

PROGRESSIVE ARCHITECTURE PENCIL POINTS]



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MATERIALS AND METHODS

For almost two years we have been gathering together in one section the "technical" material relating to architecture. At times it is almost impossible to decide whether or not a certain item is primarily technical in its interest; inevitably, one way or another, the products used and their method of application become inseparable elements of finished architecture.

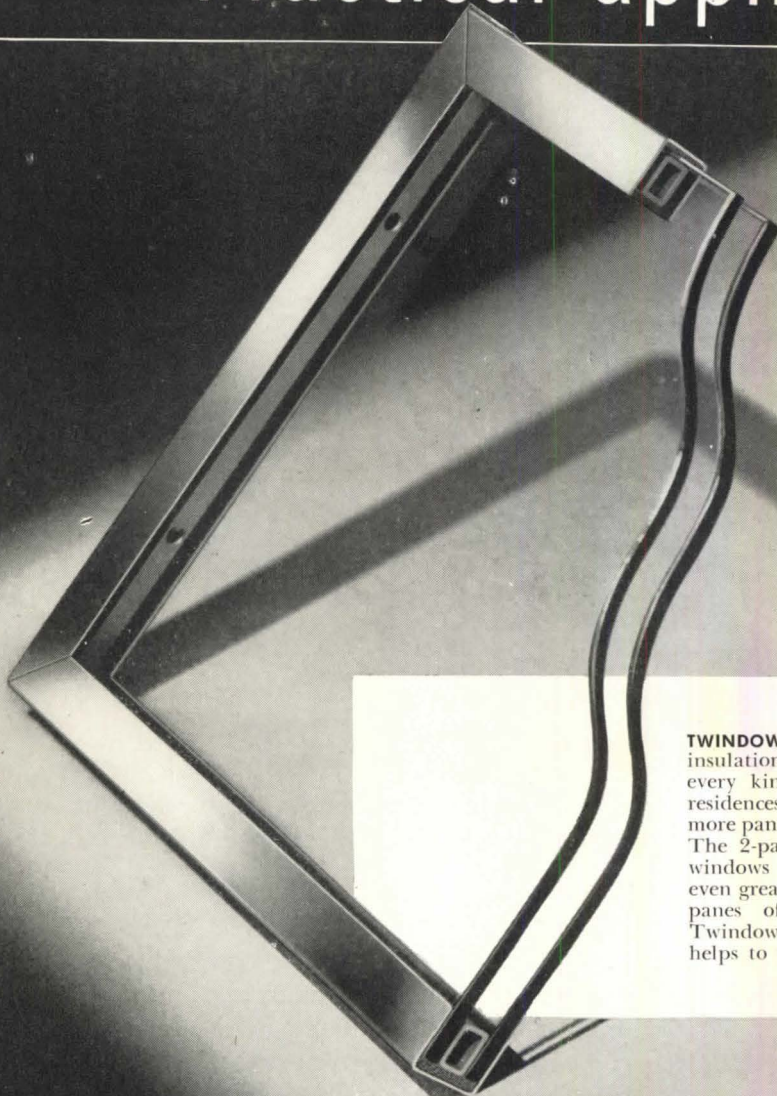
In the magazine, as in architectural practice, it is a matter of choice of emphasis rather than an arbitrary division into "design" and "techniques." The construction system is one of the most important aspects of the design of the Tanglewood Opera Shed in this issue, and the discussion of freezer equipment is for the sole purpose of producing a satisfactory house. In both cases the end sought is integrated architecture.

This issue of PROGRESSIVE ARCHITECTURE indicates also the wide range of tools, not generally considered "materials and methods," with which the designer must work. He cannot depend alone on product information, important as that is; he cannot rely solely on standards pulled from a file and applied to a new job. In the case of the Opera Shed the architects played with the shape of the building to reach an unusually fine acoustic solution. The street of stores in Corning, New York, is important because of a new modular application of materials. The Daytona plan has a good chance of realization because the planner used local publicity and citizen interest as part of his design technique.

We take the materials of design to mean knowledge, investigation, and imagination as well as manufactured products; we include public relations, salesmanship, and civic responsibility in our understanding of the methods which will result in progress in this important period of architectural development. Not only is it true that science and art fuse in progressive architecture; understanding of the sciences and appreciation of the arts are greater than they have been for some time. The designer today who does not take advantage of all available techniques and build from them with the fullest play of his imagination is not doing a complete job.

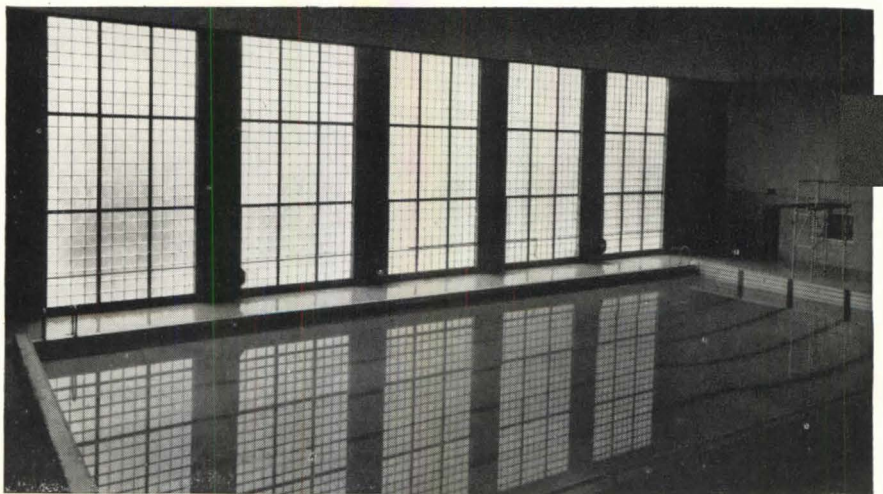
The Editors

Practical applications of



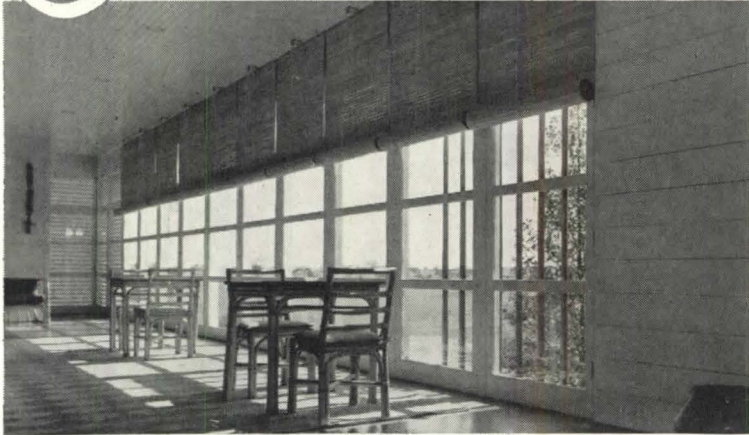
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P I T T S B U R G H P L A T E G L A S S C O M P A N Y

