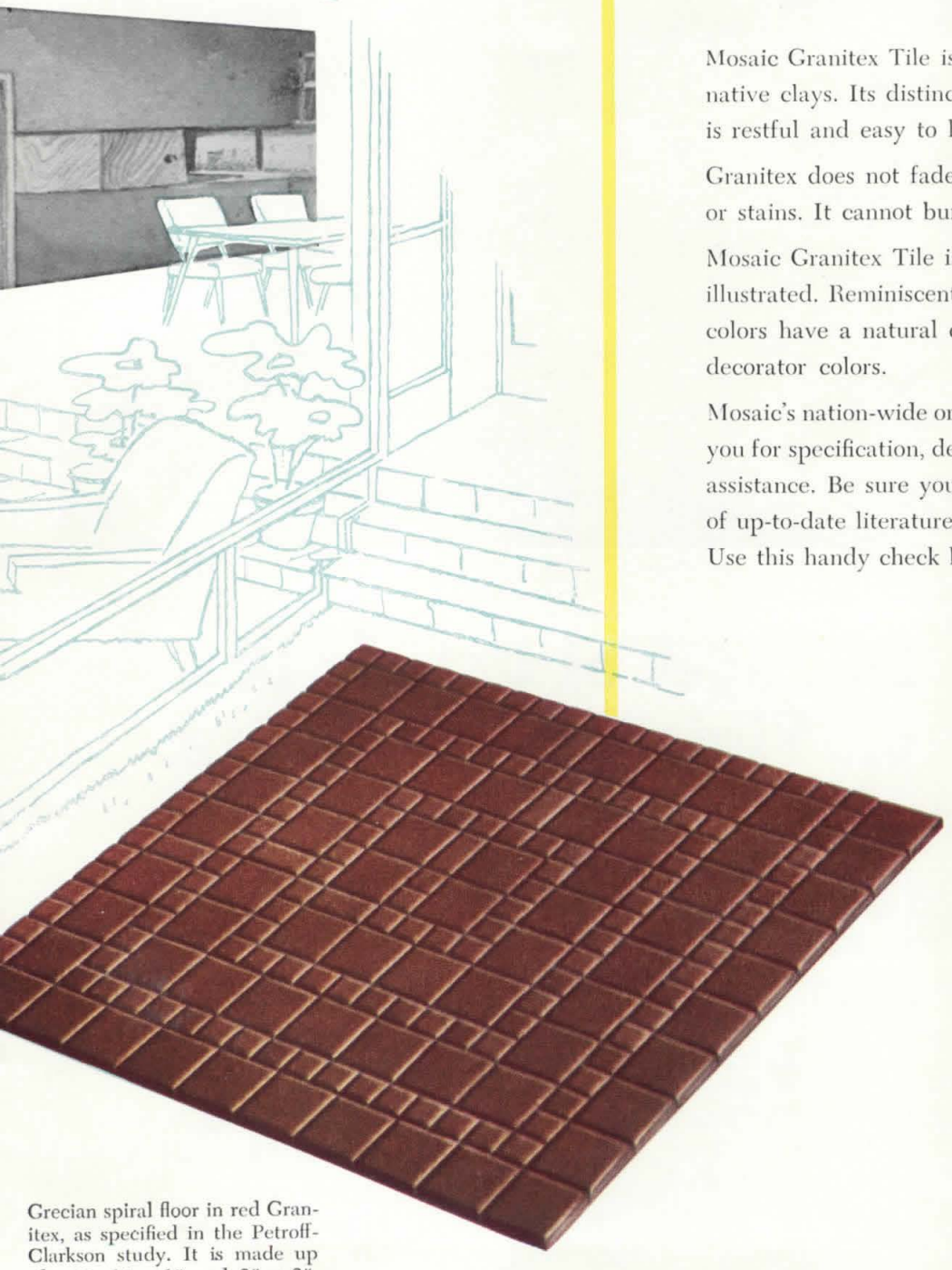
In this living-dining room study, the architects clearly illustrate how Mosaic Ceramic Tile may be used in several ways to provide an unusual combination of lasting utility and beauty—a warm and attractive background for pleasant, carefree living.

Several types of Mosaic Ceramic Tile are used in the study. Mosaic Granitex for the floor over a concrete slab in which heating pipes are placed; Mosaic Glazed Wall Tile for decorative surface on two walls; Mosaic Carlyle Quarry Tile in the construction of the fireplace, as the surface for a unique bench served by movable seats and as steps to reach the dining area on an upper level.

The complete Petroff-Clarkson Study is available at no cost. Three folders describe the study, provide tile specifications and radiant heating computations. Use the coupon on the opposite page.



MOSAIC GRANITEX FLOOR TILE



Grecian spiral floor in red Granitex, as specified in the Petroff-Clarkson study. It is made up of units 1″ x 1″ and 2″ x 2″. Pattern No. 2251A.

Mosaic Granitex Tile is made from a blend of native clays. Its distinctive, pleasing texture is restful and easy to live with.

Granitex does not fade. It is not affected by acid or stains. It cannot burn, warp or curl.

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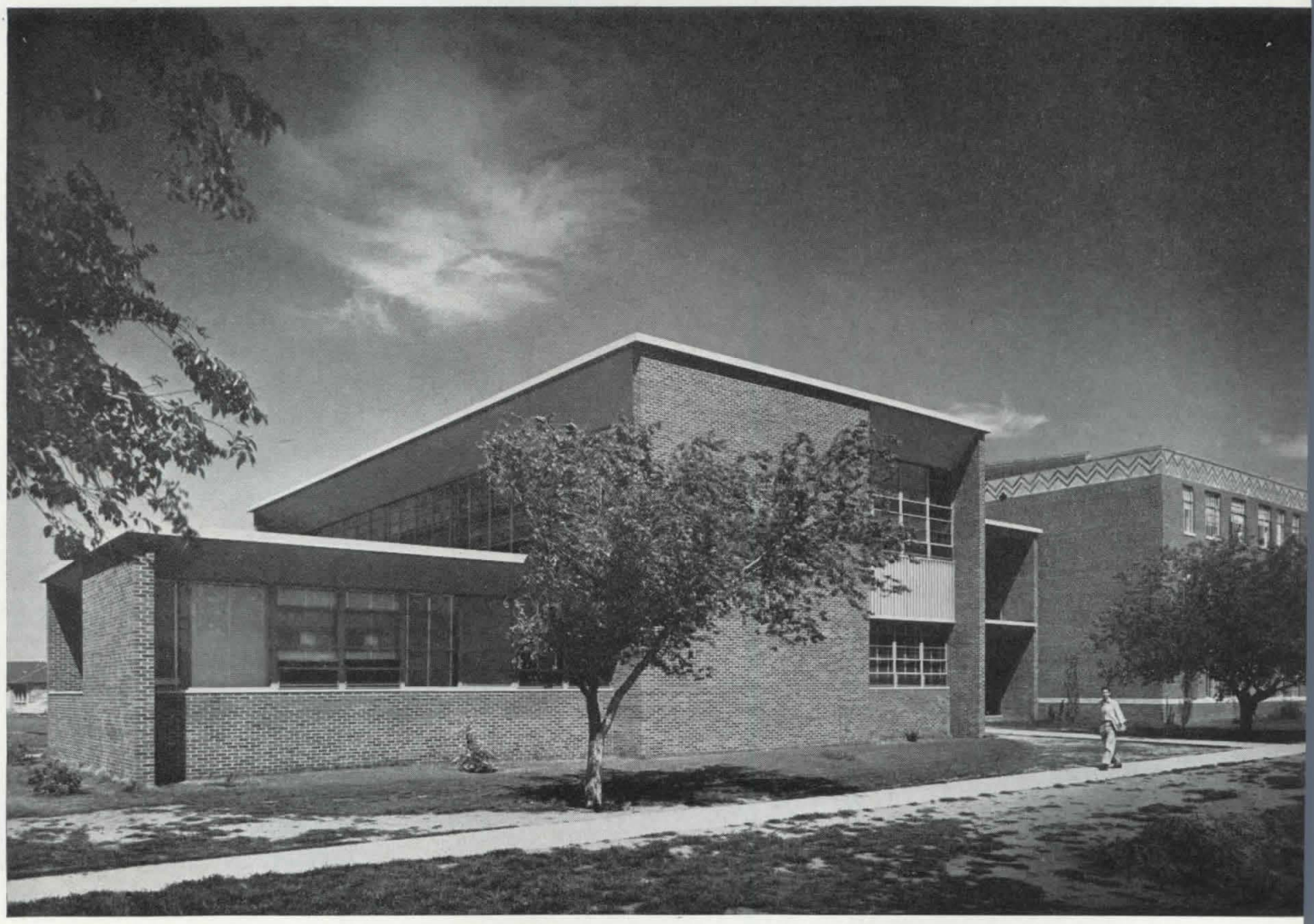


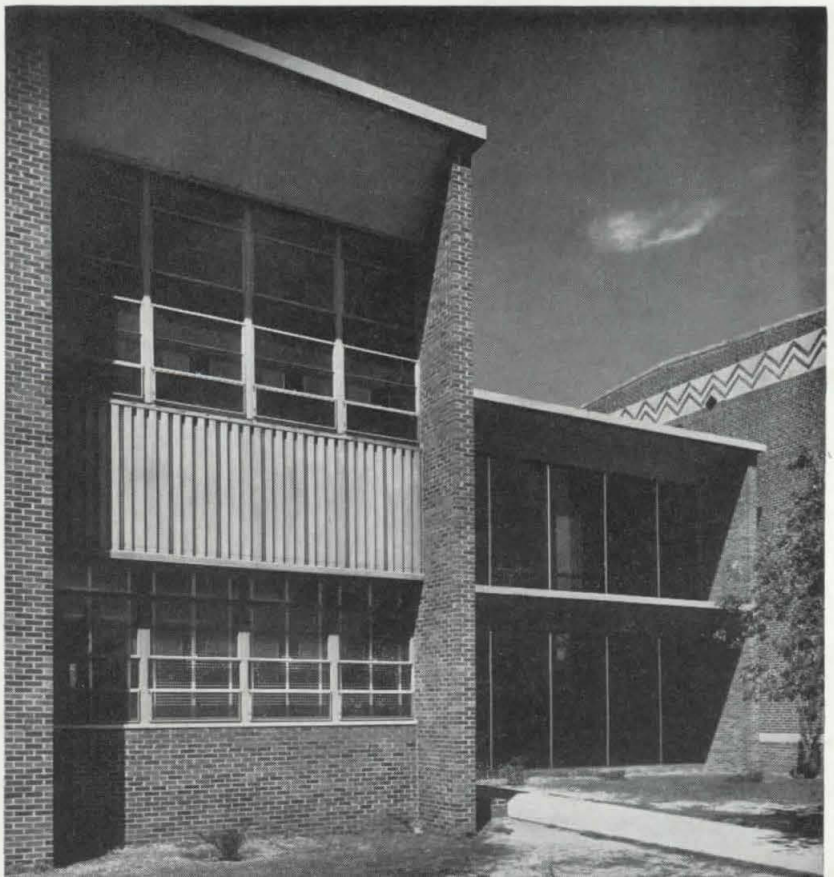
College Library: Lawton, Oklahoma

PAUL HARRIS, ARCHITECT

PHILIP A. WILBER, ASSOCIATE

Collins & Gould, Consulting Engineers
Plumbing and Heating

L. B. Perkins Company, Electrical



In addition to the library, which occupies the whole of the second floor, this building, attached to the old administration building of Cameron State Agricultural College, contains the offices of the college president, the registrar's and business offices, and three classrooms.

Right—detail of entrance, which is also the link that joins the new and old buildings. *Photos: Julius Shulman*

program A new building for Cameron, to be joined to the existing administration building, that would include offices for the college president, business offices, three classrooms, and a library with a capacity of 15,000 volumes. The college, founded in 1908, now has an enrollment of approximately 600 students.

site Flat property on the campus immediately south of the administration building.

solution A two-story scheme, with the president's offices, business offices, and the three classrooms on the ground floor; library facilities, above. The entry corridor connects to the old building at the ground-floor level. The library required greater width than the classrooms below, which proved a "natural" for letting the second floor overhang the south-facing classrooms, and thus subdue the glare of the sun (see photo above and section, facing page). On the library floor, a roof overhang is provided for the same reason, and this works out well, according to the architect, except in midsummer, when some direct sunlight enters. With this setback feature thus established, it was felt it would be esthetically satisfying to carry out the same general scheme throughout the fenestration.

materials and methods Due to a clay-soil condition, with a spontaneous water gravel about 12 feet below grade, bell-bottom footings, extending down 15 feet, were used. The building is steel framed. Interior walls are either pumice-concrete masonry or brick; exterior walls, separated by an air space from interior walls, are of either brick or corrugated metal siding. The building is steam heated with baseboard radiation in the office and library areas; wall convectors in classrooms.

CONSTRUCTION: *Foundations:* bell-bottom concrete footings. *Frame:* structural steel and bar joists. *Walls:* cavity walls of brick; metal spandrels. *Floors:* concrete, either colored and hardened or surfaced with as-

phalt tile. *Roof:* steel deck; built-up tar and gravel roofing. *Insulation:* acoustical—tile on ceilings; thermal—glass wool in attic space. *Fenestration:* architectural projected sash; 1/4" plate, double strength, and heat-absorbing glass. *Doors:* hollow core, birch; folding doors; built-up, flush, birch.

EQUIPMENT: *Heating:* gas-fired, sectional cast-iron steam boiler and controls; wall-hung convectors; baseboard type radiation. *Lighting:* fluorescent; flush; incandescent; galvanized conduit.

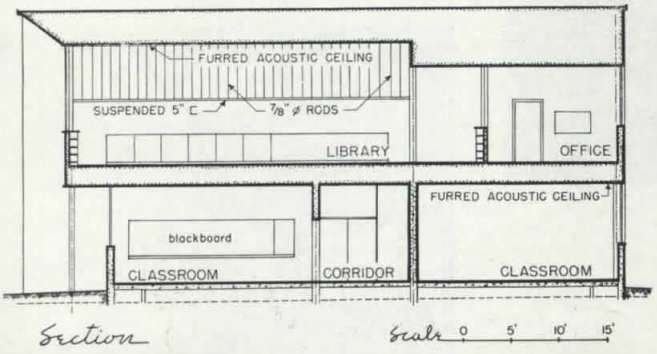
Harris

the architects

Paul Harris: Oklahoma A. & M.; work in various offices until 1927 when partnership was formed with the late E. H. Eads; private practice since 1932.

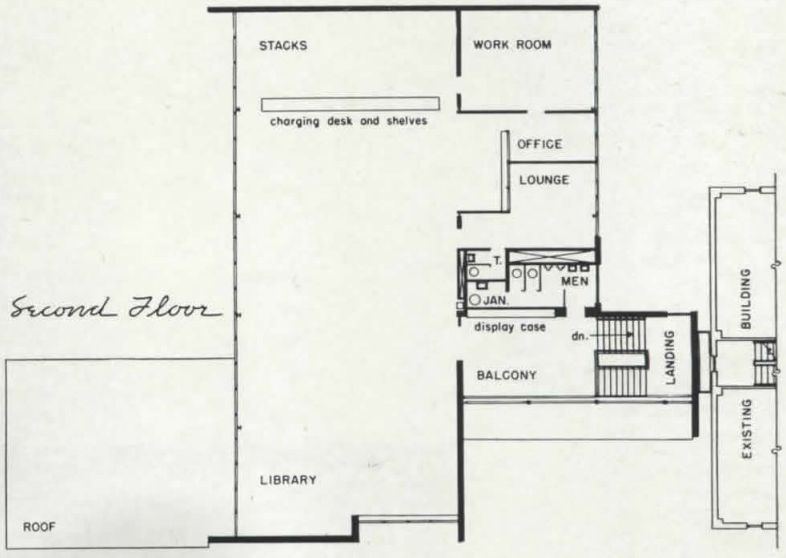
Philip A. Wilber: Oklahoma A. & M.; Professor of Architecture and Head of School of Architecture and Applied Arts at A. & M. from 1930 to 1947. Since 1947, College Architect charged with development of plans and supervision of construction for the eight schools and colleges under the Board of Regents for the Oklahoma Agricultural and Mechanical Colleges.

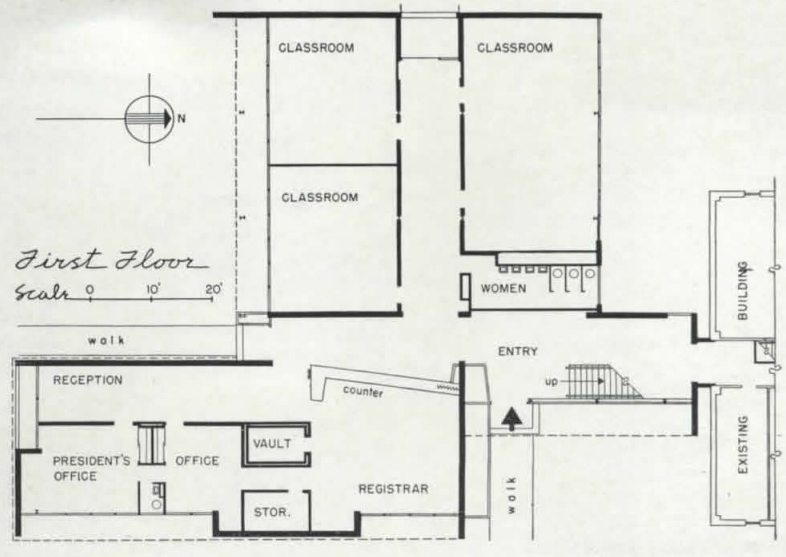
Wilber

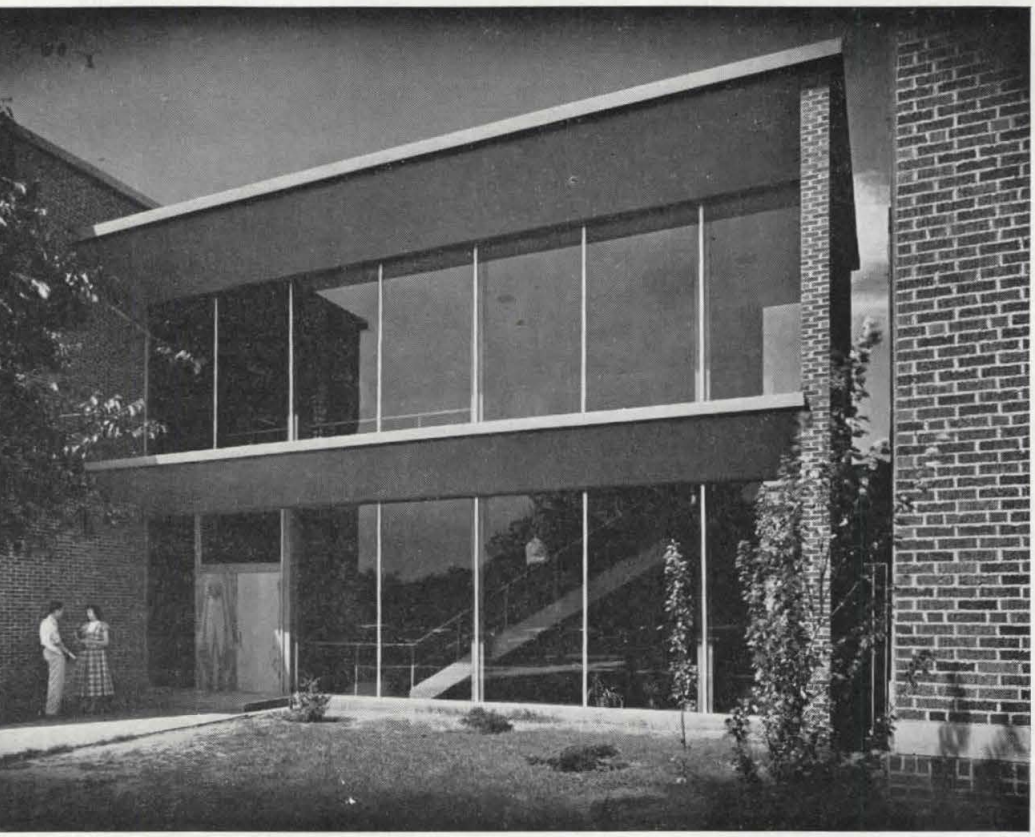


Left—section indicates the setback wall system worked out for the southern classroom and library wall.

Below—photograph indicates how this operates as a sun control.



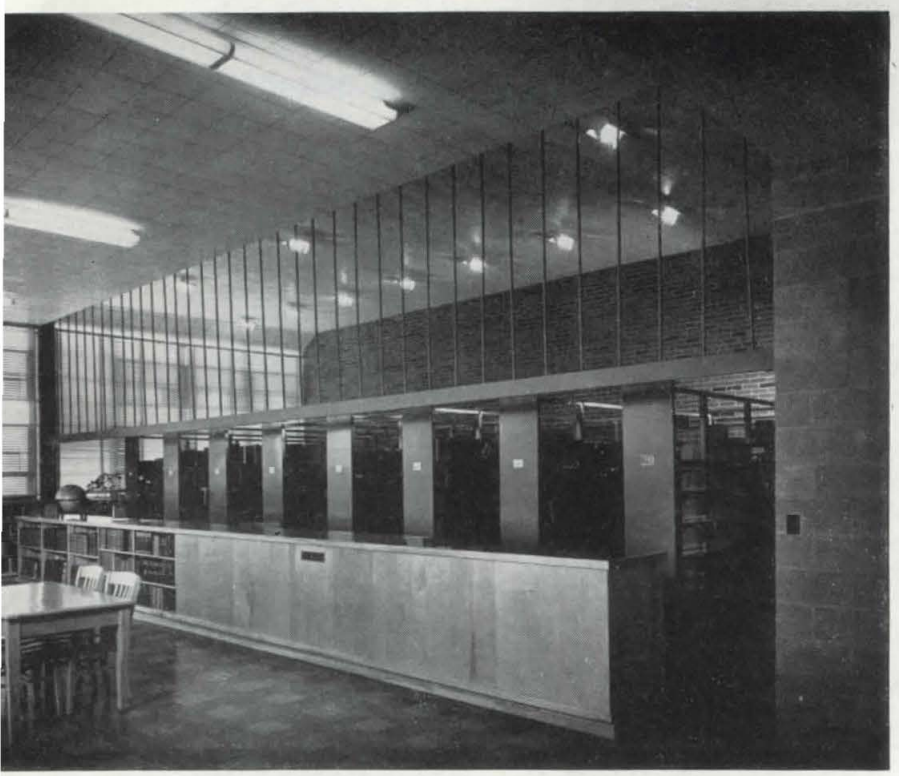




Left—the east-facing entrance and stair hall pavilion; at right of photo is wall of old administration building. Students using the library can reach it without passing through other parts of the buildings.

Above—detail of stairway, taken from the landing. Display cases line inner walls at both levels.

Left—the registrar's desk and south entrance.



Left—detail of charging-desk end of library, with open stacks in back.

Below—detail of room, looking across desk to south window wall, and (bottom of page) looking back toward the entrance and corner window.

The verde antique marble veneer of the storefront (left) is applied over existing 6" terra cotta wall surfacing, with a 2¼" air space left between. Angled display window allows relaxed window shopping.

Immediately below—one of the movable, curtained and mirrored background panels that define sales areas.

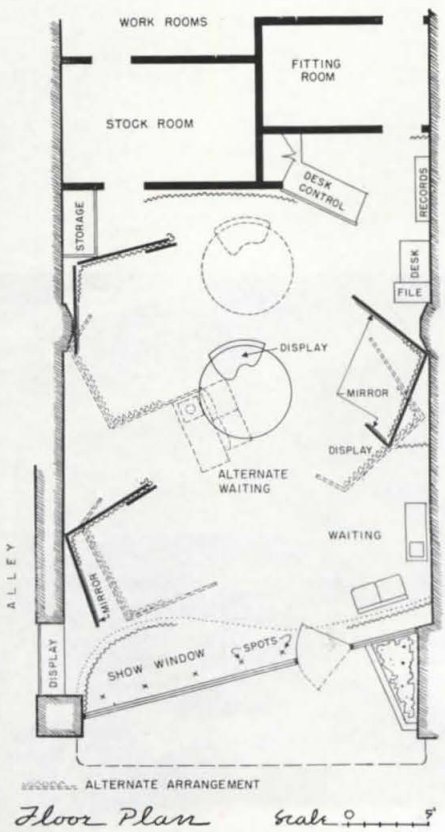
Bottom of page—general view, looking toward street. Carpeting is light, warm gray; chartreuse window curtains; light gray curtaining on sales-area panels.

Facing page—looking to rear of shop. Round island display table is used for the *pièce de résistance*. The background curtain is white, and the ceiling eggcrate is painted off-white.

Photos: Dearborn-Massar

Shop: Seattle, Washington

RALPH BURKHARD, ARCHITECT, GIDEON KRAMER, ASSOCIATE



program A conservative setting for display and sale of quality furs. The original idea was that the shop should be separated from the street by a fairly solid wall, with only small show windows. Specific requirements: three defined selling areas; work shop, storage space. To be accomplished as economically as possible.

site Deep, ground-floor rental space, at corner of pedestrian alleyway. Instead of the closed-front parti originally contemplated, an angled, open-front scheme was adopted; equipped with a sliding curtain, so that the degree of openness is optional. To provide the required selling areas, yet allow the client flexibility in his shop arrangement, movable panel units were provided. Thus, as shown in the plan, the entire shop may be rearranged at will. Display of furs is limited to a few pieces, placed casually on the chairs or tables that furnish the sales areas. Ceiling lowered by wood eggcrate hung from existing ceiling.

materials and methods CONSTRUCTION: Existing building. *Insulation:* acoustical tile, above eggcrate. *Floors:* carpeting over wood, over concrete. *Exterior wall surfacing:* verde antique marble veneer. *Interior walls:* plaster, painted. *Partitions:* wood frame; plaster. *Store front:* extruded aluminum sections; ¼″ plate glass. *Doors:* entrance—custom built of anodized aluminum and glass; other doors—flush, fir; door closers.

EQUIPMENT: *Heating, plumbing, etc.:* existing. *Lighting:* fluorescent lamps above wood eggcrate construction; eyeball spotlights.

the architects *Ralph H. Burkhard* (upper photo) : B. Arch., Syracuse U.; M. Arch., M. I. T. Work in various offices in New York and Washington, D. C.; engineering research work at Boeing Aircraft Co., Seattle, during war; own practice since 1945.

Gideon A. Kramer (lower photo) : Art Institute, Chicago; industrial designer with various plants; engineering research at Boeing during war; industrial-design practice established, 1946.

DeMars

In the USA, the record of better housing achieved through co-operative ownership and building has been a rather meager one. But now, under Title 213 of the 1950 Housing Act, a special section of the FHA is specifically charged with responsibility for getting some action in this field. Since passage of the Act, applications have been filed for some $216 millions of proposed work. What are the chances of the program's success? What is the proper base for success in co-operative housing? How has it proved effective elsewhere? These and many related subjects are discussed in the accompanying article by Vernon DeMars, Berkeley, California, well known architect and housing specialist. Perhaps the kernel of his argument is a plea for as good treatment from the government for co-operators as the speculative builders receive. To indicate potentials, three of the largest co-operative housing ventures launched in this country since World War II are shown in some detail, with DeMars' accompanying description and appraisal.

The Editors

Co-operative Housing—An Appraisal

BY VERNON DeMARS

Recent years have seen a great upsurge of interest and activity in a form of enterprise comparatively new to this country, but one which for many years has been spectacularly successful in other parts of the world—co-operative housing.

The idea of co-operation or mutual self-help is no stranger to America. Barn-raisings and husking bees were part of the fabric of pioneer life. The frontier was penetrated by the trapper and trader who were, of necessity, rugged individualists. But, of the same necessity, the wagon trains of settlers which followed them were co-operative enterprises. The many could do together what one could not do alone. The idea behind co-operatives today is as simple as that.

Co-operation in early America was not a self-conscious affair. It was simply a direct answer to an obvious problem. The production of housing being a pretty complex business, it is not surprising that organized co-operatives confined themselves in general to other forms of activity for several decades in the United States. The packing, shipping, and marketing co-operatives of the California Fruit Growers are independent, old, and solid institutions not really related to the co-operative movement. Yet these are, in one sense, consumers' co-operatives; for although the individual members are producers of goods, they are also consumers of the co-operative services.

In the Middle West, however, the retail, wholesale, and processing activities of co-operatives have reached a scale that justifies calling them a movement. In 1948, the co-operatives in Ohio, Illinois, Michigan, and Wisconsin did a retail business of almost $200 millions, including more than 20 percent of the farm-supply business—seed, fertilizer, feed, and other supplies—and nearly 25 percent of retail petroleum business in the rural sections of those states. Here again the base is agricultural, with the implication, perhaps, that the co-operative is a necessary device in rural areas. It is, of course, more than that, and its widespread activities in the Middle West stem, without doubt, from the large Scandinavian population with its background and experience of successful operations in the Rochdale type of organization.

The principles developed by the mill workers of Rochdale, England, in 1844 have been taken as the basis of most co-operative enterprises throughout the world today. Briefly, as listed by Elsie Danenberg in *Get Your Own Home the Co-operative Way* (Greenberg Publisher, 201 East 57th Street, New York, N. Y.), they are:

1. All goods to be sold at prevailing market prices.
2. All merchandise to be sold for cash.
3. Membership to be open to men and women regardless of party or creed.
4. One vote to be allowed each member regardless of shares owned.
5. Full information, based on proper accounts and audits, to be presented to members.
6. Interest payments for the use of capital to be restricted to a fair return.
7. Fair and honest dealings to be maintained in all business.
8. Savings to be returned to patrons in proportion to the patronage of each.
9. A portion of all savings to be used for education and expansion.

The Rochdale idea quickly spread and took hold, particularly in Northern Europe. Perhaps its success has been most noteworthy in Sweden, where consumer co-operatives today do over one-fifth of the total retail trade. The significance of this figure cannot be fully grasped until it is understood that the co-operatives are organized consumers, interested primarily in having goods of controlled quality made available to themselves at lowest costs.

In the field of housing, the accomplishments of the co-operatives in Sweden have been truly spectacular. Not only have the standards of planning and design scarcely been equalled elsewhere in the world, but the production figures are remarkable. Between 1939 and 1948, the largest of the building societies built over 25,000 dwelling units, more than 12 percent of all urban home building.

Co-operative housing has been most successful in those countries where aid and encouragement in various degrees have come from municipal and national governments. In turn, the experience of co-operatives in large-scale planning, economical construction methods, and efficient organizational techniques has led to their employment by these governments to provide housing for the lowest income families.

The reasons for government support of co-operatives abroad could not be better summarized than by quoting from the report of the U.S. Senate Banking and Currency Subcommittee on a study of co-operative housing in Europe:

"The governments have encouraged the co-operative because they believe that it affords an efficient technique of economic construction and maintenance, resulting therefore in lower rentals and housing costs to the consumer, and at the same time keeps government out of a field which, it has been demonstrated, is as efficiently or more efficiently run by the co-operative type of organization than by the government itself. In fact, many municipalities employ the co-operatives to build and operate the housing projects for them. Furthermore, these governments believe that the people gain an advantage from taking part in such activity in terms of personal satisfaction and by substituting their own work and efforts for that of others, an economic or

monetary advantage. The co-operatives, it is pointed out, are not only interested in housing as such, but in the social aspects of housing as well, yet unlike the government they retain the advantage of private initiative. Because they are interested in the social aspects of housing they work closely with the government but are nonetheless independent of it. They at the same time serve as a vehicle for special aids by the government to large families and the aged, and carry on a number of special social tasks—such as providing and operating nurseries, kindergartens, recreational activities, etc. The self-operation of the co-operatives relieves the government of a huge administrative task . . .

"Co-operative housing appeared on the Swedish scene as early as 1880," states the above report, and continues with what might be a description of co-operative housing in the United States today; "The founders of these early societies tried to secure lower housing costs and greater security in tenure for their members. However, because each society was an independent unit, each new venture had to go through all the difficulties of organizing without being able to use the experience of earlier groups. Consequently these early societies were generally financially weak and involved considerable risk to the members who had pooled their small savings to make the co-operative possible."

World War I, with its housing shortages and sharply increased rents, brought on a spurt of co-operative housing activity in Sweden, but it was not until the 20's that the key was found to the accomplishments of the next quarter century. In 1924 the war-born local housing societies formed the National Association of Tenants' Savings and Building Societies—*Hyresgästernas Sparkasse - och Byggnadsförengars Riksförbund*—otherwise known as H. S. B.

The essential characteristics of all the Swedish associations are ownership and control by the member-tenants. H. S. B. is organized on three levels. In the middle are the "parent" societies in some 130 towns and communities which take the initiative in building new projects and provide certain banking, bookkeeping, purchasing, and supervising services at the local level. On completion, a project is taken over by a "daughter" society composed of the tenants whose five percent equity and modest payments will make them the future owners of the specific development. They continue, of course, to receive business and bookkeeping assistance from the "parent" society. Then there is the "national" office which, in addition to performing architectural, engineering, and financing functions for the society, operates various business enterprises such as banking, materials manufacture, prefabrication and architectural and town planning consultation to communities.

Co-operatives abroad have been dealt with in some detail because, despite differences of history and temperament, it seems unlikely that co-operative housing in this country will ever amount to very much without most of the ingredients of the successful Swedish program.

Until comparatively recently, co-operative housing in the United States was limited almost entirely to apartment houses which had been built or purchased by co-operative associations. Of these, the majority represents an established, conservative real estate device among high income groups. Others seem remembered mostly for their financial difficulties during the depression of the Thirties. These associations were for the most part completely independent and unrelated to the Rochdale movement. An outstanding exception to both these categories are the developments sponsored by the Amalgamated Clothing Workers in New York City, within the framework of the N.Y. State Limited Dividend Housing Law. These are now in their 24th year. Through May, 1950, 11 separate projects had been undertaken to a total of 1906 dwelling units. At the present time, 565 additional units are under construction. Most of the projects were financed by the Bowery Savings Bank and some insurance companies. Some received N.Y. State tax exemption for 20 years on the improvements. (Swedish co-operatives pay full taxes.) Member's equity is based on a payment of $500 a room. Rents are $11 and $12.50 per room per month. Persons forced to leave the development receive a full refund for their equity. Distribution of patronage rebates on the 1944-45 operations of two developments exceeded $50,000. Voluntary contributions of one half of these rebates over the years had built up reserves in the Bronx projects totaling $250,000 in 1946. A.C.W. is proud of the fact that it was able to carry most of its tenant members through the depression, with its own reserves.

Since World War II, a new wave of interest in co-operative housing has swept the country. Now the crest is passed. Of the many who rode the wave some few are still afloat and may yet make the shore. Many have sunk from sight and others are on the rocks—the beach is strewn with wreckage and the rescue party which set out with such high hopes has been critically delayed. This grim metaphor is, unfortunately, too apt.

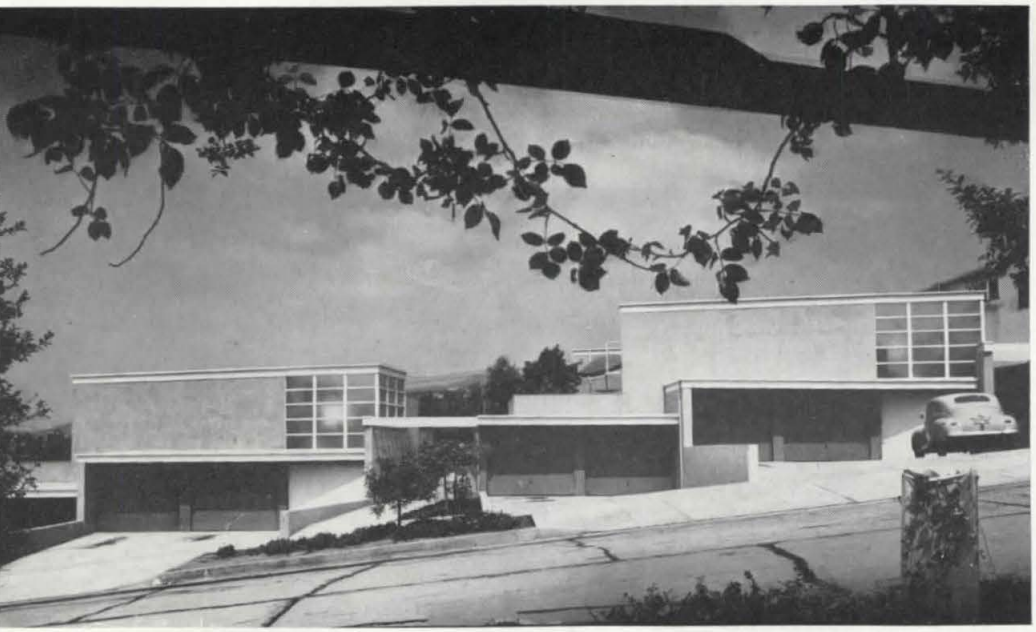
Since World War II, H.S.B., Sweden's largest building society, has helped build all or some of the public housing for 70 cities, in addition to building for its own members. As stated in the U. S. Senate co-operative housing report: "The chief advantages claimed for the co-operatives, in addition to their ability to get low interest rates and long-term amortization loans, are their ability to erect largescale projects with all the advantages of mass purchasing and mass construction; and related to this is the existence of a continuous . . . clearing house of building, financial, and technical knowledge and know-how, which it keeps passing on to and incorporating into new housing co-operatives."

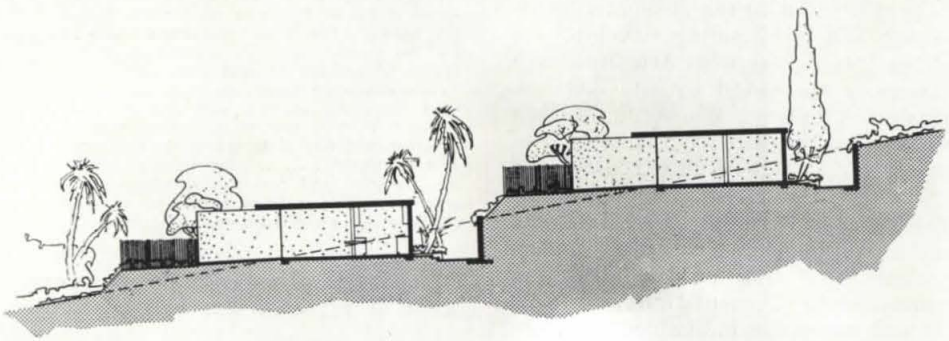
Of those who made it, however, the score or more in war housing projects had it easiest. When permanent or semi-permanent war housing was put up for sale by the government, veterans and tenant co-operatives were given preference and many co-operative organizations over the country came into being, with most problems already solved.

Another category included small associations with modest aims, whose goal might be a group of 5 or 50 homes either detached or in a row scheme, of which the Avenel group, on the next two pages is an example.

(DeMars text continued on page 64)

In H.S.B.'s famous small-house program, a family with three children can own its own home, co-operatively, for less than 20 percent of annual income, its own labor providing the 10 percent down payment.





Avenel Housing Associates: Los Angeles, California

GREGORY AIN, ARCHITECT
JOSEPH JOHNSON & ALFRED DAY, COLLABORATING

Early in 1946, 10 veterans and their families who wished to live in a central location joined together in the hope of saving through a co-operative undertaking. Because of rapidly rising building costs, the houses cost more than originally anticipated; yet they were built for close to $10 a square foot, and there was also a real saving in the joint purchase of the property.

Financed under Title 608 of the FHA, the group consists of 10 identical houses, arranged in two rows across a slope so that the living sides of the upper-level houses look across the rooftops of the downhill houses, and all houses thus enjoy the widespread view.

Through use of sliding doors or panels, the houses can be one, two, or three-bedroom dwellings at will. The large bedroom off the living room can be furnished as a den, and, with a panel opened wide, this entire area is added to the living-room space. Similarly, a panel between the two smaller bedrooms can be moved on its track to form one large room.

Stud-and-stucco construction was selected as the most economical, and fixed glass or doors were inserted between nonload-bearing posts spaced four or six feet on centers.

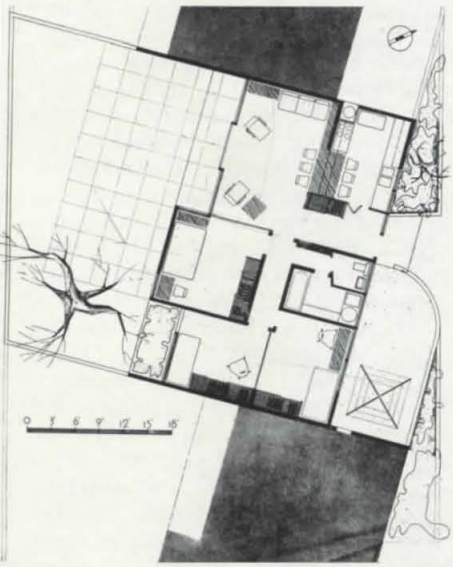
The architect is frank to comment that "other than the savings due to party walls, we doubt if there was a great saving over individual houses in either time or cost. Conditions were at their worst, with contracting on a cost-plus basis." But acquisition of a site in a good central area, within three miles of downtown Los Angeles, at a reasonable individual price ($2,000 each) near parks, transportation, and schools, he believes was a great advantage of the group action: "Such sites just are not available to the individual at several times this price."

In commenting on this project, Vernon DeMars finds the flexible house plan "extremely ingenious" and assumes that the exact repetition of the 10 units undoubtedly resulted in some savings. But, he goes to say, "10 would seem to be about the limit, esthetically, to be grouped in any one spot." **The Editors**

Left—detail of one of the upper-level houses, taken from the roof of one of the downhill units.

Below—looking along the entrance walkway for the lower-level houses, at right, the curved enclosures shield service yards.

Photos: Julius Shulman



The three photos at the bottom of this page show details of the living room and terrace areas of one of the upper-level houses. All houses have identical plans and similar amenities. The site slope (see section, opposite page) insures for all a good degree of privacy.

Co-operative housing group at Blackwell, Oklahoma—one of 17 projects in that state that have been spurred by the American Legion, with full co-operation from FHA district directors.

Amalgamated's "Queensview" project in New York—728 apartments in 14, 14-story buildings. Nondiscrimination as to race, creed or color has maintained from the start. Brown & Guenther, New York, Architects

(DeMars text continued from page 61)

If the owners were veterans, financing was not too difficult, as long as they didn't have too unconventional ideas about architecture, nonsegregation or restrictive covenants. Perhaps 50 projects of this sort have been launched successfully, and as many more may have foundered. Success or failure would seem to depend much more on whether sponsoring, financing, and underwriting groups really *wished* to see them succeed than on any other factor. In some sections of the country, the time consumed in securing, financing, and underwriting has been a matter of years. On the other hand, in Oklahoma, since the special section was added to the FHA legislation early last year providing 90 percent financing for veterans' co-operatives, 17 projects are actually under way and several others in the process of being organized. Here the story shows the American Legion actively organizing the co-operatives on a statewide scale and the district directors of the FHA lending the kind of assistance formerly reserved for the speculative builder.