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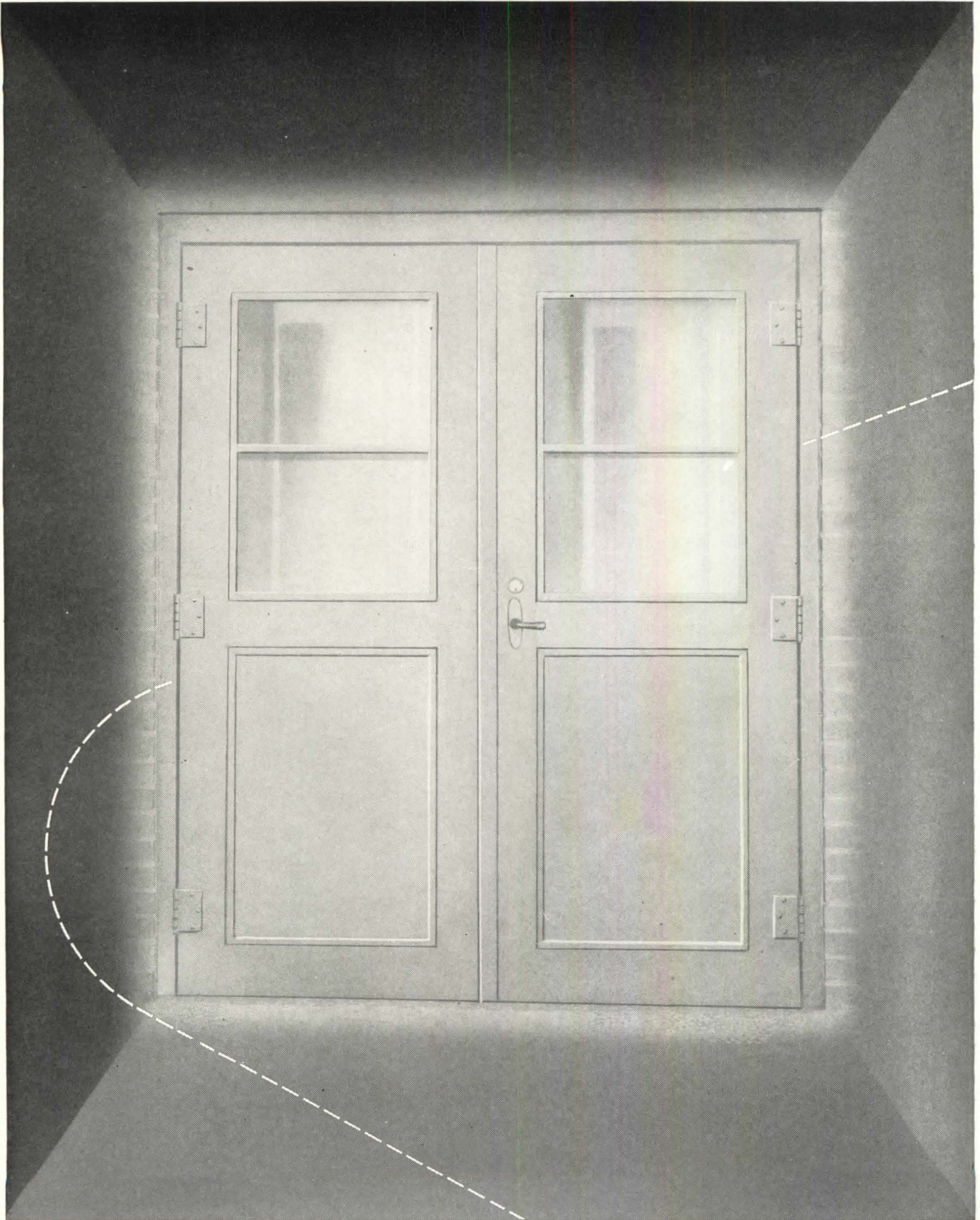
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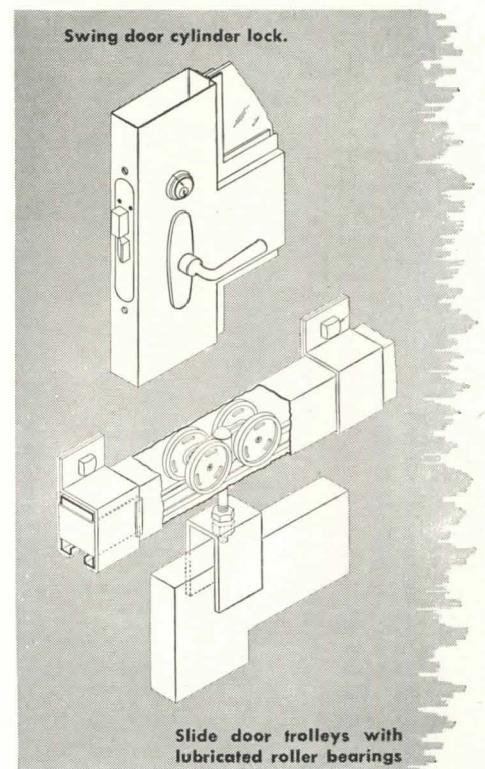
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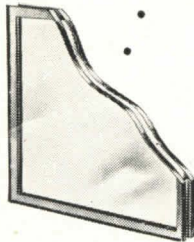
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($\frac{1}{4}$ " Plate Glass and $\frac{1}{2}$ " air space)

Width	Height	Width	Height
35 $\frac{1}{2}$	x 48 $\frac{1}{8}$	48 $\frac{1}{2}$	x 50
55 $\frac{1}{4}$	x 48 $\frac{1}{8}$	56 $\frac{1}{2}$	x 50
75	x 48 $\frac{1}{8}$	64 $\frac{1}{2}$	x 50
35 $\frac{1}{2}$	x 60 $\frac{3}{8}$	72 $\frac{1}{2}$	x 50
55 $\frac{1}{4}$	x 60 $\frac{3}{8}$	80 $\frac{1}{2}$	x 50
75	x 60 $\frac{3}{8}$	96 $\frac{1}{2}$	x 50
42	x 66	64 $\frac{1}{2}$	x 58
42	x 72	72 $\frac{1}{2}$	x 58
84	x 66	80 $\frac{1}{2}$	x 58
84	x 72	96 $\frac{1}{2}$	x 58
96	x 66	116 $\frac{1}{2}$	x 58
96	x 72		

DOUBLE HUNG WOOD WINDOWS

(DSA Window Glass and $\frac{1}{4}$ " air space)

2-Light		4-Light	
Width	Height	Width	Height
24	x 24	24	x 11 $\frac{5}{8}$
28	x 24	28	x 11 $\frac{5}{8}$
32	x 24	32	x 11 $\frac{5}{8}$
36	x 24	36	x 11 $\frac{5}{8}$
40	x 24	40	x 11 $\frac{5}{8}$
44	x 24	44	x 11 $\frac{5}{8}$
24	x 28	24	x 13 $\frac{5}{8}$
28	x 28	28	x 13 $\frac{5}{8}$
32	x 28	32	x 13 $\frac{5}{8}$
36	x 28	36	x 13 $\frac{5}{8}$
40	x 28	40	x 13 $\frac{5}{8}$
44	x 28	44	x 13 $\frac{5}{8}$

RESIDENTIAL STEEL SASH

(DSA Window Glass and $\frac{1}{4}$ " air space)

Width	Height	Width	Height
16	x 12	14	x 10
16	x 11 $\frac{5}{16}$	14	x 9 $\frac{5}{16}$
14	x 12	14 $\frac{3}{4}$	x 12
14	x 11 $\frac{5}{16}$	17 $\frac{1}{4}$	x 12
		12	x 12

construction. This means greater design flexibility for the architect, more opportunity for the use of this time-proved insulating glass unit.

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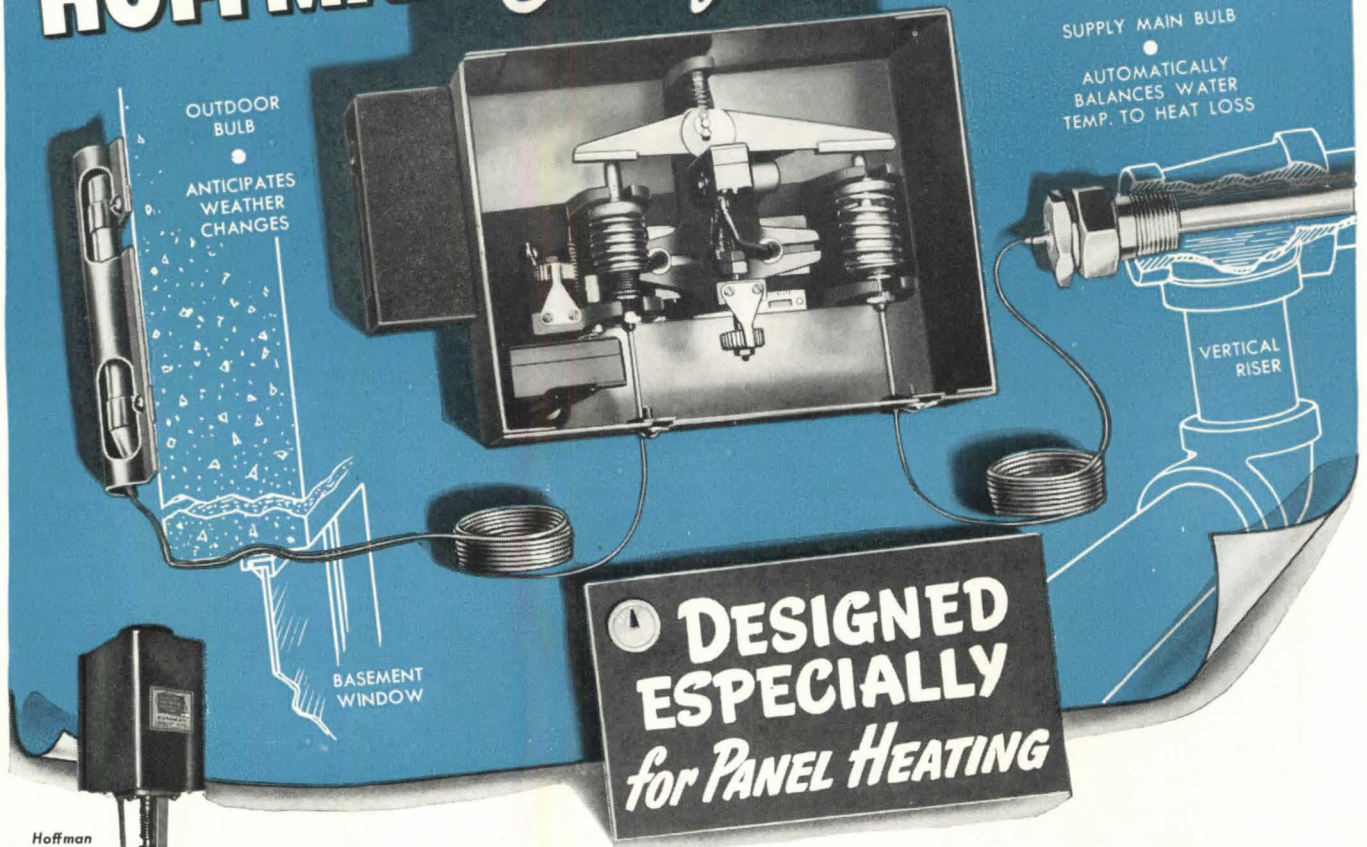
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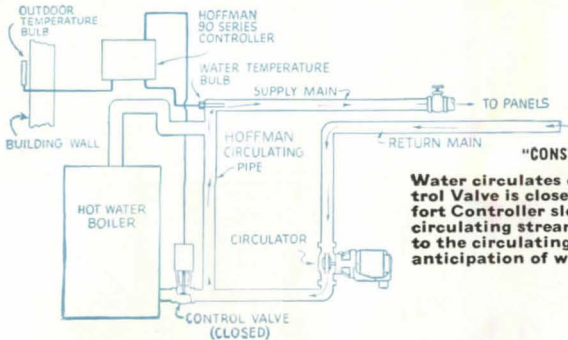
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A STEP AHEAD

Dear Editor:

Thanks for the all too brief description of the Chapel of St. Francis, Pampulha, Brasil, Oscar Niemeyer, architect, which you published in your December 1946 issue.

Of all the modern church designs using concrete as the main building material that have come to my attention, this church stands far out in front, using the new material according to its inherent nature rather than more or less forcing it to follow forms that historically were developed from the use of separate masonry units—stone or brick.

In Notre Dame du Raincy, Paris, 1922, A. and G. Perret, architects, the general composition is essentially Gothic, allied with some classic forms. In the tower the concrete was forced into thin verticals in Gothic imitation. In the nave the columns are Gothic, the barrel vaulted ceiling classic. The Gothic buttresses have disappeared from the exterior walls, and the stained glass in lead and stone has been replaced by clear glass in concrete in a classic, geometric pattern, but the detail is essentially Gothic.

In St. Therese at Montmagny, 1926, by the same architects, there was almost no change from the above except that the number of vertical lines in the tower was reduced and some classic grille work added.

The Engelbrecht Church, Sweden, Professor Wohlman, architect, and the Cathedral of St. John the Divine, New York, Cram & Ferguson, architects, made use of masonry parabolic arches at the crossing, but the building design remained wholly traditional.

In the Pallatiner Church, Linburg, Germany, J. H. Pinaud, architect, and a church in Nijmegen, Holland, H. Thunnissen, architect, the parabolic arch form is used in the nave but the buildings retain their medieval character, less in the former and more in the latter.