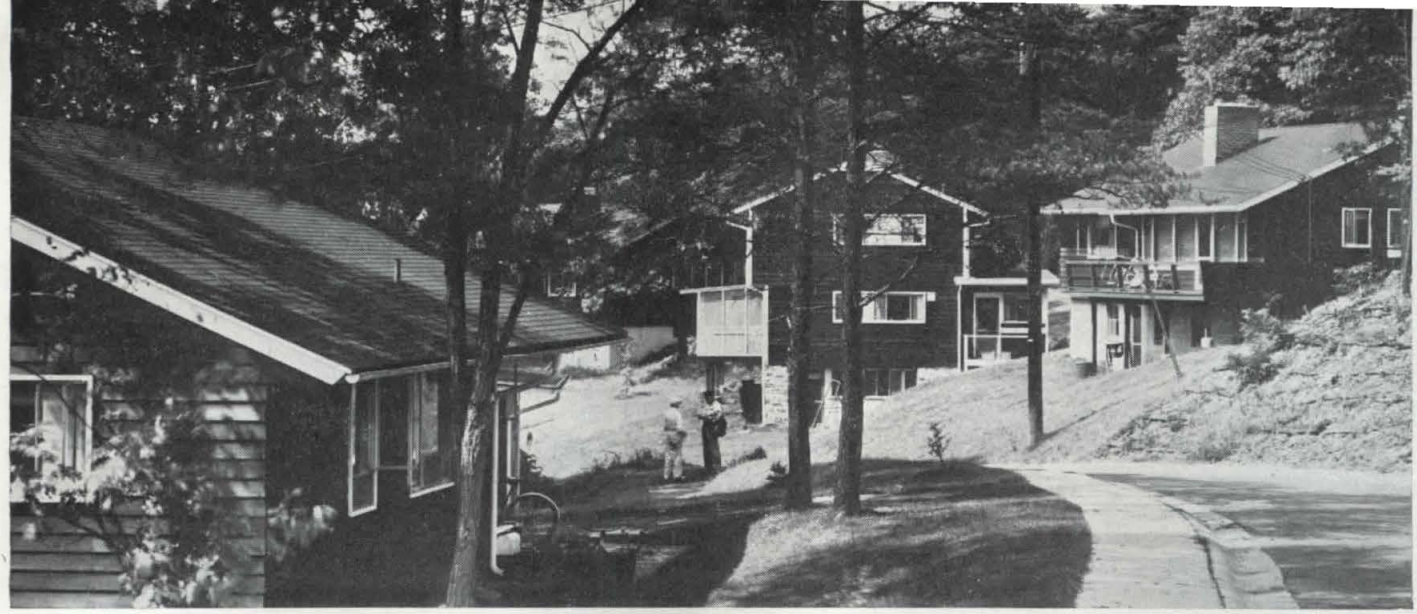
Special legislation for middle-income housing, including co-operatives, is available in some states. In New York, this is partly responsible for the new Queensview development now under construction across the East River from Manhattan. The initiative has been taken here by a most impressive list of sponsors. Included are such names as Louis H. Pink, Chairman of the Board of the Associated Hospital Service and of the National Public Housing Conference; Gerard Swope, Honorary President of General Electric; Henry Morgenthau, Jr.; David Sarnoff of R. C. A.; Howard Sheperd, President of the National City Bank; Bernard Gimbel; Beardsley Ruml, and others. The 728 apartments in fourteen 14-story buildings will rent from $61 to $89 per month including utilities. The low rental charges are possible because of: (1) 25-year tax exemption by the city on the improvements, (2) a $6,800,000 loan at 4 percent interest, (3) site acquired from the city at cost, (4) a necessarily large equity payment—$2100 to $3000—slightly more than 30 percent of apartment cost (which, though desirable from one viewpoint, should nevertheless be compared with the kind of help available to the speculative builder. On the FHA-insured Levittown houses, until the recent credit freeze, the required down payment was—zero!).

Among the most interesting of all the postwar co-operative housing endeavors are the three developments illustrated on pages 65 to 77. Stimulated by the architectural press on the potentialities of planned communities, and seeing little hope of getting such an approach from the speculative builder, these groups set out to build for themselves complete residential communities, in a controlled environment.

These are by no means small undertakings. Involved were hundreds of families and millions of dollars. That they did not altogether succeed is less surprising than the fact that they did not altogether fail. From the case histories of Ladera, near Palo Alto, California; Bannockburn, near Washington, D.C.; and Mutual Housing Association, near Los Angeles, California, emerges a pattern curiously similar in almost every respect: general conception, timing, size of undertaking, kind of property purchased, the architects chosen and their number, range of prices and house types, and the income bracket. Even the difficulties encountered follow an almost identical pattern: internal organizations, reaction to rising costs, trouble with financing and the FHA. And these projects, in quite different parts of the country, were virtually unaware of each other's existence until after their patterns were completely set.

Just what this proves, I suppose, is that under a given set of circumstances one group of human beings will react very much like another. But, more specifically can we not read into this that groups in the range of 50 to 300 persons or families begin to exhibit a predictable and dependable composition and behavior; that any such group is a ready-made *actual* market for housing investment of potentially greater security than the *hypothetical* market of the speculative builder; that the difficulties encountered by such enterprises have been in the necessity of pioneering a most difficult field, and without the usual assistance available to the speculative builder; finally, that if encouragement, advice, and financing were available to co-operatives, a healthy, new kind of democratic building activity would appear profitable not only to the shareholders and residents but to the whole building industry as well.

What was achieved by the Peninsula Housing Association at Ladera, by Bannockburn Co-operative, and by Mutual Housing Association came only through continuous, disheartening struggle. The results give some idea, however, of what might have been, and what might yet be done, with a change in heart toward co-operatives.



Bannockburn Cooperators, Inc.: Montgomery County, Maryland

BURKET, NEUFELD & DEMARS, ARCHITECTS

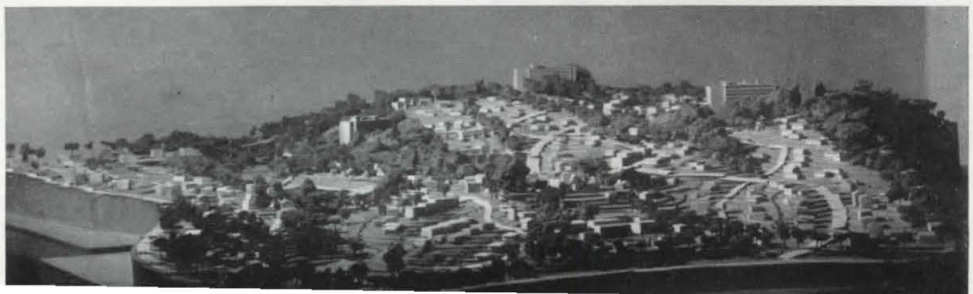
KEYES & SATTERLEE, ASSOCIATES

MARY GOLDWATER, PLANNING CONSULTANT

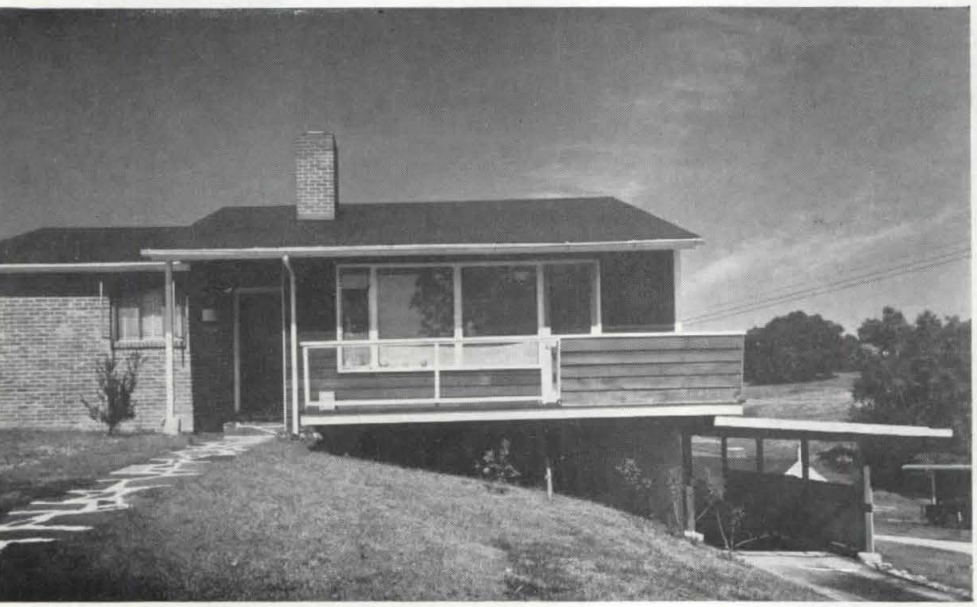
In 1944, Group Housing Co-operative was organized in D. C. to stimulate postwar construction of co-operative housing. In 1946, the Bannockburn Golf Course in Maryland, eight miles from the White House, was put up for auction. With remarkable determination, Group Housing raised $50,000 within two weeks and was successful bidder on the 124 acres of rolling fairways and wooded hillsides. The prospective residents organized as Bannockburn Cooperators, Inc. (Mary Fox Herling, Executive Director) and engaged Rhees Burket, Joseph Neufeld and Vernon DeMars as their architectural team. For the story of the original ideal (see model photo) and how this had to be tempered, see Page 132.

Questionnaires were sent to members; a series of preliminary plans was developed, and finally some eight or ten house types selected. At first, financing without FHA insurance seemed assured from the Mutual Life Insurance Company of New York, with an 80 percent mortgage at 3½ to 3¾ percent. However, as a result of rising costs and a tightening money market, this insurance company insisted on FHA insurance which, in turn, meant individual mortgages. Seven months were consumed in delays and construction detail revisions to suit the FHA. Finally, in order to get on with the planning, to test house types, and perhaps even to reassure the neighbors for another try at rezoning, a "pilot project" of 24 houses was started in the spring of 1949. Design of the houses was purposely nonspectacular. Such issues were at stake—the co-operative itself; the hope for the balanced community—that the battle of the styles seemed best avoided.

Although it is difficult to be objective about one's own work, I believe that the completed group looks less "like a project" than some of the others. Affecting this are the rugged topography; variation in house heights; pitched roofs that provide variety of wall shapes and—perhaps most important—existing tree masses that break up the group. The writer may seem to be preoccupied with variety and the street scene. It is, however, in just this area that developers have done so badly. V. DeM.



Left—photo of model of the architects' desired scheme, combining detached homes, semi-detached houses, garden duplexes, and three elevator apartment buildings, plus complete community facilities. A rezoning request to allow this was defeated and a more conventional subdivision scheme was developed (plan above). The area indicated as BL-1 is the "pilot project" of 24 houses illustrated in this study. At some later date another rezoning proposal may be made that might yet make the preferred site scheme possible.

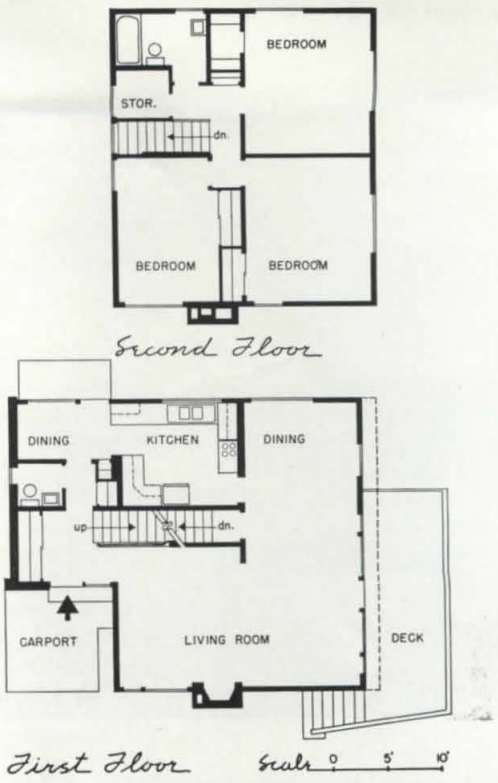


BANNOCKBURN COOPERATORS, INC.: MONTGOMERY COUNTY, MARYLAND

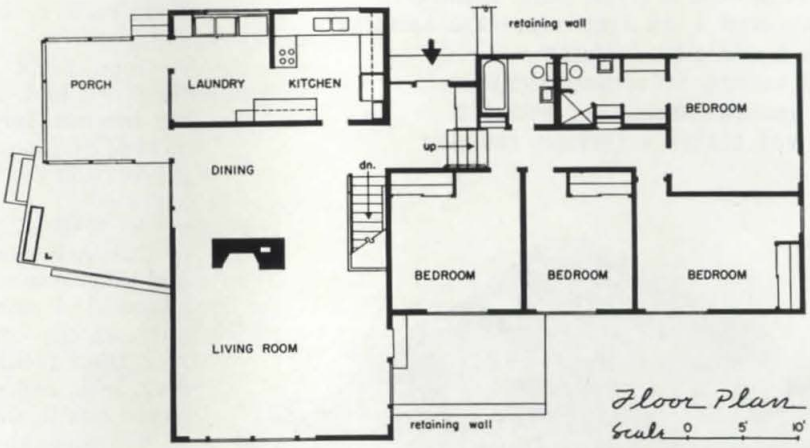
A two-bedroom house with basement, and a carport alongside. Design is tidy but purposely nonspectacular—one of the useful factors in launching the development.

Photos: Robert C. Lautman

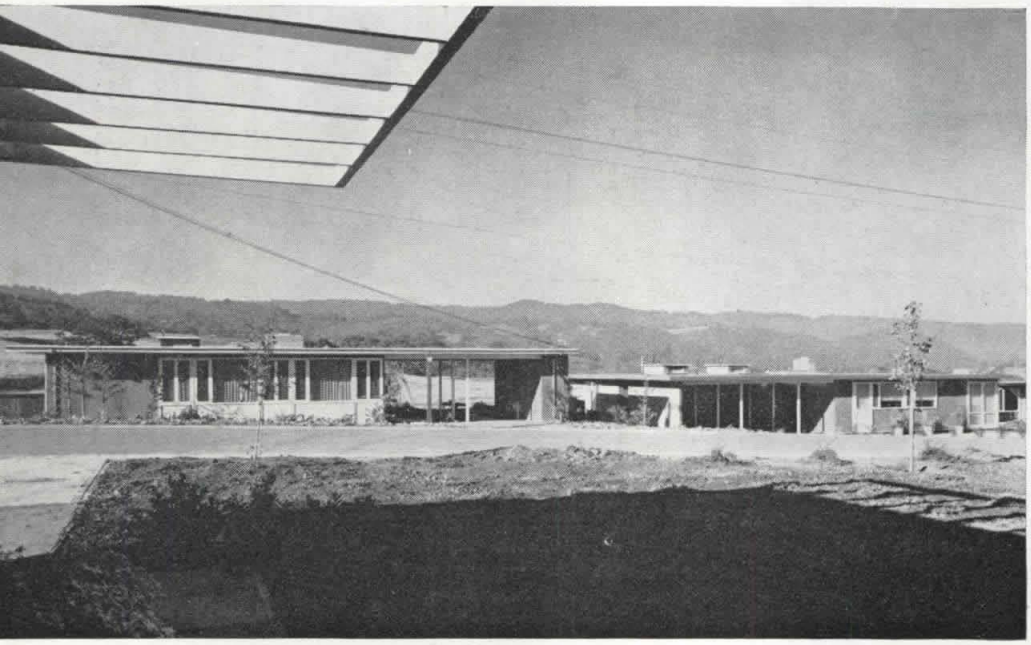
Left and below—details of one of the three-bedroom houses, with a heater room and cellar under the downhill portion of the house. For level sites, the house is built without a basement.



For those preferring a more conventional plan, a two-story, three-bedroom house was designed.



Above and right—plan and photographs of one of the larger house types. Elements in the agreeable visual variety at Bannockburn are the rugged site, good trees, different roof forms, and a lively contrast of verticals and horizontals.



Peninsula Housing Association, Inc.: Palo Alto, California

JOHN FUNK & JOSEPH ALLEN STEIN, ARCHITECTS
ECKBO, ROYSTON & WILLIAMS, LANDSCAPE ARCHITECTS
NICHOLAS CIRINO, CIVIL ENGINEER
EDWIN A. VERNER, STRUCTURAL ENGINEER
GEORGE BROKAW, MECHANICAL ENGINEER
CHARLES VON BERGEN, ELECTRICAL ENGINEER

Model of hoped-for development. With completion of 35 houses (within bottom point of photo) the co-operative had to be disbanded.

Wartime discussions of better homes and planned communities led to the formation of the Peninsula Housing Association in Palo Alto, California. The goal was to build Ladera, an ideal living environment for 400 families.

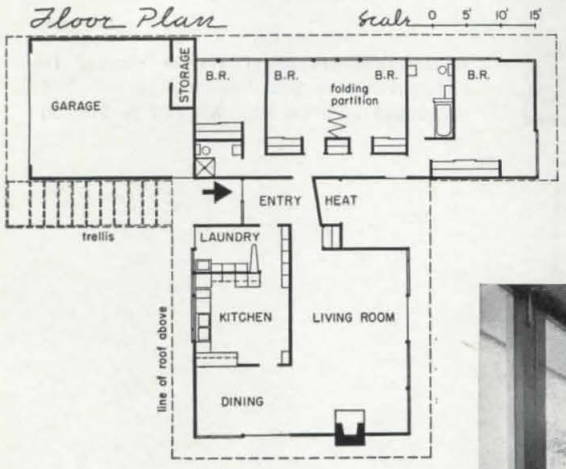
John Funk and Joseph Stein, San Francisco architects who had talked to the group in their meetings during the war, formed a team in collaboration with Garrett Eckbo, landscape architect, and Nicholas Cirino, civil engineer, and contracted to provide planning and technical services.

In 1946, a 258-acre site in the rolling foothills west of Palo Alto was found. Parts of the property were steep and heavily wooded. Many fine live oaks dotted the gentler slopes. The plan that developed provided for 400 home sites, an elementary school, a small shopping center, and recreation facilities, including a swimming pool, central play fields and extensive areas of woods on the steeper slopes left in their natural state.

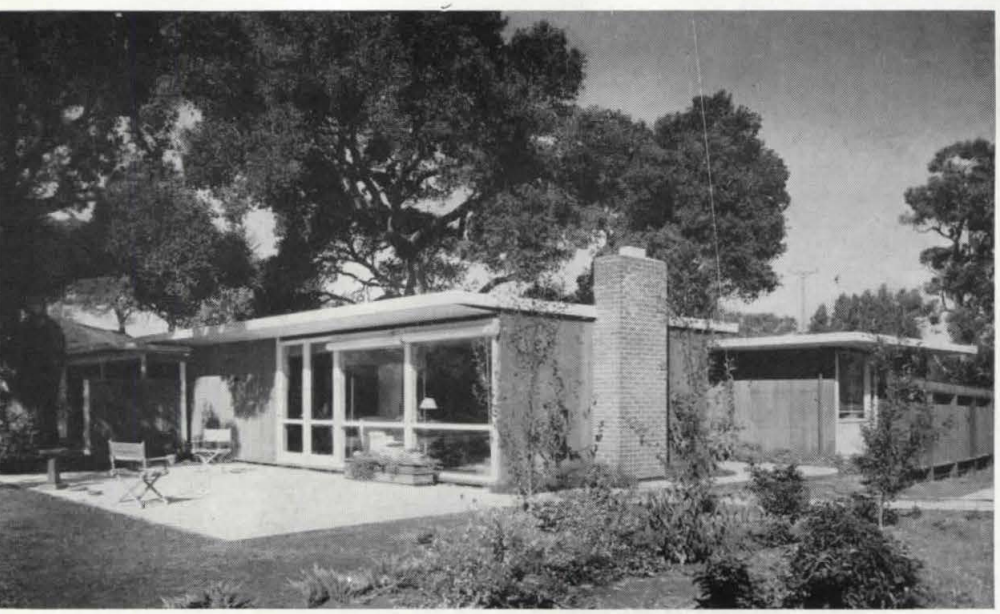
Questionnaires to the members formed the basis of the program developed by an architectural committee of the Association. From this program a range of house types, designed to fit the requirements of every member, evolved, and some ten types were selected as satisfying the majority of family needs and variations.

The Association planned to develop the land co-operatively and to build the houses, both with construction loans. Here was the rub. They were never able to get the construction loan for development, and consequently never realized their full membership. After three years the first and only part developed by the co-operative was done with individual financing—one house and lot at a time. This proved too slow and cumbersome and much too costly. In 1949, with 35 houses built, the co-operative was disbanded and the remaining land sold to a local realtor.

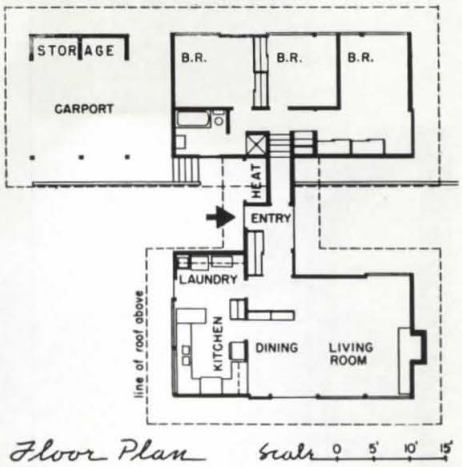
Architecturally speaking, the impression one gets from the section that has been completed brings mixed emotions. There is, on the one hand, the excitement of seeing such a large number of uncompromisingly modern houses in one group. In the section bare of large trees, the most insistent module—the story height—tends somewhat to monotony; although community buildings, school, shopping center, etc., will add the contrasting mass and some notes of vertical change missed at present. V.DeM.



One of the 10 basic house types designed for Ladera—with one of the bedrooms divisable by a folding partition. Photos below show the fireplace end of the living room and the dining area in an ell at one side. *Photos: Ernest Braun*



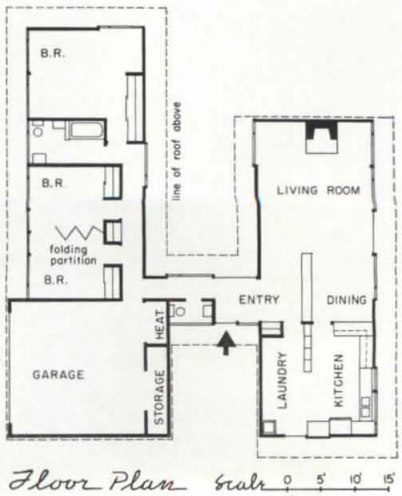
A three-bedroom house. Houses planned for Ladera range in size from two to four bedrooms and in price from $10,000 to $18,000.



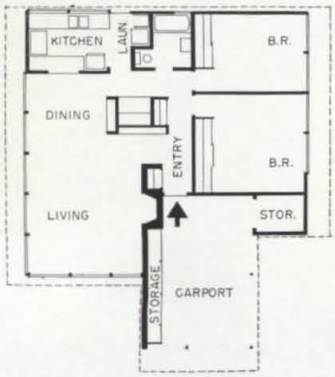
Floor Plan Scale 0 5' 10' 15'

PENINSULA HOUSING ASSOCIATION, INC.: PALO ALTO, CALIFORNIA

Below—plan and interior view of one of the two-bedroom schemes. All houses were laid out on a modular system to allow precutting of all material regardless of variation in floor plan.

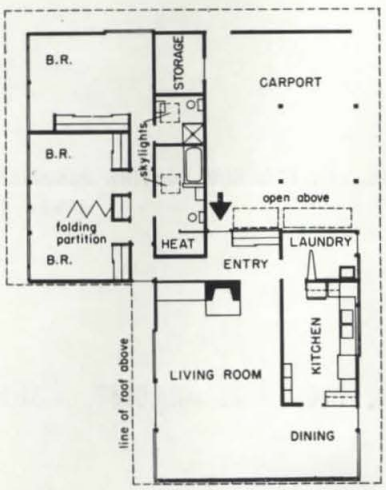


Floor Plan Scale 0 5' 10' 15'



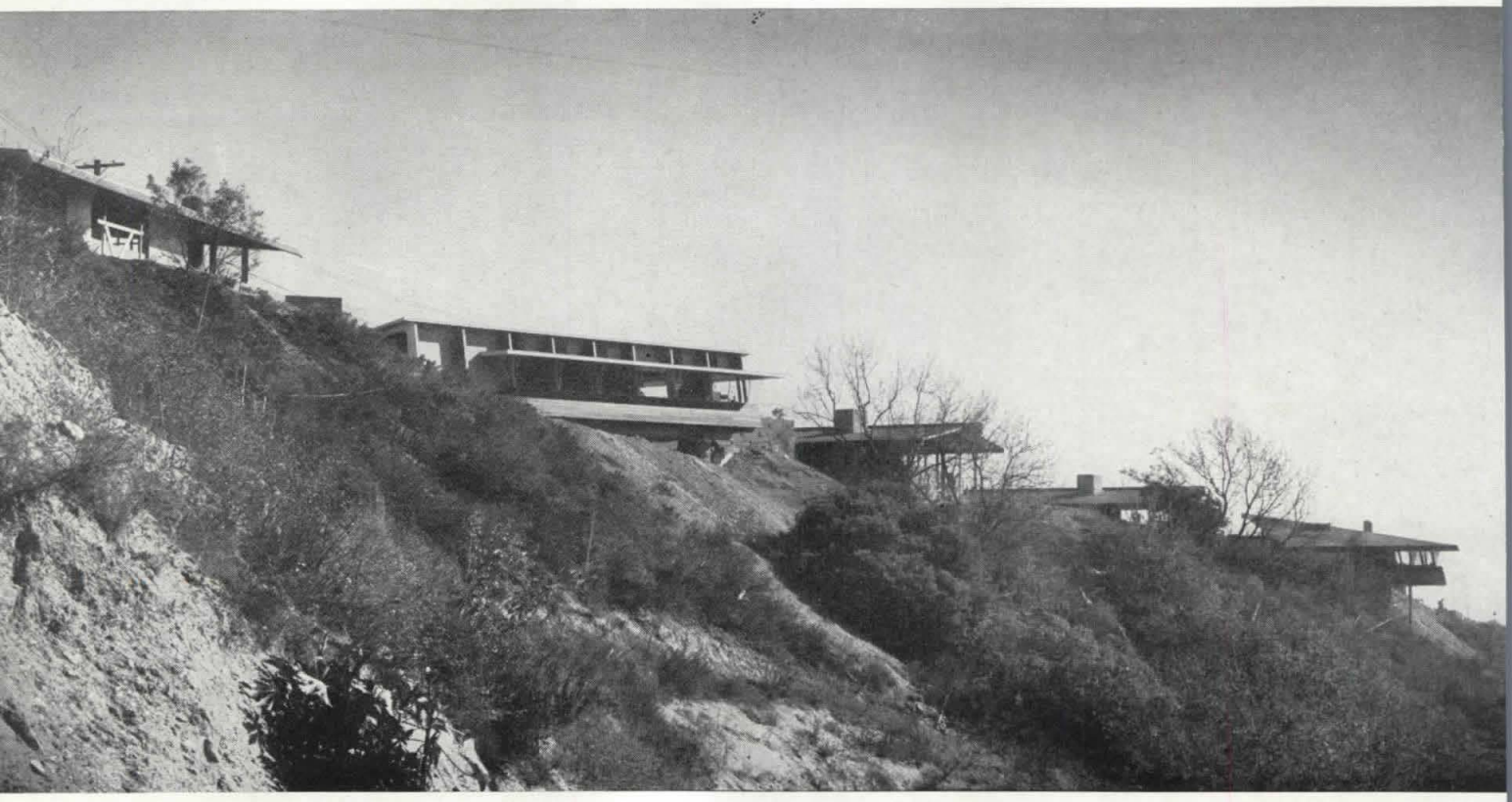
Floor Plan
Scale 0 5' 10' 15'

An extremely compact two-bedroom house. Millwork, doors, sash, etc., were standardized for all houses.



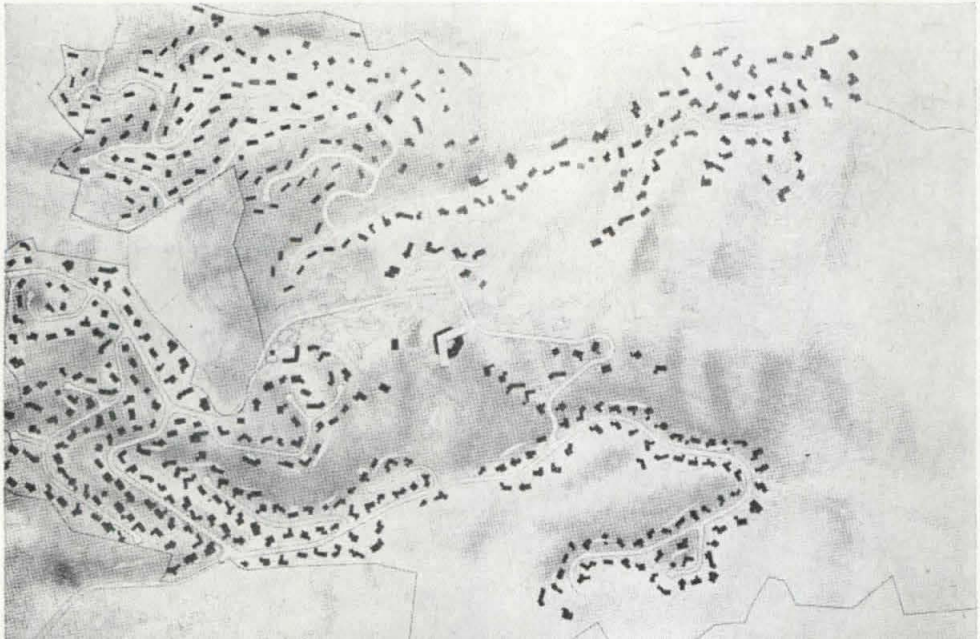
Floor Plan Scale 0 5' 10' 15'

Right—plan and living room of a two- to three-bedroom scheme. Wood-frame construction was chosen for the houses as the most economical.



WHITNEY R. SMITH, A. QUINCY JONES, JR., EDGARDO CONTINI, ASSOCIATED ARCHITECTS, ENGINEERS AND SITE PLANNERS
JAMES CHARLTON, WAYNE R. WILLIAMS, COLLABORATING

Mutual Housing Association, Inc.: Los Angeles, California



Mutual Housing Association grew from a group of four musicians who planned, in 1946, to share an acre of land and a swimming pool. At the peak of activity, the Association had 500 members and owned 800 acres of "gently rolling to hillside" property.

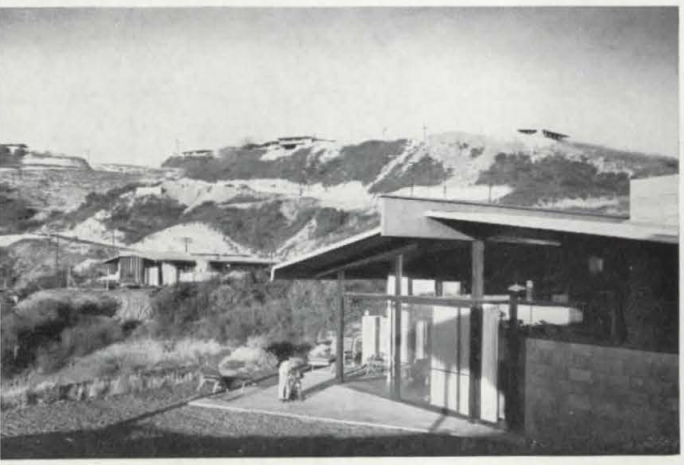
An architect-engineer team—Whitney Smith, A. Quincy Jones, Jr., and Edgardo Contini—was engaged to render planning and architectural services. The design program was developed through questionnaires and a committee of members, as in Ladera and Bannockburn. The extremely rugged topography here demanded a bold approach. Site planning was initiated with bulldozers; great benches were cut for house sites and trails were blazed for future roads. Sites were determined on the partially graded land and house types planned for the sites, ranging from flat to "over 20%." The decision to provide a range of house sizes for several grade conditions resulted in the design of 35 house types.

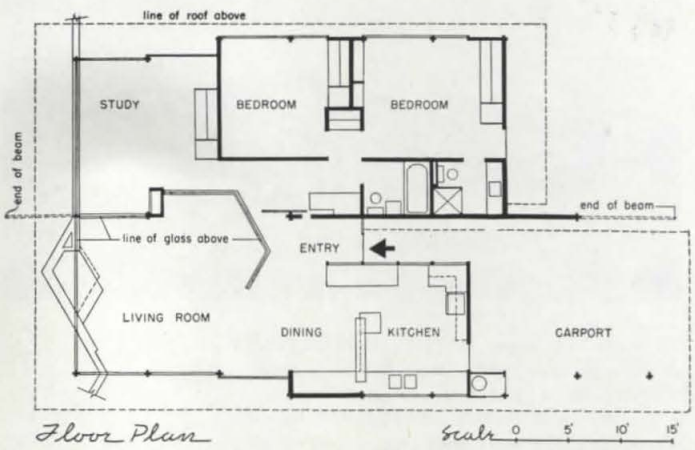
Early attempts at financing on a group co-operative basis were unsuccessful and FHA insurance was found necessary. There ensued an endless period of delays and continuous plan revisions running into many months. Only constant hammering at the local FHA and patient resolving of each new objection finally resulted in enough commitments to start construction early in 1949. At present, there are 100 houses completed or under construction. One contractor built a first block of some 30 houses. The others have been done by different contractors in much smaller groups and many have been contracted on an individual basis by the member directly. Surprisingly, the houses built one at a time cost no more than the same units built as part of a large contract. The answer? No overhead; also the great number of types ruled against savings through repetitive work.

The really remarkable thing to anyone outside the fabulous Southwest is that houses of such imaginative and daring design could be built for apparently no more than conventional houses elsewhere. What was merely an extended struggle with FHA could only have resulted in defeat in more "sensible" parts of the country.

The houses, many of them set like birds poised for flight, are not as arbitrary in their design as they might seem without analysis. The slopes have been disciplined into buildable benches, shelves and terraces with walls of concrete block. The houses are wood-framed shelters soaring lightly above. Others are more earthbound with masonry below the sill height continued to become garden walls. Many of these walls have been effectively patterned by the simple device of offsetting the concrete blocks. One is not at all conscious, however, that there are as many as eighteen variations. The architects feel that six or eight types could have suited the different family needs and offered variation visually.

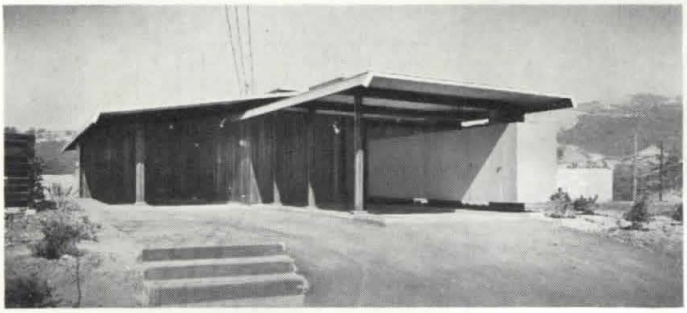
The group picture suffers at present from lack of planting and some crowding not intended in the original scheme, but taking these into account the scene is dramatic, stimulating and altogether human. V. DeM.



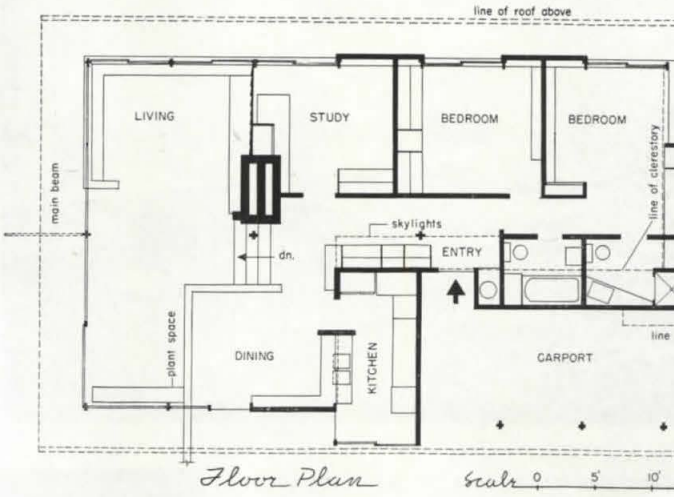


Basic plan for the giant site groups the houses along two major ridges, with the valley area left free for community facilities. The three general views (immediately above and across page) record the general appearance of the site.

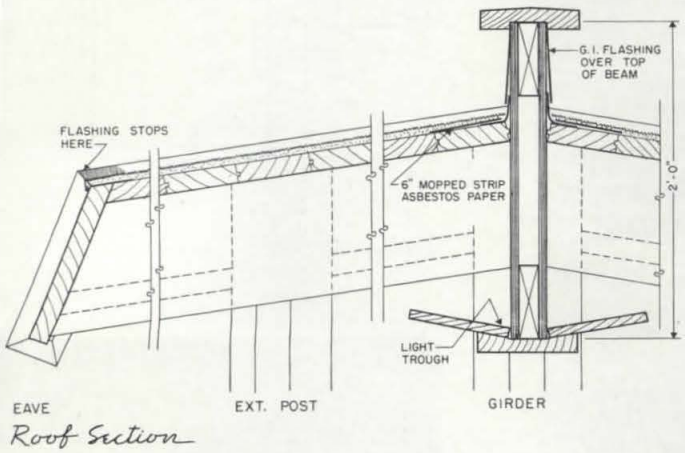
Right—with its plan—is one of the 35 house types that were developed to accommodate various size houses to widely varying types of plots. Eighteen house types have been built to date, ranging in price from $8400 to $20,000. *Photos: Julius Shulman*



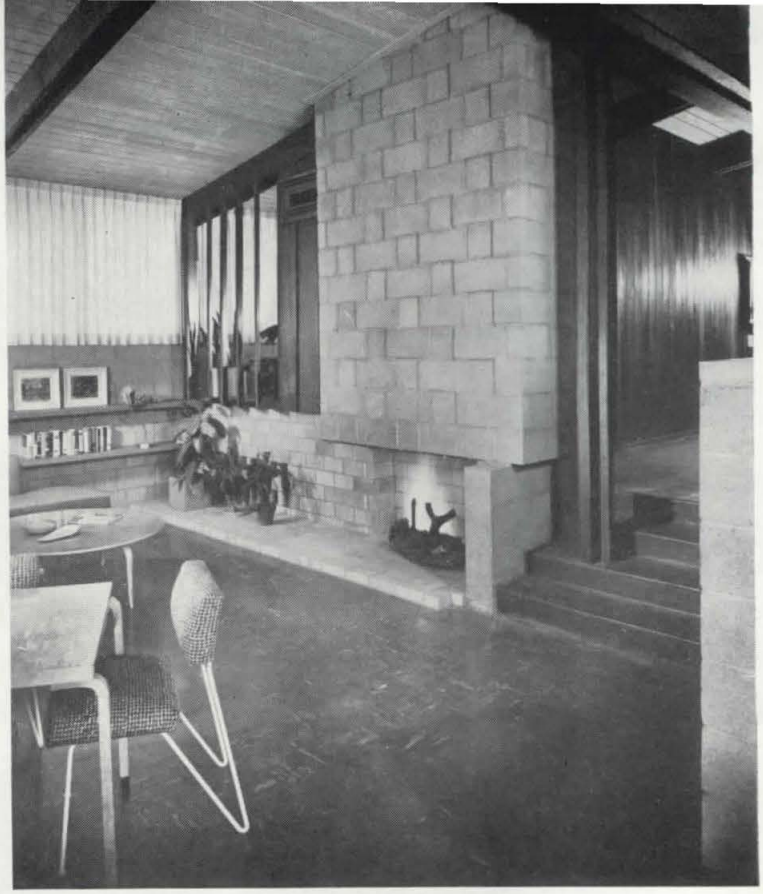
On these two pages are plan, a detail, and photographs of a two-bedroom-and-study house designed for a gentle slope. Plans are used in reverse where orientation requires it. Below sill height, masonry walls are extended to become garden or terrace walls.

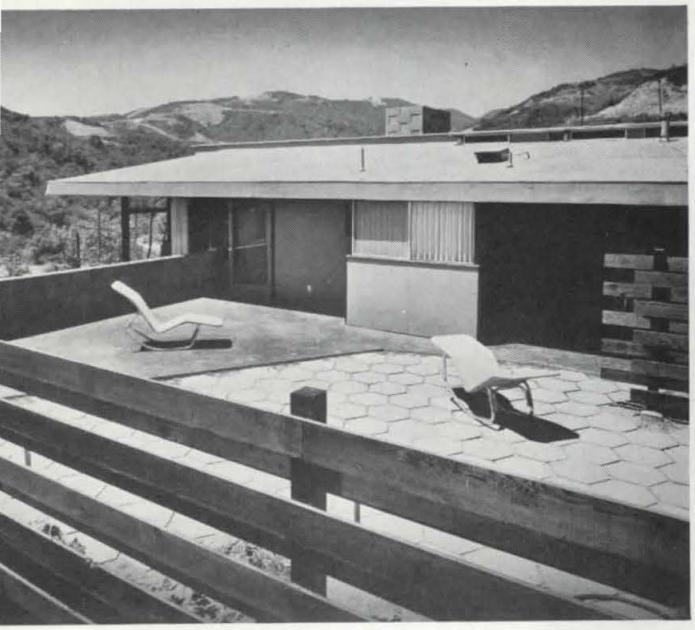


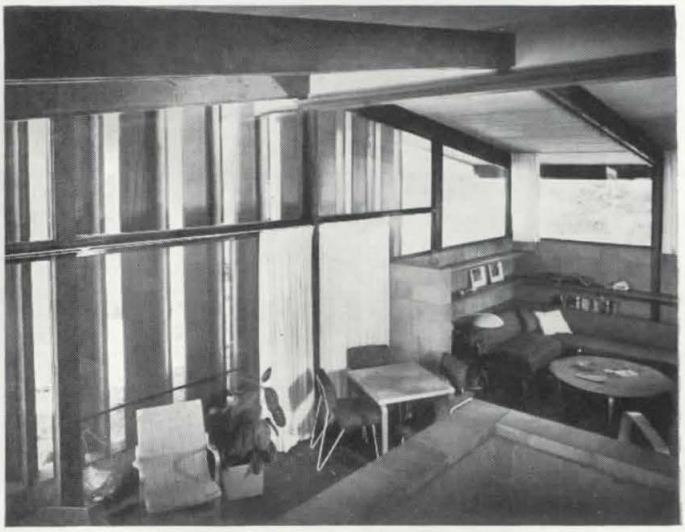
From the living room, four steps lead up to the dining deck, the entry, and the bedroom hallway. Detail below shows the typical roof-framing system, with its deep ridge girder. Picture immediately below shows closeup of terrace, with door at corner of masonry wall opening into the dining deck.



Roof Section





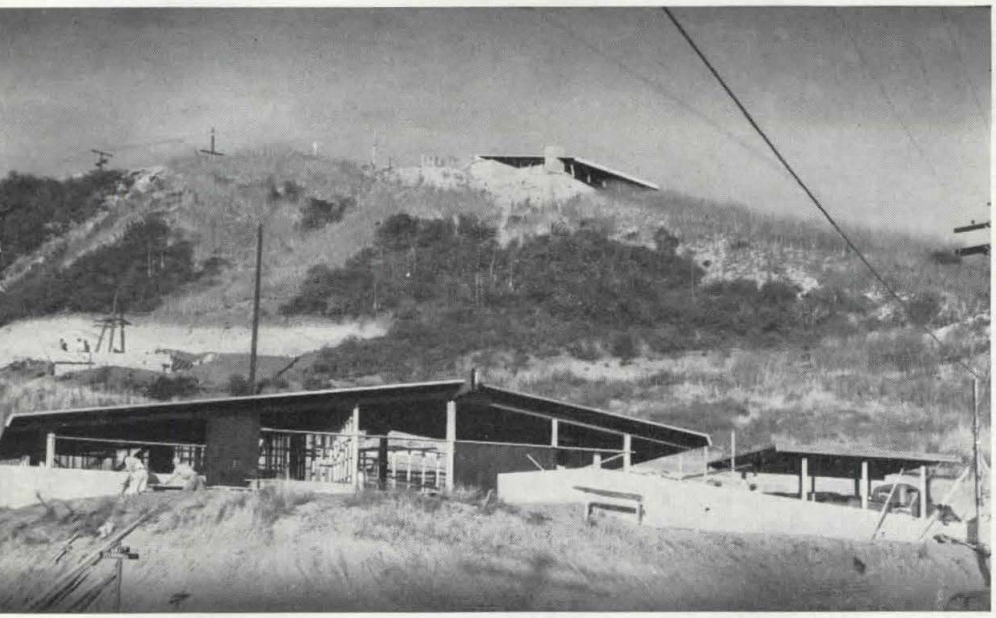


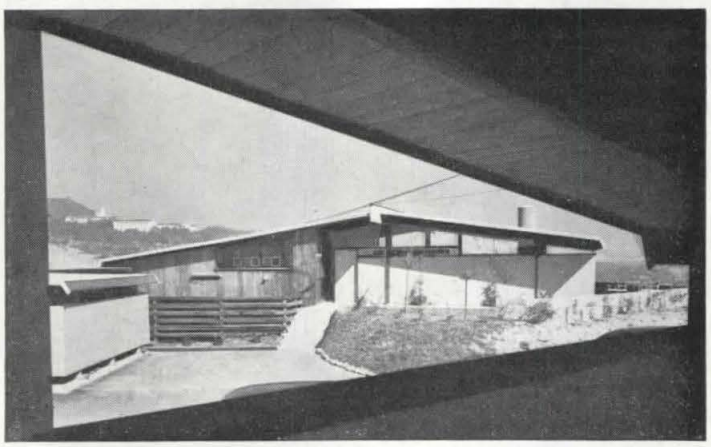
Right, above—looking down from dining deck to corner of living room, and wood sun-screen outside the window wall.

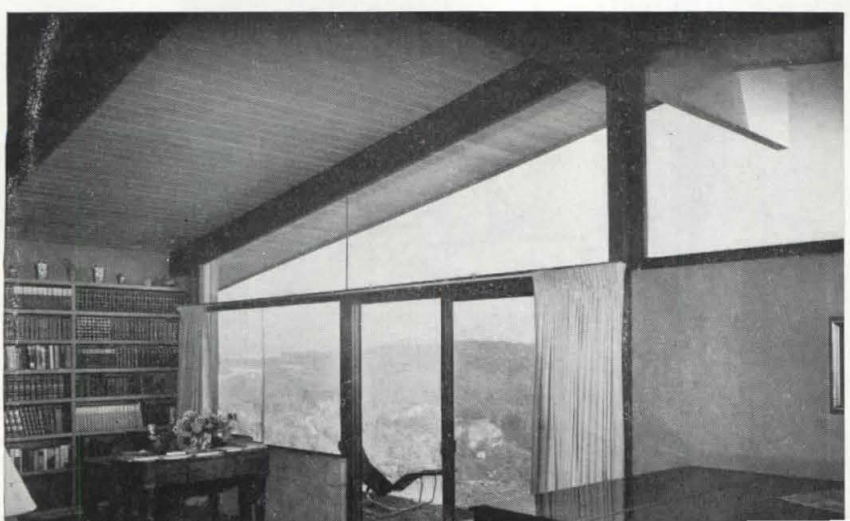
Right—dining area (left) with stairs down to living room (right).

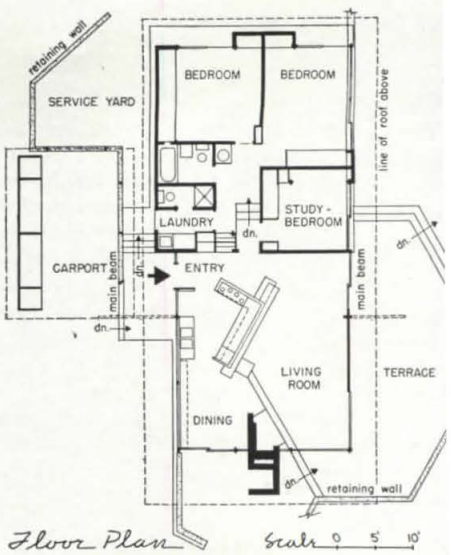
MUTUAL HOUSING ASSOCIATION, INC.: LOS ANGELES, CALIFORNIA

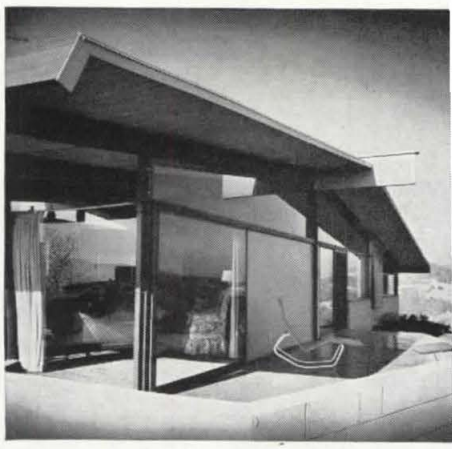
MUTUAL HOUSING ASSOCIATION, INC., LOS ANGELES, CALIFORNIA











Illustrations on this page show a single theme, with variations. The plan is the same for all of the houses shown, but with differing sites the carport occurs at different levels, and wing walls of either masonry or fencing also vary.

CONCLUSIONS AND RECOMMENDATIONS

organization

The procedures for co-operative organizations are well established, but the importance of having experienced business management during the development period cannot be over-emphasized. Speed is absolutely of the essence. Beginning organizations should not tackle land where topography, zoning, utilities or other problems will prevent starting construction by six months to a year.

membership

FHA recommends "forming a group within your labor union, within your place of employment," etc. This is sound advice to the active organizers of the co-operative. When it comes to filling out the membership, however, a wider cross-section of interests will result in a healthier community life later on. And while a spread of income ranges is not in accord with recent real estate practice, it does not run counter to American tradition or the democratic ideal. This leads inevitably to the next question. Co-operatives have traditionally insisted on nondiscrimination as to race, creed, and color, a rather academic consideration in England or Scandinavia, and one presenting no difficulty in running a consumer's grocery store in the United States. Housing is something else again, and co-operatives should abandon not idealism but naïvete. Better housing is, in itself, a crusade —so is the co-operative way.

financing

A few more successful projects will go a long way toward loosening the financing of co-operatives. Of course, FHA removes any problem as far as it goes. But direct government loans would no doubt find private money following closely after, in willingness to make loans at low interest rates.

site selection

While rolling, wooded hillsides make the most beautiful homesites, they are not the cheapest to develop. If economy is the main reason for the co-operative's existence, avoid hills like the plague. But if beauty and the good life were the goals which brought the members together in the first place—and if they can pay for it—then by all means pick "gently rolling to steep, wooded slopes."

dwelling types

Co-operators are progressive and will usually have nothing but progressive architecture—and rightly so. There is some question, however, whether the design approach should not be tempered by the fact of group design and sights set not so high on the spectacular. Plan variations should be kept to the minimum that will serve family needs. For small projects two or three types of detached dwelling plans should be sufficient. For large projects these might have to be increased to six or seven.

design services

The creation of architectural firms by the co-operatives themselves, even if only by suggestion, is dangerous and sure to cost everyone money and delays. The desire for the best talent is understandable, but co-operators should get this by contracting with one firm or an individual who will hire or bring in other expert advice as needed.

building services

In multiple or multi-story construction, there is little question that the standard procedures of competitive bidding are the only safe way. In the case of detached houses, however, the experiences of Ladera, Bannockburn, and M.H.A. show complications arising. In all three cases, large contracts were abandoned after a first block (24, 35, 40 houses) was built. In at least one case, separate houses were being built as cheaply as in a group. Consideration should be given to architect-builder combinations, contracting a package deal *after* building a sample of each house—just as the speculators do, and for the same obvious reason. It's the only way really to know how cheaply it can be done.

role of the government

The federal government, up to almost the present time, has been the co-operatives' best hope and greatest disappointment. While most developments that have gone ahead have only done so with FHA insurance, their co-operative organization has, in the past, been considered a liability by FHA, and appraisals have often been disastrously low.

There is now, however, a special section of the FHA charged with the responsibility of getting some action under Title 213 of the 1950 Housing Act. The most recent spurt of co-operative housing activity can, for the first time, be traced to the FHA. In fact, the flood of applications under this section amounted recently to $250 millions. Suspected is a remote connection with the recent credit freeze (Regulation X) and the likelihood that many of these applications are builder-inspired, not bona fide co-operatives at all, and the FHA intends a careful screening. Just one item that is now available, an earnest of the new FHA, would have been a ray of sunshine to the storm-tossed craft on our earlier metaphor. This is a large envelope with printed title "A Kit of Tools for Co-operative Housing" and containing bulletins, pamphlets, information on organizations and how to climb on with the FHA. Just what we always wanted to know!

Section 213 of the National Housing Act now provides insurance for co-operative housing projects of not less than 12 units. FHA will make a blanket mortgage up to 85 percent of replacement cost for 40 years at a maximum charge of 4 percent on either multi-family construction or individual houses. Individual house developments may be either of the "management" or "sales" type. In the latter case, provision is made for withdrawal from the blanket mortgage on completion of units and transfer to the individual owner. Veteran membership of 65 percent in the co-operative can bring the loan up to 90 percent. Unless allowed to be averaged over a project, the statutory cost limit of $1800 per room or $8100 per dwelling unit may seriously hamper the production of anything other than minimum-sized dwellings.

While this represents immense progress, co-operators yearn for provisions of the defeated Title III of the 1950 Housing Act, the Sparkman-Maybank Bill, with direct government loans at 3 percent for 50 to 60 years, and 100 percent development cost for genuine co-operatives or nonprofit housing corporations. And while they wish Godspeed to Warren Lockwood, Assistant Administrator for Co-operatives in the FHA, they are still convinced that co-operative housing should be pulled out from under the wing of FHA, with its weakness to pressure from real-estate interests, and established as a relatively independent administrative setup under the Housing and Home Finance Agency. They argue for the basic principle of good administration: that when something new is to be started it must be entrusted to a group of people vitally concerned with its success and whose primary job it is to make it successful. And they fear that, however well intentioned, any compromise with this principle will doom the co-operative housing program to failure from the start. VERNON DEMARS

A great deal of interest was stirred by the OFFICE PRACTICE *article, "The Architect and Defense," by Daniel Wentworth Wright, architect with an office in Short Hills, New Jersey, describing his experiences in applying for defense work from the U.S. Corps of Engineers. (See October 1950* **P/A.***) A conference was held in New York shortly afterwards attended by representatives of the Corps of Engineers, the National Defense Committee, A.I.A., and the architectural press. To make generally available more factual information on the organization of the U.S. Corps of Engineers and the procedure that architects should follow in applying for commissions,* **P/A** *presents the following statement.*

The Architect and Defense, 2

By CHARLES K. PANISH*

THE U.S. CORPS OF ENGINEERS is one of the agencies used by the National Defense Department for securing architectural services.** The Engineer Corps is relied upon for Army Master Planning and for Army and Air Force Construction. The Corps of Engineers is organized for centralized military control but for decentralized operations. Its structure includes: National Offices in the District of Columbia, 13 Divisions, several District Offices within each Division, with defined boundaries for each Division and for its Districts.

A wide range of categories and cost characterize the projects conducted by the Corps of Engineers. The current military program falls into the following categories:

a. Standard Type Building Design (in type to be duplicated locally) let to private architects by the National Office;

b. Construction of Cantonments, using standard detail plans already on file (for individual buildings) which private architects are called upon to site and to provide with designs for outside utilities;

c. Technical Facilities for special purpose buildings such as Research Facilities or Technical Facilities of water supply, petroleum supply, machine shops;

d. Housing Projects constructed under the Wherry Bill Title VIII under the National Housing Act (the Wherry Bill augments housing within bases provided by regular military appropriations). By its modus operandi, architects and architect-engineer organizations are hired by appropriate District Offices to prepare plans; a "sponsor" is then selected by process of bidding on the plans and the property site is leased to the "sponsor" who develops the project with private means; and

e. Until recently, Veteran Administration Hospital Projects, presently to be handled exclusively by the Veteran Administration itself.

PROCEDURE IN APPOINTING ARCHITECTS for Projects of the Corps of Engineers. The Corps of Engineers maintains lists of architects and of architect-engineer organizations by accepting their formal applications on regular printed forms available at all District Offices. When a project is first referred to the District Office for execution, the contract is let to the private architect or architect-engineer organization if the District Office is already engaged to capacity. This is for reasons of economy, so as not to add personnel, and for reasons of policy whereby architects are trained for war emergency demands. It results, therefore, that by these terms the larger projects are let to private practice more frequently than the smaller jobs.

The contracts fall into two categories:

1. Negotiated Lump-Sum Contract:* Title I: Plans and Specifications; and Title II: Plans and Specifications and Supervision of Construction.

2. Cost-Plus Fixed Fee, which is used only when the terms of the project are too indefinite for lump-sum evaluation—for instance, when planning must be piecemeal, when construction must start before designs are complete, or in certain foreign work.

For each project, three applications are usually selected, based on the following criteria:

Each applicant must (a.) have proved competence to perform that kind of work; (b.) be not unduly burdened by other obligations; (c.) be normally accustomed to fulfilling projects of commensurate size; (d.) be able to finance the preparation of plans and specifications; (e.) preferably be located near the site of the project.

THREE NAMES ARE SELECTED in accordance with these criteria and are submitted to the Division Engineer or to the National Office in the District of Columbia—according to the importance of the project—for approval to negotiate.

Having obtained approval, the District Engineer selects one of the three recommendations, basing negotiations on prior estimates of his own. If he fails to arrive at a meeting of minds, a second name (of the three) is selected and, if necessary, a third.

When terms are finally agreed, the District Engineer prepares a contract and submits it to the National Office for approval and award. This is done to assure uniform application of fee policy.

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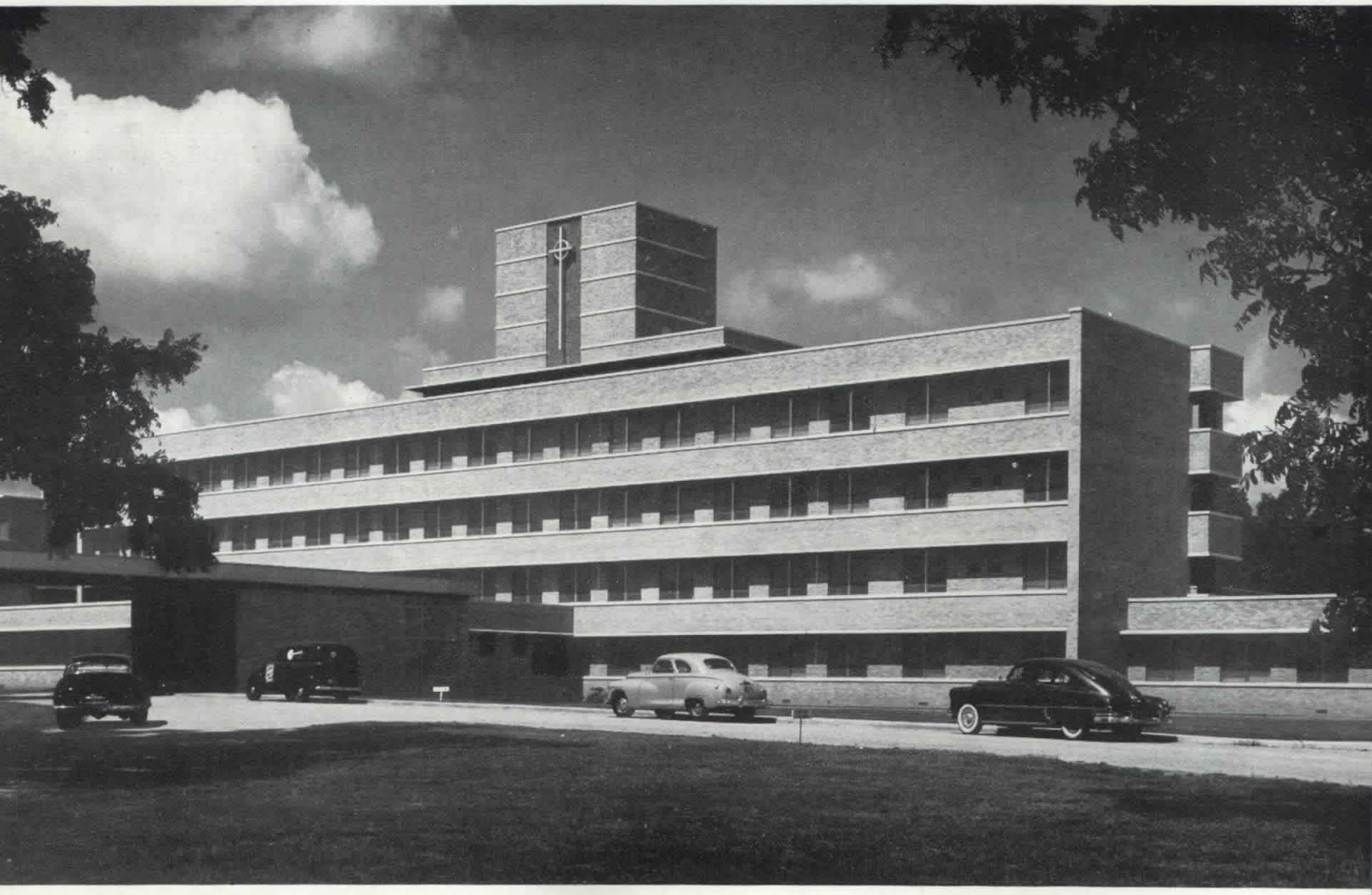
*Chief of Engineering Division, New York District, U.S. Corps of Engineers.

**Two other agencies are used by the Defense Department for procuring architectural services:
1. The major Air Force Command—for master planning by staff, by the Corps of Engineers or by private architects;
2. The Navy Bureau of Yards and Docks, which conducts projects mostly from its National Office in the District of Columbia and occasionally some projects through its District Offices.

*Generally the type of work designated by this title (Supervision of Construction) is conducted by the Corps of Engineers.



Hospital: Alexandria, Louisiana

GOLEMON & ROLFE, ARCHITECTS
FRANCIS J. NIVEN, STRUCTURAL ENGINEER
REG F. TAYLOR, MECHANICAL ENGINEER

This general hospital, planned for future expansion, is finished throughout with durable, easy-to-maintain materials—face brick exterior (reinforced concrete frame), trimmed in stone, with hollow tile back-up walls; terrazzo floors (over concrete); washable wall fabric on plaster walls; glazed tile wainscots.

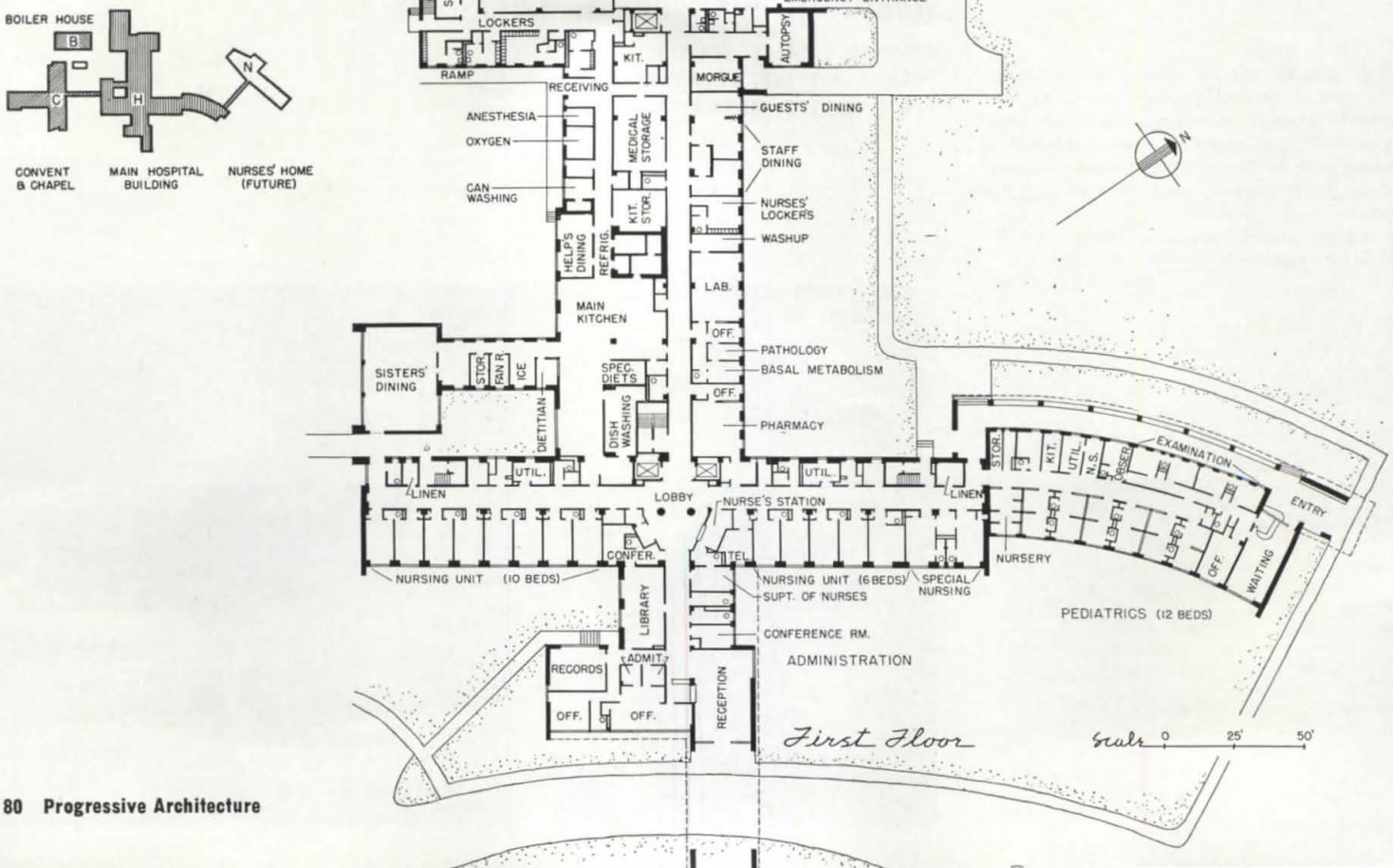
Above—general view of entrance.
Below, right—air view from northeast.
Photos: Paul Dorsey

program A 150-bed general hospital to serve the central Louisiana regional community. To be planned and built in such a way that future expansion to practically twice the initial bed count could be accomplished economically. In line with local practice, separate nursing units and an obstetrical section had to be provided for nonwhite patients, but of the same quality and finish as the other areas. All patients to be served by the same surgical and adjunct facilities; emergency; X-ray and deep therapy; kitchen, etc. Pediatrics and outpatient children's section in a wing, with separate access.

site A 25-acre tract, nearly level, wooded in portions, fronting (toward the east) on U. S. Highway 165. Alluvial soil.

solution Organization of nursing units in parallel wings—the forward wing for white patients—with a connecting block for joint-use services. On the ground floor, administration offices are organized in a one-story forward projection, while the pediatrics section is located in a curved wing to the northeast. A central kitchen serves all patients by means of dumb-waiters and serving kitchens. To provide additional beds in future, more floors—perhaps as many as four—may be added to nursing-unit wings without disturbing the present operation. Nursing units are oriented to receive the prevailing breezes, with canopies for protection from rain and excessive direct sunlight. All rooms are adequate for two beds if needed (a few four-bed wards are also provided), but a majority will actually be used as private rooms. To help minimize the institutional character of the hospital, full color fabric wall coverings are used in all patient areas. To lower the noise factor, most patient areas are across corridors from work areas.

Surgery is located in the center, with access from both of the nursing-unit blocks. Although this might suggest awkwardness in traffic, the architects report that "there would be very little of it, only by hospital personnel, and there are optional routes of travel at times (usually in the morning) when surgery is in critical use."



The alluvial soil required a precast concrete piling foundation system (driven to 50 feet). To allow for future expansion, piling, foundations, columns and mechanical services enclosed in walls all had to be oversized for the present plant. Space enough to handle the enlarged plant also had to be provided in the present kitchen, laundry, surgery, O. B., X-ray, central service, laboratory and pharmacy areas.

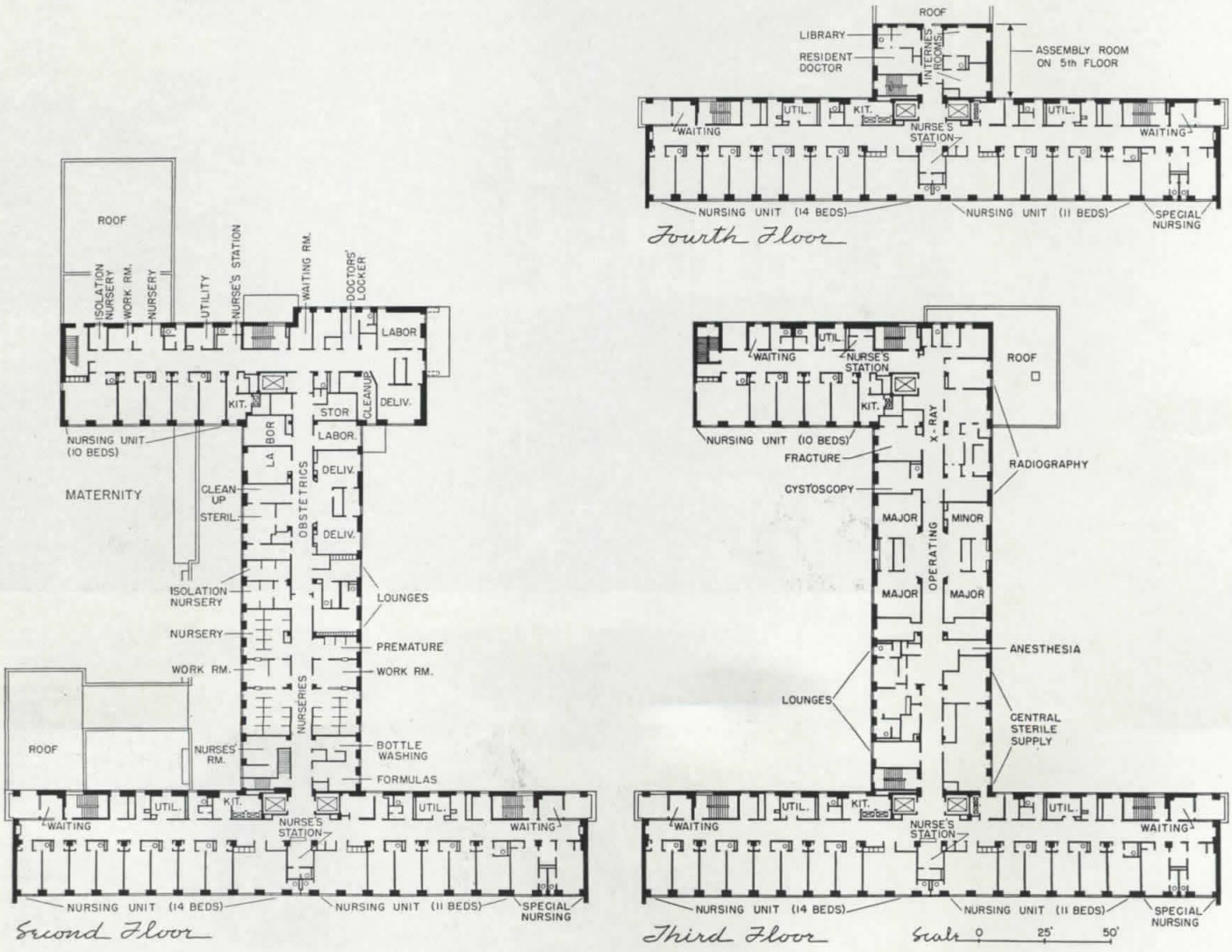
materials and methods

CONSTRUCTION: *Foundation:* precast concrete piling. *Frame:* reinforced concrete, except in the pediatrics wing, where (above the first-floor concrete slab) steel is used. *Walls:* brick and tile, finished inside with plaster, glazed tile (wainscot) ; ceramic tile; marble; fabric wall coverings. *Floors:* reinforced concrete, surfaced with terrazzo; ceramic tile, or quarry tile. *Roof:* reinforced concrete; built-up tar and gravel. *Insulation:* acoustical—tile; thermal—spun glass type. *Roof drainage:* inside cast iron and galvanized wrought iron downspouts; mushroom dome strainers in drains. *Partitions:* hollow tile; marble. *Fenestration:* aluminum, double-hung sash; double-strength "A" glass. *Doors:* hollow-metal interior frames; oak-veneer slab-type doors; steel roll-up; double-sliding.

EQUIPMENT: *Heating* and *air conditioning:* Steam system, served by welded, gas-fired boiler; recessed and wall-hung convectors; propeller type unit heaters; boiler fire control; air-conditioning system for surgery, O. B. nurseries and X-ray. *Lighting:* ceiling type incandescent; fluorescent, combination fan and light units in nursing units; operating-room lights. *Special equipment:* stainless steel kitchen units; automatic laundry units; nurses' call system; public address and doctors' paging system; complete X-ray and other specialized hospital equipment.

Golemon

Rolfe



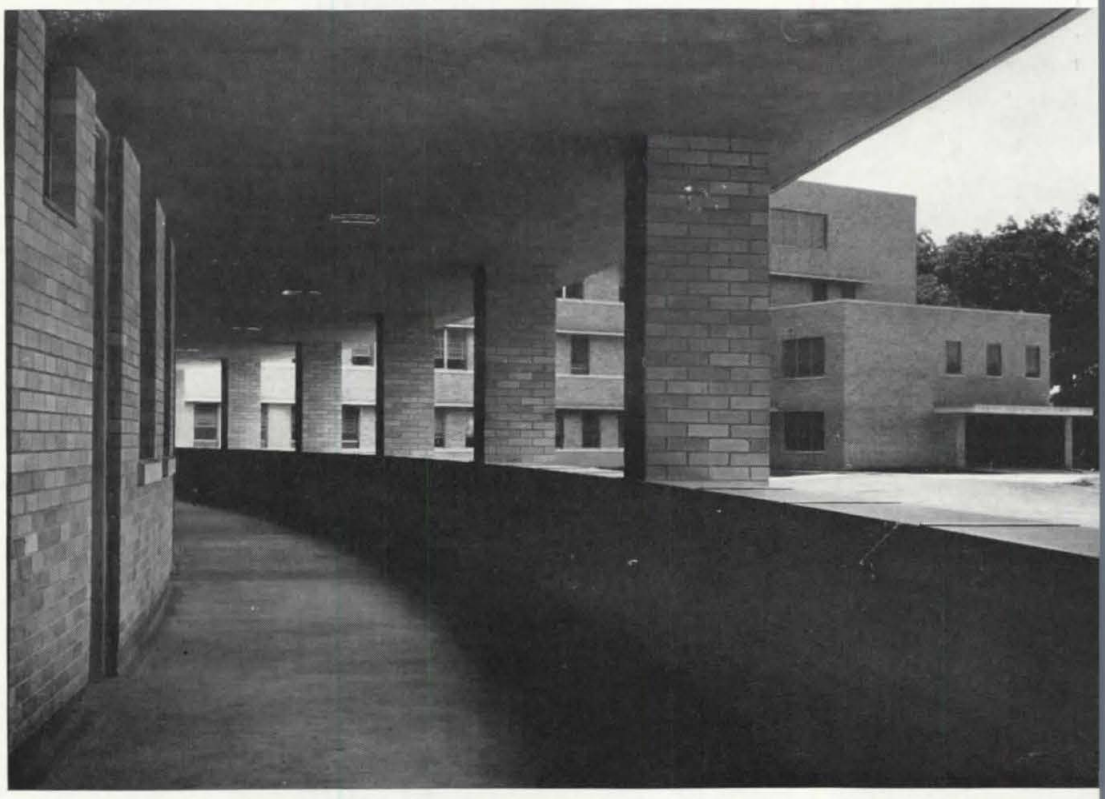
HOSPITAL: ALEXANDRIA, LOUISIANA

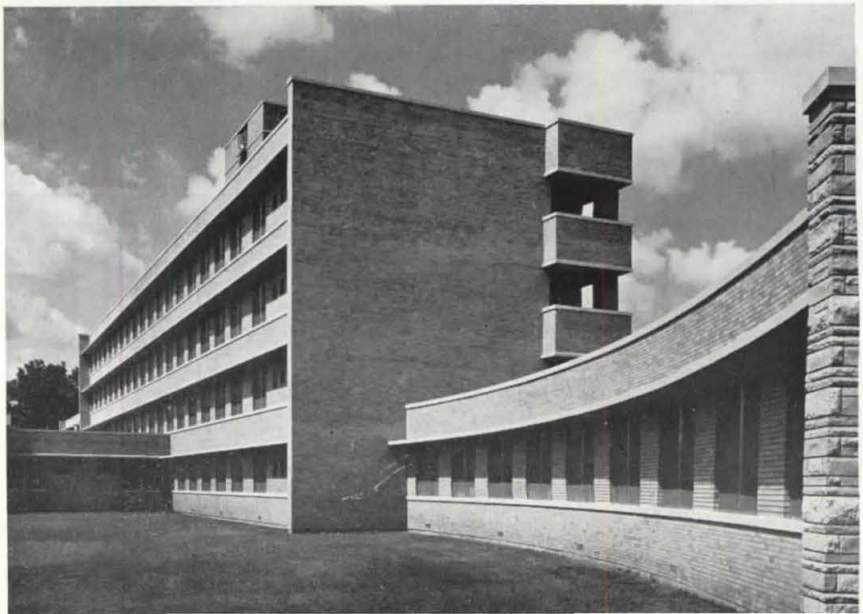
HOSPITAL: ALEXANDRIA, LOUISIANA

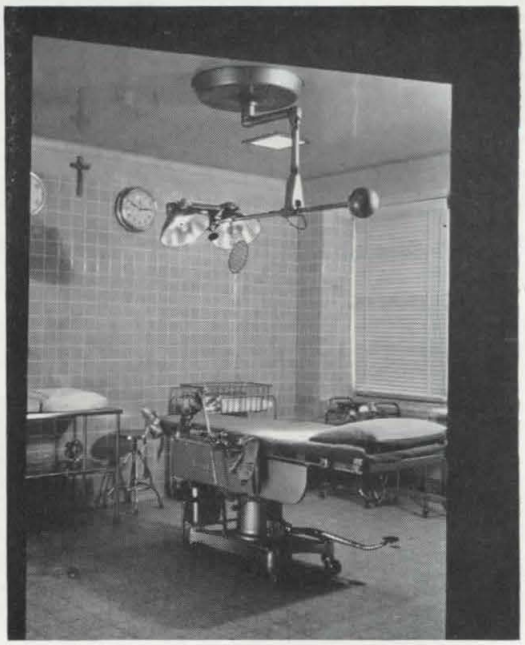
Left—general view of the forward nursing-unit block. Projecting canopies are provided for protection against sun and rain.

Immediately below—curved access loggia adjoining pediatrics wing; in background, emergency ambulance entrance, with secondary nursing unit block above.

Bottom of page—detail of front of pediatrics wing, curving up to the main hospital mass.



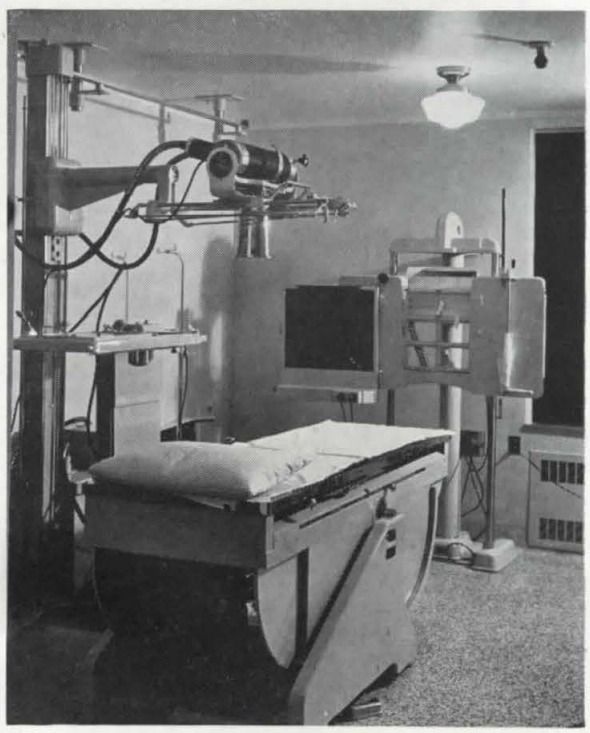




Above—surgery, with wash-up in foreground. Note use of glazed tile, terrazzo floors.

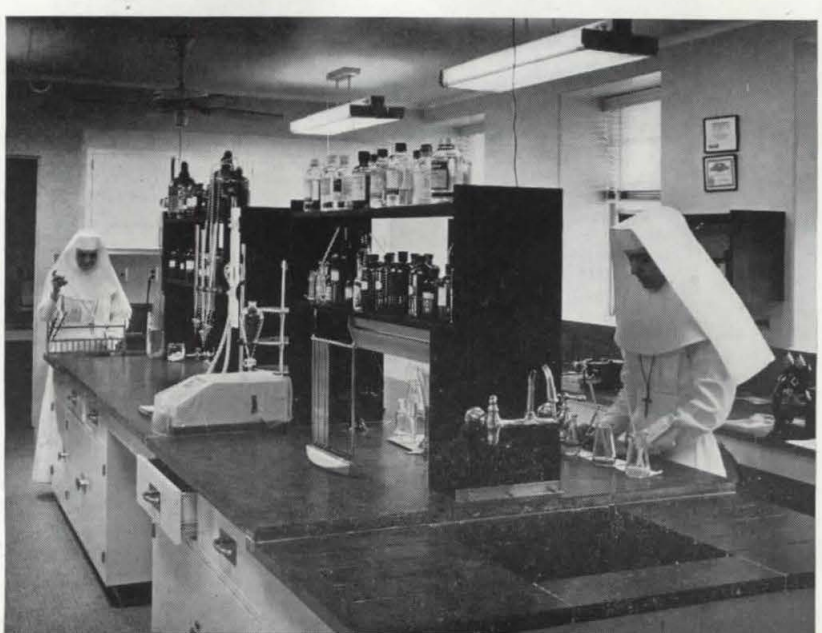
Above, right—one of the four operating rooms.

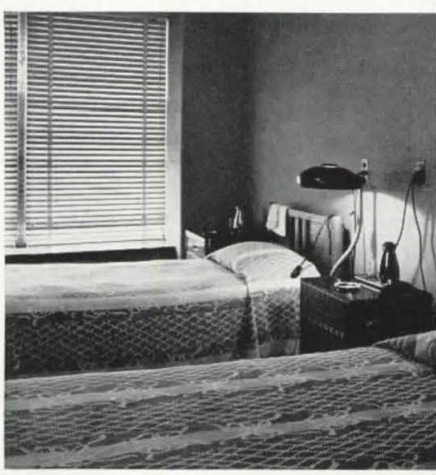
Right—X-ray room.



Below, left—sterilizing room (central supply).

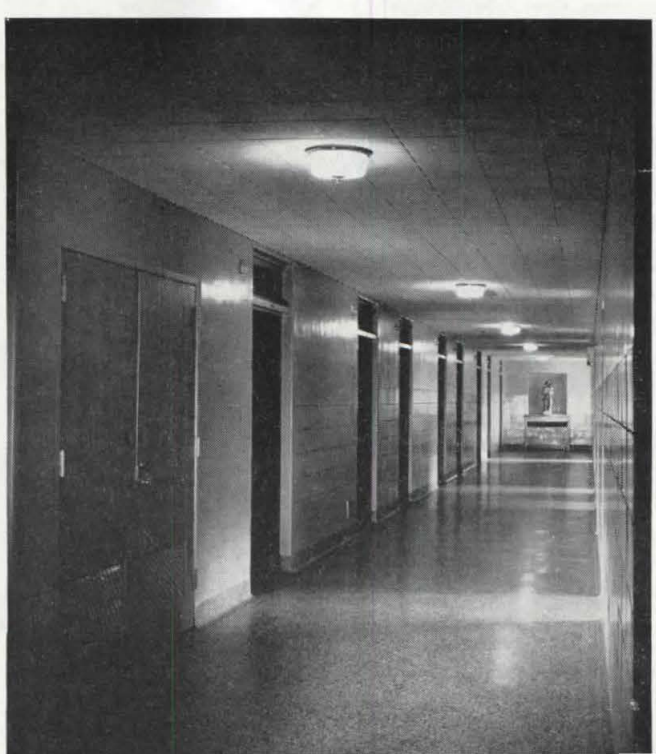
Below, right—laboratory.

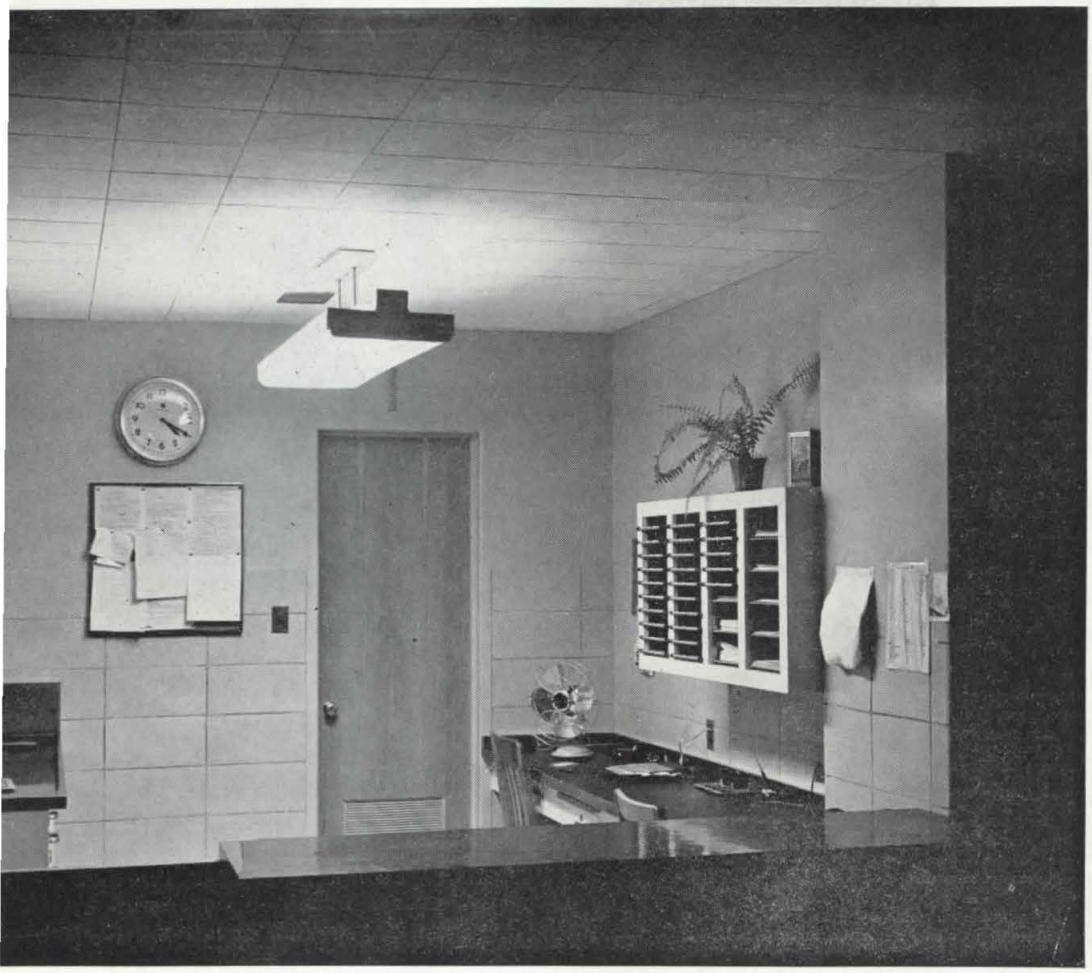




Above—one of the nurseries, with its glazed partitioning. Walls of both this room and the typical patients' room (right) are surfaced with a full-color, washable fabric material.

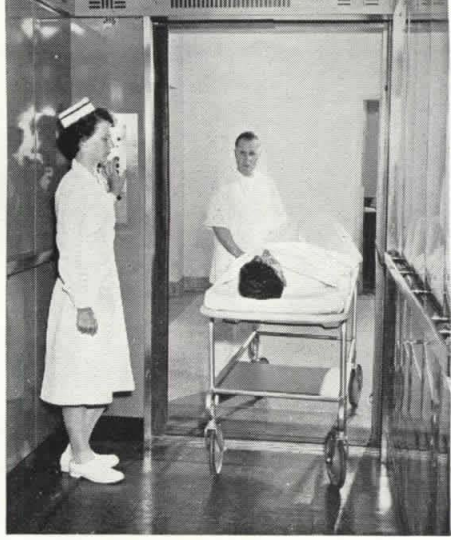
Below—typical corridor, with terrazzo flooring, glazed tile wainscot and acoustical tile ceiling.





Above—typical nurse's station located at the center of the forward nursing-unit block.

Below—the waiting room and nurse's station in the pediatrics wing. A mosaic decoration to interest children is used on the counter face.



Elevator Requirements for the 200-Bed General Hospital

By G. M. HEPPLE*

In general hospitals, where differing activities are often spread throughout five or six floors, elevator traffic is unlike that experienced in any other type of building. A careful examination of many influencing factors is essential before efficient and economical elevator service can be provided; the flow of passenger and vehicular traffic, the location of the elevators, the handling of food and supplies, and the actual specification of vertical transportation equipment are among these factors.

The general hospital receives both medical and surgical cases. Its plan must include space for private, semi-private, and ward rooms; a clinic for outpatients; and special facilities for maternity, cancer, and other cases. The general hospital of 200-beds and under comprises 85 percent of the hospitals in this country today.

interior traffic

During a 24-hour period, vertical transportation may be required for as many as 4000 persons. This estimate is based on an average of 20-elevator passengers, including patients, per day per bed—a generally accepted approximation. In addition to passengers, there will be vehicular traffic and the movement of food and supplies, all originating within the building.

Traffic Engineer, Otis Elevator Company.

The staff for a 200-bed hospital, which includes internes, nurses, and service employees, but no doctors, will average 400-persons. These individuals work in three shifts; between each shift, a peak elevator load is created. Doctors usually perform their routine surgery during the morning, and, as they also frequently visit their patients at this time, there is a relatively heavy traffic of passengers and vehicles during the morning hours. Meals, which are usually served between seven and eight a.m., at 12-noon, and between five and six p.m., will also cause peak loads for the vertical transportation system. At night, there is a minimum of interior hospital traffic and the elevators are relatively idle.