In the Catholic Church, Bischofheim, Germany, Professor D. Bohm, architect, the concrete parabolic vault was used for the interior cross section of the nave, the sides pierced with parabolic arches opening into the aisles. The exterior of the building, strangely, is in a simple rectangular classic form in brick. The entire building, although fresh, new, exciting, and modern in many details, remains, like the previously mentioned, essentially medieval.

As distinct from the above mentioned uses of modern engineering forms in a partly modern way, the church in Pampulha seems to have freed itself from

medieval form more completely, still keeping the traditional and necessary plan of a Catholic church. It seems to me to be a step ahead in a continuing process. I feel, by the way, that the use of concrete in Brasil, where there is no strongly developed building industry and where exposed stone or brickwork is not traditional or common, is a very happy choice of construction material.

LOUIS H. FRIEDHEIM
New York, N. Y.

INSPIRATION AND CHURCH DESIGN

Dear Editor:

In your December issue you published a church in South America executed by the prominent South American architect, Oscar Niemeyer. In recent years Niemeyer's work has been of great inspiration to us as younger architects. In that field of architecture which is perhaps one of the most difficult for innovators to conquer—the ecclesiastical field—we find that Niemeyer has broken down the conservative and has pointed the way to new, inspirational thinking. We sincerely feel that PROGRESSIVE ARCHITECTURE is to be highly complimented for publishing this fine, outstanding work. We urge that the very high standards of selection we have seen of late be most strongly continued.

ARCHITECTS ASSOCIATED
New York, N. Y.

A NOD FROM STUDENTS

Dear Editor:

With such swell articles as yours on Niemeyer's St. Francis' Chapel, you have every right to call the magazine PROGRESSIVE ARCHITECTURE. My students and I appreciated it. More power to you!

JAYNE VAN ALSTYNE
Michigan State College
East Lansing, Mich.

NICE AND CLUTTERED

Dear Editor:

We have just received the January issue of PROGRESSIVE ARCHITECTURE and wish to immediately voice our displeasure with same. We read the advertisements in the professional journals but do not believe that any circumstances can justify the scattering of advertisements through the text. Having once read an advertisement we have no further use for it, because if we are interested we write the advertiser for catalogs and detailed data. Imagine binding the text into a nice binding with it cluttered up with advertisements.

PERC BRANDT
Manitowoc, Wis.

IMPATIENT ARCHITECTS

Dear Editor:

In my opinion the January issue "takes the cake" as an extremely original, well conceived, and well executed piece of architectural journalism. Timing this issue for the beginning of the year and what promises to be the beginning of

ANNOUNCEMENT

Kenneth Reid, long Editor-in-Chief of *Pencil Points* and PROGRESSIVE ARCHITECTURE, and more recently Editorial Adviser, has become Consulting Editor to the Architectural Book Department of Reinhold Publishing Corporation, and has found it necessary to sever his official connection with the magazine. Ken's multitude of friends in the design professions know that his experience and knowledge will result in a book list which will be important in itself and will complement the work of the magazine. The editors of PROGRESSIVE ARCHITECTURE congratulate Ken on his new status and look forward to continuing informal advice from the editor who charted our course.

an era is also significant. It assembles under one cover a bird's-eye view of up to the minute, technically important information in the field of materials and methods.

I find that while marginal cataloging is very helpful, the respective texts do not pretend to be exhaustive but rather reflect careful discrimination and inspiring projection of possibilities yet uncovered. This is very stimulating. I find the materials commented on are in many instances regrettably behind what the commentators appear to feel they would really like to have them do. There used to be a time when a material would not even be considered by the architect unless it had ages to recommend it. Today, the architect is impatient with the manufacturers because, being aware of the enormous social need, he demands commensurate technological fulfillment.

ISADORE ROSENFELD
New York, N. Y.

SELF-IMPOSED YARDSTICK

Dear Editor:

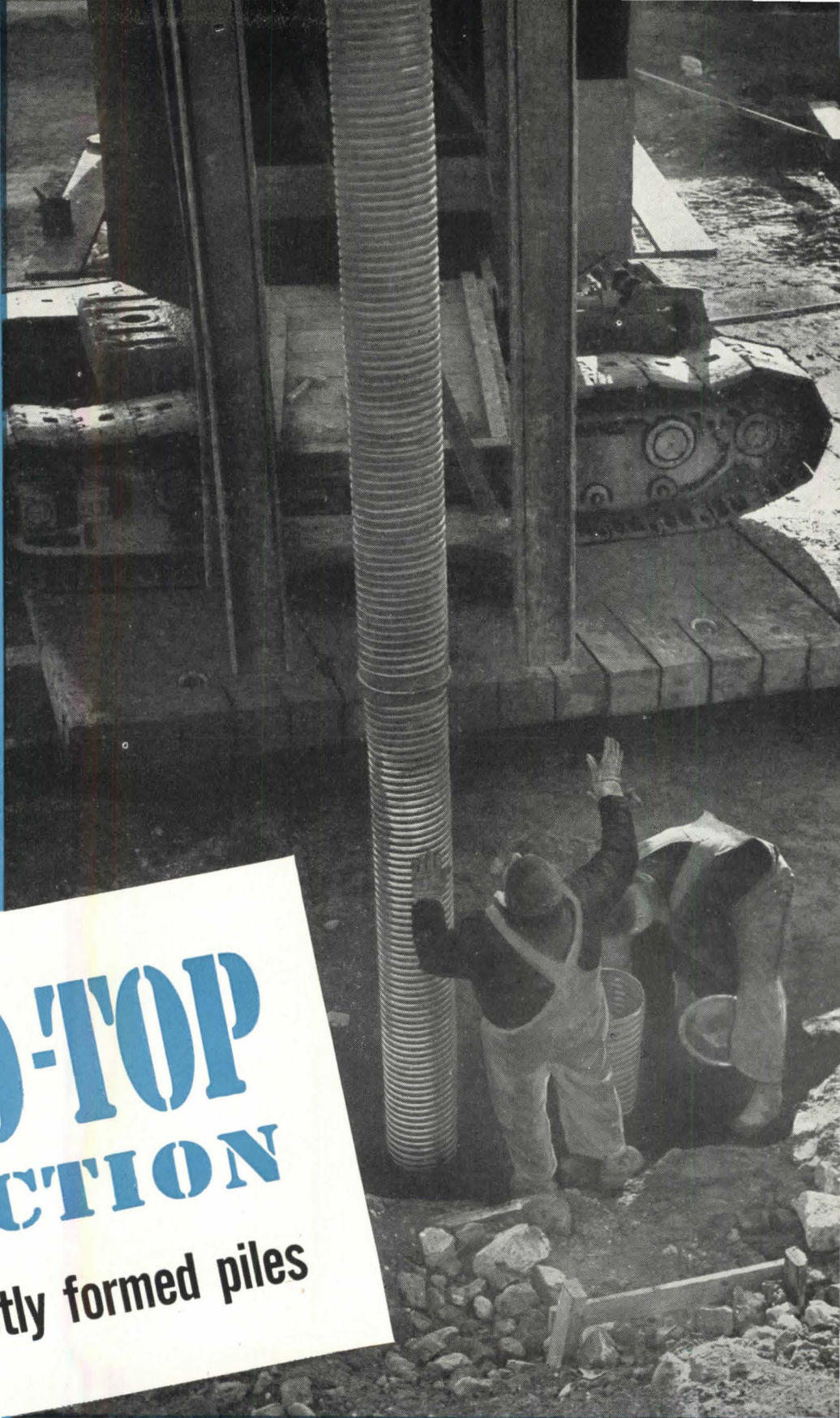
The contents and format of the January issue of PROGRESSIVE ARCHITECTURE suggest that, at long last, someone has tried to produce a professional magazine of practical worth to the working designer. Upon reaching page 172 and reading your account of meeting with the New York Chapter, we learn that the excellent results evidenced in this month's magazine are not just a coincidence but are part of a carefully laid plan.