Figure 2 shows a characteristic flow of passenger and vehicular traffic originated in this type of hospital by the staff and the patients.

exterior traffic

Less predictable is the flow of exterior traffic. The amount depends greatly upon the degree of control exercised by the hospital with respect to visiting hours, number of visitors permitted, and the number of outpatients. If waiting rooms are provided on the first floor, the flow of visitor traffic can be regulated by attendants. Overloading of the elevators can also be avoided by establishing visiting hours when the interior traffic is relatively light. Although long visiting hours reduce congestion, peaks will occur at the end of each period.

The average number of visitors for both private and ward rooms is one and one-half persons per bed; for wards alone, the average is three to four persons per bed. Ward-bed visitors are limited to the regular visiting hours which may be from two to four p.m., and from seven to nine p.m.; those people calling on patients in private and semi-private rooms, however, usually enjoy less restricted visiting periods. Under normal conditions, as many as 300-persons may visit a 200-bed hospital during an average day, creating the heaviest concentration of traffic during regular visiting hours.

Clinics receive an average of one-half to two outpatients per day for each occupied bed. If the clinic is located on an upper floor, up to 200-outpatients may have to be accommodated; elevators are especially occupied carrying these patients when the interior traffic reaches its peak.

Figure 2 also shows the flow of exterior traffic; note that it greatly exceeds that of the interior traffic at given periods.

elevator location

Hospital elevators, as a matter of economy, should be all-purpose elevators. When located near the center

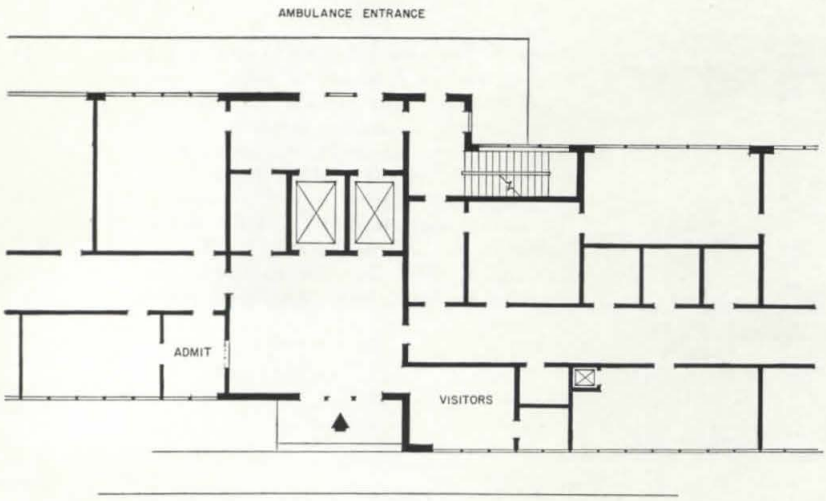


Figure 1 This first floor plan indicates a satisfactory location for a double hoistway in a general hospital. Front and rear doors of the elevator make the cars accessible to both the passenger lobby and the entrance for ambulance-borne patients.

of patient population and such important facilities as operating rooms, X-ray department, and ambulance entrance, an elevator's capacity is more efficiently utilized and the number of steps of those it serves will be greatly reduced. For maximum efficiency, doors should open at both front and back. Figure 1 shows a bank of elevators in relation to a passenger lobby, ambulance entrance, and other service entrances. Such a relationship permits maximum use of ground floor equipment in a general hospital, and enables the architect to obtain full use of the double entrances of the elevator car.

number of elevators

Two elevators are the minimum number required for adequate and efficient service in a typical general hospital which has five or six floors. There are several advantages in having this number: additional service is available during peak load intervals; at meal times one of the two cars can be used exclusively for service traffic; should one of the elevators be halted for repairs, the second can maintain service.

control of elevators

The choice of control is extremely important. A properly controlled elevator is capable of promptly responding to the requirements imposed by the various activities of the hospital Two-car collective control is a desirable solution to the unique traffic problems presented by this type of general hospital, as it provides the

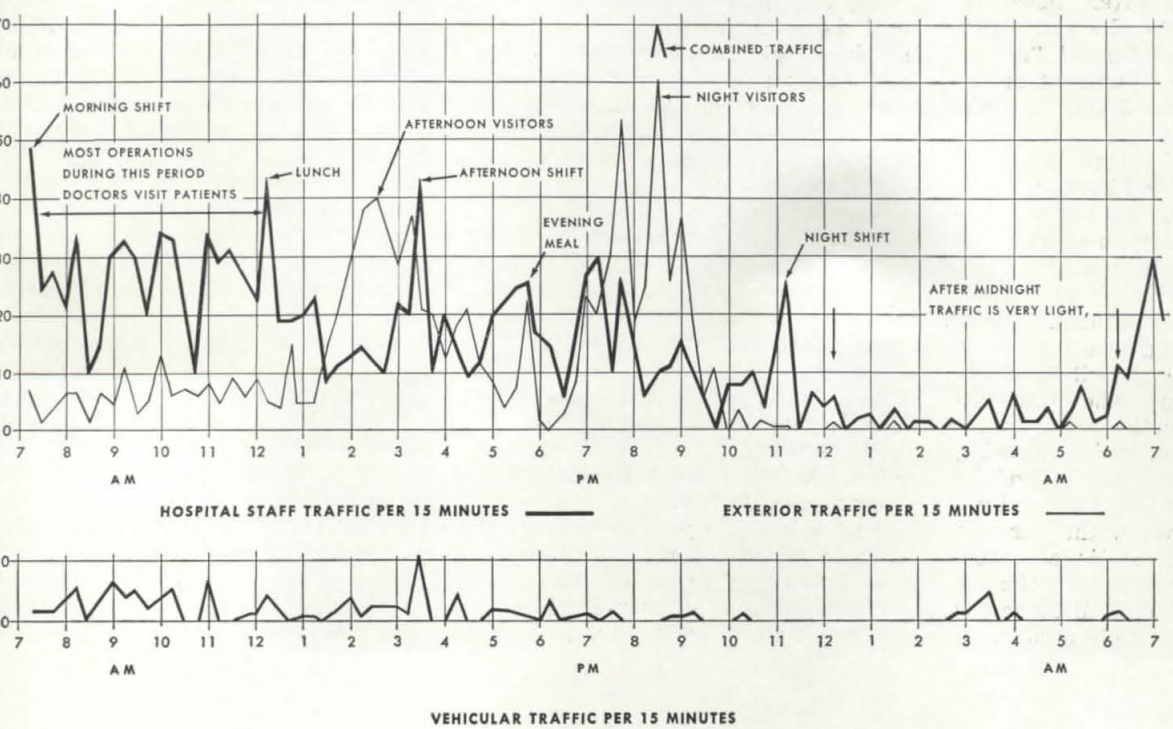


Figure 2

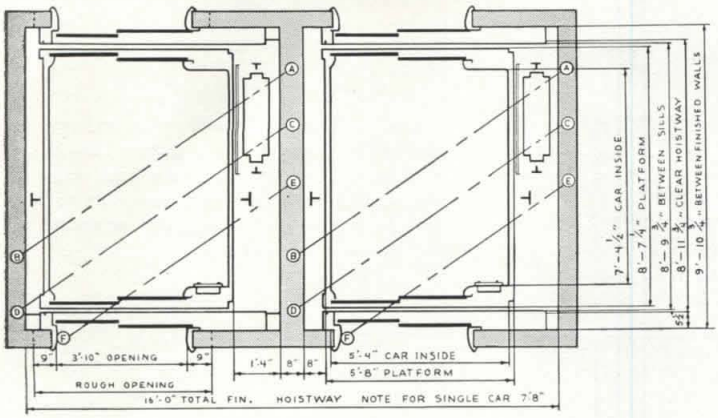


Figure 3 This enlarged plan of the double hoistway illustrated (Figure 1) gives the preliminary design data for the elevators described in this article. The minimum distance between the top floor of the hospital and the machine room floor is 16'-10"; the height of the rough door opening is 7'-4". Values of reactions at supports are: A, 15,300 lbs; B, 14,800 lbs; C, 2000 lbs; D, 2000 lbs; E, 7500 lbs; and F, 5000 lbs. This data will vary somewhat for the elevators of different manufacturers.

hospital with dependable 24-hour service without the expense of full time operators. Two-car collective control is a system effectively coordinating the operation of both elevators so that they operate as a team to provide the most efficient service. By eliminating a duplication in answering calls and a waste of power, this system provides maximum service at minimum cost.

To operate the collective control system, a passenger presses the button indicating his floor on the car operating panel—the elevator does the rest. The car answers calls in the order that they reach the control system; doors open and close automatically. All "up" calls are answered on the upward trip; the car reverses itself automatically after answering the highest call. As the car starts downward, it stops for all "down" calls. This control equipment stores all calls received until they are answered.

Although the elevators are fully automatic, the general hospital often requires attendants, who work elsewhere at other times, to operate the elevators during visiting hours. Thus, the two-car collective control should be equipped with an optional feature which permits attendant operation.

The turn of a key switch on the car operating panel allows an attendant to operate the elevator. He operates the elevator by pressing the "up" or "down" button, and he can reverse the car at any landing. In case of emergency, the car can be expressed by the continuous pressure of a direction button on the car operating panel which will cause the elevator to by-pass landing calls.

The basic principle of two-car teamwork, with the attendant-operation feature, is the automatic allocation of each landing call to the car that can answer it more readily.

self-leveling features

A micro-drive mechanism, which levels the elevator cars at each floor landing, is a desirable requirement for general hospital elevators. As there is constant movement of stretchers, wheel chairs, and other equipment in and out of the cars, a self-leveling mechanism facilitates this movement and eliminates power-wasting "jockeying" to bring the car floor level with the landing.

elevator machine

Accepting the premise that the general hospital does not exceed six stories, high elevator speed is not necessary; therefore, a geared traction machine can be installed. Its cost is low and an economical, efficient machine is provided. A speed of 250 fpm is sufficient.

The machine is powered by a direct current driving motor, equipped with variable voltage speed regulation. Power is transmitted to the drive sheave through a worm and gear. Motion is transmitted to the hoist ropes by traction between the ropes and grooved driving sheave. The driving motor responds to a full load smoothly, quietly, and without effort; at the same time its power consumption is low. It is compact—saving space and weight—yet every part is accessible for maintenance. For reasons of space economy, the elevator machine is normally located overhead; there seldom are any conditions in hospital construction where the machine is not located overhead.

elevator cars

As hospital elevators may be required to carry several types of vehicular traffic—beds, stretchers, iron lungs, and so on—they should have deep and relatively narrow platforms. A platform 5'-8" wide and 8'-7¼" deep, with front and rear entrances 3'-10" in width, will allow sufficient room for doctors, nurses and/or attendants to travel with stretchers and beds. The interior height should be 7'-0". The capacity for an elevator of this size is 4000 pounds, in accordance with ratings given in the American Safety Code for Elevators; 26 passengers can be transported without crowding. An easy rule-of-thumb method which may be used to determine the approximate number of passengers a car can carry is to divide the weight capacity by 150.

Cars should have uniform, pleasant illumination. Fluorescent tubes located in coves and extending the full length of the car give highly satisfactory illumination. Lighting of other types can be installed but most manufacturers recommend fluorescent.

Because of hospital odors, which are numerous, proper ventilation must be provided. Forced ventilation will require a blower and plenum chamber; fresh air may enter the car from light coves which deflect incoming air and prevent it from blowing directly upon patients and passengers. As the rate of air change varies widely, because of constant opening and closing of the doors, a simple blower is standard equipment

Sample Minimum Specifications

1. *Number of Elevators:* 2
2. *Type of Elevators:* hospital size, geared traction machine
3. *Load (Capacity):* 4000 pounds
4. *Car Speed:* 250 fpm
5. *Operation:* two-car collective control, with attendant feature
6. *Control:* generator field control
7. *Car Leveling Device:* include two-way leveling
8. *Machine Location:* overhead
9. *Machine Room Floor:* concrete slab, by others
10. *Car Platform Size:* 5'-8" x 8'-7¼"
11. *Car Floor:* rubber tile
12. *Car Door:* two-speed, 3'-10" wide x 7'-0" high
13. *Hoistway Doors:* same as car doors
14. *Car and Hoistway Door Operation:* power operated with intermediate speed operator
15. *Signals:* in car, car position indicator; at landing, push button faceplates
16. *Painting:* exposed metal to be painted one coat by elevator contractor
17. *Maintenance:* 3 months; permanent maintenance service suggested
18. *Power Supply:* 220 volts, 3 phase, 60 cycles, AC
19. *Inspection Fees and Permits:* by elevator contractor

Travel should include distance from basement to top floor of building. *Openings* depend on number of floors where double entrances will be used.

for hospital elevators. To reduce the bacteria content of air entering the car, germicidal lamps should be installed in the plenum. As these lamps are not standard equipment, they must be specified by the architect.

Car interiors are designed for ease of cleansing. Side and base corners are coved to prevent accumulation of dirt and grease; interior side panels are finished with a hard, synthetic, baked enamel which can be readily cleaned with soap and disinfectants without danger of deterioration. Stainless steel wainscoting is used to absorb the impact of bumps from stretchers and other equipment.

Floor surfacing material should be of rubber tile, which is durable and well suited for hospital use. The platform is isolated from the car-frame by rubber pads which eliminate the transmission of vibration and noises to the car.

car and hoistway doors

Power-operated car doors and hoistway doors are a standard part of the elevator equipment. Car doors must be equipped with a safety shoe which reverses and re-opens them should they come in contact with an obstruction while closing. Two-speed doors which save hoistway space should be specified.

food service

Food service may be provided in any one of several ways; each has an important bearing on the type, capacity, speed, and location of elevators and dumb-waiters. A central kitchen is assumed in the following methods of distribution: 1) patients' trays are sent to the various floors by means of dumb-waiters; 2) trays are conveyed by trucks to elevators and then to the different floors; and, in widest use today, 3) food is prepared in bulk and sent by truck and elevator to service pantries on each floor where trays are filled and then distributed. To help simplify the requirements of vertical transportation, the latter method proves most successful for many general hospitals.

Good service requires that all patients be served promptly and at regular hours; cooked foods must be served hot, chilled foods must be served cold. Efficient vertical transportation eases this problem.

The first method of distribution, used principally for special diet service, has the advantages of being both convenient and expeditious; also, the equipment required involves a relatively low capital investment. When this method is employed for a special diet service, the specifications for the food lifts or dumb-waiters depend upon the number and size of the food trays to be accommodated.

Minimum inside dimensions for a car box should be 32" wide, 27" deep, and 36" high. This car permits three shelf spaces for three loaded trays, 10" apart and with space above top shelf for pitchers and bottles.

A dumb-waiter of this size should have a capacity of 200 pounds; this amount will allow large numbers of soiled dishes to be returned to the kitchen at one time. The speed of the dumb-waiter is 100 fpm.

To permit dumb-waiter installation in any location, and to avoid obstruction of the space in front of the lift, biparting doors should be used. These have interlocks which prevent the doors from being opened when the car is not standing at a landing.

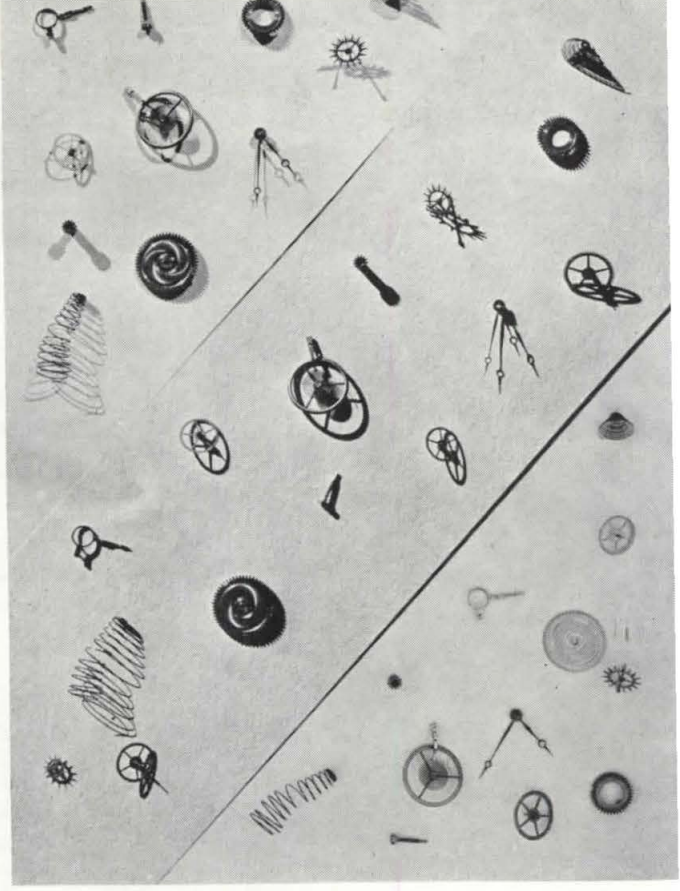
The food lift is equipped with controls located at a central station. These controls are able to: 1) send the food lift to any floor, 2) recall the lift to the kitchen, and 3) signal, audibly and visually, when a lift has arrived at a floor for unloading. Attendants at all floors must also be able to signal to the central station for the lift so that trays of empty dishes may be returned to the kitchen. The lift will return automatically to the central station after it has been unloaded. The central station must have a position indicator to show at which floor a car has stopped.

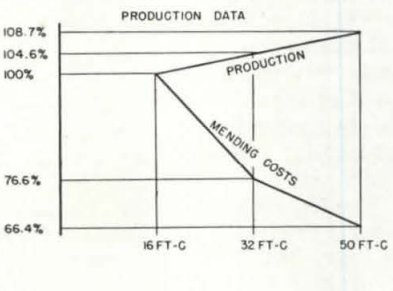
For the general hospital described earlier, three lifts are required to give adequate service. They must be located so that they are accessible to the loading and dishwashing sections of the kitchen.

The dumb-waiters will also be used during nonmeal hours for carrying linens, medicines, and other hospital supplies to relieve the load on the elevators.

The foregoing, outlines the principal requirements that must be met to obtain effective and economical vertical transportation in a general hospital. It must be remembered that the activities carried on in a general hospital are unlike those of any other building; in addition, special requirements peculiar to specific projects often arise.

Careful consideration of all aspects of vertical transportation problems will enable architects to cope with this important phase of hospital planning.





Above—shadows and highlights may hinder or enhance the clarity with which the size of details appear. In upper left panel, direct, nondiffuse light from two or more sources and directions creates multiple shadow patterns. By comparison, the single shadows of center panel may for some purposes be helpful in observing details. In lower right panel, the objects are viewed with the effect of diffused light which erases shadows; for many purposes this would be the most helpful condition for seeing.

Upper left—seeing tasks in this laboratory for physical studies are aided by single lamp troffers, 3' on center, equipped with 40-watt, T-17 low-brightness lamps; system delivers 50-footcandles plus.

Left, photo and chart—this exemplary industrial lighting system of single lamp, 40-watt, aluminum troffers provides machine operators with 50-footcandles of light. As indicated by the chart, high standard lighting has worked out well for the owners of this mill.

Advanced Lighting: Industry's All-Around Production Tool

By J. L. TUGMAN*

With many factors tending to make production costs rise sharply, industrial management must constantly give closer attention to better equipment to build up plant efficiency. In this respect, advanced lighting methods should receive deserved attention as an influence for both economy and better working conditions. Lighting can be a prime operating asset when it is applied as fully as a given industrial situation requires. Its bearing upon safety, ease, and accuracy of seeing on the job, and its effect upon general impressions of the attractiveness of a place to work, qualifies it as Industry's No. 1 All-around Production tool. The present mobilization program arising from the national emergency, with the probability of an extended period of priorities, allocations, scarce labor and high wages, provides a natural demand for high efficiency in a basic facility like lighting. It has a greater pertinence than ever to the old question of how to make investment and operating expense more effective in terms of unit costs of production.

illuminants

In planning an industrial lighting installation which will provide optimum seeing conditions, architects and engineers should choose illuminants and footcandle levels related to the kind of work (seeing tasks) employees will be doing.

With reference to illuminants—fluorescent, filament, and mercury lamps—a few general distinctions should be kept in mind. Fluorescent lamps, large in area, low in brightness, are approximately three times as efficient as filament lamps. Over a period of time fluorescent lamps will give more light per dollar than filament lamps, even though initial costs are higher. The large, diffuse character of fluorescent sources makes their application in industry better suited to most tasks than the concentrated sources (filament lamps). New instant start fluorescent lamps, which operate without starters, available in lengths up to eight feet, are an added feature in this field of illuminants.

Mercury lamps, characterized by their bluish-green color, approach fluorescent lamps in efficiency. They are high intensity sources and are very effective in medium and high bay areas. In such locations where maintenance must be kept as simple as possible, mercury lamps are a good choice. They are often used in combinations with filament lamps.

Filament lamps, still the most widely used, are also available in self contained reflector types which have proved extremely valuable for general lighting in situations where dirt and smoke make maintenance difficult. Much supplementary lighting very important in many specialized tasks, is done with the aid of filament lamps.

* *Engineering Division, Lamp Department of General Electric Company.*

RECOMMENDED LEVELS OF ILLUMINATION Minimum Footcandles in Service (on Task or 30 Inches Above Floor)

most difficult seeing tasks ..... 100 or more ft-c
Finest Precision Work
Involving Finest Detail
Poor Contrasts
Long Periods of Time
such as Extra-Fine Assembly, Precision Grading, Extra-Fine Finishing

very difficult seeing tasks ..... 100 ft-c
Precision Work
Involving Fine Detail
Fair Contrasts
Long Periods of Time
such as Fine Assembly, High-Speed Work, Fine Finishing

difficult and critical seeing tasks ..... 50 ft-c
Prolonged Work
Involving Fine Detail
Moderate Contrasts
Long Periods of Time
such as Ordinary Bench Work and Assembly, Machine Shop Work, Finishing of Medium-to-Fine Parts, Office Work

ordinary seeing tasks ..... 30 ft-c
Involving Moderately Fine Detail
Normal Contrasts
Intermittent Periods of Time
such as Automatic Machine Operation, Rough Grading, Garage Work Areas, Switchboards, Continuous Processes, Conference and File Rooms

casual seeing tasks ..... 10 ft-c
such as Stairways, Reception Rooms, Washrooms, and Other Service Areas, Active Storage

rough seeing tasks ..... 5 ft-c
such as Hallways, Corridors, Passageways, Inactive Storage

spacings and mounting heights

If the spacing of lighting fixtures does not exceed the mounting height, a reasonably uniform illumination will usually be provided. This one-to-one relationship, or closer, if the character of the building construction requires, offers an approximate guide to permissible spacing. In general, however, better uniformity of lighting is achieved with a greater mounting height and a closer spacing. This spacing-mounting height relationship applies not only to individual units, but to the spacing between continuous rows, luminous panels, or troughs.

A building's dimensions, particularly the ceiling height, and the location of cranes, will usually determine the types of equipment to be selected. This general determination will be developed with respect to maintenance objectives expected to keep the system operating effectively and economically.

For high bays, usually associated with heavy industry where safety considerations on the job and in maintenance rate top priority, the least number of units required to provide the necessary level is often the most desirable solution. Thus, all mercury or all filament equipment, or combinations of mercury and filament lighting, is the most logical recommendation for high mountings. Filament reflector bulb lighting, desirable for foundries or other industries where dirt and smoke abound, is a very practical solution. Very little dirt collects on the light emitting surface of the lamps and an outage, where clusters of these lamps are used, does not hold up production in the area that the cluster serves. Maintenance simplicity is definitely aided in foundry high bay areas by 3000-watt mercury systems. This lamp has the highest output of any single industrial source; it does not take many to deliver a satisfactory illumination level to the work plane. With the aid of craneways or disconnecting hangers, maintenance crews are not involved in special hazards.

For intermediate mountings, up to 25 feet, economy in initial installation and in maintenance emphasizes the appropriateness of larger (and fewer) units to obtain a desired illumination level. With higher mountings, the problems of brightness contrast from the units is much less critical.

When the mounting can be made under 14 feet, about the maximum for stepladder maintenance, the factors of comfort and economy are differently related than they are at the higher mountings. For one thing, labor time for maintenance is normally less and easier to plan with reference to operations. Most important are the considerations for comfort. Thus more units of lower wattage and lower brightness in the field of view, are more relevant to the objective of ample light with desirable brightness distribution.

An architect can obtain desired illumination levels by following the recommendations offered in material published by the Illuminating Engineering Society and leading manufacturers in the industry. He might distill such information into the following simple program:

For Mounting Heights Under 14 Feet

Continuous rows of 96″ T-12 slimline or 2-lamp, 40-watt industrial fluorescent units, 10-feet on center, will deliver approximately 40-footcandles where the maintenance is 65 percent. Rows at right angles to the original rows, making a grid system, should be added where more light is needed. There is a trend toward installing the 96″ T-12 slimline lamp because of the absence of starters and the smaller number of units, lamps, ballasts, and so on required to produce a desired level.

For Mounting Heights 14 to 35 Feet

Continuous rows of 2-lamp, 85-watt

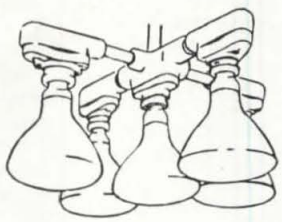
Below: top—typical bays of this plant are equipped with continuous rows of 2-lamp, 96″ T-12 fluorescent lamps which supply 50-footcandles of illumination; reflectors are mounted 14′ above the floor.

Bottom—slimline lamps in 8′ units deliver 80-footcandles maintained lighting for these workers. To improve visual comfort, the color scheme emphasizes cool greens.

System 1, above—2 lamp, 85-watt fluorescent units in broken rows permit future expansion to continuous rows. Installed 10′ on center and mounted 13′ above floor, these fixtures deliver 25-30 footcandles. Walls are a light green.

System 2, above—where maximum light per outlet is needed for high bays, 3000-watt mercury lamps offer a good solution. Each lamp emits as much light as fifty 40-watt fluorescent lamps or six 1000-watt filament lamps. Mounted 20′ on center and 35′ above floor, 110-footcandles are furnished. Fewer lamps require simpler maintenance.

System 3, left—clusters of five 300-watt R40 (filament lamps) are also efficient for high bays; mounted 20′ on center and at a 40′ height they allow 30-footcandles. Clusters with built-in reflectors are particularly suitable for areas where dust accumulates rapidly.



industrial units, 13½ feet on center, will give an illumination level equal to that for the 40-watt installation suggested for the lower mounting. If additional light is needed, a grid system offers quality advantages that are practical in many cases. The economies mentioned above for the 96″ T-12 slimline lamps are particularly relevant for higher mountings. Without maintenance of equipment, the level in either example will drop to 25-footcandles or lower. This result refers to maintenance of lighting equipment independent of cleaning programs for plant surfaces, such as walls, columns, and machines, where good housekeeping supports comfortable seeing more thoroughly.

For storage areas

A good way to plan for areas which may presently have no critical seeing tasks, but which may offer space for later expansion, is to anticipate the latter situation. Continuous rows could be contemplated here with a 20-foot spacing for the initial rows. Every third unit could be omitted; fifteen footcandles could be realized with a 65 percent maintenance factor, if 2-lamp, 40-watt units were installed.

value of daylight

There are few cases where daylight should be considered as an element in the *planning* of an industrial installation. Most plants must operate night shifts at times, if they do not require them regularly. The useful light for work, therefore, must come from the artificial system. Daylight is highly variable, even on sunny days, and in important industrial areas of the nation overcast days are more the rule than sunny ones. Even under favorable weather conditions, ordinary fenestration does not admit enough dependable, useful light a few feet away from the windows to make a difference in lighting plans.

From the standpoint of the lighting specification, windows are more valuable for the psychological lift they offer to workers on day shifts. To be able to see outside the plant is regarded by some managements as a factor outweighing some of the advantages which windowless plants offer in controlled conditions. In plants of the latter type some managements regularly announce weather reports and provide rest periods so that the workers can get outside. The more general use of windows in industry indicates the persistence with which architects and managements think of them as aiding in plant seeing conditions. The fact that many plants paint their windows subsequently, as a short-cut remedy for daylight glare, evidences the frequent troubles which result. During the last war, when a number of engineers were working directly on the problem of lighting in production, one of the commonest faults they found was the bad orientation of work positions with reference to windows. With so many architects fully familiar with techniques for control of window brightness, problems of this origin should be eliminated from new buildings. Their confidence with respect to this aspect of brightness control should prove an excellent approach to the problems of interior brightness control. This is an area of special concern to lighting men. To give satisfactory relevance to initially good lighting installations in service, maintenance programs must be relied on to keep room surfaces at reflectance values which support the conditions the system can supply.

reflectances

With respect to desirable brightness distribution, this subject has special importance. Desirable reflectance values for floors should range from 20 to 60 percent. For plants with operations analagous to those in an aircraft plant, where there are work positions under wings cutting off direct illumination, white cement or white asphalt tile floors with top reflectance values simplify provision for seeing by redirecting light upward. Floors with high reflectance values are desirable in any plant where the work would not quickly and permanently darken them. More upward light reduces contrasts and increases comfort. Actually, in practice, dark floors with little or no reflectance value are so common, that

improvement in older plants must await new flooring. Except in very clean industries, the opportunity to get budget concession for the maintenance of floor surfaces at even 20 percent is difficult. Other surfaces, such as walls, columns, and machines, are much more likely to be approved where thorough maintenance plans are observed, as they are easier to keep light and clean.

The satisfactory reflectances to be sought in color schemes for industrial interiors are those found in the higher values—white for ceilings, generally, and to a limited extent for upper walls. There can be a wide choice among blue-greens, warm grays, and buff-tones. Blue-greens are popular for warm areas of a plant, such as the kettle room of a brewery, and warmer yellows or buffs or browns, or even pinks for cooler areas such as refrigerated or air-conditioned space. In one instance, a windowless building uses three tones of gray on its side walls, blue on one end wall, and yellow on the opposite wall. This scheme works out well as a compensation for lack of windows as a psychological factor. In another plant, the upper walls and columns are light green and a dark green stripe separates a gray dado; in addition, light gray machines have been installed.

System 4, above—combination 400-watt mercury and 1000-watt filament units, mounted in pairs, 20' x 18' on center, deliver 45-footcandles. They are suitable for economical service in high bay areas where ample levels with an even blend of light are required.

costs

Lighting costs, which have all too frequently and incorrectly been regarded as unproductive overhead, are never more than a small fraction of operating budgets. Proper cost elements are: 1) the initial cost of fixtures, wiring, and labor; 2) lamps; 3) current; and 4) maintenance, which should cover labor for lamp replacements. Many plants find it sound economy to replace all lamps at 75 percent of rated life. Such a plan cuts labor costs as much as 75 to 80 percent over other lamp maintenance schemes.

System 5, right—continuous rows delivering 50-footcandles or better are widely used in low bay areas. This installation in a large automobile assembly plant employs 2-lamp, 96" T-12 fluorescent units; on 9' spacings and 10' above floor, they deliver more than 50-footcandles.

System 6, below—a grid system providing 80-footcandles from continuous rows of 2-lamp, 40-watt units.

conclusion

Whenever industrial lighting is being planned, it is always wise to obtain the co-operation of a trained lighting engineer. His knowledge will assist the architect in making decisions more rapidly and will also help him to establish more practical policies.

The advantages of superior workmanship, reduced spoilage, better utilization of floor space are all valuable elements contributing to more efficient plant operation. Lower eyestrain and lessened fatigue not only influence lower accident rates but also develop better employe morale.

Figure 1, above—this reinforced concrete structure was once used as an assembly plant by an automobile manufacturer. In this photo, taken before remodeling, it temporarily houses a general sales office with its gloomy maze of filing cases, desks, and electrical wiring equipment.

Figure 2, right—aluminum ducts being hung from existing concrete slab ceiling. Pairs of channels which will support light troughs are 7'-0" on center.

Aluminum Ceiling Combined with Air Conditioning

Perforated aluminum ceiling panels combined with one type of acoustical material or another have been successfully installed in many parts of the country for a number of years. In Louisville, Kentucky, Architects Stratton O. Hammon and Neal O. Hammon have now combined a perforated, corrugated aluminum ceiling with an air-conditioning system in the general sales offices of the Reynolds Metals Company. Their system, conceived by Neal O. Hammon, forces year-round conditioned air through the perforated ceiling to achieve the following advantages: 1) increased evenness of air distribution; 2) elimination of need and appearance of diffusing registers; and 3) reduction of cost.

The architectural program for this structure required that the architects remodel an existing five-story industrial building which had previously been used as an assembly plant by an automobile manufacturer. On each of the five levels, the architects were given a space of 200′ x 100′. Five percent of this area was to be enclosed by ceiling type partitions; the remaining 95 percent to be divided by relatively low 4′-6″ partitions to separate the differing activities of the office personnel.

Although this corrugated aluminum material was only manufactured by Reynolds to provide an inexpensive and permanent acoustical ceiling for the trade, its design made it readily adaptable for the passage of air. To control the temperature of these offices, conditioned air is distributed through aluminum ducts above the ceiling to selected locations and then allowed to find its way down through the perforations. In some instances, there is only one inch between the duct and the corrugated aluminum ceiling. Leaving through holes in the bottom of the ducts (see Figure 2), the air is baffled by a single piece of aluminum plate. The perforations through the ceiling, which comprise about 35 percent of the surface area, are of a diameter that causes the air to distribute itself before penetrating the ceiling. Return air registers are located in the outside wall near the floor.

While still in the design stage, critics agreed that cold air has an inclination to fall in the summertime and that such an air movement would assist the operation of this system; at the same time, they also warned that a natural tendency of hot air to rise might cause the system to fail in the wintertime. As a result of tests taken on one floor through an entire year, however, it was generally agreed that the system works perfectly. During the same testing period, an attempt was made to zone control six different sections of this 200′ x 100′ area. After a reasonable amount of adjustment, it was possible to control all sections separately and efficiently. To date, this ceiling has exhibited no tendency toward darkening as a result of small amounts of dirt and dust that may remain in the conditioned air. Should this darkening someday occur, the architects state that the aluminum ceiling can be easily lifted out of place, wiped off with a damp cloth, and replaced by a janitor or unskilled laborer.

Figure 3, right—unskilled worker raises corrugated aluminum ceiling panel which can be easily removed for cleaning. Corrugations are 2½" on center and ⅞" deep; note overlap in upper right corner. For future installations, the architects recommend that 25 percent of the surface area be perforated.

Figure 4, below, right—view of sales office after remodeling; job was completed last fall. Fluorescent lamps in aluminum troughs, 9'-6" above floor, deliver 40-footcandles of illumination at desk level. Double glazing helps provide both thermal and acoustical insulation.

A layer of glass fibers, applied with mastic on the underside of the concrete slab above the aluminum ceiling, undoubtedly assists the holes to provide excellent acoustics. One unusual observation of this installation has been that better acoustics seem to obtain when the blowers are off and not forcing air through the perforations. Apparently the forward movement of the air is sufficient to reduce the acoustical efficiency of the ceiling; however, this reduction is too small to be of consequence.

The gage of the aluminum sheeting is .032; its extremely light weight, .432 pounds per square foot, made it possible to hang the entire ceiling on the light troughs (see Figure 3). Frequently in the past, when other materials were suspended between troughs, their heavier weight made it necessary to maintain a relatively small distance between lighting units. With this corrugated material, however, the architects were able to span any desired width without overloading the carrying capacity of the light troughs. Although the maximum span for this gage is about 12 feet, it was not used in excess of 7 feet in this installation.

The original building possessed a satisfactory sprinkler system which the architects wished to keep intact for reasons of economy and appearance. The perforated panels were hung under the sprinklers; in the event of a fire, they spray out as before and the water drips through the ceiling with effective results.

At the exterior wall, light-directing glass blocks extend past the new ceiling to the existing concrete. Natural light entering the space between the ceiling and the floor above is reflected back to the working area through the aluminum grille in the ceiling near the window. The structural aluminum framework which contains sash for six windows weighs but 75 pounds. Glass block units were laid directly above these multiple windows without the use of additional steel.

Left—sections of pool, fabricated in multiples of five feet, are bolted together; channels conceal joints.

Below—adjustable overflow trough and valve permit level of water to be raised or lowered.

prefab stainless steel swimming pool assembled at site

Assembled from prefab sections and erected at the site with a minimum of protection, stainless steel swimming pools introduced by the Standard Swimming Pool Corporation, New York City are designed primarily for use by private home and small estate owners. The pools require no chemical treatment or painting to prevent corrosion and weathering; they have an indefinite life span with low maintenance costs and, when desired, can be moved from one location to another without danger to their usefulness.

Lengths of the pools can range from 20 to 60 feet, in multiples of 5 feet, by the addition of prefab sections, with the width the same for all lengths at 15 feet. The standard "family size" pool measures 15 by 30 feet and has depths graduated from 4 feet at the shallow end to 7 feet at the deep end. Through the use of an adjustable overflow trough and valve, both made of stainless steel, the water level can be raised or lowered to accommodate children or adults. When Olympic diving depths are required, as in installations at hotels and clubs, a depth of 9 feet can be arranged for. While these dimensions are most practical from the standpoint of design and structural purposes, they have also been chosen to keep the cost of the pools at a minimum to meet market demands.

The stainless steel sections of the pools are bolted together, not welded, and the pools are kept watertight through the use of a rubber gasket material especially compounded for the manufacturer. Channels covering the bolted flanges are designed to conceal the joints and provide a smooth appearance.

Type 304 stainless steel, ranging from 12 gage to 3/16″, is regarded by the manufacturer as the best commercial grade available for his purposes. Normally, minimum care is required in the upkeep of the pool. If a ready supply of generally good water is available and changed occasionally, recirculation, chlorination, or filtration is not required. Several conditioners well overcome fungi.

Structurally strong enough as designed, the pool needs no concrete foundation. After the excavation is dug and grading is completed, four parallel rows of concrete blocks, numbering 16 to a row for a standard pool 30 feet long, are laid in the pool's bed. Gravel or earth filling is used between the rows, and the stainless steel sections are placed directly on top of the blocks. Backfill is placed around the pool.

The pool requires no special care during the winter months, except that it is advisable to leave the pool filled to overcome normal heaving and frost conditions. If desired, logs can be put in the water before it freezes. It is not recommended that the pool be used for ice skating, but only because metal skates can mar the surface finish of the stainless steel.

Prices range from $3735 for the 15 by 20 foot size to $10,735 for the 60 foot length. Each additional 5 foot section costs $875. Standard Swimming Pool Corporation, 355 Walton Avenue, New York 51, N. Y.

p/a products

air and temperature control

260M Anthratube: completely automatic, anthracite-burning heating unit for apartment houses, churches, schools, large residences, etc.; automatically takes coal from bin, burns it and shakes ashes into container or pit; savings said to be as high as 50%. Axeman-Anderson Co., 233 West St., Williamsport 3, Pa.

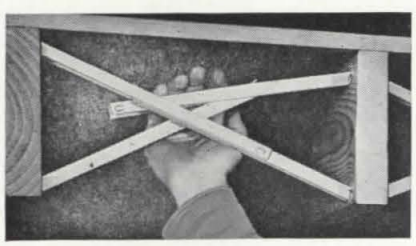
Ingersoll GHSS Gas-Fired Furnace: approved by A.G.A. as vented wall heater and forced air furnace for use with natural, mixed, LP gases. Heat is delivered in any direction through ducts connected to front, sides, back, or top of cabinet. Assembly includes wedgetube heat exchanger, blower, filters, raised drill port burners, and automatic controls. Base requires less than 3 ft. floor space. Borg-Warner Corp., Ingersoll Products Div., 321 Plymouth Court, Chicago 4, Ill.

Haertel Dehumidifier "50": small commercial and industrial dehumidifier with maximum 24-hour capacity of 50 lb. of water removal from room air. Powered with ½ h.p. hermetically sealed Freon condensing unit. Walter Haertel Co., 2840 4th Ave., S., Minneapolis, Minn.

R & M Package Fan: vertical discharge, attic fan unit, with built-in suction box including fan and motor, measures 3 sq. ft. and projects only 17½" above attic floor. Automatic ceiling shutter, finished in ivory baked enamel, is operated by wall switch. Available in 4750 and 6800 cfm capacities, with air delivery ratings certified. Robbins & Meyers, Inc., 387 S. Front St., Memphis, Tenn.

Combustioneer Gas Conversion Burner: approved by A.G.A. for natural, mixed, and LP gases. High efficiency burner head, with telescopic adjustment to increase or decrease burner length; all controls arranged for easy access within burner cabinet. Capacity ranges from 50,000 to 225,000 Btu. Steel Products Engineering Co., Combustioneer Div., Springfield, Ohio.

construction



Hercules Metal Floor Bridging: formed from 20-gage, rust-proofed steel, bridging is easily installed; sharp points on each end bite into joist as two pieces snap-lock together when pulled down. Floor can now be laid first and bridged underneath later, in contrast to slower operations with wood bridging. No sawing or nailing necessary; can be removed and reinstalled if heating, plumbing, or electrical alterations are ever required. Glover Mfg. & Sales Co., 2491 Manchester Rd., Akron, Ohio.

doors and windows

Detector Optical Door Viewer: especially designed optical instrument for front door installation, permitting persons inside to see out but preventing outsiders from seeing in; equipped with wide angle optical lens for all-around view of exterior at glance. Home Protector Mfg. Co., 8258 Melrose Ave., Los Angeles 46, Calif.

Roly-Door: 9' x 7', four-sectional, overhead garage door constructed of steel, adaptable to 6'-6" opening where ample headroom is available. Ball-bearing moving parts and especially designed counter balancing springs insure quiet, effortless operation. No holes to drill or hinges to apply, no skilled labor or special tools required. Morrison Steel Products, Inc., 601 Amherst, Buffalo 7, N. Y.

Integralock: lighter duty model of original Integralock lockset, designed for residential entrances and requiring extremely small mortise. Sealed, tamperproof case, key-in-knob action, and deadbolt safety feature. Popularly priced. Sargent & Co., New Haven, Conn.

electrical equipment

Automatic Emergency Exit Light: operates as any ordinary exit light, but if regular current source fails, unit will function instantly and automatically from power furnished by batteries within unit. Brilliant downward beam will illuminate floor area for approximately eight hours. Electric Cord Co., 30 Church St., New York 7, N. Y.

"Fixture Type" Lamp Holder: new line of slimline lamp holders designed for either surface or flush mounting. Fastened easily by means of single screw, these holders are particularly suitable for exposed lamp type fixtures. Available in both low and high voltage models. Sylvania Electric Products, Inc., 1740 Broadway, New York, N. Y.

finishers and protectors

All-Seal Waterproofing: clear liquid compound for waterproofing of all masonry surfaces, shingle roofs, all natural woods, and many other materials; seals natural resins, prevents bleaching, splitting, decay and curling. May also be used to waterproof canvas, sailcloth, etc., without stiffening or changing the color of material to which it is applied. Progressive Enterprises, 1001 N. Vermont Ave., Los Angeles 27, Calif.

insulation

Acoustical Ceiling Board: rigid, lightweight board composed of Fiberglas, for suspended ceilings. Incombustible; noise reduction coefficient of 80%. Easily cut with knife to conform to irregular openings and boundaries. Fabricated in sizes to fit 24" x 48" grid spacings. Owens-Corning Fiberglas Corp., Nicholas Bldg., Toledo 1, Ohio.

interior furnishings

Coryl: new formed Vinylite calendered film with three-dimensional, textural surface effect that resists wrinkling and creasing; unaffected by mildew, resists moisture, oils, alcohols, most chemicals, and is noninflammable. May be applied wherever conventional Vinylite plastic film is used—in curtains, draperies, shower curtains, etc. Decora Corp., Fort Edward, N. Y.

Extension Drawer Support: metal supporting device enables drawers to be opened fully without slightest danger of them falling, thus permitting full vision and use of drawer. Device eliminates need for old-style center or side guides, framing of cabinets and cases. As much as 2" can be added to height of drawers because of these eliminations, resulting in considerably more drawer space in same sized cabinet. Supports cost very little, are easy to install, save material and labor costs, and permit simplified and stronger cabinet construction. Extension Drawer Support Co., 3727 Broadway Pl., Los Angeles 7, Calif.

Lorain Carpet: woven in two levels of looped pile in two-tone color rayon yarn; said to compare favorably with wool in durability, appearance, and feel. Completely moth-resistant, easy to clean. Available in 27", 9', and 12' widths. Archibald Holmes & Sons, Erie Ave. & K St., Philadelphia 24, Pa.

sanitation, water supply, drainage

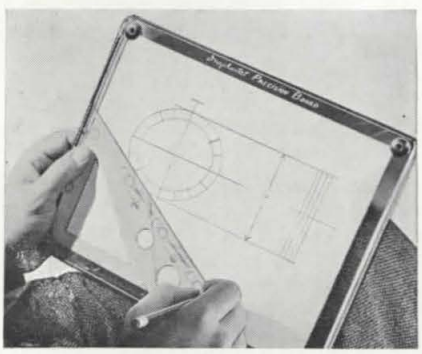
Truart Wall Surface Bath and Shower Fitting: especially designed for solder-joint copper tube installations. Complete unit, with roughing and finishing nipples, hot and cold valves on 6" centers, automatic diverter valve in spout, self-cleaning shower head with ball joint, shower arm and flange. No wall access panel needed with this fitting. Briggs Mfg. Co., 3001 Miller Ave., Detroit 11, Mich.

Large Capacity Safety Relief Valve: new series of moderately-priced valves for prevention of excess pressure in domestic water heaters and tanks. Ratings in Btu capacity, making it possible to select valve that will open at desired pressure, with capacity equivalent to heat output of firing means. McDonnell & Miller, Inc., 400 N. Michigan, Chicago, Ill.

specialized equipment

BW Copyflex: new type of office copying machine makes low-cost contact prints of letters, records, reports, etc., any size up to 11½" wide by any length. Entire copying process accomplished within unit; needs no ink, tray developing, dark rooms, or special lighting. Prints are clean, smudge-proof, with last copy as sharp and legible as first in any quantity. Charles Bruning Co., Inc., 100 Reade St., New York, N. Y.

Stak-Rak Selective Storage System: entirely new method of storing materials of any size or shape. Consists of self-standing rack-columns designed to receive required material, crane bridge that spans entire width of storage area and equipped with overhead trolley from which is suspended electric fork lift. By means of push button, single operator controls all motions of fork lift to place or remove any item from its place on rack. Complete engineering and design facilities provided by manufacturer. Chicago Tramrail Corp., 4000 W. Washington Blvd., Chicago 24, Ill.



Graphostat Precision Drawing Board: portable plastic drawing board weighs less than 8 oz., compact enough to fit into brief case. Four recessed clamps will hold 8½" x 11" working sheet; two metal straight edges, one vertical, the other horizontal, are retractable, eliminating need for T-square; triangles easily stored on underside of drawing board with tension clamps. For desk work, board is equipped with rubber, skidproof feet. A. Partrick Co., 9 Grove St., Westwood, N. J.

surfacing materials

Naugahyde: Wall Covering: vinyl material, adapted from well-known upholstery product, is waterproof, resistant to fire, abrasive wear, and scuffing; unaffected by oils, greases, most acids, alkali, or alcohol; will not shrink, stretch, fade, or change color. Applied by standard wall covering methods. Material is 50" wide with trim allowance to 48", available in range of colors. Richard E. Thibaut, Inc., 269 Madison Ave., New York 16, N. Y.

p/a

MANUFACTURERS' LITERATURE

★ *Editors' 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

★ **1-71. Presenting the First Fundamental Improvement in Schoolroom Ventilation in Twenty Years** (3332), 16-p. illus. catalog describing new system of unit ventilation which intercepts chilling down drafts from large window areas and recirculates captured cold air through unit ventilator for heating before discharging into room. Method of operation, cross sections, plan views, capacity tables, suggested specifications. American Air Filter Co., Inc., Herman Nelson Div.

1-72. Outdoor Reset Hot Water Controls, AIA 30F (F-3157-1), 4-p. folder and 17 data sheets. Information facilitating selection of automatic temperature controls for hot water heating systems. Schematic operation diagrams, control applications, basic wiring diagrams. Barber-Colman Co.

1-73. Bryant Automatic Heating, 42nd Edition (SA-3464), 28-p. illus. catalog presenting complete line of gas heating equipment and allied heating products. Ratings, dimensions, architects' specifications, descriptions of parts. Bryant Heater Co.

1-74. Residential Ventilation Guide, AIA 30-D-1 (52), 10-p. bulletin covering uses of mechanical fan ventilation in the house. Types of fans, choice of proper size and location, ratings, table of air changes, typical installation drawings, contents table. Propeller Fan Manufacturers' Assn.

Catalog describing all-metal, double-wall gas vent and flue pipe employing die-formed couplers permanently attached to each pipe section and forming complete unit without need for cutting, crimping, or special tools. Advantages, specifications, sizes. Other booklet comprehensively analyzes gas appliance venting, its basic requirements, and proper installation. Photos, drawings. William Wallace Co.:

1-75. Metalbestos, AIA 30-D-4 (Cat. 6)
1-76. Venting of Gas Appliances (17)

CONSTRUCTION

3-56. Architectural Terra Cotta and Ceramic Veneer, 16-p. brochure. Brief synopsis of manufacture of terra cotta, specifications for furnishing and erecting terra cotta and ceramic veneer, installation drawings, details. Architectural Terra Cotta Institute.

3-57. California Redwood Association, 8-p. catalog giving general characteristics of redwood lumber. Yard grades, comparative properties, typical application photos. California Redwood Assn.

3-58. Granite in Architecture, AIA 8-B-3, 8-p. bulletin. Contains specifications for standard grade granite, color classification of granites quarried by association members. National Building Granite Quarries Assn., Inc.

3-59. Super-Concrete Bins, 12-p. folder on storage bins, constructed of diagonal-ended, concrete staves formed under 140 tons hydraulic pressure to give them rock-like density and high crushing strength; aside from holding bulk materials, structures may be employed as cooling towers, dryer housings, smoke stacks, mixing tanks, and well houses. Capacity data, other uses. Neff & Fry Co.

3-60. Republic Sheets (548), 20-p. illus. booklet devoted primarily to applications of stainless steel; some data on iron alloy, copper sheets, and other forms of metal. Types, finishes, forms, properties, detail drawings, installation photos. Republic Steel Corp.

3-61. Structural Clay Tile Fireproofing, AIA 5-C or 10-A (Vol. 1, No. 11), 4-p. bulletin. Technical notes and fire-resistance ratings for steel structural members protected with clay tile covering. Advantages, construction methods, detail drawings, recommended mortars. Structural Clay Products Institute.

3-62. Mobilwalls, AIA 35-H-6, 16-p. catalog describing various types of flush and panel metal partitions designed for complete interchangeability and instant mobility. Features, scale drawings, stock panel sizes, brief descriptions of door hardware, specifications. Virginia Metal Products Corp.

DOORS AND WINDOWS

4-76. Aluminum Double Hung Windows, 16-p. booklet. Specifications, full size details, cross sections, data on custom windows, weatherstrip and hardware, balance data and required clearances, typical installation photos. Adams & Westlake Co.

4-77. Glass Exit Door, 4-p. folder and two data sheets. Mechanical and operating information on automatic device for releasing glass exit doors from inside. Plan drawings, details. Balch Glass Exit Door Release.

Booklet and leaflet describing aluminum frameless screen provided with automatic tensioning device to keep screen tight against window blind. Construction, full installation data, photos. Columbia Mills, Inc.:

4-78. Columbia-matic Frameless Screens
4-79. Columbia Window Screens

4-80. The Balanced Door, AIA 16-A-1 (1951), 12-p. booklet illustrating commercial and industrial entrance door pivoted top and bottom to facilitate traffic by quicker operation. Operating principles, detail drawings, specifications. Ellison Bronze Co., Inc.

4-81. The Overhead Door (E-50), 12-p. booklet. Various types of electrically and manually operated *doors for* commercial and industrial buildings, and residential garages. Photos and schematic drawings of operators and controls, headroom requirements, typical installations. Overhead Door Corp.

4-82. Fire and Panic Exit Devices, AIA 27C5 (10150), 8-p. illus. bulletin showing various types of emergency exit devices for single and double door openings. Dimensions. Vonnegut Hardware Co., Von Duprin Div.

ELECTRICAL EQUIPMENT, LIGHTING

5-53. Curtis "Coronet" Series, AIA 31-F-2 (2413), 16-p. bulletin offering new line of fluorescent luminaires for use with 4-, 5-, 6-, and 8-ft. fluorescent lamps in offices, stores, schools, etc. Illumination data, materials and finishes, types of reflectors, dimensions. Curtis Lighting, Inc.

5-54. New Ideas in Fluorescent Lighting, catalog made up of AIA file folders illustrating many popular fluorescent lighting luminaires. General and technical data, installation directions, details, features. Lighting Products, Inc.

5-55. Acusti-Luminus Ceilings, 4-p. folder describing low cost, acoustically controlled, luminous ceiling. Translucent, corrugated plastic ceiling is hung below fluorescent tubes; hollow acoustical fins, made of perforated steel and containing sound absorbing pad, are placed at intervals below plastic sheeting. Advantages, construction drawing, illumination data charts. Luminous Ceilings, Inc.

5-56. Mid-Century Fluorescent Luminaires, AIA 31-F-23 (399), 8-p. bulletin. New series of 2-lamp, commercial fluorescent luminaires made of plastic extruded in one piece to provide low surface brightness. Types, dimensions, illumination data, diagrams, accessories. Mitchell Mfg. Co.

5-57. Lighting Transformers (FL-135), 30-p. catalog. Fundamentals of fluores-

cent lighting, types of transformers for hot and cold cathode, and other lamps, electrical and mechanical specifications, lighting calculations and other technical data, index. Sola Electric Co.

FINISHERS AND PROTECTORS

6-19. Phenoline Protected Concrete Floors (C-301), two application sheets showing method of applying thermosetting coating on concrete for increased resistance to corrosion and wear. Coverage, prices. Carboline Co.

6-20. The Multi-Clean Method, AIA 25G, portfolio of folders describing many kinds of floor maintenance products, such as nonslip wax, cleaners, sealers, concrete preservers, etc., for linoleum, concrete, terrazzo, asphalt, and wood flooring. General information, methods of application, recommendations, specifications, reconditioning of old floors, price list. Multi-Clean Products, Inc.

INSULATION (THERMAL, ACOUSTIC)

★ **9-37. Textured and Perforated Acoustical Tile,** AIA 39-B (AC6.A1), 8-p. bulletin. Design data on textured and perforated acoustical products made of Fiberglas. Application methods by adhesive, mechanical suspension, or clipping on wood furring described and illustrated; specifications, other Fiberglas acoustical insulating materials. Owens-Corning Fiberglas Corp.

INTERIOR FURNISHINGS

9-38. Cassard Contemporary, 8-p. brochure containing photos of furniture pieces designed by Eleanor and Ronald Allwork. Items, made of fine woods, include tables, commodes, desks, chairs, chests, and lamps. General information. Cassard Romano Co., Inc.

★ **9-39. Knoll,** 80-p. catalog of furniture and textiles in modern tradition. Five individual sections on chairs-sofas, tables, beds-chests-cabinets, office furniture, and textiles, all created by leading designers in America and Europe. Index of designs, color-keyed and cross-referenced by number and page. Knoll Associates, Inc.

SANITATION, WATER SUPPLY, DRAINAGE

19-103. Chilled Water by Filtrine, AIA 29-d-42; 30-f-21 (2-05), 12-p. reference manual offering guidance in selection of drinking water conditioning equipment for all types of food service establishments. Requirements, application diagrams, capacities, recommendations. Filtrine Mfg. Co.

19-104. The Greatest Name in Quality Sinks, AIA 29-H-6, 8-p. catalog. Presentation of custom-built cabinet and scullery sinks and tops in stainless and galvanized steel; also, custom-built stainless steel institutional and industrial equipment. Sizes, specifications, photos of equipment. Just Mfg. Co.

19-105. Packaged Water Heating (SM-41), 4-p. bulletin on all-bronze steam mixer water heaters, complete with controls and accessories; also combination safety unit which supplies hot water at two or more controlled temperatures for industrial washrooms and processes. Ratings, specifications, hot water requirements. O'Brien Steam Specialty Co., Inc.

19-106. Roof Drainage Equipment, 6-p. folder covering wide variety of roof drains for all types of decks under built-up roofing. Full details of flashing procedure and roof drain construction, specifications, rainfall map of the U.S. for quick, easy determining of number of roof drains for any building in any locality. Wade Mfg. Co.

SPECIALIZED EQUIPMENT

19-107. Automatic Shut-Off Valve, 4-p. brochure describes valve which prevents explosions and fire resulting from breaks in gas pipe lines caused by earth shocks; within valve, chain-suspended ball rests on incline; earthquakes or explosions of established intensity dislodge ball from normal position so that it drops onto rubber gasket sealing off gas. Method of operation illustrated, table of data. Underwriters' Laboratory approved. Guardian Valve Co.

19-108. Proscenium Treatments, AIA 35-A-1 (25R), 16-p. bulletin on theater equipment such as stage curtains, curtain controls, orchestra lifts, curtain tracks, motorized band cars, counterweight rigging, etc. Models, engineering data, photos, list of standard equipment. J. R. Clancy, Inc.

SURFACING MATERIALS

19-109. Vinyl Cork Tile, 8-p. catalog illustrating 23 patterns of resilient tile flooring. Color chart, installation instructions, care and maintenance directions, comparative test results. Dodge Cork Co., Inc.

19-110. Flexwood, AIA 28-C, 4-p. folder describing two products: flexible wood veneer for flat or curved surfaces; and extra-strength vinyl sheeting with color permanently fused to underside, for wall covering and furniture upholstery. Advantages, suggested uses, availability, color photos. U. S. Plywood Corp.

VERTICAL TRANSPORTATION

★ **22-3. Passenger Elevators,** AIA 33-B (B-4572), 52-p. buyer's guide giving detailed information on different types of elevator controls; selecting correct number of elevators of required size and capacity; budget pricing data; dimensional layouts for standard passenger elevators; safety features; installation information; and modernization of outmoded elevator systems. Diagrams, curves, tables, case examples. Westinghouse Electric Corp.

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How to Specify Armstrong's Rubber Tile for Grade-Level Subfloors

Now architects can specify Armstrong's Rubber Tile for grade-level installation. This is made possible by an adhesive known as Armstrong's No. S-104 Chemical-Set Cement developed originally for cementing linoleum to metal and other nonporous suspended subfloors. Until the development of this adhesive, rubber tile installations were not recommended over grade-level concrete because the alkaline moisture in such subfloors attacked and destroyed the bonding qualities of standard adhesives for rubber tile.

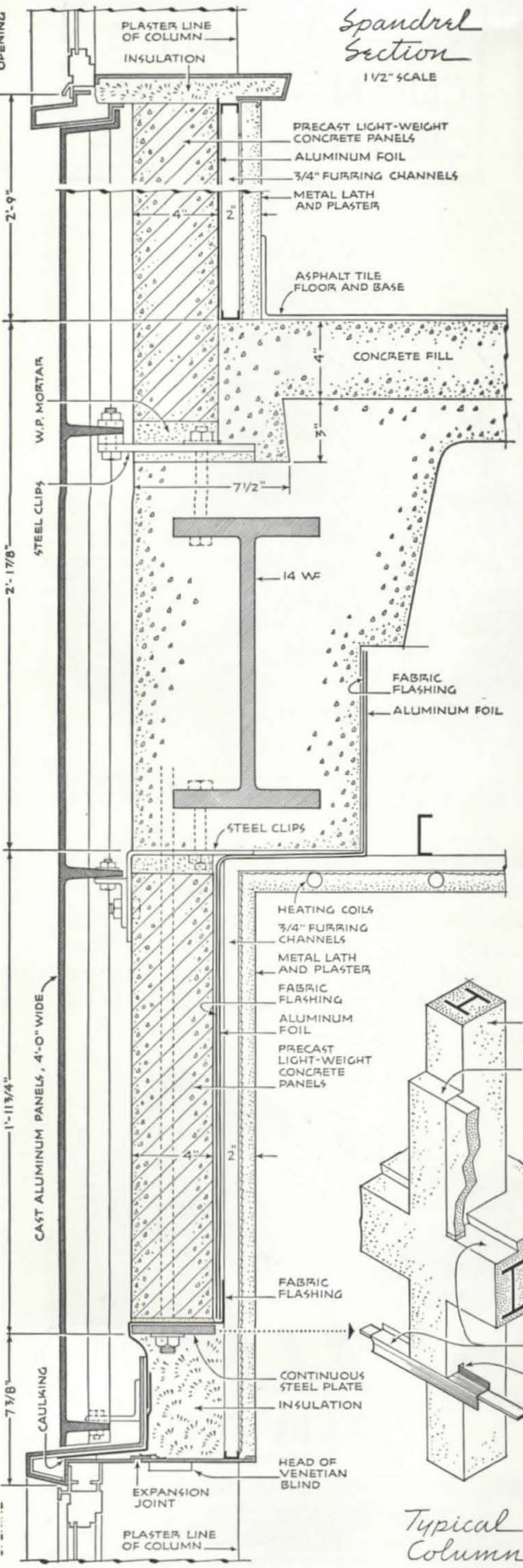
Armstrong's No. S-104 Chemical-Set Cement resists the harmful action of alkaline moisture in grade-level concrete floors. In order to obtain a satisfactory bond, it is extremely important that the subfloor meet certain conditions. It must be clean, free of all oil, grease, and other foreign substances. No. S-104 Chemical-Set Cement will not bond satisfactorily to areas upon which paint, varnish, or flooring adhesives have been applied.

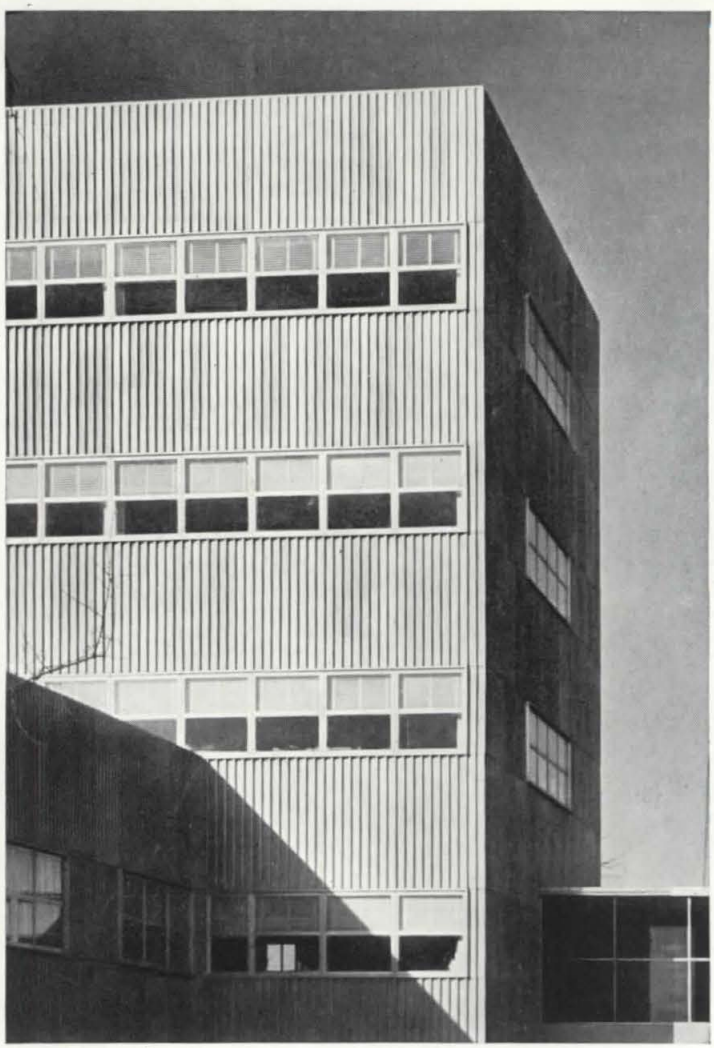
Armstrong's No. S-104 Chemical-Set Cement is a two-part adhesive—mixed on the job. It is trowelled on the subfloor in the same manner as standard resilient flooring adhesives. It covers approximately 100 square feet to the gallon. Armstrong's No. S-104 Chemical-Set Cement is also used to bond metal edging to concrete and metal stairs.

Present restrictions on certain raw materials used in its manufacture limit the production of Armstrong's No. S-104 Chemical-Set Cement. It is advisable to contact your Armstrong flooring contractor as to availability in your locality before specifying. For complete architects' specifications and other information on the installation of Armstrong's Rubber Tile over grade-level subfloors with Armstrong's No. S-104 Chemical-Set Cement, architects are invited to contact their nearest Armstrong District Office or write directly to the Armstrong Cork Company, *Floor Division*, 8902 State Street, Lancaster, Pennsylvania.

ARMSTRONG'S RESILIENT FLOORS

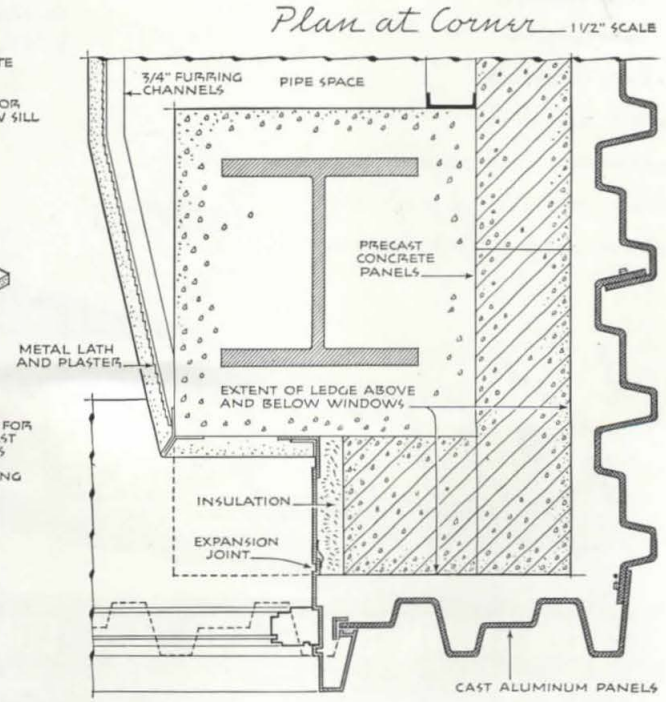
INOLEUM • LINOTILE® • ASPHALT TILE (A) RUBBER TILE • CORK TILE • LINOLEUM TILE



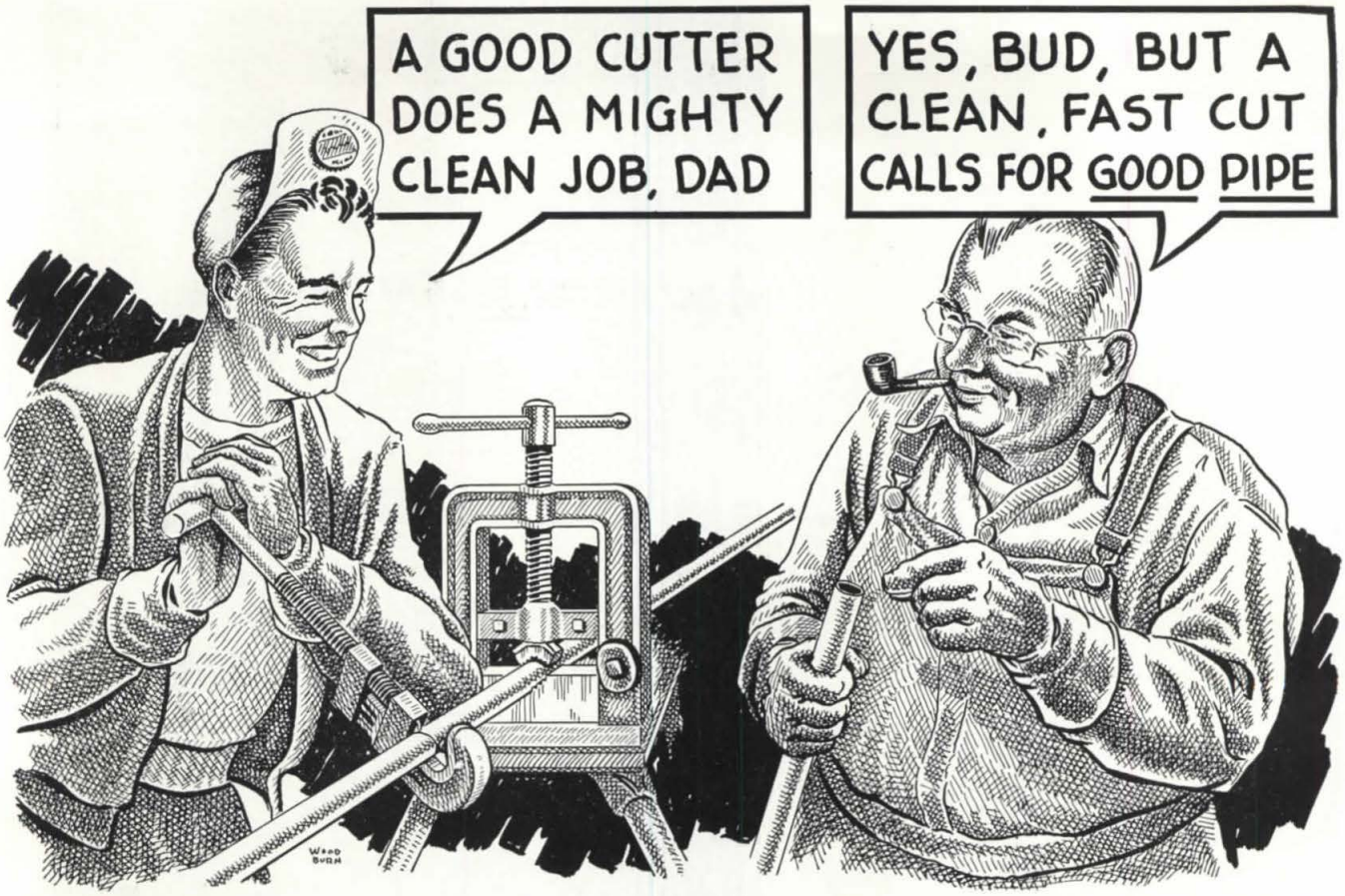


PHOTOGRAPHY INC.

Typical Column



ADMINISTRATION BUILDING, ALUMINUM CO., OF AMERICA, Davenport, Iowa **HARRISON & ABRAMOVITZ, ARCHITECTS**



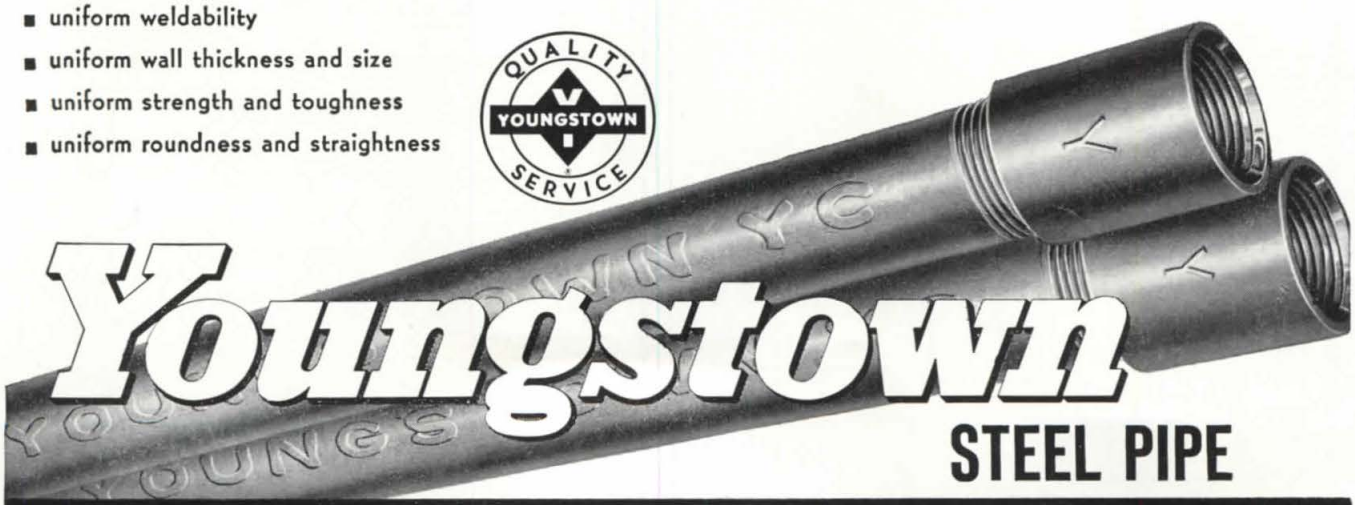
Good plumber + good tools + GOOD PIPE = GOOD JOB!

7 POINTS OF UNIFORM GOODNESS IN YOUNGSTOWN STEEL PIPE

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

ON the job or in the shop, you like to work with Youngstown pipe. Cutting is clean, fast and easy because Youngstown pipe is uniformly round and soft--true to size, even in grain structure, free of inclusions and hard spots. The name Youngstown, rolled into every length, means GOOD PIPE.

QUALITY YOUNGSTOWN SERVICE



Youngstown STEEL PIPE

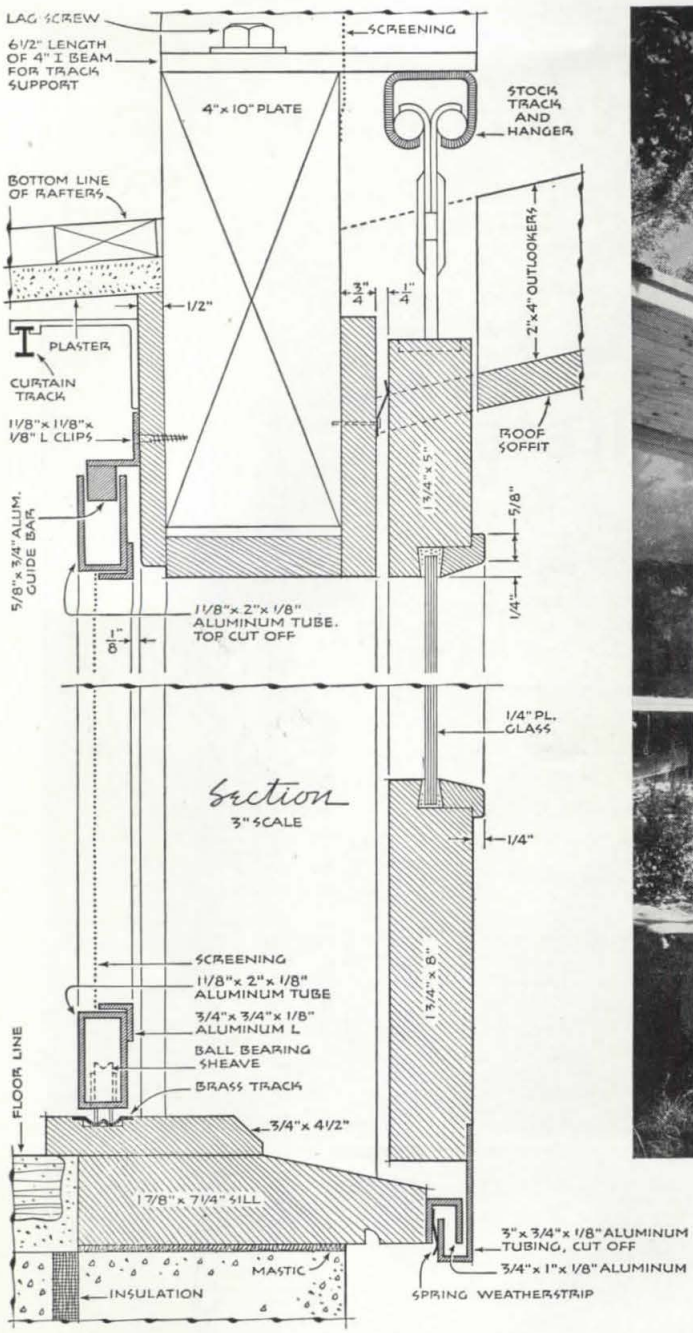
THE YOUNGSTOWN SHEET AND TUBE COMPANY

Manufacturers of Carbon, Alloy and Yoloy Steel

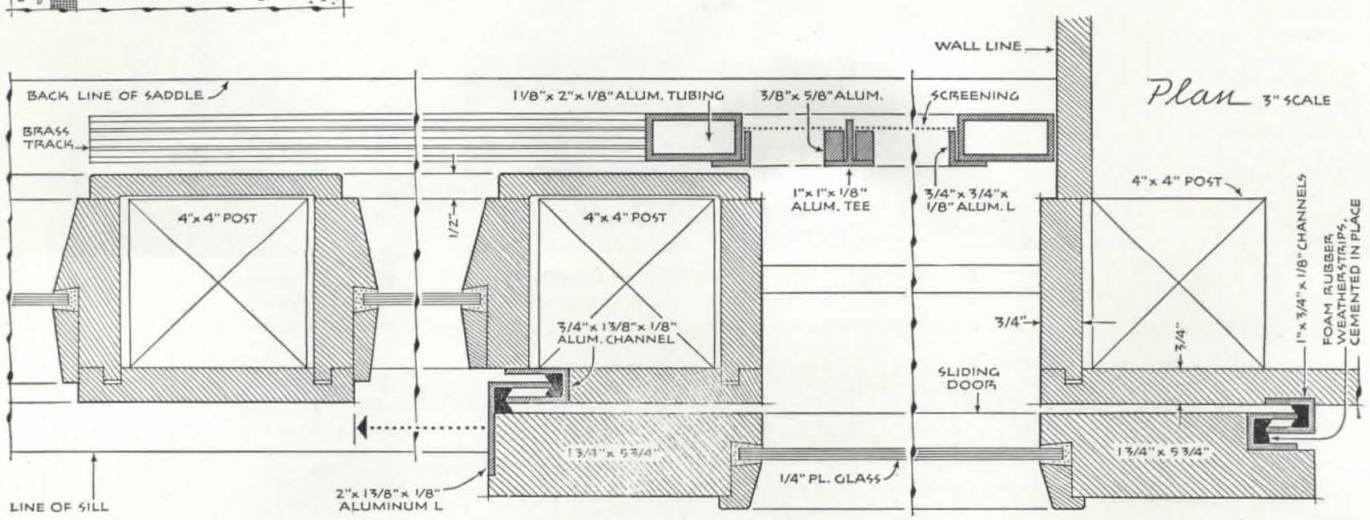
General Offices — Youngstown 1, Ohio

Export Office - 500 Fifth Avenue, New York

PIPE AND TUBULAR PRODUCTS - WIRE - ELECTROLYTIC TIN PLATE - COKE TIN PLATE - HOT AND COLD FINISHED CARBON AND ALLOY BARS - RODS - SHEETS - PLATES - CONDUIT - RAILROAD TRACK SPIKES.



EZRA STOLLER : PICTOR



HUGH STUBBINS RESIDENCE, Lexington, Mass.

HUGH STUBBINS, ARCHITECT

A city within a city...

HEATED BY 15 GAS FIRED

KEWANEE
STEEL BOILERS

● "Stonestown," in San Francisco's famous Lake Merced section, is actually a City within a City. This $20,000,000 development with its fourteen apartment buildings provides homes for 700 families, plus a 40 acre business and shopping area with parking space for 2500 cars.

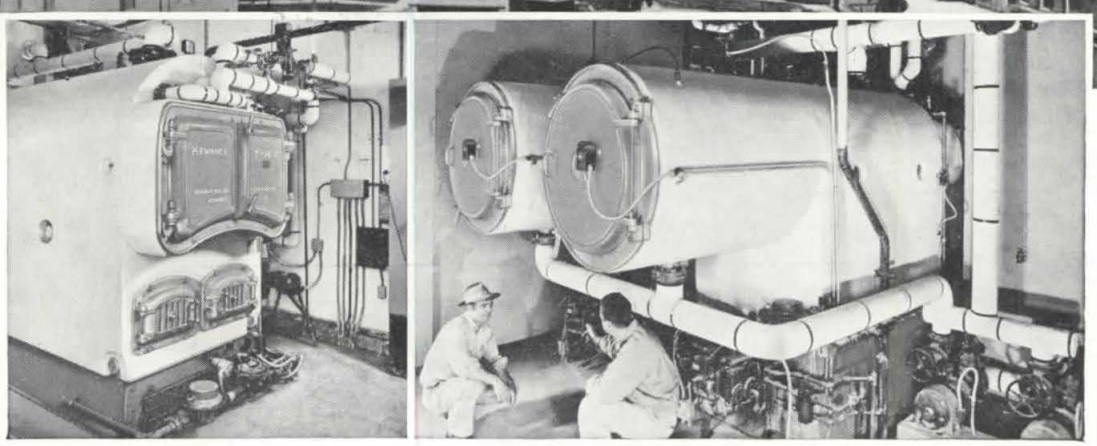
Heat, plus ample hot water for kitchens, bathrooms and laundries, is provided by 15 Kewanee Steel Boilers equipped with Kewanee Submerged Tankless Hot Water Coils . . . another typical example of an outstanding modern project where Kewanee was selected for dependable, economical heat.

"STONESTOWN"
Apartment Project
San Francisco, Calif.

Architect:
ANGUS McSWEENEY
Burlingame, Calif.

Engineer:
C. H. BAZILLE
San Francisco, Calif.

Heating Contractor:
L. J. KRUSE CO.
Oakland, Calif.



● A view of two boiler rooms showing three of the 15 Kewanee Steel Boilers installed in the Stonestown Project. With a total output of more than 24 million Btu, these boilers provide both heat and domestic hot water for the entire project.

KEWANEE BOILER CORPORATION

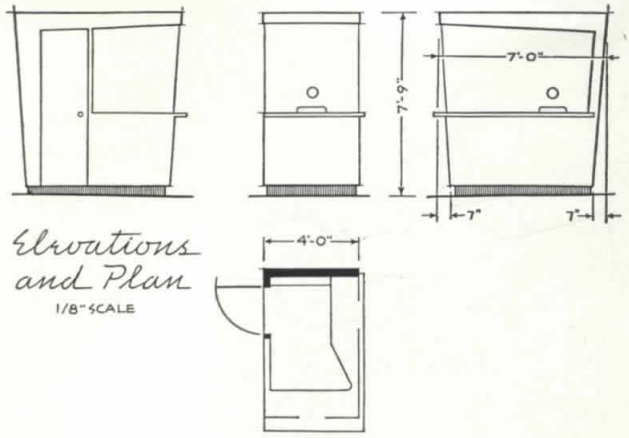
BOILERMAKERS 80 YEARS KEWANEE, ILLINOIS

Branches in 60 Cities—Eastern District Office: 40 West 40th Street, New York City 18

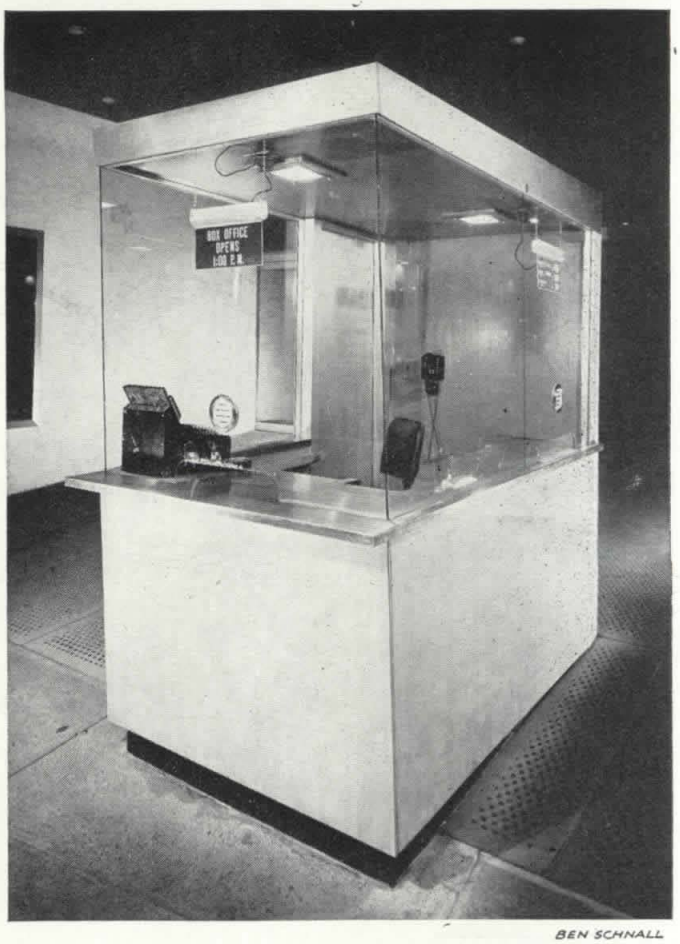
Division of AMERICAN RADIATOR & Standard Sanitary CORPORATION

Serving home and industry

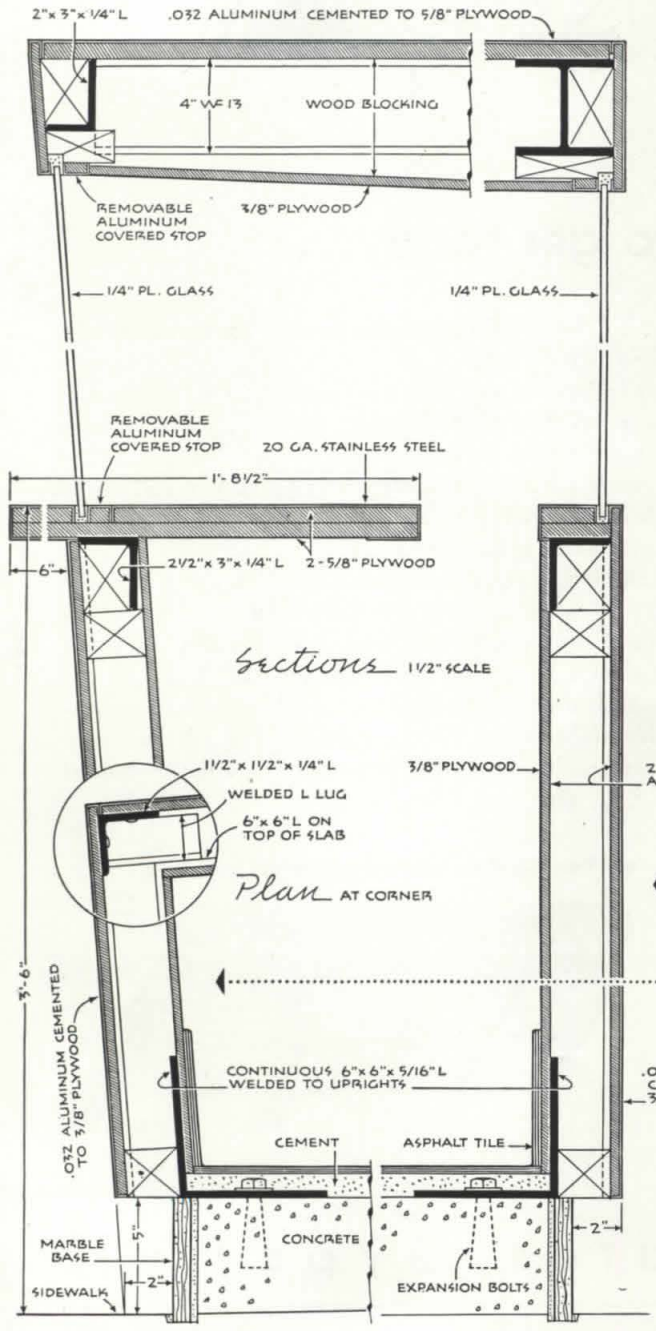
AMERICAN-STANDARD • AMERICAN BLOWER • CHURCH SEATS • DETROIT LUBRICATOR • KEWANEE BOILERS • ROSS HEATER • TONAWANDA IRON

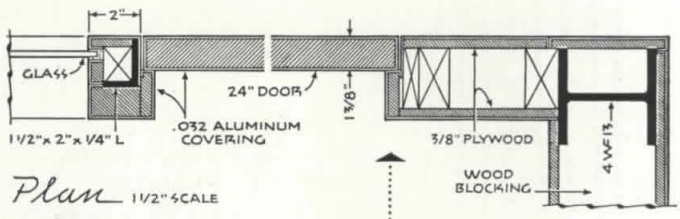


Elevations and Plan
1/8" SCALE

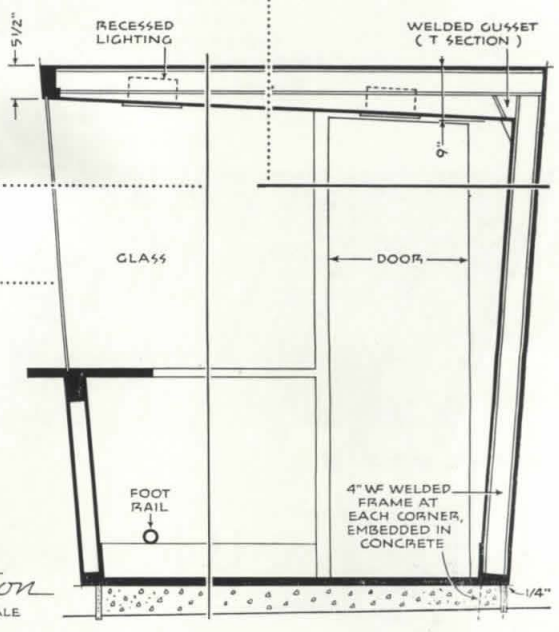


BEN SCHNALL





Plan 1 1/2" SCALE



Section
3/8" SCALE

CALDERONE THEATER, Hempstead, New York

WILLIAM LESCAZE, ARCHITECT

3 to get ready...