The subject matter of the January number lends itself very naturally to the form of treatment you have given it. The next eleven issues will be examined with a new interest as they are measured by the yardstick you have set for yourselves. Our wish is that you will be successful in maintaining your established high standards throughout 1947.

PHILIP R. GENTNER
Dansville, N. Y.

Plumbing the driver just before starting the hammer to drive a step taper pile.

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ARCHITECTURAL PLANNER—Housing Authority of the City of Milwaukee. Salary \$414.52 to \$464.52 per month. Examination consisting of appraisal of experience and professional record based on questionnaire. Age limit is 45 with exception of veterans. Apply before March 21, 1947, to City Service Commission, City Hall, Milwaukee, Wis.

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(Continued on page 12)

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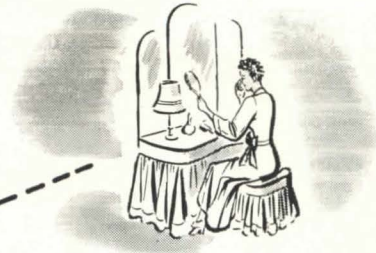


See SWEET'S for suggested specifications, or write us for descriptive folders and detailed information.

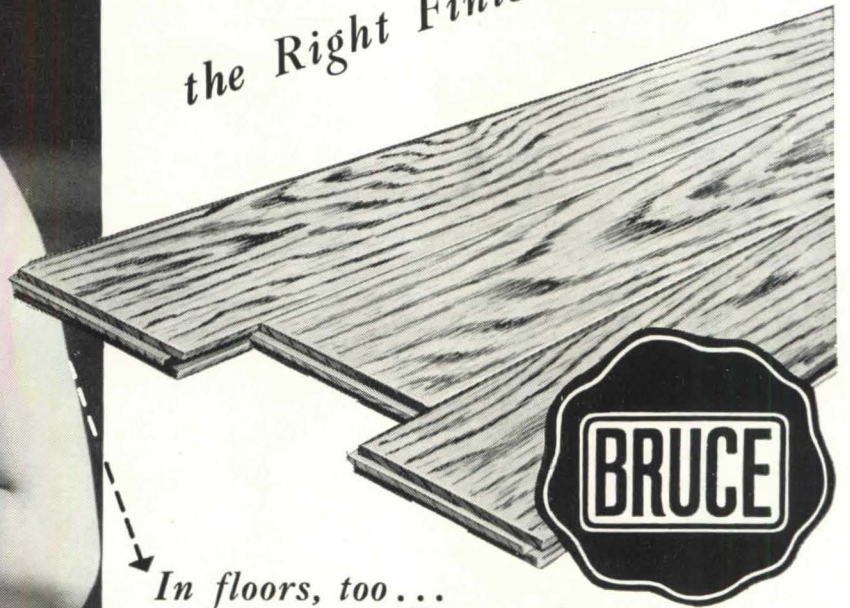
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JOBS AND MEN

(Continued from page 10)

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ARCHITECTURAL ENGINEERING DRAFTSMAN—will work with engineering department making prospective drawings. Good background needed for general plant work including structural steel and reinforced concrete. Give full details covering experience, age, and salary expected. Box 367, PROGRESSIVE ARCHITECTURE.

JOBS WANTED

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DRAFTING WORK WANTED—structural plans for architects and engineers. Shop plans for steel fabricators; bending details and bar schedules for concrete work; mechanical designs, details, and developments. By competent, registered engineers. Georgia Detailers Association, P. O. Box 191, East Point, Ga.

CONSULTING ENGINEERS — registered New York and New Jersey; civil and structural engineering for design, details, specifications, and supervision of public works, industrial plants, residential, commercial, and public buildings. Reinforced concrete, steel, timber, soil analysis, pile and heavy foundations; fee or percentage basis arranged. Box 364, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN—39 years old, 20 years' experience including residential, commercial, educational, and industrial buildings. Structural design, squad leader. Salary \$125 weekly. Prefer Southwest or Pacific Coast. Box 366, PROGRESSIVE ARCHITECTURE.