. . . "three" also gets *you* ready—ready to specify U.S.G. roof decks!

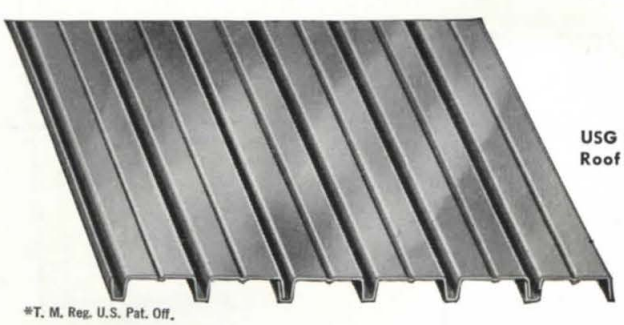
For here in *one* line are *three* roof decks to cover your building plans, whether they call for a *pitched, flat, or curved roof.*

Your U.S.G. representative will give you full information about U.S.G. roof decks—*poured-in-place gypsum, precast gypsum, or steel.*

Besides, if you have a specific problem, he will gladly go over it with you and offer a dependable recommendation that's unbiased because U.S.G. has all three types of decks. Phone or write him today.

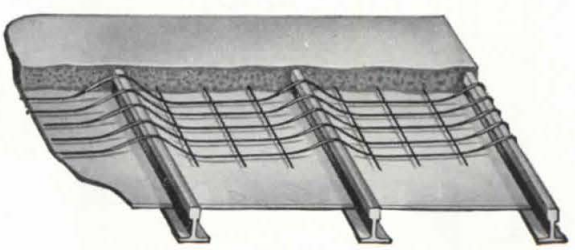
All United States Gypsum roof decks are incombustible, lightweight, strong, quickly installed, and easy to maintain. Be sure of your next roof deck—*consult U.S.G., specify U.S.G.*

USG Precast Metal Edge Gypsum Plank and Short-Span Tile



USG Steel Roof Deck

USG Poured-in-place SHEETROCK*-PYROFILL* Roof Deck

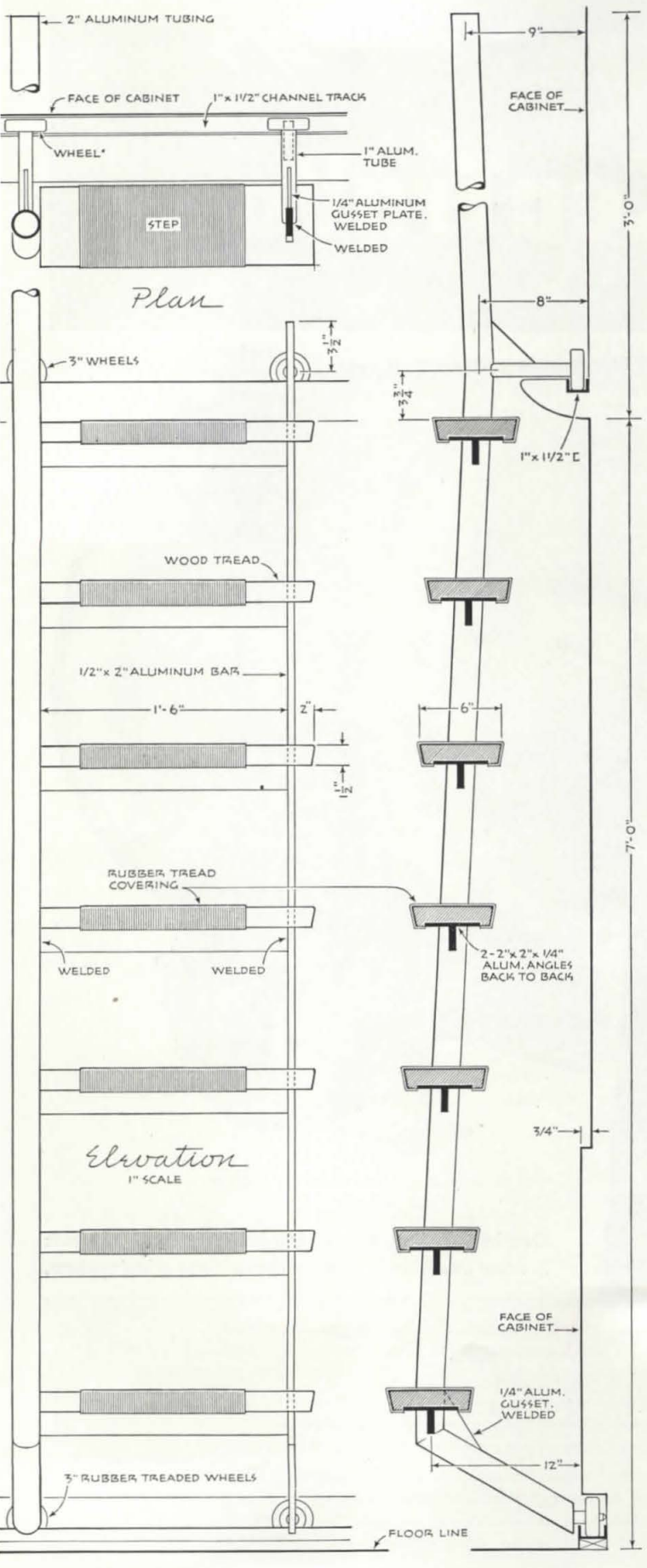


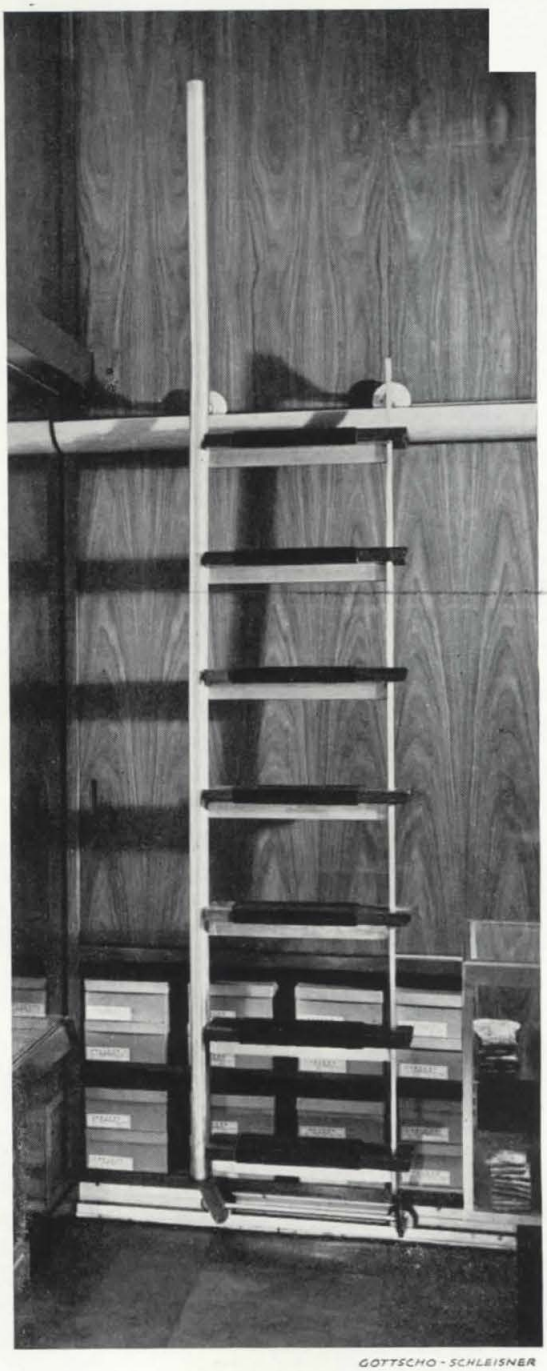
*T. M. Reg. U.S. Pat. Off.

United States Gypsum

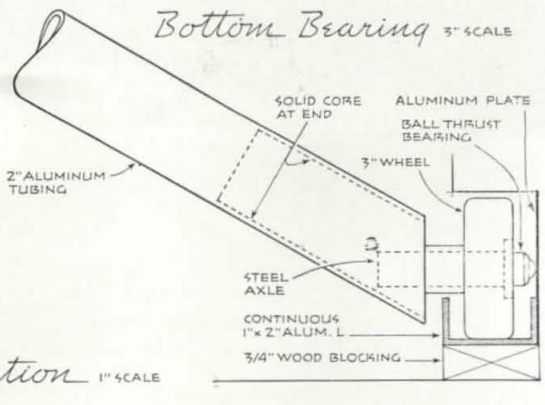
For Building • For Industry

Gypsum • Lime • Steel • Insulation • Roofing • Paint





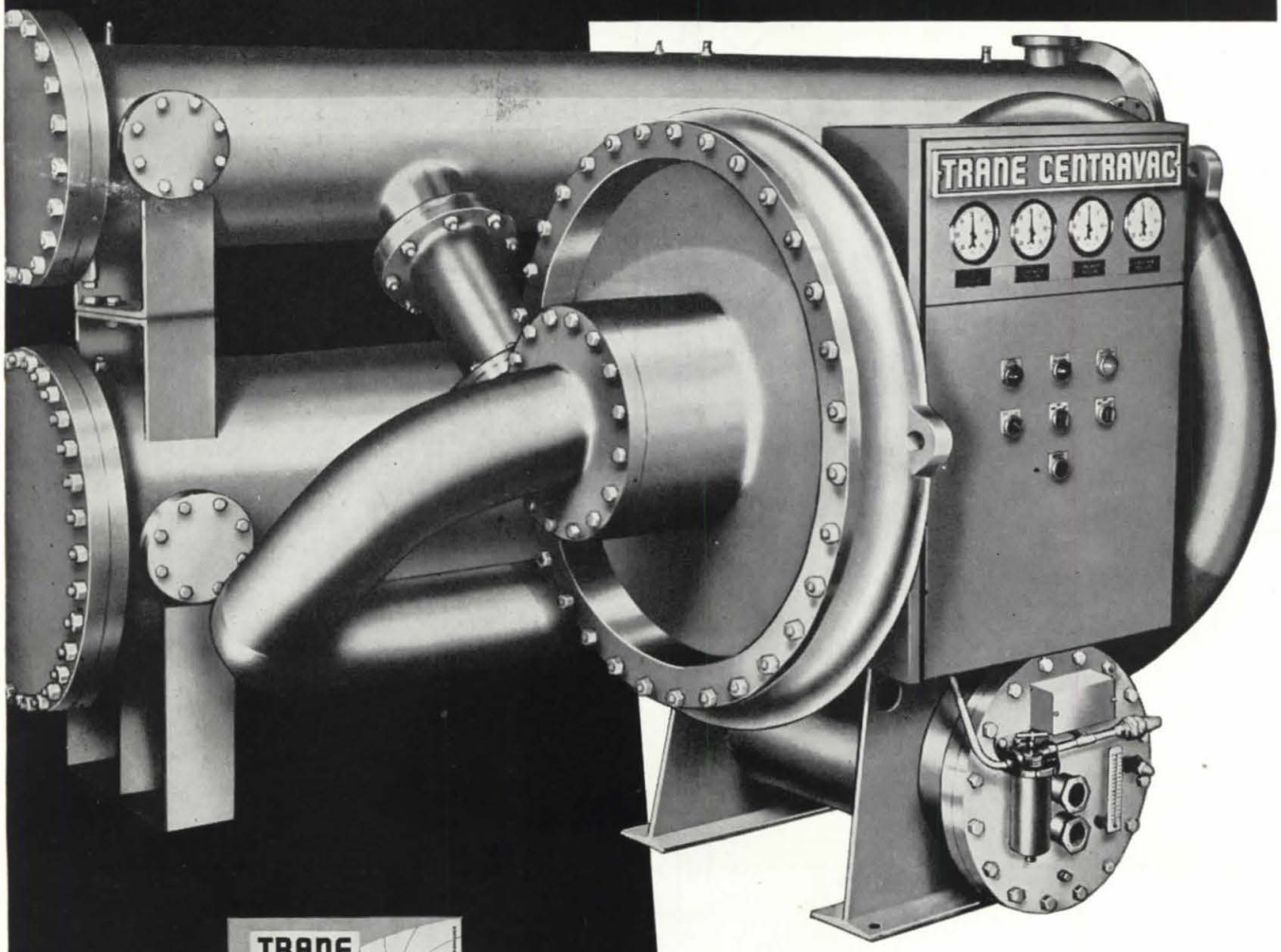
GOTTSCHO - SCHLEISNER



JOHN FORSYTHE SHOP, New York, N. Y.

MORRIS LAPIDUS, ARCHITECT

HERE'S THE NEW
TRANE CenTraVac...



One installation, one wiring job, one set of controls . . . one machine is a complete refrigeration system.

For complete literature and full information contact the Trane Field Representative in your area or write to The Trane Company, La Crosse, Wisconsin, for Bulletin S-399.

Now . . . better-than-ever results from the systems you design or install . . . with a CenTraVac, the completely new Trane Centrifugal Refrigeration Unit.

Now . . . for the first time . . . a centrifugal design engineered for practical air conditioning and process cooling requirements with models ranging in capacity from 45 to 190 tons of refrigeration.

Flexible capacity control, proportionate power reduction, hermetically sealed construction—these exclusive features are only a few of the outstanding basic improvements available only in the great new Trane CenTraVac Centrifugal Refrigeration Units.

MANUFACTURING ENGINEERS OF HEATING

it's more than a compressor!

Complete centrifugal refrigeration unit cuts costs four ways

For the first time, a centrifugal unit furnishes chilled water for installations as low as 45 tons! The CenTraVac is the only centrifugal designed for smaller jobs as well as the bigger ones. A new kind of centrifugal—with hermetically sealed direct drive—with stable operation from 100% down to 10% of rated capacity—with reduced power consumption under reduced capacity operation.

Big Power Savings On Jobs As Low As 45 Tons!

When less cooling is demanded by the system, the CenTraVac automatically lowers capacity. Horsepower per ton reduction parallels capacity reduction over wide operating ranges. Owner pays only for cooling actually used by the system, thanks to CenTraVac built-in capacity control and the new Trane power reduction feature.

Simplified Installation Slashes Costs!

Compact, lightweight CenTraVac can be located conveniently in building without special mounting foundations. Smooth running, quiet operation eliminates need for isolation. Then, too, *one* wiring job, *one* set of connections, *one* system of controls is all that is required. The CenTraVac is a hermetically sealed unit containing the compressor, the condenser and the evaporator for the complete chilled water system!

Maintenance Time and Expense Eliminated!

The CenTraVac is designed to run without special attention. Impellers mounted directly on shaft of water-cooled, hermetically enclosed motor eliminate troublesome shaft seals, gear boxes, unnecessary bearings. Forced-feed oil system is designed for positive lubrication of two main bearings, the only bearings in the entire machine. Turn it on, turn it off, as often as necessary, or let it run continuously season after season.

High Efficiency Means Low Cost Cooling!

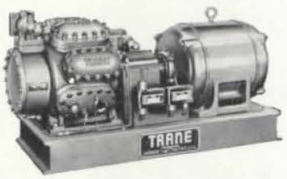
Less than one horsepower per ton required for usual air conditioning applications! Under varying loads the tonnage-to-horsepower ratio often averages out even more favorably.

The CenTraVac supplies lowest cost chilled water for smaller jobs as well as big ones. Five models to choose from between 45 and 190 tons!

This great new Trane line makes centrifugal refrigeration available—
for the first time—in the capacities required for the majority
of practical air conditioning and process cooling applications!

AND AIR CONDITIONING EQUIPMENT • OFFICES IN 80 CITIES

New Trane Self-Contained Air Conditioner! Brand new design packs greater capacity into small cubic space, produces more cooling, yet occupies less floor area. See new Trane Bulletin S-362.



The Brand-New, All-New Trane Reciprocating Compressor. Higher efficiency . . . smoother running . . . longer lasting . . . here's a new Trane-designed and Trane-built refrigerating unit for 10- to 50-ton jobs. See bulletin DS-361.

Choose Trane and Choose Your Own Weather! Each guest at Continental Hotel, Miami Beach, Florida, can choose *his own weather* because management wisely chose *UniTrane Air Conditioning* . . . complete systems like this, with *individual room weather control*, are easier than ever to design and install with Trane's bigger, better 1951 line of products.

TRANE

THE TRANE COMPANY, LA CROSSE, WISCONSIN
EASTERN MFG. DIVISION • SCRANTON, PA.
TRANE COMPANY OF CANADA, LTD., TORONTO

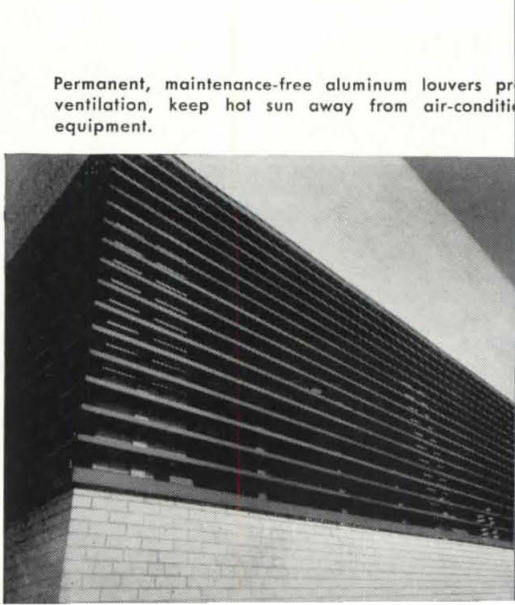
ALUMINUM...MODERN METAL

. . . PLAN FOR ITS US

100 Park Avenue. Kahn & Jacobs, Architects. George A. Fuller Co., General Contractors. Alcoa Aluminum used for windows, spandrels, and mullions fabricated by General Bronze Corporation.

Aluminum troughs reflect light in lobby ceiling, harm with the bronze trim.

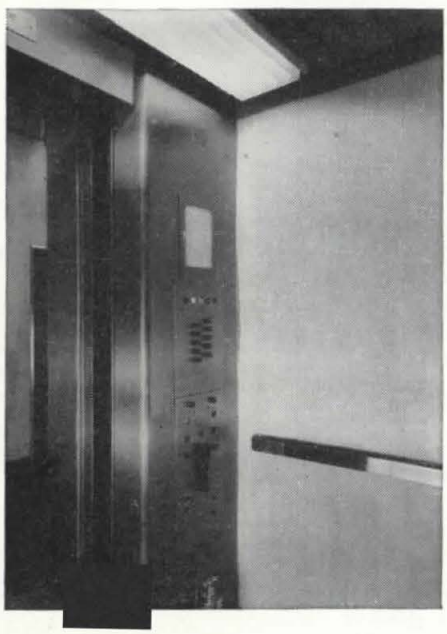
Permanent, maintenance-free aluminum louvers pr ventilation, keep hot sun away from air-conditi equipment.



FOR MODERN BUILDINGS

REMEMBERING REARMAMENT NEEDS COME FIRST

Elevator cabs by Otis are lined with easy-to-clean striated aluminum panels. Combine strength, lightness and lasting good looks.



Aluminum mullions accent the vertical lines, blend with aluminum windows and spandrels.

The clean, efficient lines of today's architecture are well expressed in aluminum . . . the modern metal. In 100 Park Avenue, aluminum has been used for windows, spandrels, mullions, copings, louvers, and lobby ceiling. In each case, one or more of aluminum's qualities of lightness, economy, workability and freedom from corrosion have contributed to the building's efficiency and economy of maintenance.

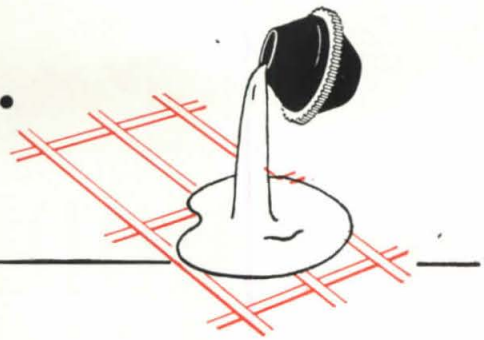
As in this building, Alcoa Aluminum has been used in nearly every major office building erected in America in recent years. Alcoa engineering and production men are eager to co-operate with forward-looking designers and builders. For information on any application of aluminum, call your nearby Alcoa Sales Office or write, ALUMINUM COMPANY OF AMERICA, 1890B Gulf Building, Pittsburgh 19, Pennsylvania.

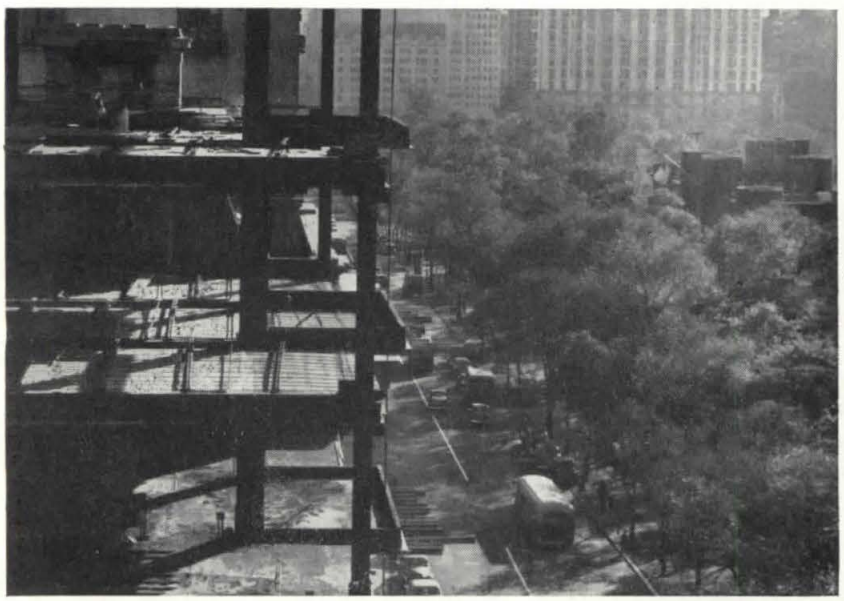
ALCOA

FIRST IN ALUMINUM

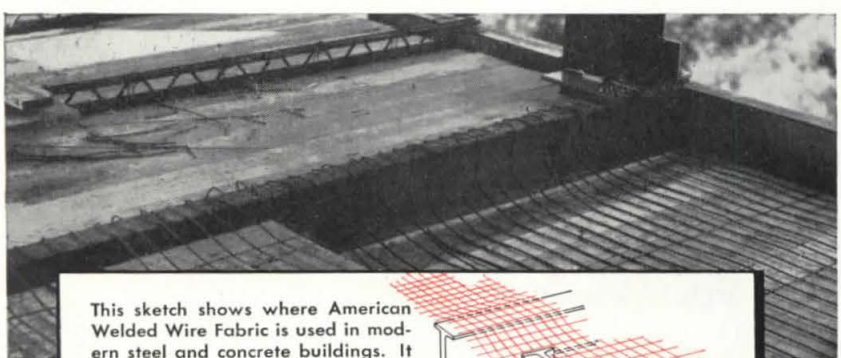
For steel and concrete buildings...

American Welded Wire Fabric

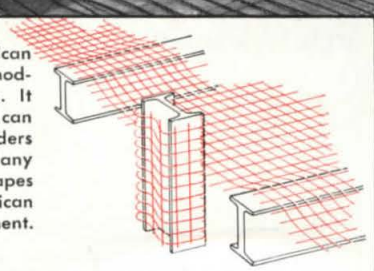




This apartment building is typical of modern steel and concrete construction. In floors, walls and ceilings, on beams, girders and columns, the continuous reinforcement of American Welded Wire Fabric keeps concrete in place, prevents cracking, helps strengthen structural members.



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.



AMERICAN Welded Wire Fabric reinforcement has been used extensively in building construction. Wrapped around structural steel members, it fortifies the concrete against cracks caused by stresses and strains due to deflection of the structural members, normal temperature changes, and extraordinary temperature variations accompanying fire.

This fabric reinforcement possesses adequate tensile strength. It is easily shaped to structural steel. It comes in rolls and sheets, aids speedy construction. Structural steel beams, when wrapped with Welded Wire Fabric and enclosed in concrete fireproofing, are usually designed as composite beams.

Its adaptability, efficiency and economy have made American Welded Wire Fabric the most widely used reinforcement for concrete. You will find it in floors, walls, roofs and ceilings of all sorts of structures, in highways, sidewalks and driveways, in tunnels, bridges and approaches.

U·S·S American Welded Wire Fabric is available in every locality from jobbers' and dealers' stocks — supplemented by prompt mill shipment to identified projects.

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 fabric. 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

Every type of concrete construction needs

AMERICAN WELDED WIRE FABRIC

reinforcement

USS TRADE MARK

UNITED STATES STEEL

p/a

REVIEWS

STIMULATING, UNHESITATING

The Urban Pattern: City Planning and Design. *Arthur B. Gallion and Simon Eisner. D. Van Nostrand Company, Inc. 1950. $12*

All I can say is, it is an amazing book. You start off with the Pyramids and the Acropolis, dive into FHA mortgage financing and come out of the pool with Le Corbusier and the new Utopias. I find the book stimulating. Its great asset is its breadth of attack and its unhesitating, almost headlong, plunges into the whole world of planning and housing. Of all the books on these subjects in my bookcase this contains within its 418 pages a wider coverage and more prying curiosity than anything written since Casey Bauer tossed *Modern Housing* into my empty shelves in 1934. As a social document, *The Urban Pattern* does not compare, nor for all of its references is it as scholarly a tome; but the eager enthusiasm of its authors and their winning surprise at what they find as they muzzle into the *Harvard City Planning Series*, the *Encyclopedia Britannica*, and great piles of periodicals and reports, is one of the book's most ingratiating aspects.

I like a well illustrated book on any subject, being visually minded. This one has a great many fine pictures. It was a big format job and I suppose I should be more lenient, but the choice of illustrations and the captions are not always too happy or too accurate. The weighting of the pictorial selection is questionable —only two pictures of attractive but minor USHA projects to three illustrations of Williamsburg houses and two of Westfield Acres, both PWA projects. PWA built 22,000 dwelling units in four years as against 168,000 by USHA in the same number of years (our authors' own figures and they use "dwellings" instead of "dwelling units," thus confusing terminology with the single family house). Obviously, it would be hard to illustrate all large-scale programs properly, but these pictures are totally inadequate to give the sense of scale or importance deserved by the USHA program. On the other hand, the Greenbelt towns and the Radburn prodigy get a good display. However, their effectiveness is limited by the fact that many of the pictures are old dishes from planning and housing literature, i.e., the air view of Radburn taken before the school was built.

Perhaps the book's worst problem is that while it attempts to be a text presumably for architectural students or planning and housing students in architectural schools, its authors attempted to reach other audiences as well. That does not quite come off. On the other hand, the authors deserve all the kudos available for tying into such a document not only the standard materials on

(Continued on page 114)

BOOKS RECEIVED

Mexico in Sculpture. 1521-1821. Elizabeth Wilder Weismann. Harvard University Press, Cambridge, Mass., Nov., 1950. 224 pp., illus. $7.50

Architecture. Five Thousand Years of Building. Joseph Watterson. W. W. Norton & Co., Inc., New York, N. Y., 1950. 399 pp., illus. $6

Parliament House. Morris Hastings, The Architectural Press, London, Oct., 1950. 200 pp., illus. 12s 6d

Fundamentals of Acoustics. Lawrence E. Kinsler and Austin R. Frey. John Wiley & Sons Inc., 440 Fourth Ave., New York, N. Y., Oct. 1950. 516 pp. $6

Snow Melting. T. Napier Adlam. The Industrial Press, 148 Lafayette St., New York, N. Y., 1950. 224 pp., illus. $4.50

Heat Insulation. Gordon B. Wilkes. John Wiley & Sons, Inc., 440 Fourth Ave., New York, N. Y., 1950. 223 pp. $4

Seaplane Facilities. Civil Aeronautics Administration. U. S. Government Printing Office, Washington 25, D. C., Oct. 1950. illus. 25 cents

p/a **REVIEWS**

(Continued from page 102)

physical planning but also on private and public housing and problems of urban redevelopment.

The problem of writing a comprehensive book on planning and housing, which is faced by any author today, is that the picture is changing so rapidly. Also, there is a tendency to confuse history, which is confused itself, with theory. The authors here have made a valiant stab at trying to accomplish both a clarification of history with the philosophical concepts out of which present programs are growing. But housing and planning historical material becomes dated overnight. For instance, at the time at which this book was written, there was just beginning to be a specific discussion on the control of obsolescence beyond zoning. Chapter 26 stops with Louis Justement's proposals on a retirement program for buildings, which in turn may have stemmed from some of the earlier German studies on property life insurance. The chapter, however, does not go into the so-called "Baltimore Plan" and principles of enforcement which are now becoming important in all considerations of the control of obsolescence. This does not invalidate the chapter but simply points up the difficulty which anyone has at the present time in preparing a book which in itself will quickly become out of date. I wish to emphasize that the book's comprehensive nature should stimulate the reader to keep up to date with things that are happening in this country and abroad, and if it does nothing else but include subject matter of importance which the student will follow up himself, it will have accomplished a very important mission.

I hope that what I have said above does not in any way militate against what I consider to be a favorable criticism of the book. It is well worth owning and should be available to every architectural and planning student for study. It has background material on which such a student may analyze work that is being done and work which he himself proposes to do. CARL FEISS

SWISS ARCHITECTURE

Moderne Schweizer Architektur, *1925-1945. Max Bill, Karl Werner, Basel; Wittenborn & Co., New York, N. Y., U. S. Distributors, 1950. 208 loose pages, 8¾ x 12, in portfolio form, illus., $11.25*

Many of the buildings shown in this collection are well known, for they have been published many times in books and magazines. Nevertheless it is good to

(Continued on page 116)

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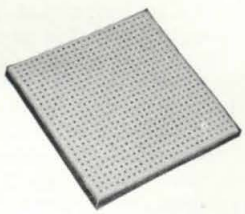

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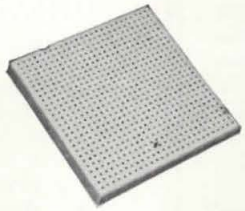

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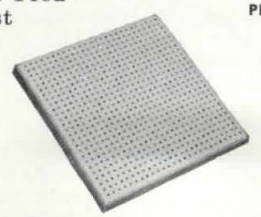

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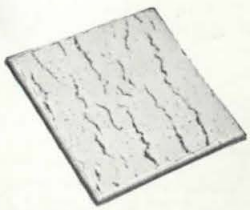

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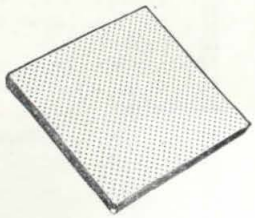

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p/a

REVIEWS

(Continued from page 114)

have them all in one place for easy reference. This is the third edition of this work, which was first published in 1938, then edited by Max Bill, George Schmidt, Siegfried Giedion, Lewis Buchler, Werner Jegher, Peter Meyer, and Egidius Streiff. The new edition brings the document up-to-date, the older edition having been culled by Bill for the best examples of Swiss architecture from its earliest days, with additions to the present.

The work is organized in five parts according to building type: 1. for work; 2. for traffic; 3. for dwelling purposes; 4. for recreation; and 5. for education and pleasure. From two sides of a single sheet to six sides of three sheets is devoted to each building; and captioned photographs, plans, elevations, sections, and such information as the date the building was constructed, a brief description of the method of construction, and its cost. It is a magazine type of presentation, with text in French, German, and English.

The second section, on traffic buildings, contains some excellent photographic reproductions of bridges by Maillart and others, as well as a trolley and cable railway terminal, and a 1944 example of a Swiss railway dining car. The third section, on houses, includes mostly examples of single-family dwellings but there are a few apartment houses, children's homes, and other types of dwelling units.

The portfolio, if it can be called that, is a worthwhile investment to anyone interested in the development of modern architecture in Switzerland—few places in the world being more replete with good examples of many different types of buildings as far back as 1925.

W.W.A.

ROBBED OF FAME

Frederick Catherwood, Architect. *Victor Wolfgang Von Hagen. Introduced by Aldous Huxley. Illustrations from drawings by Frederick Catherwood. New York: Oxford University Press 177 pp. $5.00*

When I tackled this book, I anticipated a work rather thoroughly taken up with the dustiness of archeology. Instead, to my great pleasure, I discovered within its covers a fascinating harvest of information related to historical, social, personal, and archeological affairs during that exciting era when Englishmen were so active in pursuits of foreign cultures; when Lord Byron made his expedition to Greece, when George Borrows was spreading the Bible in Spain.

Would that the publishers had used continuous chapter numbers to facilitate one's referring to the notes at the end of the book! Would that the author had resisted unfamiliar, untranslated foreign phrases, a habit generally disapproved of by Fowler in his *The King's English!*

The author was confronted by an incredibly difficult task, for he wrote of an almost unknown man about whom precious little information could be found. He haunted encyclopedias, biographical dictionaries, and lexicons—all in vain. He turned to publications and museums that specialized in Mediterranean cultures, for Catherwood had spent 10 years exploring in Rome, Greece, and Egypt. The Library of Congress, the British Museum, and the Royal Institute of British Architects offered only the scantiest of material. Tempted to accept defeat, the author nevertheless met the challenge. He sent letters of inquiry to Egypt, Syria, Den-

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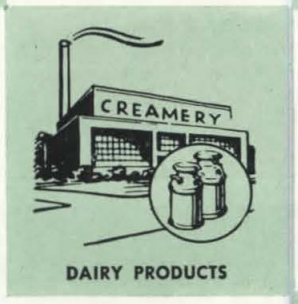

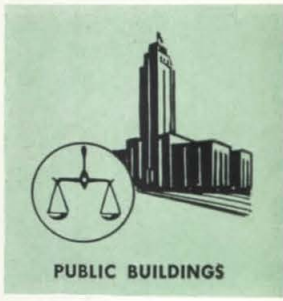

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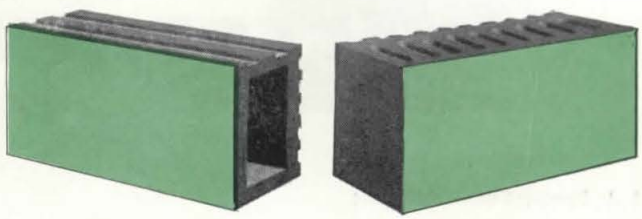

FACING TILE INSTITUTE

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(Continued from page 116)

mark, England, British Guiana, Scotland, and places in America.

Gradually Catherwood, the unknown archeologist, who had undertaken such important work on two continents, began to take on flesh. Fragments of information in amazing number were sent in by authorities, librarians, collectors, etc., in snatches from letters, newspaper items, illustrations, all sympathetically contributing to this amazing monument to persistence on the part of the author. Despite many references to Catherwood in letters—this man known to almost every important artist or architect of his time—none had ever described, drawn or painted him.

Catherwood returned to England disillusioned by his years of unprofitable research. He went into the panorama field, working for Robert Burford who had his panoramas in Leicester Square. Rotundas housed colossal circular murals—of battles, coronations, remote cities. They were the 'movie-houses' of the day, and had as much hold on curious citizens. Many a future master contributed to them as an art student.

•

One day when Catherwood was lecturing in a Rotunda before his mural of Jerusalem, there began his remarkable friendship with John Lloyd Stephens, an American lawyer. This friendship was to lead to their rediscovery of the Mayan Civilization in the western world.

In 1836, Catherwood came to New York and set himself up as an architect at 4 Wall Street, later to enter partnership with another Britisher. He lectured and worked at various projects in Newport and Boston. But his interest lay in building a panorama, and this he finally did in partnership with George W. Jackson, at Mercer and Prince Streets on Broadway in New York (at a cost of $7,816.16). His Rotunda held a huge panorama of the Holy Land, illuminated at night by 200 gas lights. It was well received by enthusiastic critics. Encouraged, Catherwood went to London and purchased Burford's 'Thebes' and 'Baalbek.' Those along with 'Niagara' comprised the New York show.

•

The panorama business brought him financial success, but Catherwood felt another call. He and Stephens had often discussed the cities and temples of Central America, buried in jungles. He left the panorama to Jackson and he and Stephens went to Guatemala, to be diverted by a local war into Honduras. At Copan they started operations in 1839, thrilled at the prospect of finding the promise of an entire lost civilization. To avoid trouble with natives they bought the site for $50. Catherwood worked standing in the mud, wearing gloves to protect his hands from mosquitos, yet drawing intricate, complicated designs so entirely new and unintelligible* that only his stubborness and enthusiasm carried him through. Sometimes he used the camera

(Continued on page 120)

*Von Hagen supports Catherwood in the belief that this architecture had no tie with any previous Old World style. All archeologists will not agree with him. Catherwood knew Middle East architecture as he could not know the architecture of Southeastern Asia, with which he might have discovered a tie. But this brings us to the Diffusion Controversy, an old one but particularly vehement during the few years following 1933 when proponents of each theory, Diffusion and Non-Diffusion, brought into the argument an amazing number of considerations. Some of our younger authorities have recently brought forth additional illustrations of architectural and sculptural resemblances tending to fortify the belief that our ancient Indian culture may have had roots in Southeastern Asia.

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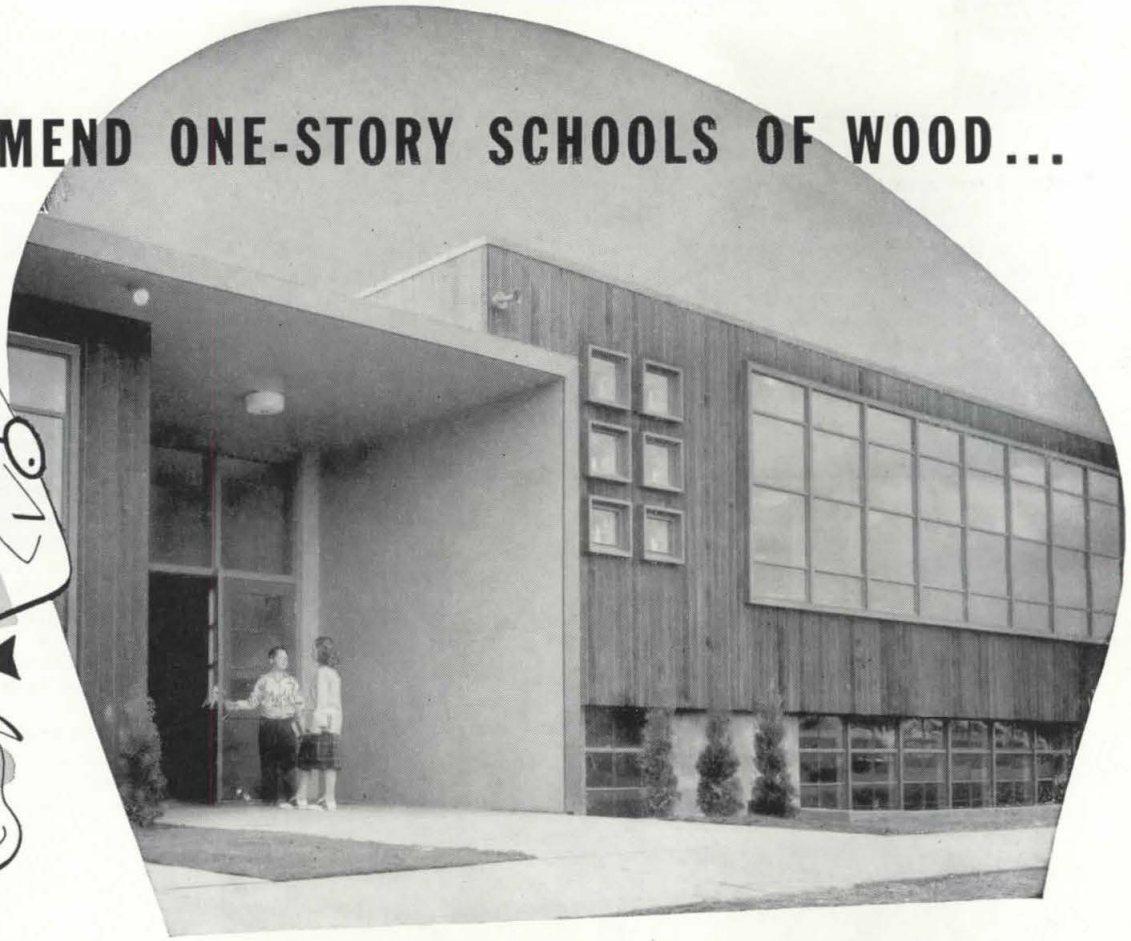

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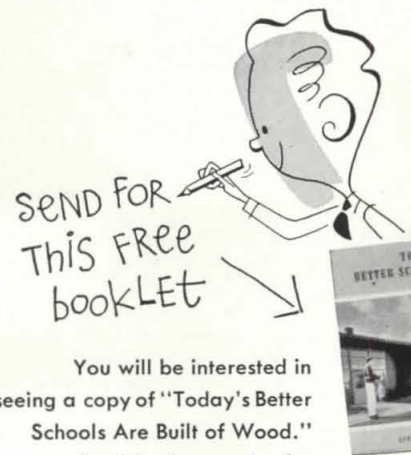

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(Continued from page 118)

lucida, a prismatic device, to project a façade onto his paper.

There followed further researches at Quirigua, Palenque and Merida. The two men then pushed on to the ruins of Uxmal, 50 miles to the south. While fever kept Catherwood flat, Stephens examined these ruins. His enthusiasm caused his companion to accuse him of romancing, but next morning both were on the ground and before long they went to work. Catherwood soon collapsed and they sailed for New York, July 31, 1840.

Stephens returned to Central America, to write his monumental book, while Catherwood, in New York, started work on his illustrations.* Harper Brothers' undertook to spare no expense in making it one of the finest books ever published in America. Poe wrote: "The work . . . is certainly a magnificent one —perhaps the most interesting book of travel ever published." Prescott wrote: ". . . the narrative is spirited, but the real value of the work lies in the drawing . . ." (remarkably accurate).

•

In 1841, Stephens and Catherwood sailed again for Central America, with Dr. Samuel Cabot, Jr., to study the Mayan "New Empire" in the dry-zone area where conquest by Toltecs, come from Mexico, brought in the cult of the god Quetzalcoatl. This was Catherwood's best and happiest period. But only six weeks later he was carried away in complete delirium, due to malaria. On his partial recovery, however, there followed visits to the sites at Kabah, Labnah, Sayil, Bolonchen, Sabatsche, and finally the great Chichen Itza. In June, 1842, the expedition was over.

Then tragedy! And loss to the world! Catherwood had kept his priceless Yucatan collections in his Rotunda in New York. One night the Rotunda was destroyed by a spectacular fire and most of his drawings, as well as the large paintings of Thebes and Jerusalem, were ashes. Catherwood courageously threw himself into the illustration of Stephen's book on Yucatan. They even planned a more ambitious work on the whole of Central America, 300 volumes to be sold at $100 a copy. But Stephens lost interest and Catherwood, in desperation, managed to publish his own, rather well written book. But it did not do well.

For five years, on a pittance, young Catherwood served as an apprentice to Michael Meredith, architect. Together they made a topographical tour of England. Then, through a boyhood friend, Joseph Severn, since become notable as a painter, he was brought into the "Keats Circle." In 1820, Catherwood attended free art classes of the Royal Academy and partook of lectures on architecture, among students destined to make archeological history. He was deeply moved by the engravings of Piranesi, so emotionally imbued with the grand archeology of ancient Rome. A similar emotion Catherwood captured, in part, in his own drawings.

In September, 1820, his friend Severn accompanied Keats to Rome, but first made Catherwood promise to follow, upon finishing his studies. Their later meeting was joyful, and visits followed to Saint Peter's and the Vatican. In Rome, Catherwood came into contact

(Continued on page 122)

*This reviewer recently saw an exhibition at Columbia's Avery Library, which includes these lithographs in color, and a few of Catherwood's masterful delineations in sepia, in many respects surpassing the lithographs in quality, and certainly deserving of separate publication.

(Continued from page 120)

with an English aristocracy living elegantly in villas of impecunious Rome nobles. He was welcomed into the Society of Englishmen—20 painters, sculptors, and architects—"all lively and enthusiastic." The author describes Catherwood's temporary involvement with Lady Westmoreland, allowing Severn an opportunity to escape when Catherwood took up residence at her villa. But in time a break came and their planned trip up the Nile was abandoned.

There followed studies and drawings in Rome, then of Greek remains in Sicily. In Greece, Catherwood made castings with his own hands. But Greeks and Turks became involved in war, and Catherwood and a friend escaped into Syria. Dressed as Arabs they made their way to the Nile. It was just when "Egyptianism" had taken hold of European intellectualism, so Catherwood met Englishmen and Frenchmen earning fame in exploration. In 1824, with two friends, he went over a thousand miles up the Nile and into Nubian country. They drew and they mapped clusters of ruins. A meeting with Robert Hay was to set the dial for archeological history.

But the time came when Catherwood's three years of travel had used up his traveling money. He was obliged to return to England. There he worked on architectural projects, but his heart remained in the Middle East. When Robert Hay asked him to return to join an exploration, he accepted. With a retinue, they investigated every known and unknown ruined site along the Nile.

There followed an expedition with Arundel into the Near East where Catherwood, able to speak fluent Arabic as well as Hebrew and Italian, dressed as an Arab. There he accumulated a mass of material. Surveys included the Baalbek ruins and Jerusalem. He gave away many drawings to interested scholars, an act he later regretted and one which contributed toward his obscurity.

•

After a return to New York, and failure in getting architectural commissions, then a disappearance into South America, Catherwood showed up again in England in 1845. He now became an engineer and a railroad builder! After working on the Sheffield-Manchester Railroad, he was offered a contract for surveying the first railroad in South America. After spending some time in British Guiana in 1845, he returned to England with a report that made a favorable impression. He returned to supervise the work, but encountered formidable difficulties. By 1849 he 'had drunk his drench' and his agreement was terminated. But he was not through with railroads. Stephens had acquired 47 miles of track across the isthmus of Panama, and had bought up the French franchises of two others. Catherwood's affection for Stephens induced him to accept a job, but soon he was suffering from malaria and had to be carried to a ship bound for California.

There—now an American citizen—his health revived quickly and he helped build Yerba Buena (San Francisco), erecting warehouses and wharves. In Oregon, he reported to the U.S. Government on the practicability of forming settlements on the Columbia River. Back in San Francisco, he became involved in railroads and speculations and was made a consultant-engineer. He purchased land and railroad stock. His enthusiasm once more rekindled, he left for England, crossing through Mexico. On his return voyage, in 1854, his ship, the "S.S. Arctic," rammed head-on into a French vessel in a fog, and was lost. Reported among the missing was Catherwood. So came to an end on earth the adventures of this ever restless soul, who contributed so much and received so little thanks.

GREVILLE RICKARD

(Continued on page 124)

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REVIEWS

(Continued from page 122)

IMPORTED INDIGENOUS

The Architecture of the Southwest. *Indian, Spanish, American. Trent Elwood Sanford. W. W. Norton & Co., 101 Fifth Avenue, New York, 1950. 312 pp., illus. $4.00*

The author has made a painstaking pilgrimage of the architecture of the Southwest, beginning with pueblos of the 11th Century in the area now New Mexico, tracing the course of the Spanish explorers who arrived in 16th Century — though little was built under Spanish direction until the 18th Century was just around the corner. He then describes Spanish architecture in Texas including one secular structure, the Governor's Palace in San Antonio now beautifully restored but at one time a barroom known as "The Hole in the Wall." He traces Spanish exploration up the California coast where most of the architecture was busily copied from plates of the orders of architecture, simple or miscellaneously ornate, depending on the taste of the mission priest-builder and the skill of available workmen. It is a surprise to discover that most of the "indigenous" Mission architecture of California was created from the years just before the American Revolution to our War of 1812, during which the Mexicans threw off Spanish rule. Today's Missions along the Coast are largely restorations within the present century.

The early pueblos are described in so dull a fashion that it is difficult to plow on. But the author takes fire as he describes the early Spaniards venturing forth to discover "Cities of Gold." The pueblo Indians were at first amazingly hospitable, considering the didactic quality of the friars, when they turned to ancient ceremonials in time of drought, their old gods were destroyed and their tribal priests were killed, resulting in a sudden revolt that drove the early Spanish rulers back to Mexico minus most of their missionaries. And to this day, most of the old Missions in New Mexico belong to the Indians, who use what they choose from both cultures.

Most of the Texas Missions show the ornateness of Old Spain and have been rescued, as have *the California* Missions, by sentimental Chambers of Commerce.

The California Missions are more restored than original, most of them having been completely deserted by 1850, so that it is hard to understand the author's feeling that this is an "indigenous" architecture. The reader is left with a sense of the complete ineptness of the Spanish as both colonizers and converters, and bewildered by the insistence of Californians in clinging to so full a tradition.

One postscript: the Famous Larkin house in Monterey, first in the "Yankee" style and derived from "his native New England," with a second-story porch on three sides—looks more like Charleston or New Orleans than old Boston.

M.A.M.

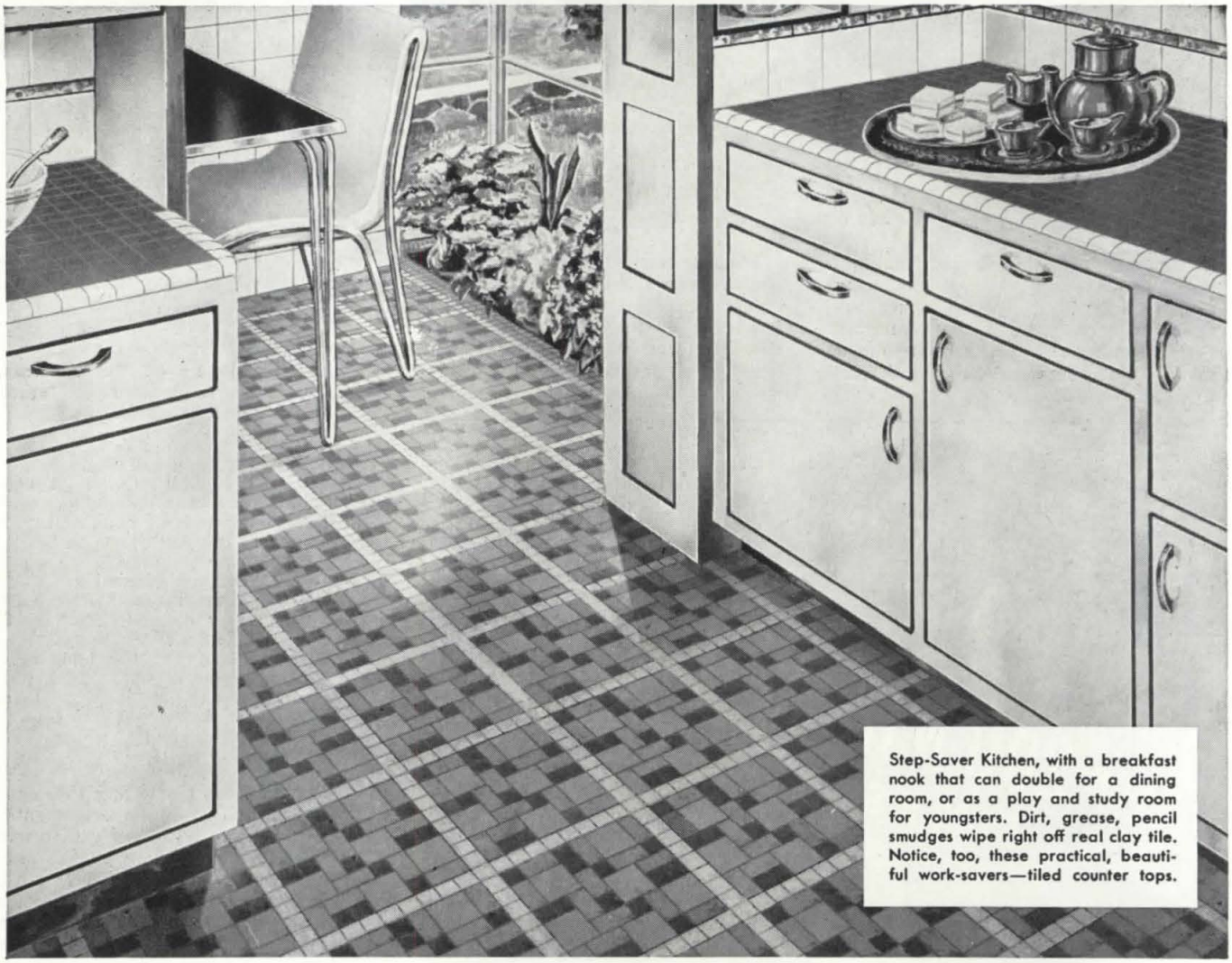
RICH SOURCE

Ceramics and Potterymaking for Everyone. *Carol Janeway. Tudor Publishing Co., 221 Fourth Ave., New York, N. Y., 1950. 126 pp., illus. $1 paper; $3 cloth*

This book is the first of its kind to devote especial attention to the making of tiles and to indicate their varied uses. A restudy of this method of wall decoration by architects and interior designers will yield a rich source of decorative treatments, in addition to those so ably presented by Miss Janeway. Interior glazed wall panels as shown in her book, or large areas on exterior walls treated as carved surfaces composed of tiles, are eminently worthy of consideration.

The thoughtful presentation of the technical material in this book makes it possible for designer or architect to carry out his own experiments.

ALBERT JACOBSON
Wilton, Conn.



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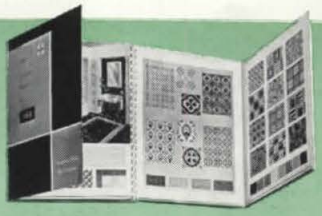

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By BERNARD TOMSON

In the hazardous days ahead for building, an architect with a substantial project may find it evaporating into thin air prior to the time preliminary sketches or even the program are agreed upon. What compensation is he entitled to in such event?

The standard A.I.A. contract employed when a multiple of the technical personnel costs forms the basis of payment for professional services, covers this situation. When the agreement is terminated prematurely, the following clause applies:

"Upon such termination the Architect will be entitled to the payments due or incurred on account of the provisions of this agreement up to the date of such termination."

The provisions of the contract, to which the above clause refers, state the basis of payment as follows:

"The Owner agrees to pay the Architect for such (Professional) services,

(a) A sum equal to . . . times the Technical Personnel Costs, as stated in Article 2 hereinafter set forth, paid or incurred by the Architect for work performed in connection with this project by the Architect's personnel.

(b) Reimbursements (for the Architect's costs) as stated in Article 4 hereinafter set forth.

(c) The cost for the time actually spent by the Architect (or any partner thereof) on this work, which cost is hereby fixed at the rate of $ . . . per hour of time so spent."

●

However, most (including the standard A.I.A.) owner-architect agreements provide a definite basis for computing the architect's fee only after the preliminary sketches have been completed. Before that stage is reached, a substantial amount of time and effort will be expended in preliminary work. The amount of the architect's compensation, should the project be abandoned at this point, is not easily determined unless additional explicit provisions are inserted in the agreement.

In the A.I.A. contract which provides for a "fee plus cost" payment for architectural services, the following clause governs the architect's right to compensation on the abandonment of a construction program:

"In case of the abandonment or suspension of the work or of any part or parts thereof, the Architect is to be paid in proportion to the services rendered on account of it up to the time of its abandonment or suspension, such proportion being 20% upon completion of preliminary sketches and 75% upon completion of working drawings and specifications."

The A.I.A. "percentage of the total cost" form of fee arrangement contains the following provision:

"If any work designed or specified by the Architect is abandoned or suspended, the Architect is to be paid for the services rendered on account of it."

●

Since the reported cases on this subject have dealt with projects terminated at some point following the completion of

(Continued on page 128)

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(Continued from page 126)

preliminary sketches, the courts have found little difficulty in computing payment on the basis of percentages due, as set forth in the contract.

If the contract specifies no method for determining compensation in the event it is terminated before completion, the architect, in order to recover for work already performed, must base his claim on the "reasonable value" of his services. This would seem to apply not only to contracts which make no provision for percentage payments at certain stages, but also to the situation here under consideration, where there is no stipulation for a fee for services rendered prior to the submission of preliminary studies in the event of abandonment. The burden then devolves on the architect to prove the "reasonable value" of his services.

Under one architect-owner contract, stipulating a given percentage of the cost of the work as the architect's fee, the architect had not supervised the construction of a portion of the building for which he had prepared plans and specifications. For his services in preparing the plans for that portion, the architect sued in *quantum meruit*, that is, for the "reasonable value" of the services he had rendered. The court held that this was a proper basis for recovery since the contract provided no means or data by which the relative value of the plans, as distinguished from the value of supervision of the work, could be ascertained. The architect in that case was permitted to establish his claim by producing competent witnesses to testify concerning the "reasonable value" of such services.

Where a percentage of the cost agreement is entered into, payments to the architect are usually computed on the reasonable cost estimated by the architect, or if bids have been received, on the lowest bona fide bids, if the contract is abandoned. However, even such provisions cannot be given effect if the work is stopped at a point where no price can be estimated and no bids received. Here again, the architect will be required to produce independent proof of "value" of his services.

●

The above illustrations amply point out the desirability of inserting some clause in the contract which will relieve the architect of the difficult burden of proving the "reasonable value" of his services at the trial, and which may well avoid litigation concerning his right to recover for preliminary services. Three bases upon which his fee could be computed in the event of a premature abandonment of the contract will be suggested here.

(Continued on page 130)

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(Continued from page 128)

The *first* is a fixed retainer, which would constitute the minimum payment to the architect for his services prior to the completion of preliminary studies. This could be a specified amount, or it might be expressed in terms of some workable formula, such as X times draftsmen's cost. This is similar to the provision for liquidated damages found in many contracts, which is intended to compensate one party for a termination of the contract by the other. By and large, such provisions are upheld if the stated figure, considered with respect to the scope of the entire project, is not, according to the courts, inequitable or unconscionable.

The importance of specifying exactly the purpose such a retainer or liquidated damage clause is to serve, cannot be overemphasized. If the provision does not clearly state that it is applicable only in the event that the work is stopped before preliminary studies are completed, it is in danger of being construed as applying to an abandonment at a more advanced stage in the execution of the contract. Thus, under a given contract where the architect was to be paid 3½% of the contract price on the awarding of the contract, and 1½% on the completion and acceptance of the building, but in the event the employer failed to erect the building within a certain time, the architect should receive $250 "for preliminary services rendered in connection with his contract," the court held that the contract provided for payment on one basis if a contract was awarded for construction, but on the basis prescribed by the proviso if the building was not erected. Therefore, since the employer had abandoned the project without having let a contract for construction, the architect's recovery was limited to $250 although he had prepared not only preliminary plans but complete working drawings and specifications as well.

A *second* method for computing the architect's compensation is on a cost plus basis prior to completion of preliminary studies. This envisages payment to the architect of all actual expenses incurred by him in connection with the preliminary work and in addition a stipulated amount. It is analogous to the standard contract form providing for a cost plus fee method of computing the architect's compensation for full professional services.

A *third* possible stipulation might provide for payment on the basis of the amount of time the *principal* spends on the preliminary work. This method, of course, contemplates that the principal will spend substantial time on the preliminary details, and payment would therefore be made for his time rather than that of a draftsman.

●

The clauses suggested above do not preclude a consideration of other types. No one formula will prove suitable to all types of contract. In addition to the cost plus and percentage of the cost contracts already mentioned, other types, such as contracts stipulating a lump sum fee for professional services, contracts under which the architect is paid a salary, and others, will demand special clauses.

Today, more than ever, the architect should adequately protect himself against the adverse effects of a possible premature termination of his contract by inserting a clause in his contract which will provide specifically his exact compensation in that event.

●

Consider the incorporation of one or more clauses reading somewhat as follows:

(Continued on page 132)

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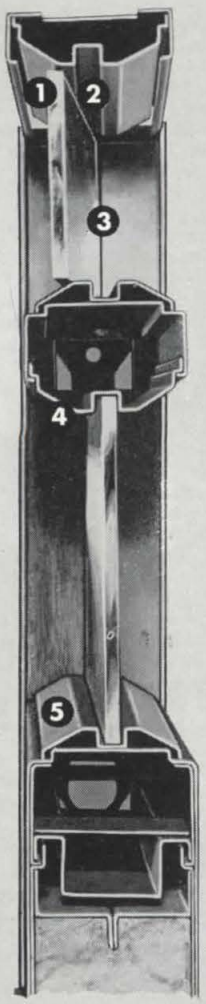

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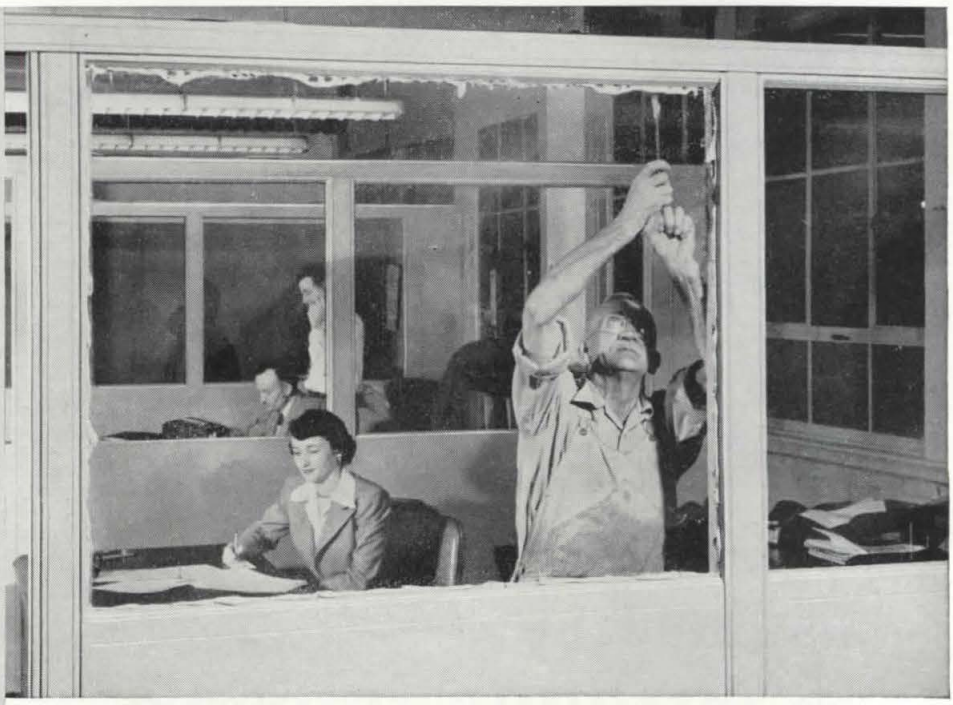

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(Continued from page 130)

1. A retainer fee of $ . . . shall be due and payable upon the signing of this Agreement and shall constitute the minimum fee payable hereunder. The said sum shall be retained by the Architect and shall be applied on account of the final payment for the Architect's fees.

2. Services rendered pursuant to Article (insert number of article referring to abandonment of work) shall be billed by the Architect and paid for by the Owner at the rate of "drafting" costs plus . . . %.

3. In the event of an abandonment of the contract, prior to the completion of preliminary sketches, the Owner agrees to pay the Architect for services rendered:

(a) A sum equal to . . . times the Technical Personnel Costs, as stated in Article . . . hereinafter set forth, paid or incurred by the Architect for work performed in connection with this project by the Architect's personnel.

(b) Reimbursements as stated in Article . . . hereinafter set forth.

(c) The cost for the time spent by the Architect or any partner thereof, on this work, which cost is hereby fixed at the rate of $ . . . per hour of time so spent. (a, b, & c are taken from the "multiple of technical personnel costs" A.I.A. contract.)

Background of Bannockburn Project (See page 65)

Group Housing Co-operative, the Washington, D. C., organization that in 1946 was instrumental in acquiring the golf course for the Bannockburn group shown on pages 65-67, spent the war years discussing a community ideal. Going even beyond the "integrated community" idea of the Ladera venture in Palo Alto, California (pages 68-71), their goal was nothing less than a "wholly balanced community," a social concept, as Vernon DeMars points out, aimed at providing for a wide range of incomes and range of choice in dwelling types, from small apartments to garden duplexes (row houses) and detached houses. Apartments, they argued, would be most desirable for younger and older couples and would free a large area for park use. The duplexes would provide inexpensive housing for those in the lower income brackets, and the detached houses, the group hoped, would range from $9,500 to $20,000 in price.

Since the Bannockburn property was zoned solely for single-family residential units, preliminary work by the architects—Burket, Neufeld & DeMars—was directed mainly toward an application for rezoning. In the hearing before the County Commissioners, two schemes

(Continued on page 136)

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(Text continued from page 132)

were presented. *Scheme A* showed the land as it could be subdivided under present zoning. *Scheme B* presented the scheme for the "balanced community" concept.

In *Scheme A*, with all possible area of the 125-acre site developed as detached house sites on minimum lots, some 290 families could be accommodated, with a strip of but three acres remaining as a park.

Scheme B showed the advantages of including a limited number of multiple units. 500 families could be accommodated, half in detached houses on large lots; 100 in garden duplexes, and 150 in three, eight-story apartment buildings. In addition, *Scheme B* included a school site, a shopping center and a clubhouse, and allowed a total of 30 acres for park and recreation areas.

Organized opposition from neighboring property owners, however, defeated the rezoning request. With the Co-operative's preferred plans thus brought to a halt, the decision was made to proceed with the "pilot project" group of houses discussed in this issue.

NOTICES

NEW PRACTICES, PARTNERSHIPS

W. H. WIECHELMAN, JR., Architect, 7113 Euclid Ave., Cleveland 3, Ohio.

CLETIS R. FOLEY, JOHN BYRON HACKLER, Architects, 335 Court St., Pekin, Ill.

SIDNEY KALIN, Architect, 2505 W. Cold Spring Lane, Baltimore 15, Md.

LEVON SERON, Architect-Engineer, 81 N. Chicago St., Joliet, Ill., has now been approved and registered for the practice of architecture in Indiana and Wisconsin.

FRANK MONTANA and SUREN PILAFIAN, Architects, 153 E. Elizabeth St., Detroit 1, Mich., announce the dissolution of their partnership. MONTANA has accepted the position of head of the Department of Architecture at the University of Notre Dame in Indiana. PILAFIAN will continue to practice architecture at the same address.

BARNES & REINECKE, INC., Product Designers and Engineers, 230 E. Ohio St., Chicago, announce that their Product Styling Division has separated from the parent company and has become an independent organization. DAVID PAINTER, JAMES TEAGUE and VICTOR PETERTIL, former heads of that divison, have formed the partnership of PAINTER, TEAGUE & PETERTIL, to continue activities in product and package design at the same address.

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By CARL FEISS

There is a refining influence from the arts of Design on a prepared mind which is as positive as that of music, and not to be supplied from any other source. Emerson

Nothing great was ever achieved without enthusiasm. Emerson

So we come to our third discussion on the teaching of Design and the second on "Basic" Design. Our first article was last October, then the December column had three contributions which ought to be checked before reading this month's. Skipping about as we do with long time lapses makes it difficult for the reader to follow any sequence of thought or consistency in ideas. This is perhaps a bit easier on me than you, since I keep a file of back issues handy to check on. Several people have said that I have enough material already to make into a book. Boswell's "Malahide" papers now at Yale will probably fill 40 to 60 volumes. May I commend these to you instead; it will save me the bother of trying to make steak out of hash. Besides, I have made every attempt to avoid the formal presentation of ideas. Let's just remain friendly, informal, and gently controversial, and forget the Morocco binding.

This column contains, below, the fourth and final (for the present) paper resulting from my request to four Basic Design professors to answer the questions listed in the December 1950 OUT OF SCHOOL. Professor Duncan Stuart did not see the other three before sending me his comments so what he says here is to be added to the other three and considered in the same light. The statement from Associate Duncan R. Stuart, Associate Professor of Design, School of Design, Department of Architecture, North Carolina State College, Raleigh, N. C., follows:

Question I

The questions you have raised with reference to the teaching of Basic Design are ones which seem to be perennially with us—to the point of having become academic. In the light of our recent conversation, I realize that you are now serving as a somewhat impartial medium through which they can be voiced. These questions have an unblushingly partisan flavor for both sides of the argument. This suggests, on the surface, that there is a deep and abiding difference between the schools which have grown out of the Bauhaus ideology, and the ones which cling more closely to the Beaux Arts system. It is further suggested that the design world must, of necessity, take one of the two systems to its bosom in order that the student may know, by example, what his choice must be.

Question II

The regrettable part of this is that the student, whether he realizes it or not, has not much choice to make. For the newer developments in the teaching of design as characterized by the Bauhaus, are programs which differ from that of the Beaux Arts system not in kind so much as in degree. Both systems are still very much in the same family, though the Bauhaus has undertaken a much livelier program and is, because of this aliveness, much more inviting to the student. Both methods present a seamier side that suffers from the

(Continued on page 140)

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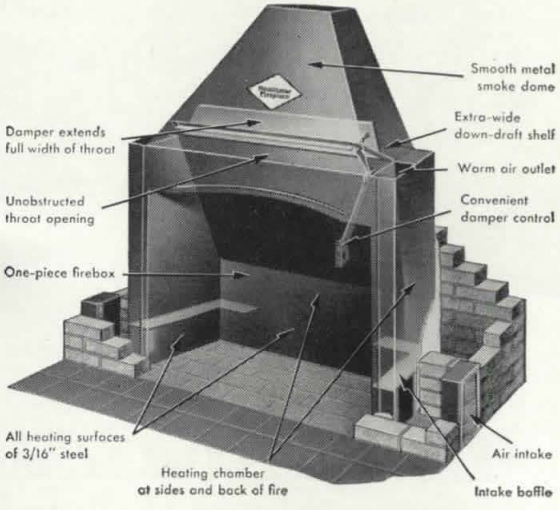

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out of school

(Continued from page 138)

same ailment. They both lend themselves in a high degree to a sort of ostentatious superficiality on the part of the student, outfitting him with unfounded confidence in his abilities as a designer, and makes him, unless otherwise naturally endowed, an insufferable bore. There is, as well, something in both of these systems which causes many students to deify individuals rather than principles. Thus we see the followers of the many cults caught in the blinding glare of "greatness" not of principles, but of egos.

Perhaps these difficulties are inevitably a part of any system of design education. It would seem, however, that elements of these systems are responsible for this state of affairs. They both establish for themselves a sort of "a priori" toward which each student is prodded with whatever means are at hand. Both assume a series of unvoiceable absolutes, which by virtue of their assumed divinity, must be taken for granted by the student. And the student, faced with the problem of relating ideas to experience, escapes the necessity of really doing so by accepting the mannerisms of his particular champion as ultimate goals. An indication of this is seen in the way the methods of some contemporary discoverers (i.e. Mondrian, LeCorbusier, Van Der Rohe, Wright) became academic so quickly—almost before they became of age. Indeed, the problem seems no longer to be one of the fight for the "new ideas" so much as it has now become a fight to prevent the growth of a new academy. An interesting facet of this is seen in the way so many architectural students attack a problem visually by first establishing a neat module on the virgin paper. Much of this can be laid at the door of an "a priori" which is based only superficially on experience. These systems are no more closely connected with the world of man's interactions with externally perceived phenomenon than was the "a priori" of Aristotle. They seem to work sufficiently well that the less adventuresome can find no reason to question.

We do live in a world which supplies us with experiences through various forms of sense channels. From the sensations we receive via these media we seem to build imaginative images about the reality of the world around us. We construct images and bring them forth creatively by novel reassociation of experience—the net result being a heightened form of experience—a distillation or essence. These novel creations do not alter, but rather affirm the basic character of real and profound experience. The only possible "use" that an "a priori" *may* have under these circumstances is one of insuring the system that no truths contrary to its tenets will be supported by its followers. Another great difficulty experienced by these systems is that they undertake to answer questions which have not, as yet, risen in the students' minds—and are not destined to arise until a later period in their training—at which time it must all be gone through again. One

(Continued on page 142)

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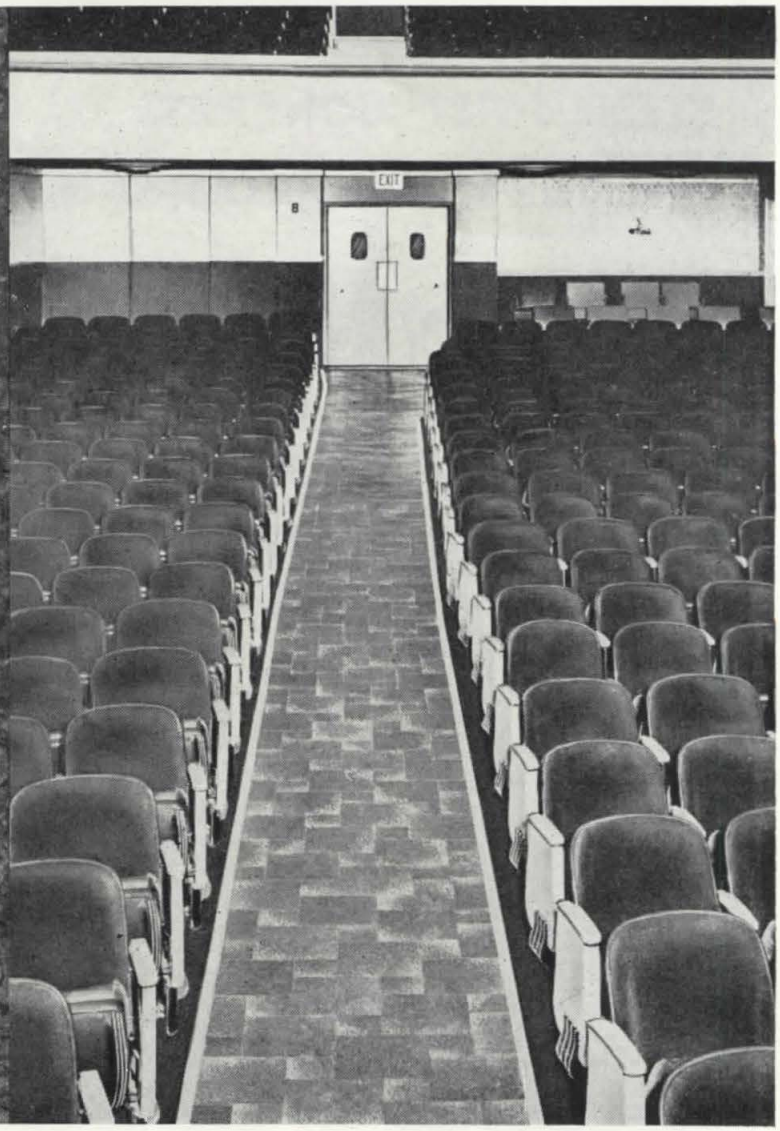

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out of school

(Continued from page 140)

might conclude that the difficulties that are experienced here are ones which have their origin in the "a posteriori" generalizations of exceptionally perceptive and talented discoverers—which have been converted to an "a priori" state of static "axioms."

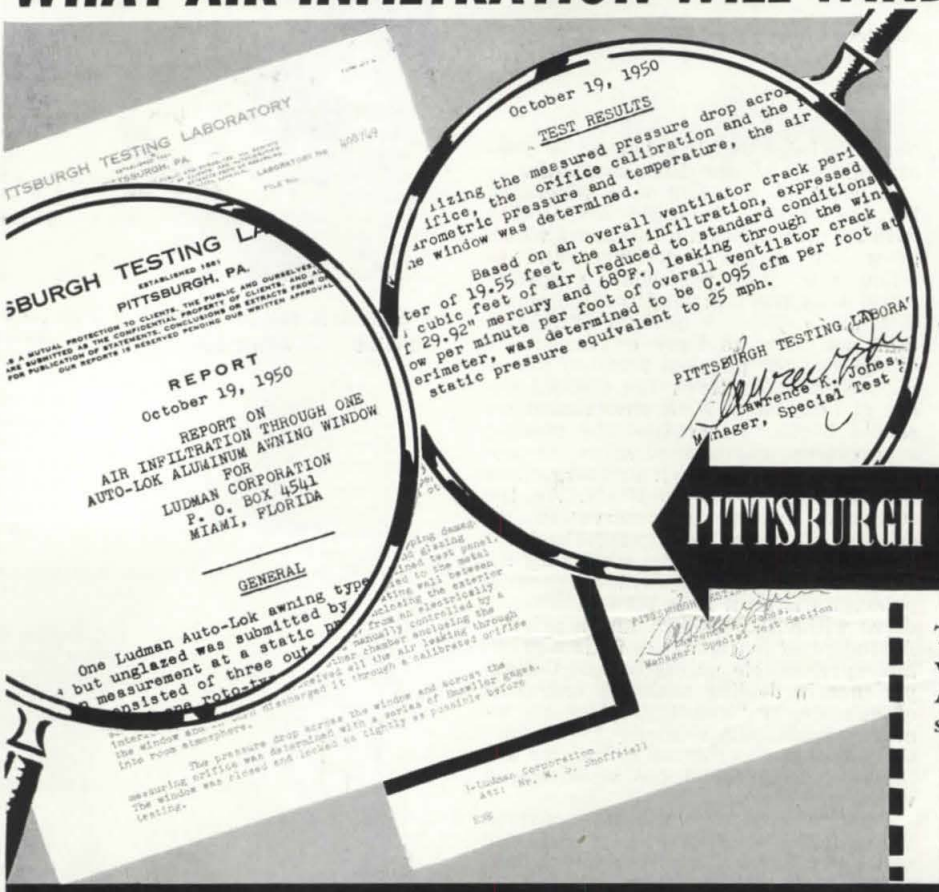
Question III

A disturbing situation which exists today can be seen when the student moves from his basic course in generalized (abstract) design principles into a more specialized field such as architectural design. Many of the students who seemed to have come through basic design with ease and fluency are seen to abandon their advantage at the first "practical" encounter. It is alarming, thus, to see the speed with which a student can invest himself with the ability to deal passingly well with "space modulators, light modulators, tactile charts" etc., and pass on to show how little he really comprehended *the import* of the exercises. Again, the remarkable contrast one finds between the abilities of a student in a drawing and a design class shows clearly that the products of the design class are no index to the student's perceptive abilities, and gives rise to the question as to the student's real abilities to move in the quasi-internal world of imaginative abstraction—regardless of the apparent elegance of his solution to design problems.

As a step toward bringing about a more adept system for the teaching of purposive visual organization, I would suggest the following. First we must undertake to help the student build up his abilities to perceive the world around him with greater clarity. Though we cannot put visual memories into his experience, we can give him methods whereby he can do so with greater ease. This should be coupled with problems which force him to generalize the experiences he has had and conclude from these generalizations, tentative principles. However, visual memory is perhaps the greatest lack which our students bear. Far too many of them are handicapped with a paucity of images on which to draw—too little money in the bank. To alleviate this, our beginning should be from the point of view of giving the student the proper kind of earning power, so that his storehouse of visual raw material will be continually enlarged, and readily available. Couple this with problems which force the student to formulate principles of organization. It is necessary, as well, to submit programs which require the development of the necessary technical skills, so that the student may bring forth images of sufficient clarity *that they* may be evaluated by himself and others. With this we must also have a varied series of visual experiences available to our student—through the media of direct physical contact and through an examination of the history of man's efforts in image making. Finally, but not least by any means, we must see that the student embarks upon as broad an investigation of the sum total of all man's pres-

(Continued on page 144)

WHAT AIR INFILTRATION WILL WINDOWS DEVELOP?



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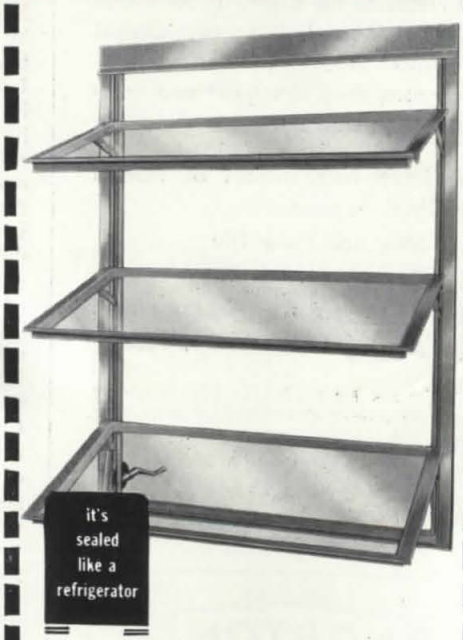

Only patented AUTO-LOK (automatic locking) Hardware closes vents tight against the frame and compresses the elastomeric vinyl weatherstripping against the entire perimeter of each vent. This action actually "seals Auto-Lok like a refrigerator."

out of school

(Continued from page 142)

ent knowledge in all fields, as is commensurate with the time available.

In short, I feel that it is necessary for the student to begin his studies with an investigation of elements which grow out of his experience, and to follow a truly "a posteriori" program. I feel that the best way to accomplish this is to place a greater emphasis than we seem to have on the direct analysis of the physical world of visual phenomenon. To teach the student the art of observing. With observation we should begin to introduce the student to problems of generalization, or abstraction through which he reorganizes his experiences imaginatively. As the student's fluency in observation increases, questions of a generalized nature inevitably arise, and when they do, the time for investigation of general principles is ripe. It is then possible to do so without the aid of an "a priori." A student of mathematics finds algebra incomprehensible unless he has the experience in dealing with the operation of number, or "counting." Just so, we must enable our students to "count" their visual experiences before we ask them to comprehend the workings of visual algebra.

I hope that these words have covered the material which you had anticipated and I thank you for giving me the opportunity to express them.

•

Now, Professor Stuart is mistaken if he believes that I serve as an "impartial medium" here or anywhere else. I am afraid that impartiality just ain't in my blood. I like taking sides and howling. You may remember that several commentators on this column have gotten mad. Well, so have I. Too damn few architects ever get mad except when another grabs a client away by doing preliminary sketches for free or undercuts a fee or by leaving a bottle of Scotch in a conspicuous spot.

My four contributors don't make me mad. I certainly appreciate their willingness to go on record and the completeness of their replies. As far as I know, these four brief statements constitute the first time that teachers of contemporary thought in Basic Design have placed their methods and ideas before the periodical public. These are good men and true and deserve your plaudits.

Now for the substance. Frankly, I find something important missing in these statements. It is an item mentioned directly and indirectly in each. What is missing is a certain quality of emphasis. The word "function" implies at all times the human usefulness of architecture. Harlan McClure regards "function, structure, and esthetics" as the three key elements in design with "function" as the pivot. There

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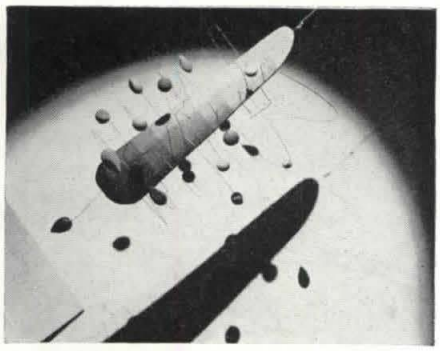
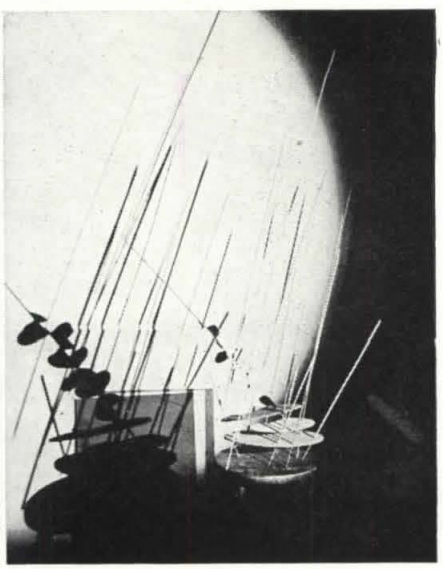


A problem in the investigation of color-value materials. *Photo: School of Design, N.C.S.*



Investigation into radial tendencies, with secondary investigations into structural uses of relationship. *Photos: School of Design, N.C.S.*

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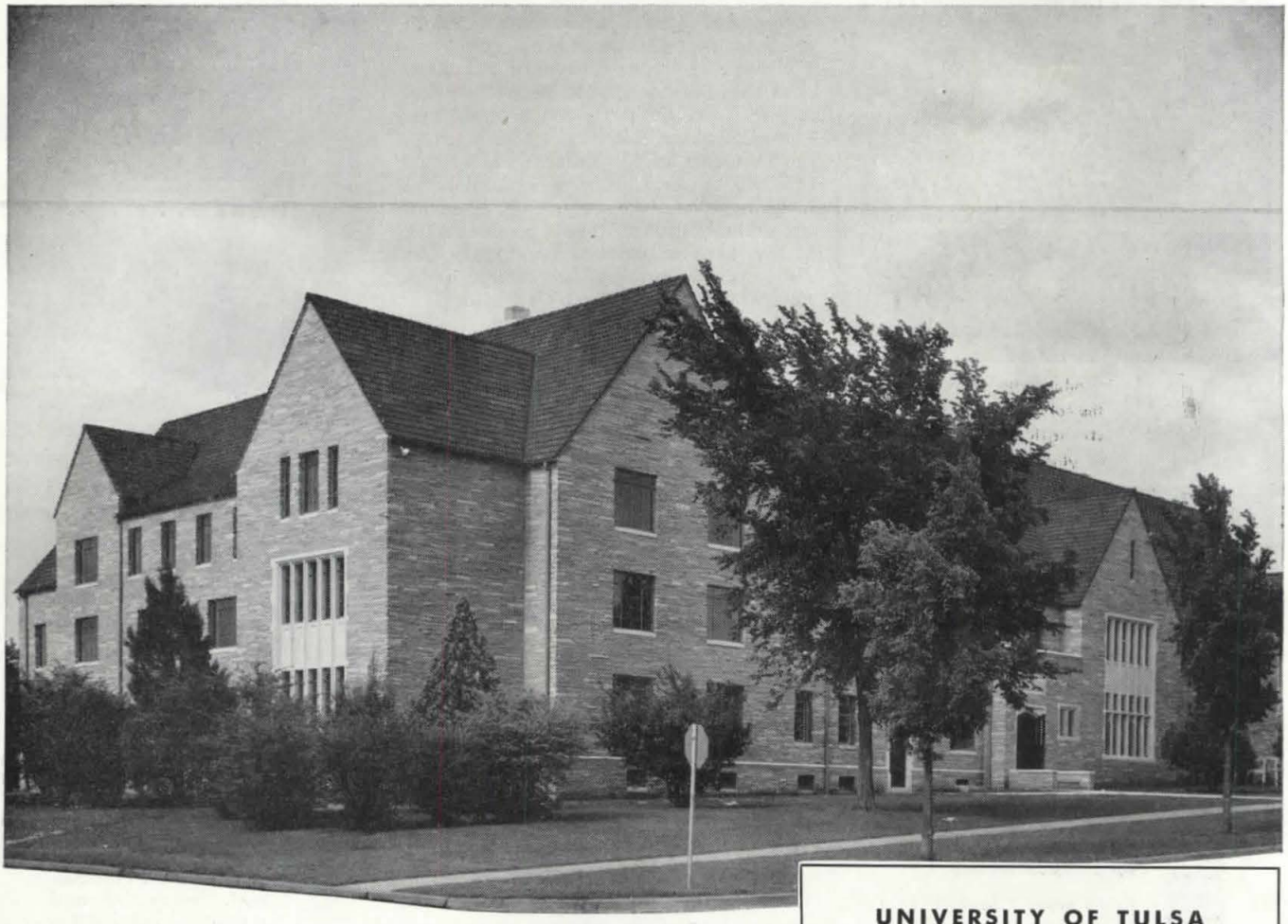

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out of school

(Continued from page 144)

seems some lack of decision between the four contributors as to when *function* appears in the scheme of teaching. Howard Miller feels that the application of Basic Design comes via the addition of *use* to abstractions. Eugene Mackey, in his carefully planned statement, stresses the continuity of architectural meaning from the beginning. Duncan Stuart is disturbed that a student with all too little experience vocabulary has difficulty in forming the bridge from abstract design to architectural design. I am perturbed in all of this because the beginning is with abstraction and not with reality. For it is here that I am afraid we are still foundering.