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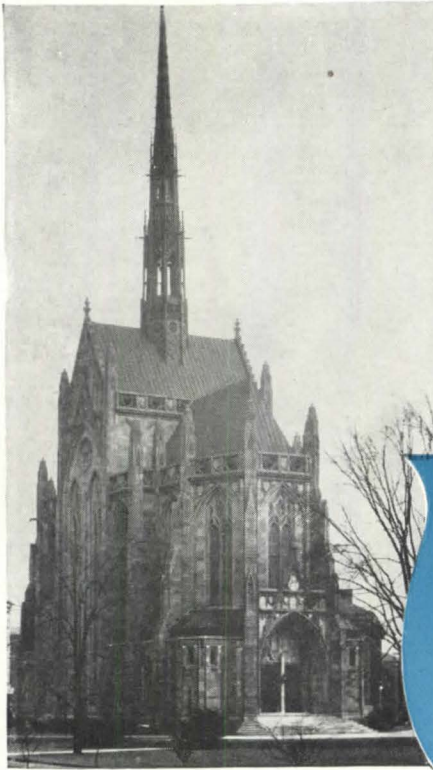
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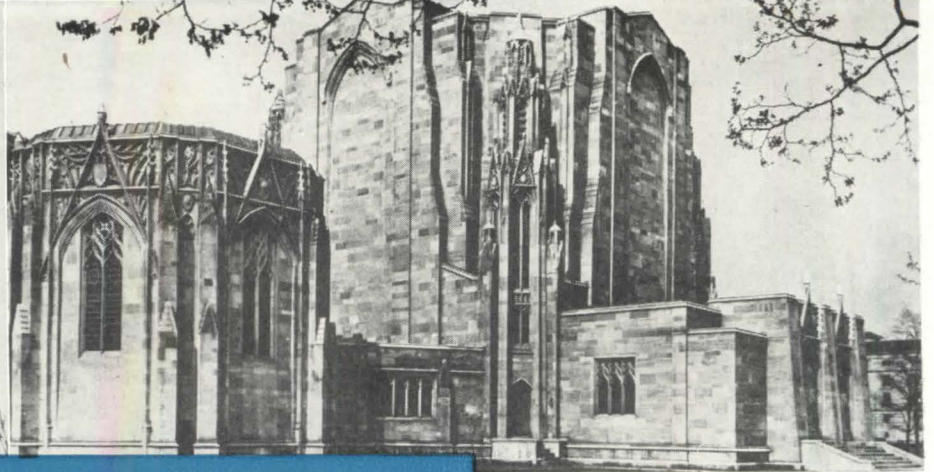
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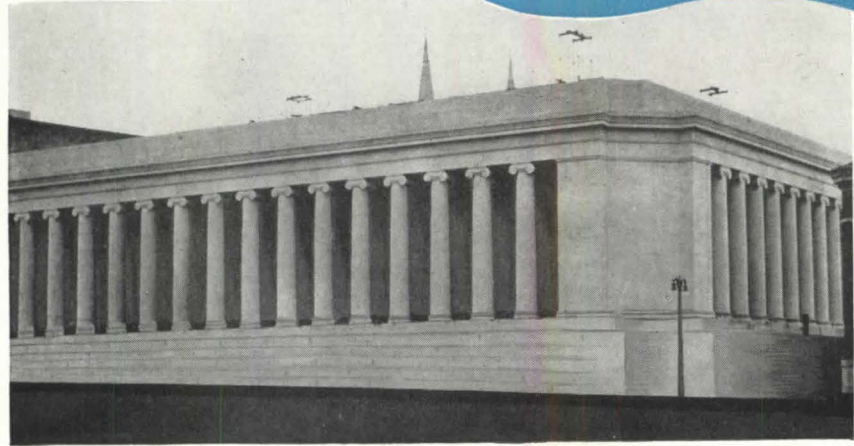


Heinz Memorial Chapel



Stephen Foster Memorial

HANDSOME IS
as
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No ugly stacks mar the beauty of this group of buildings at the University of Pittsburgh. Unhampered by the necessity of allotting space for heating units, fuel delivery and storage, and ash removal, designers enjoyed full freedom of line for beauty, while providing maximum utility for every foot of space in these fully functional structures.

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THIS MONTH

The plans for Daytona, Florida, presented this month, starting on page 59, are the work of **Arthur D. McVoy**, city planner. McVoy is no stranger to Florida, having received his B.S. and M.A. degrees in architecture from the University of Florida. His graduate work consisted of six months' study on a Langley scholarship in the city planning laboratory at Cranbrook Academy under Eliel Saarinen; travel and study in Sweden, Denmark, Holland, Germany, and France; and work (1939-1940) for a Ph.D. in city planning at the University of Buffalo under the late Dr. Walter C. Behrendt. His practice has taken him all over the country. He has worked as chief designer in the office of the architect to the Florida State Board of Control; and as city planner or planning consultant for the Buffalo City Planning Association, the National Resources Planning Board, and the cities of Spokane and Dallesport, Washington; Corvallis, The Dalles, and Portland, Oregon; and Ocala and Day-



ARTHUR D. McVOY

tona Beach, Florida. He was also planner for Tacoma, Washington, one of the three cities chosen by NRPB for experimentation on an accelerated planning method. A member of the A.S.P.O., A.I.A., and A.I.P., McVoy has taught and lectured on planning at the University of Florida, University of Washington, and M.I.T.

The association of Kim Hoffmann and Stephen Heidrich, specializing in "designs for contemporary treatment of stores, offices, homes," dates from 1946. Their offices for the Hansen Glove Company, New York, N. Y., appear in this issue on page 66. A native of Bremerhaven, Germany, **Kim Hoffmann** attended the University of Berlin, where he studied the rare combination of law and modern design simultaneously for three years. His leaning toward design won out, however, and he prac-



Photo by Valla

STEPHEN HEIDRICH

KIM HOFFMANN

ticed as a designer in Paris from 1933 to 1937, when he moved to New York and formed an association with Paul Bry that lasted until 1945. He is a member of the American Institute of Decorators. His associate, **Stephen Heidrich**, was educated in New York where, after winning the Pierre St. Godin Medal for fine draftsmanship, he received a scholarship to Pratt Institute. After three years in service with the A.U.S. came practice with Alfons Bach (1944-1945), and with Dorothy Draper until 1946.

"Brought up by a mechanically minded father, I just missed being an engineer (thank God)," says **William T. Dreiss**, designer of the little house in California presented on page 78. He attended the Art Center School, Los Angeles, Calif., where he came under the influence of such able designers as J. R. Davidson and Harwell Hamilton Harris. After a short period in war service, he worked in the aircraft industry, spending his time building "air

(Continued on page 16)

NEXT MONTH

- In April we will have the pleasure of presenting for our readers a number of new projects in Brasil, representing work of many of the best known contemporary Brazilian architects, and brought to us by Dr. Louis Parnes, recently returned from a South American trip. A new yacht club, reminiscent of the familiar one in Pampulha, comes from Oscar Niemeyer, as well as a one-floor rural hotel. Work by the Roberto brothers will include a city apartment house of reinforced concrete with interesting sun control devices, and the Casa da Comerciaria, a large residence club for Rio de Janeiro business women. Following the trend of the reinforced concrete work now associated with Brazilian architecture, a 22-story office building designed by Affonso Reidy and J. Moreira Machado for the headquarters of a railroad company will be shown. Another apartment house, this one the work of Henrique Mindlin, will be presented, with dwelling units ingeniously arranged to gain maximum light and air. Concluding the portfolio of Brazilian work will be a public school near Rio by Alvaro Vital Brazil, based on a semi-quadrangular scheme, and Brazil's own house, perched on a steep hillside in a lush setting.

- Two interesting houses from the East and West Coasts will appear in April. A wood frame house in Lincoln, Mass., designed by Carl Koch, is built into a gentle slope and brings the outdoors indoors with a piece of the hillside actually enclosed within the house. Anshen & Allen's house for Berkeley, Calif., done in association with John Hans Ostwald, takes full advantage of its typically dramatic San Francisco Bay site.

- The April Materials and Methods section will feature an article on broadcasting studio design and the importance of acoustic treatment, by M. A. Smith, acoustical engineer. Part II of Hallock and Stout's article on home freezers will also be presented, and will discuss building and planning for freezers larger than the models commercially available now.