Why do we start our students off with abstraction? The understanding of the abstract is one of our minds' most difficult achievements. In the first place, pure abstraction in any art form—that is, music, sculpture, painting, poetry or literature—is an intellectual ultimate. A Bach fugue is the purest kind of abstraction and may contain the peak in beauty of form, color, light, and sensuous response. Absolute abstraction in painting and sculpture has been achieved rarely with Mondrian, Kaudinsky, Picasso, Arp and Klee as protagonists. Most of these men, Braque, Lipchitz, Miro, and Brancusi included, work in the field of concrete abstractions or derivatives, i.e., Brancusi's "Bird in Space" is, after all, an art form with a subject—*bird*. Designs made with mandolins, melons, and montages, excellent as they may be, are still designs made from specifics from which images and associations are both consciously and unconsciously drawn. When James Joyce or Gertrude Stein broke words out of the restrictions of established grammatical form they were working with letter combinations that had specific meaning. After all, "A rose is a rose" gives emphasis to the rose.

•

As I write this, I am listening to a Mozart symphony. On the wall facing me is a titleless Miro abstraction made up of etched lines and subjectless irregular forms. I am enjoying both the aural and occular stimuli. Neither interfere with my thoughts here as my reaction to them is emotional and sensual and for the moment at least non-intellectual as far as they are concerned. Now, if I were listening to "The Star Spangled Banner" and facing a reproduction of "George Washington Crossing the Delaware," my attention would be diverted at once. The art forms are no longer abstract. They are concerned with realities growing out of both training and experience. The plastic means

(Continued on page 148)

"Hospital-Quiet" Elevatoring

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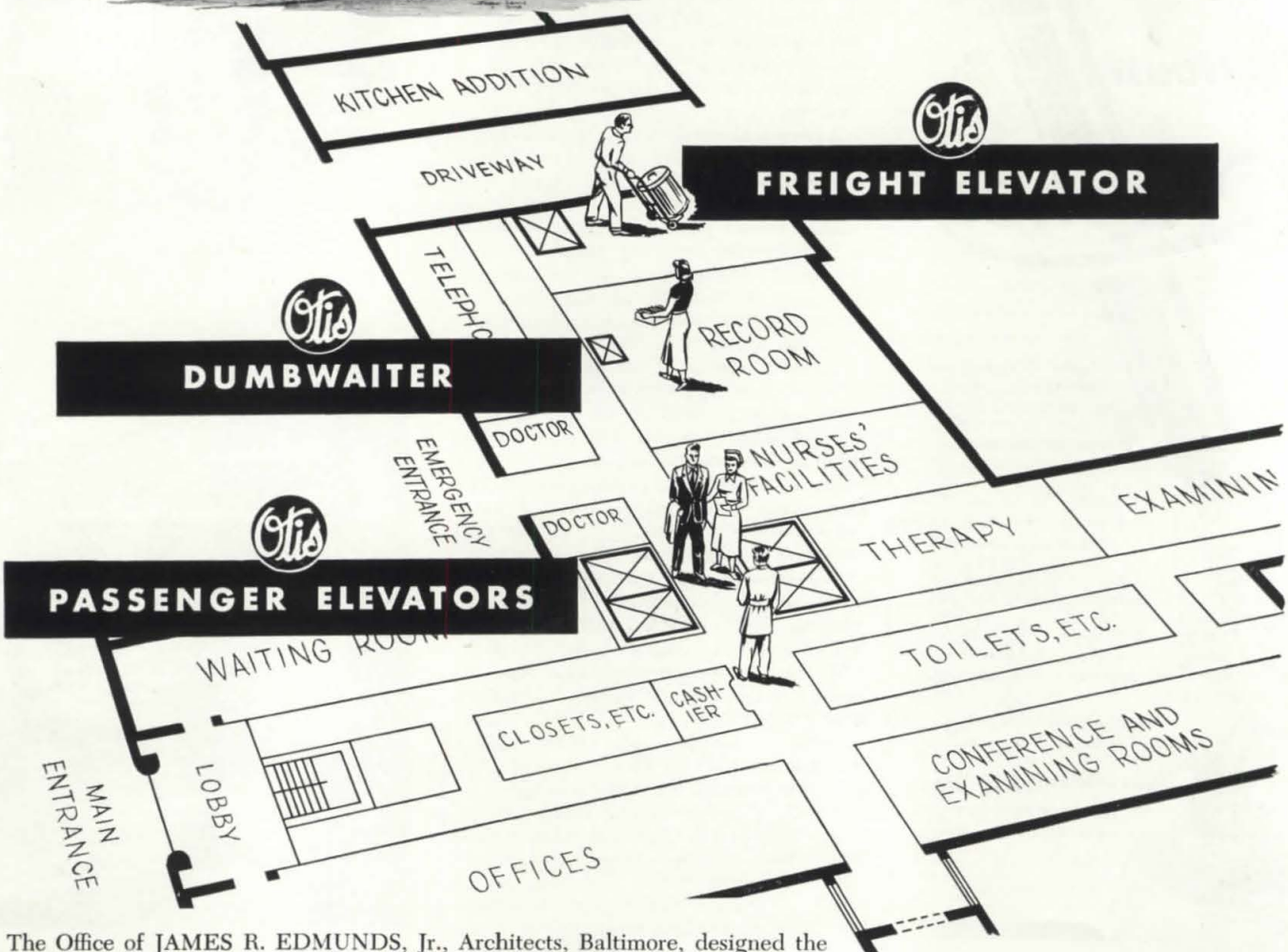

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out of school

(Continued from page 146)

are subjugated at once by subject which in turn controls my intellect. I cannot escape the subject nor it me.

Architecture, by its nature, cannot ever be abstract. Elements of architecture may be abstract. D'Espouy's plates of classic detail, on which I teethed, had no more meaning than complete abstractions did to me as an unintellectual architectural freshman. The moduli of classic forms, or those developed by Mondrian, Corbu or Gropius are the results of sophisticated intellects and are as highly developed as Bach's exercises for the Well Tempered Clavicord. To push a fledgling off from these lofty perches, whether classical or contemporary, is to tempt fate. It is one of the reasons for so many crash landings.

And yet there are very good reasons for the present day method of beginning with abstract forms. In the first place, the status of domestic art forms in the country and in most of the world is so degraded that any teacher facing the taste conditioning of the average first year man, wants to wipe the slate clean and start the lad over again from zero. Secondly, with the varied provenance of students in our schools, we are both tempted and compelled to average them all off so that there can be some kind of basing point. Third, with the complexities and terrors of modern life there is comfort in simple forms and elementary and primitive ideas, shapes, colors, and textures. Fourth, the conservative backgrounds of most of our youngsters, coupled with unimaginative high school education, shackles and inhibits them to the point of strangulation. We seem to be able best to penetrate the defense mechanisms thus established by a shock treatment rather than by persuasion.

There are these and many other reasons, as well as those expressed by our four friends, for maintaining some abstract concepts in our Basic Design training. But I believe that what I have said about abstract design as a whole must be considered in the building of a Basic Design curriculum. I revert, therefore, to the lack of emphasis in the four statements, or lack of emphasis of the human factors in design. Stuart came closest to what I have in mind when he puzzles over our attempts to substitute vocabulary for experience—or maybe I misinterpret him—perhaps "all men's knowledge in all fields," which, the Lord knows is broad enough, does include my thought.

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Simply, it is this: comprehensive architecture is nonabstract. I go back to my October story. In that I said that

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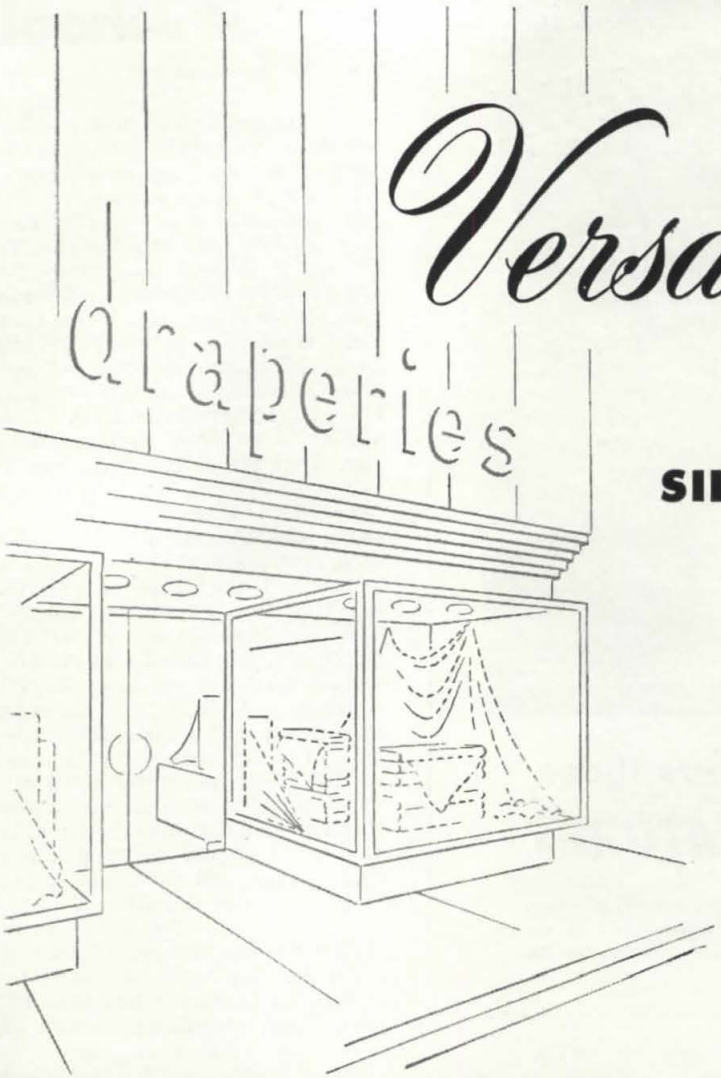

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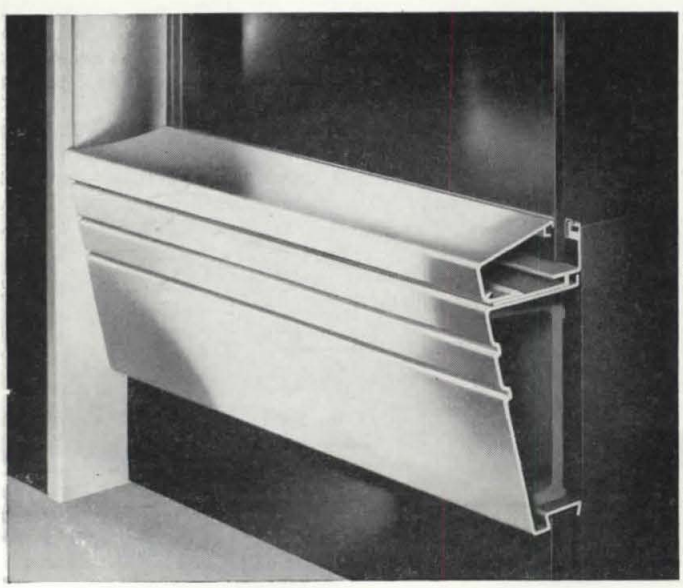

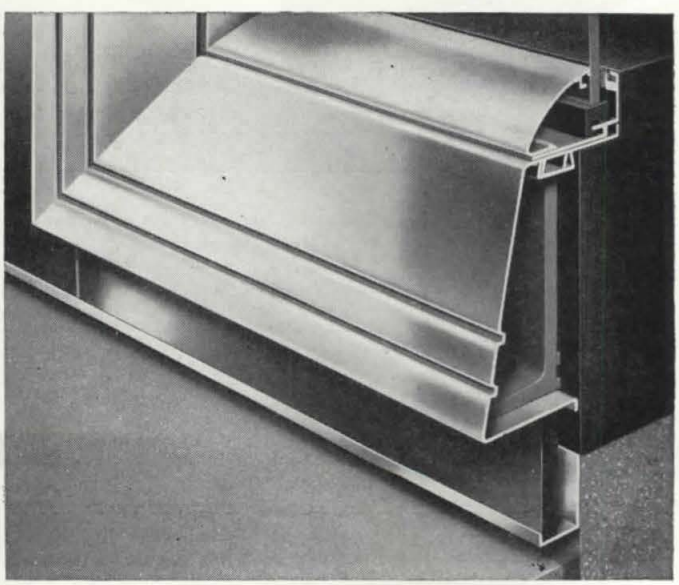

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out of school

(Continued from page 148)

"great progress has been made in a return to the natural and fundamental logic of human requirements and the resources at our disposal for the satisfying of these requirements." Recently it has been my privilege to inspect informally several schools. In these I find excellent progress in the beginning year. In all, there is evident a sincere effort to find a good way to get started. In all of them the study of man or adequate study of man, his family, and his environment, are lacking. Or if they appear, it is not until much time has passed on the second class fundamentals.

I believe that Basic Design must begin with man, his shape and size, his movements, his likes and dislikes, his habits and traditions of culture, his sensitivity to nature, and his general orneriness. I do not yet believe in Modulor, Corbu's dimensional robot, but scale is man size and we must know what man size is. I believe that Basic Design must begin with nature, its shapes and sizes, its color and forms, its materials, its light and dark, its temperatures, its likes and dislikes. I believe, further, that Basic Design must begin with *man and nature* together, for man requires architecture and both are dependent on the elements of nature. At least one teacher in every Basic Design course should be psychologist enough to explain not only man's reactions to man and to environment but also to help each student translate his own experiences into vocabulary.

Basic Design, as I see it, then shapes up into the form of Leonardo's notebooks—sketches of ideas based on man and nature, personal, varied, intense, free, mathematics, physics, and esthetics. Nothing too great or too small. And all building toward the understanding of what are the underpinnings of comprehensive architecture — man living freely and with pleasure in the environments provided for him by artifice and God.

NOTICE

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When the lockset advertised by Kwikset Sales and Service Company on Page 8, December 1950 **P/A**, appeared in a lively green instead of the metallic ink that would have suggested the actual range of "satin or polished chrome or brass, or satin bronze" produced by the manufacturer, the publisher and advertiser alike were astonished whereas the printer, amid the confusion of moving his plant from New York to Connecticut, couldn't even find a suitable alibi. We trust that our readers carefully read the advertisement and were not mis-led by this blatant error. The current Kwikset advertisement is on page 8.

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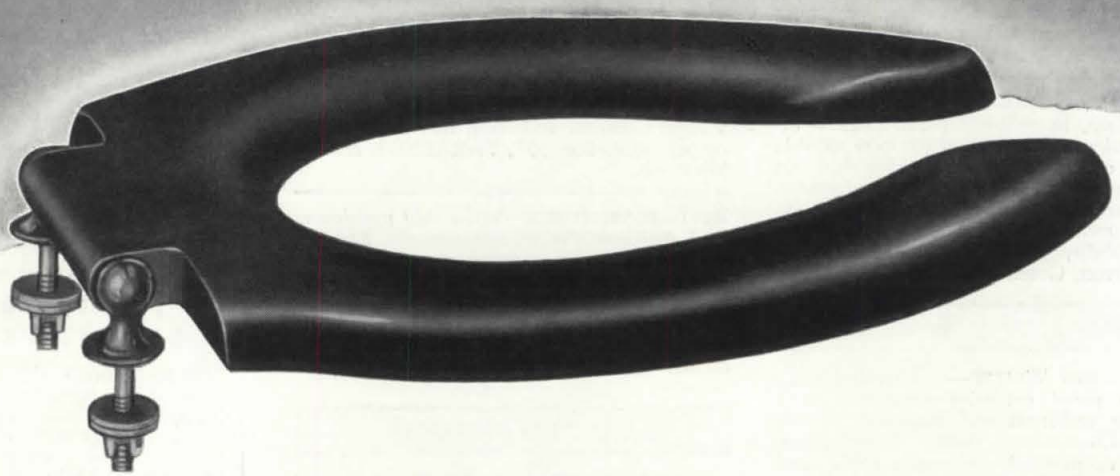

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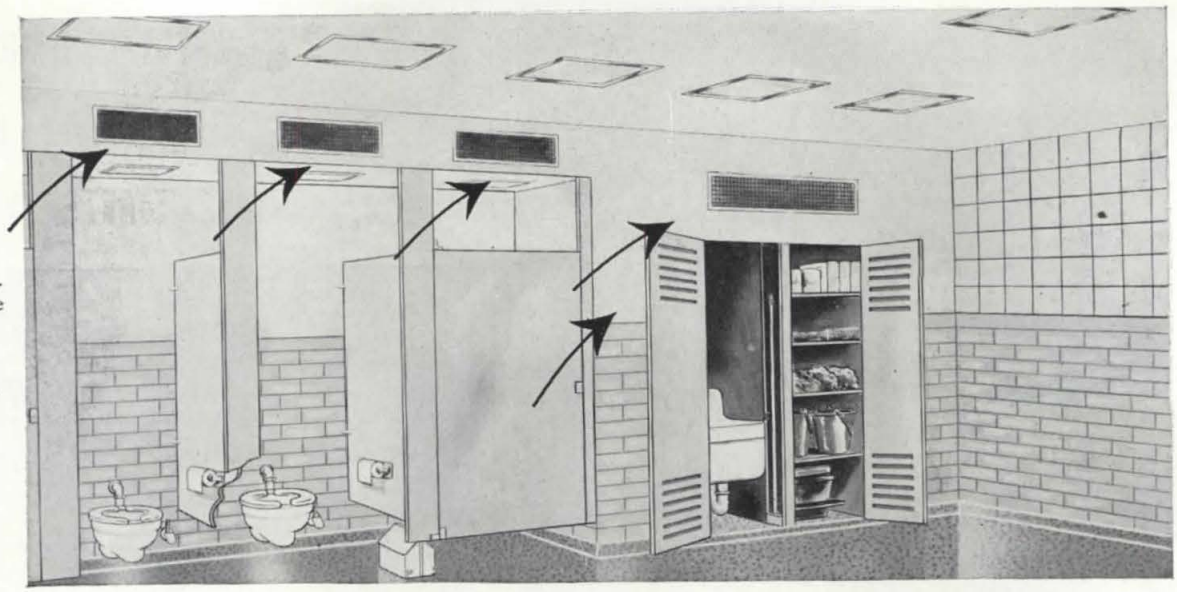
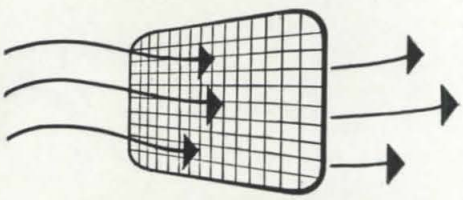
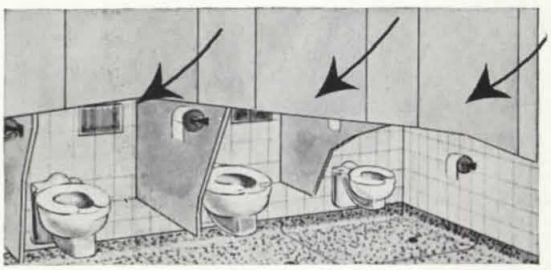


For best air circulation, odor and fume removal . . . use adequate vents on storage locker doors, recessed exhaust vents high on the wall.

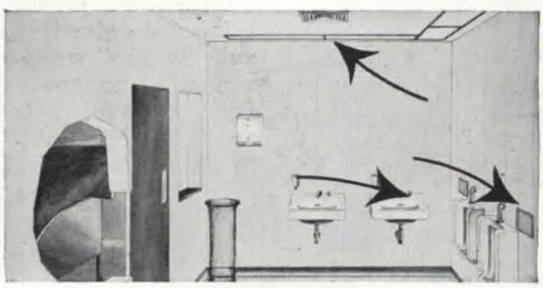
Ventilation planning



can make or break a modern washroom



In large washrooms, recessed wall vents near each toilet remove odors quickly. Correct positioning is important for best results.



Combination of recessed ceiling vents and wall vents close to urinals—a successful arrangement for smaller, heavily used washrooms.

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Symbol of Modern Washrooms

Trade Marks "ScotTissue," "Washroom Advisory Service" Reg. U. S. Pat. Off.

WASHROOM VENTILATION has a noticeable effect on the health and morale of employees. When a washroom has a fresh clean smell about it, you can be sure it has correctly positioned, properly functioning vents. Look for good production records, less illness and absenteeism, too.

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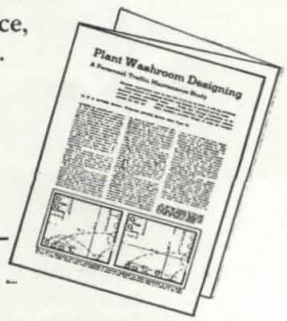

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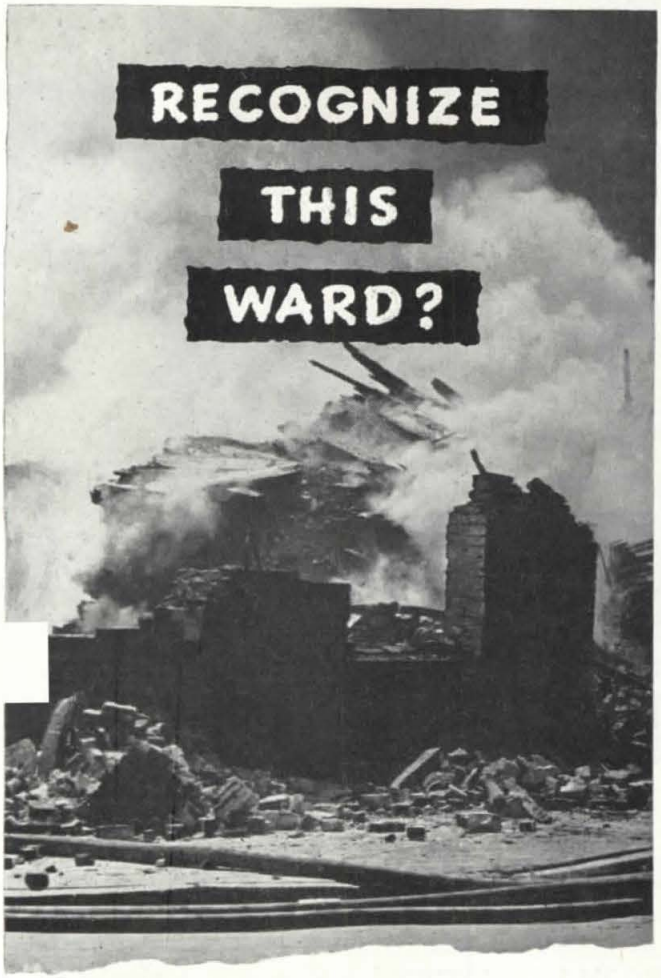

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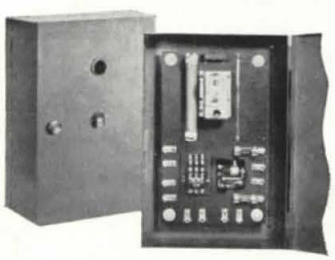

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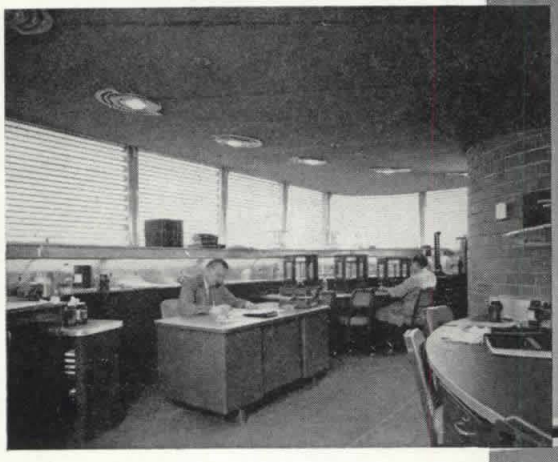
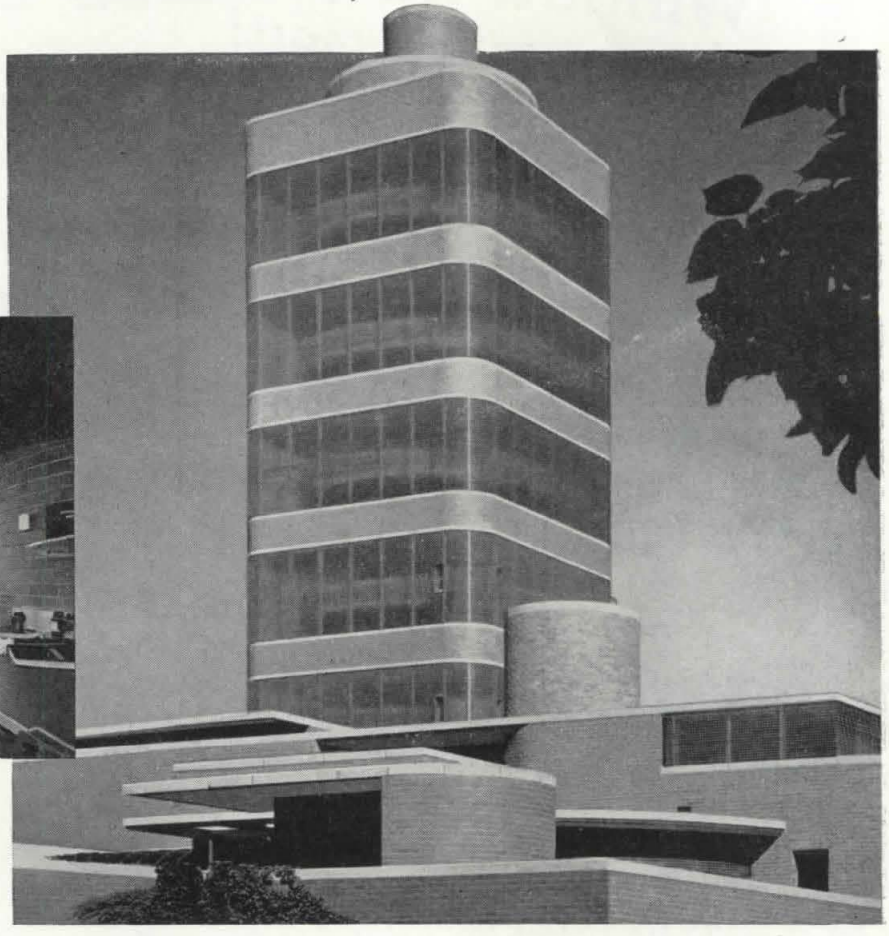
for unique new research and development tower at S. C. Johnson & Son, Inc.



Interior view of tower showing use of Hood Rubber Tile in the laboratories



With the dedication on November 17 of the new addition to the S. C. Johnson & Son, Inc. administration building at Racine, Wisconsin, another chapter was written in the long list of architectural masterpieces designed by the noted architect, Frank Lloyd Wright.

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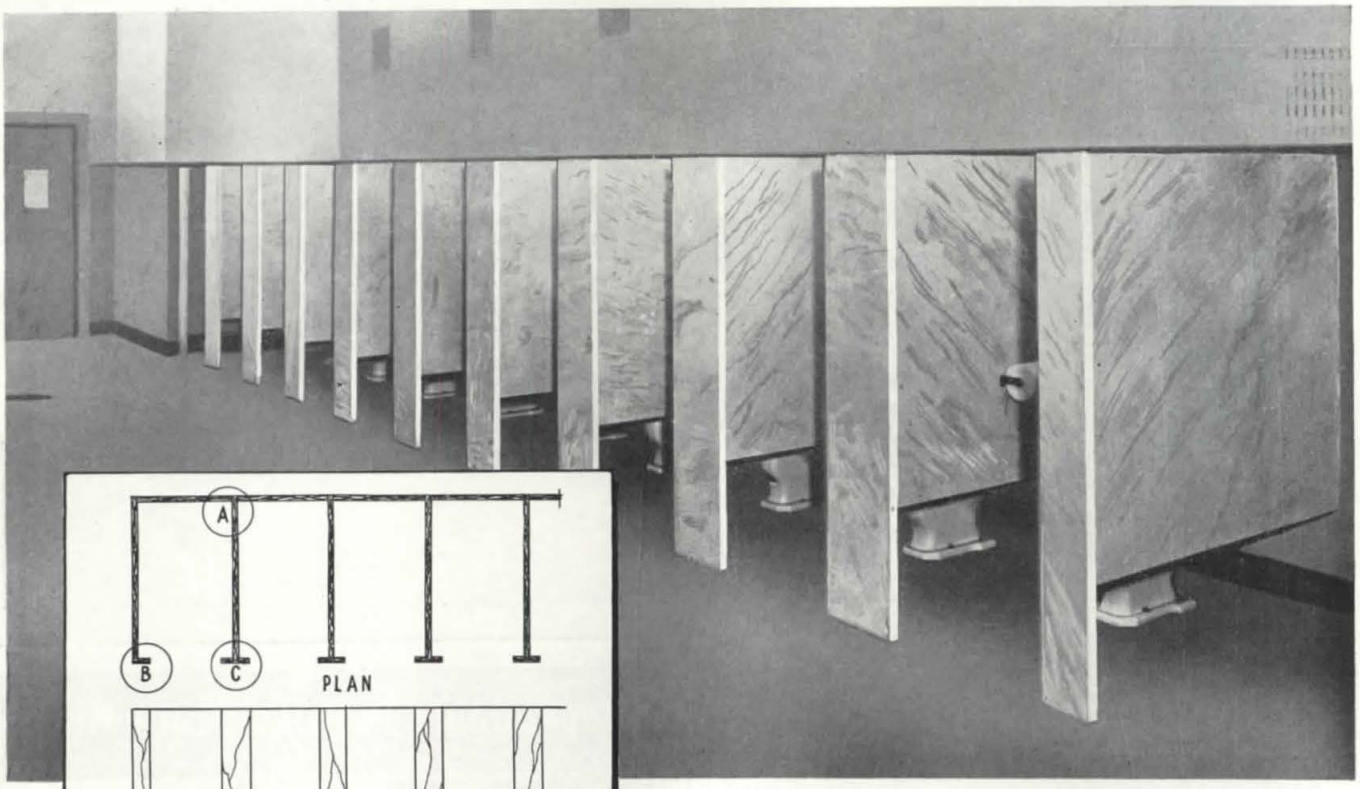

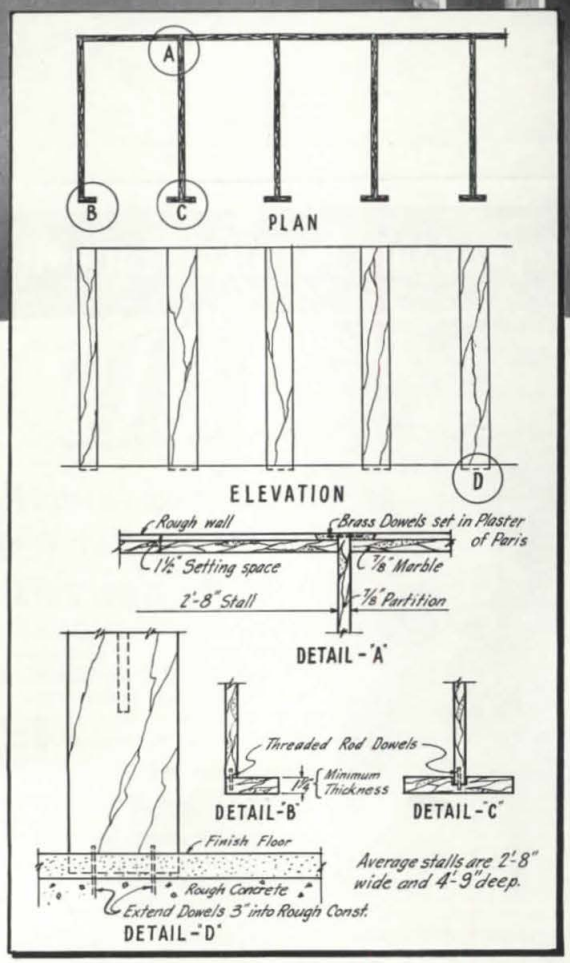

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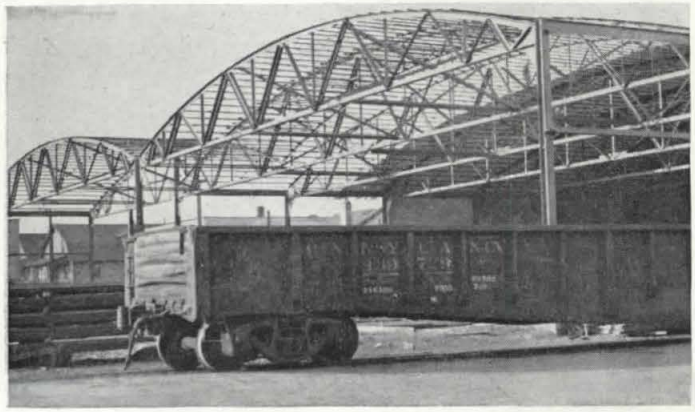

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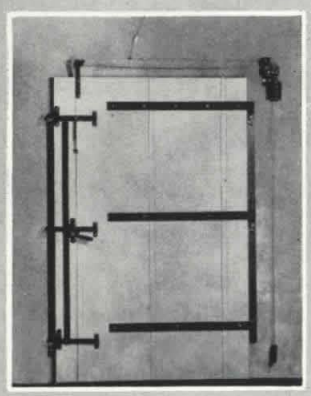

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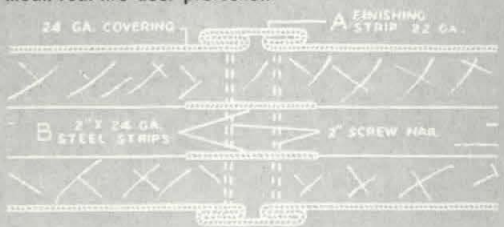

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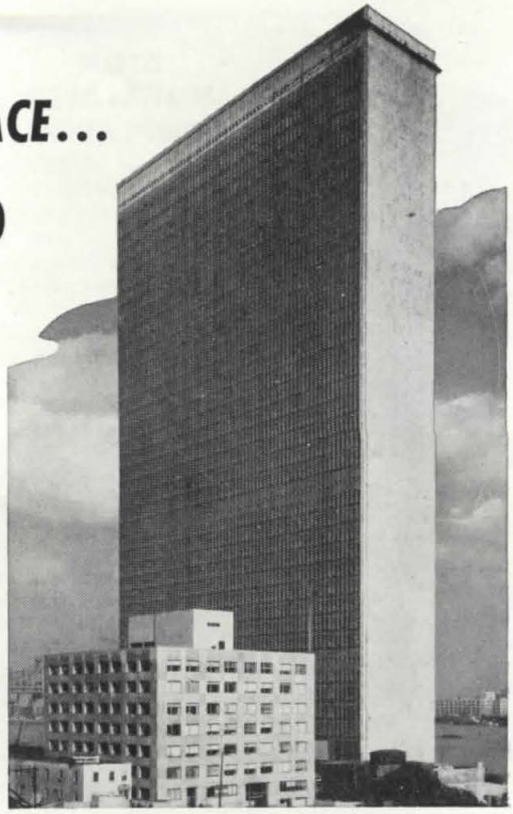
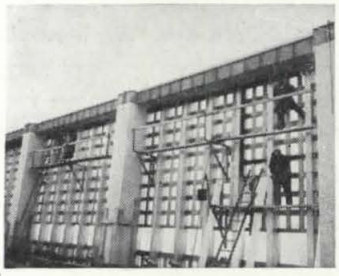
Remember, then, that on the U. N. Secretariat—and on factories, laboratories, public buildings, schools and institutions—Monel stands for long-lasting, trouble-free roofing. It's the "life-of-the-building" metal that brings your clients *permanent peace of mind.*



United Nations photo

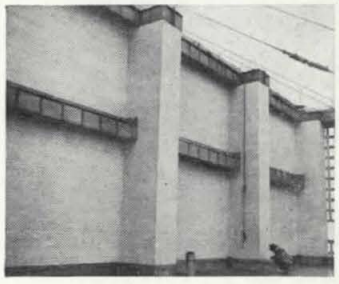
General Contractor: Fuller-Turner-Walsh-Slattery, Inc.
Architect: United Nations Headquarters Planning Office.
Sheet Metal Contractor: A. Munder & Son, Inc.

WORKMEN PUT FINISHING touches on aluminum-sheathed steel lattice work on roof of the U. N. Secretariat Building. Masonry-sealing flashings at top and bottom are Monel. **1▸**



VIEW OF MONEL FLASHING at base of masonry column. Thanks to its soft temper, Monel Roofing Sheet is easily cut, bent, formed and soldered into a trim, watertight job. **2▸**

◂3 NO SPECIAL TECHNIQUES needed. A. Munder & Son, Inc., Long Island City, N. Y., fabricators who made this installation, report: "Our men work with Monel just as they do with other roofing metals."



◂4 INSPECTING COMPLETED FLASHINGS on one side of the roof. In all, approximately 8,000 pounds of long-lasting, corrosion-resisting Monel were used for flashings and expansion joints on this building.

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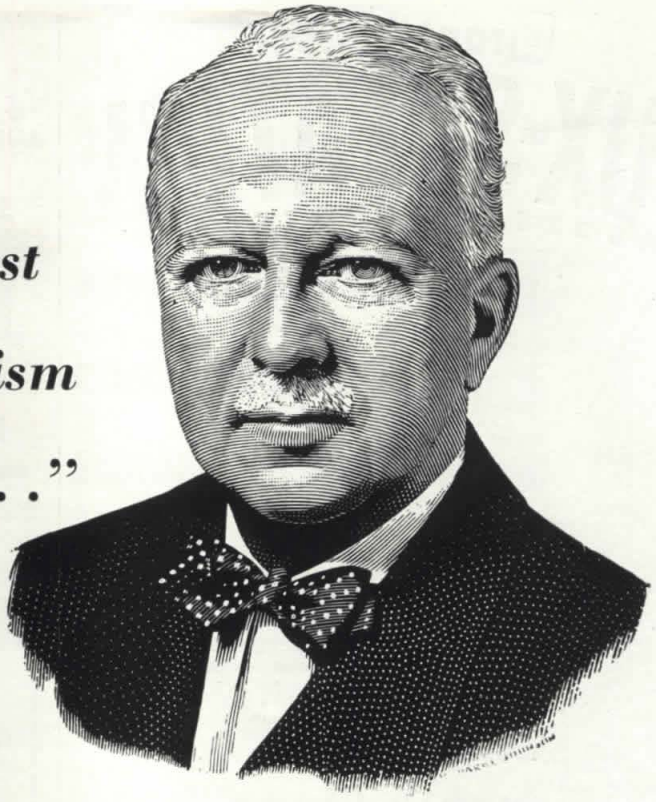

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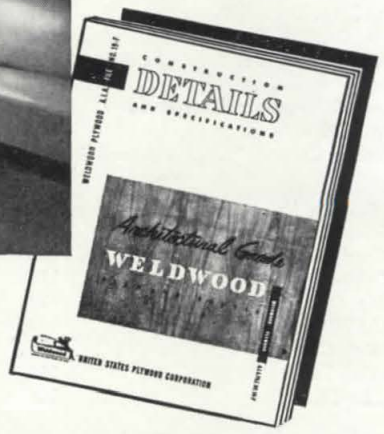

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WHAT SHOULD BE THE ATTITUDE of the architectural profession during this disturbed period in man's history? How does the architect advise his client: the man in the street, the man in the business office, even the man in the seat of governmental authority?

Shall we urge him to go ahead with the planning and building of necessary facilities in as logical and orderly a way as possible—pointing out that if we all acted as normal human beings this might be a logical, orderly world? Or shall we become hysterically afraid that the regular practice of architecture will vanish, and spend our time designing underground caves for the atomic fugitive? Is it best to become opportunistic, desert what remains of normal business and rush to Washington for a future limited by preparations for war? Should we try to become experts in the design of environment based on the destructive aspects of modern power rather than the constructive possibilities?

It is possible, you know, to take advantage of the horror of a frightening situation in various ways. I have a release from the Plumbing and Heating Industries Bureau which points out that "a thorough bath or shower as soon as possible after a nearby atomic explosion will increase your chances of survival . . ." (Preferably in a magenta bath tub, I presume.) Our profession might make the same sort of appeal, I suppose. "Use an architect to have your house checked for safety against atomic blast." (With a schedule of fees based on the possibility of studying hydrogen blast effect as well.)

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THIS IS NOT AN EASY TIME in which to remain calm and sober and give objective professional advice. Any suggestion that we should continue to concern ourselves with health care and education and recreation and creative production seems almost unpatriotic. Scare headlines and frightening articles are what get readership; fantastic suggestions for defense and protection are what keep Commissioners of Public Works in office. The plea that we keep the United States healthy and reasonably cultured was not the featured paragraph in President Truman's State of the Union message.

The architecturally trained person must, of course, do what he can with his special abilities to help his less technically minded fellow-citizens face up to undeniably nasty possibilities. Some architectural and engineering groups are making sober surveys of their towns to see what the possibilities of blast damage are and to advise on the best means of protection. P/A will report on one of these studies soon. A number of capable engineers are studying the matter of structural effects of blasts on various types of structures. McGraw-Hill has published a book on the subject, and Reinhold has one in preparation; as soon as there is something useful to report, P/A will pass this information along to you also.

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ONE OF THE MOST CONSTRUCTIVE THINGS that has been done recently is the publication of a special issue of the *Journal of the American Institute of Architects* on the subject of New Towns. I wish the issue had not been called "New Towns for Defense" because, aside from an introductory article by Albert Mayer, the discussion is entirely of the feasibility and the technique of planning new communities for constructive long-term growth. When reasonable, logical planning and building can be *related to* the present emergency, that makes much better architectural and social sense than the opportunistic scattering of haphazard housing and community facilities over that part of the landscape that happens to be classified as a "defense" area.

As Albert Mayer says in the *Journal*, "Wouldn't it be marvelous, for once, to do the right thing in time, to grasp the emergency mood and turn it into positive action instead of accentuating its distortions."

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I HAVE JUST BEEN READING an interesting footnote to American architectural history. It is entitled "The Navy Builds a Medical Center," and it appeared in the October, 1950, issue of *The Military Surgeon*. The author is Lucius W. Johnson, Rear Admiral (MC), USN. It deals with the design of the Naval Medical Center in Bethesda, Md., for which the late Paul Cret and, apparently, Franklin D. Roosevelt, were architects.

I have often seen the building and speculated on the logic of a great tower rising in the center of acres of open land, but for some reason the resemblance to the Nebraska State Capitol had not occurred to me. Admiral Johnson, however, says that the President, on one of his tours, "was said to have been greatly impressed by seeing, at a distance across the prairies, the capitol of one of the mid-western states . . . He was quoted as saying, 'Some day I will build a government building like that.'" He did. "In December, 1937, he had drawn for Surgeon General Rossiter an elevation and ground plan of the building he visualized for the medical center, and this became our guide."

There was trouble with the President's plans for the tower. Says the Admiral, "When the necessary space was taken out for stairs, elevators, pipe chase, water tanks and other requirements, there would be only room on each floor for two 2-bed and two 1-bed rooms."

It was evidently difficult to get Architect Roosevelt to budge an inch. "At last Mr. Cret was chosen to pull this particular chestnut from the fire. His national eminence and assured position were considered to make a firm foundation from which suggestions could be made." Mr. Cret's eminence (and alternative drawings) finally resulted in an extension of the 40-foot square tower the President wanted to one 88 by 104 feet. Still this was criticized by some functionally minded individuals, and even on the grounds of esthetics. The Admiral says, "Mr. Delano, uncle of the President and head of the Parks and Planning Commission, spoke strongly in condemnation of the high tower . . . As late as April 3, 1939, Mr. Delano wrote to the Surgeon General, describing the plan as 'even more monstrous than it was in the beginning.'"

The building with its tower was built even though, "Function had constantly to be sacrificed because of architectural requirements."

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SO MUCH FOR BASIC ARCHITECTURAL history. In the same article a minor episode is related that I thought was even more fascinating. There was discussion of planting and fencing the grounds on which the building was to be erected. The President visited the site and discussed the matter with Marshal Finnan, of National Park Service, and Frederick W. Southworth, representative of the Bureau of Yards and Docks. The Admiral describes subsequent events as follows:

"He (the President) told Mr. Finnan and Mr. Southworth, 'I think an Old English sheep fence would be ideal.' They agreed and Southworth immediately set a couple of his bright young men to work on it. 'What is an Old English sheep fence?' they demanded. 'Go look it up,' he answered. Several days later they returned. 'We have searched the textbooks, the manuals, the encyclopedias, everything in the art and architectural libraries. We can't find anything about an Old English sheep fence.'

" 'Then draw me something that would look like an Old English sheep fence if there were such a thing.' They did and when the President saw it he said, 'That is exactly it.'"

See what you miss by just reading the architectural magazines?

Thomas H. Creighton