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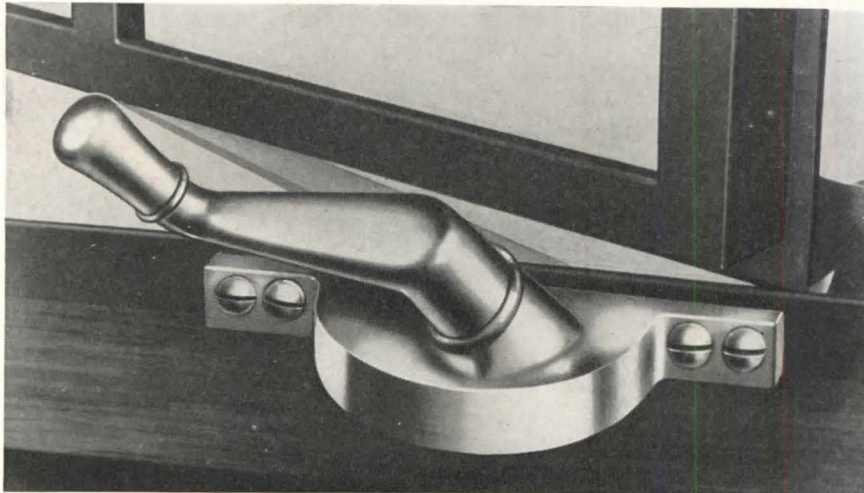
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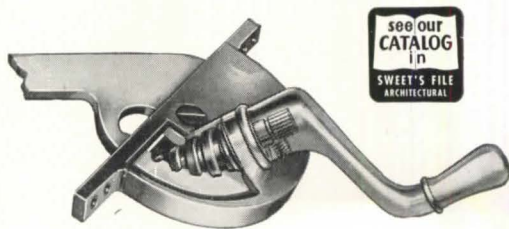
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THIS MONTH

(Continued from page 14)

architecture." With the end of the war, Dreiss resumed his studies at the University of California, while working in the office of Harris. At present he has his own practice in Los Angeles, where he is "back in line, Army style, waiting for the FHA, the CPA, and eventually maybe the WPA, but happy . . . 'doing what comes naturally.'"

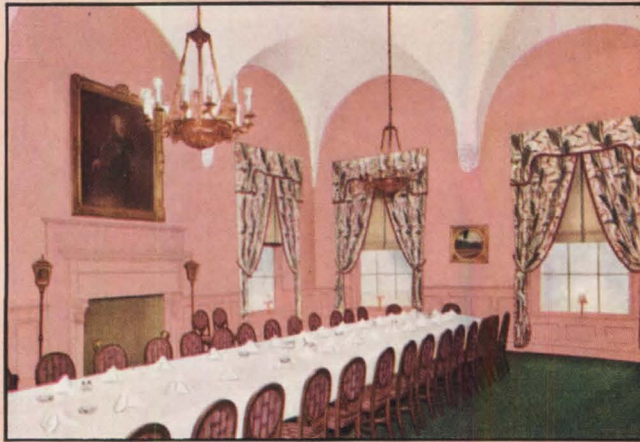


WILLIAM T. DREISS

Featured in this issue, on page 53, is the small opera shed on the grounds of Tanglewood in the Massachusetts Berkshires, designed by the well known firm of Saarinen, Swanson & Saarinen. From the office of Sanders & Malsin (see biographical notes in January 1947 PROGRESSIVE ARCHITECTURE) comes the design scheme for an entire blockfront of stores in Corning, N. Y., shown on page 68. Also known to our readers is Hugh Stubbins (April 1946 PROGRESSIVE ARCHITECTURE) whose house on a Massachusetts hillside is shown on page 74 of this issue.

The article on "Planning of Home Freezers" which appears in the Materials and Methods section this month—first of two on the subject—is by Philip F. Hallock, who achieved his B.S. and M.S. degrees in architecture at Pennsylvania State College. His early experience was gained in an engineering and construction office in Lancaster, Pa., and after some private practice, like many others he was uprooted in December 1941. Three years of work on the design of hospitals and industrial buildings in the office of Schmidt, Garden & Erikson, Chicago, were followed by service as a naval photographic intelligence officer in the Aleutians where "kindred spirits were found and the neglected water color brushes, always at hand just in case, eagerly sought paint." In March 1946 Hallock returned home to State College, Pa. (the town, not the school)

(Continued on page 20)



● A color arrangement such as this induces a feeling of well-being which aids the enjoyment of good food, well served.



● Warm glowing colors in this entrance foyer express a feeling of welcome and create a sense of cheerfulness.

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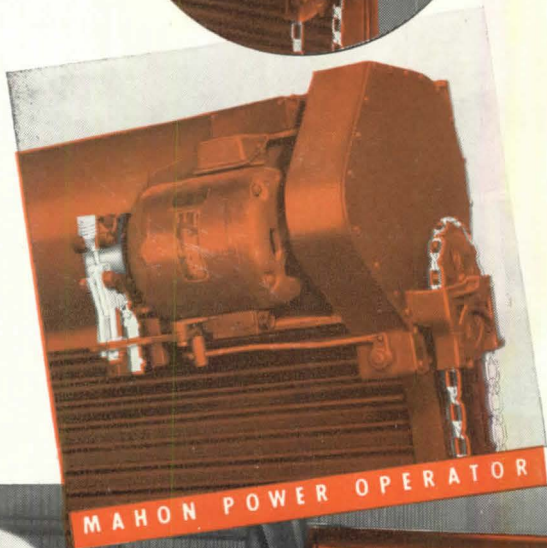
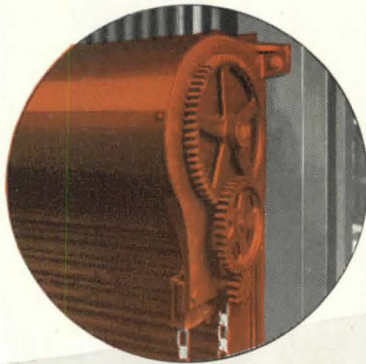
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MAHON

THIS MONTH

(Continued from page 16)



PHILIP F. HALLOCK

and private practice. Registered in Pennsylvania, New York, and Illinois, with a Certificate of the National Council of Architectural Registration Boards, he continues "to promote radiant heating and modern design." G. J. Stout, Ph.D., associated with Mr. Hallock on this article, bringing to the discussion knowledge gained as Food Technologist at Penn State College.

Appearing on page 80 is the second and concluding part of "Standard Specifications for Concrete Construction," by James D. Beacham, architect. The first part of this article was published in the December 1946 issue of PROGRESSIVE ARCHITECTURE.

NOTICES

FRANCIS E. LLOYD has opened his architectural office at 305 Grant Ave., San Francisco 8, Calif.

RAYMOND A. LESTER ASSOCIATES have removed their offices from New York City to 39 E. Prospect Ave., Mount Vernon, N. Y.

MACKIE & KAMRATH have moved their architectural office to 2713 Ferndale Pl., Houston 6, Tex.

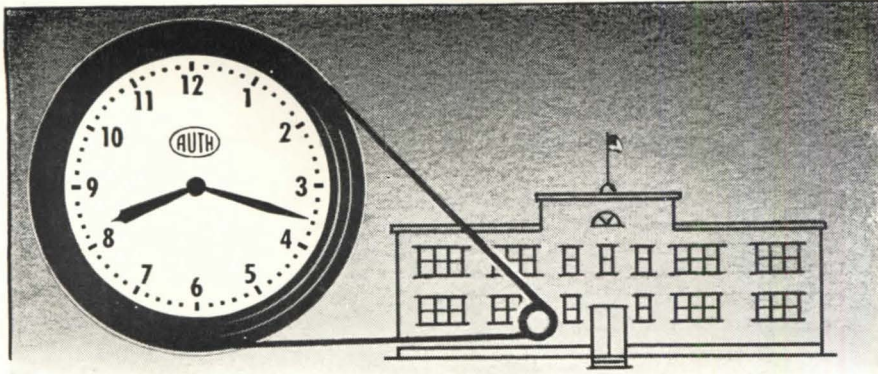
ROBERT MCKEAN, formerly associated with the office of Gilbert Rohde, is now located at 165 E. 72 St., New York 21, N. Y.

F. M. OLSTON has resumed his architectural practice at 306 Springer Blvd., Tulsa 3, Okla.

GEORGE H. STONER has opened an office for the practice of architecture and design at 166 Newbury St., Boston, Mass.

R. MARSHALL CHRISTENSEN has opened an office for the practice of architecture at 925 Madison Ave., New York, N. Y.

C. HOOD HELMER AND PRESTON M. COLE have announced their association for the practice of architecture under the name of HELMER AND COLE. Their office is at 30 Pleasant St., Woodstock, Vt.



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PROGRESS REPORT

Advance in the design of buildings moves rapidly; many bits of information come to us in the course of a month, through conversations, interviews, letters, and press releases that build into an impression of continuing, if faltering, progress. On this page for a time the editors of *PROGRESSIVE ARCHITECTURE* will attempt to pass on to you the items that appear to us most important, with what comment seems appropriate. It will not be a "news" report in the accepted sense; we gave up long ago trying to present timely news in a monthly magazine that is written many weeks before it reaches you. Our aim will be to try to find a pattern in events which may already be familiar to you as spot news, happenings that are not likely to have come to your attention, and isolated reports that reach us from individuals. The result may not always be encouraging; progress reports sometimes report no progress.

For instance, Housing Expediter Frank R. Creedon continues to issue optimistic statements about the quantity of housing to be built during the year, but there is official silence on the price, the quality, or the relation of that housing to town and city plans. Business-minded architects will notice that more non-housing construction is gradually being allowed, and that individual and group houses in the middle-class brackets are more free to fight for materials. Socially-minded planners and housers have not wept too copiously over the changes, because they had seen the Wyatt program degenerate into the familiar pattern of a scramble to build and sell bad houses, overpriced, in unplanned communities.

As remnants of last year's program disappear, it becomes apparent that the principal result of that brief flurry was the final birth of an industrialized housing industry. The opposition it will meet became very clear, but the needs—and the market—were also clearly outlined.

Government assistance will still be forthcoming, when nothing else in the economy is interfered with; the Expediter's office has announced that guaranteed market plans for prefabricators are being continued. In fact, the only change in this scheme which was devised to assure production of low priced houses is that the houses don't need to be low priced ("the new market guarantee contract will contain no price ceiling") and the production doesn't have to be assured ("benefits of the guarantee will continue even though a producer, through no fault of his own, is unable to meet the production schedule called for in the contract").

However, with or without government assistance, enough industrially produced houses will be on the market this year to be statistically important and, in many localities, physically noticeable.



Proved to exceed local code requirements, this prefabricated house was allowed to remain in its Massachusetts setting.

As distribution of prefabricated houses increases, conflict with out-of-date local building codes becomes more apparent. In Natick, Massachusetts, a Shelter Industries prefabricated plywood house which was being erected by the Solaray Corporation of Boston was ordered removed because it did not comply in exact detail with the local code.

An appeal was made to the State Emergency Housing Commission, and expert testimony was adduced to show that the construction—a stressed skin, box panel system using striated plywood inside and out—exceeded Natick building code requirements in every respect.

The Housing Commission granted a variance, and the house went ahead. However, Massachusetts is the only state which has legal machinery for setting aside local code requirements which may prevent the use of new materials or construction methods. This matter surely concerns not only prefabricators but many designers who are trying to take advantage of available techniques.

A further step toward easing local acceptance of unfamiliar materials and methods is made by the establishment of a Foundation for uniform testing and reporting by the Building Officials Conference of America, a body which has been working for some time on a basic building code. The plan is to establish central testing and research facilities, to which a manufacturer or proprietor can submit his material or method for analysis and report. Products approved will be given a label of acceptance and so noted in a bulletin which will go to the proper officials in all cities of 10,000 population or more. If this were a completely disinterested

public body, the end result as well as the aim would be unquestionably good. As it is, skeptics may raise an eyebrow at the fact that the activity is to be partly financed by "fees collected for the servicing and development of tests" and that the controlling Board of Governors is to be composed half of "participating members"—a category including manufacturers, general contractors, financial institutions, and insurance companies.

The technical experts in NHA have drawn a careful distinction between industrialized building (cutting across all the conventional construction processes as a new industry) and prefabrication (a greater degree of pre-assembly than in the past, with no great change in construction system). The Producers' Council has come forward with a third conception in what they call the "industry-engineered" house. Starting from the premise that present methods are acceptable and in many cases economical, and that a complete network of manufacturers, distributors, and erectors now exists, the Producers' Council has joined with the National Association of Retail Lumber Dealers in seeking to prove that standardization and dimensional coordination can effect appreciable savings.

A. Gordon Lorimer, until recently New York City's Chief Architect, is acting as technical consultant to the Producers' Council and is advising on the "industry-engineered" house. The plan, the overall design, and the basic construction are all fairly conventional; there is no attempt to educate or to pioneer in these respects. The advance will lie in the use of standardized products, with the house dimensioned to materials' sizes. A large planning module and the 4 inch dimensional increment are used. Savings will come principally through distribution—inventories can be more closely keyed to construction needs, and packaging and assembly will be simplified. Basic plans are suggested, with variations, but if the same principles are followed and the same unit materials ordered, savings should be possible in individual designs.

A French artist named Crotti is displaying in this country a new type of stained glass which he calls "gemmaux." It is actually a means of painting with glass; on a sheet of plate glass, colored glass pieces, cut or broken to various shapes, are arranged and built up so that any desired effect is obtained. The subject may be a formal composition or an abstract design. When the picture is finished, a transparent adhesive is used to bind the bits together and another sheet of glass is used as a cover, so that the whole thing is a sandwich. This freedom from the restrictions of lead separators seems to us to move stained glass into the position of a contemporary material which might be used to advantage in several types of buildings.

WORTHINGTON

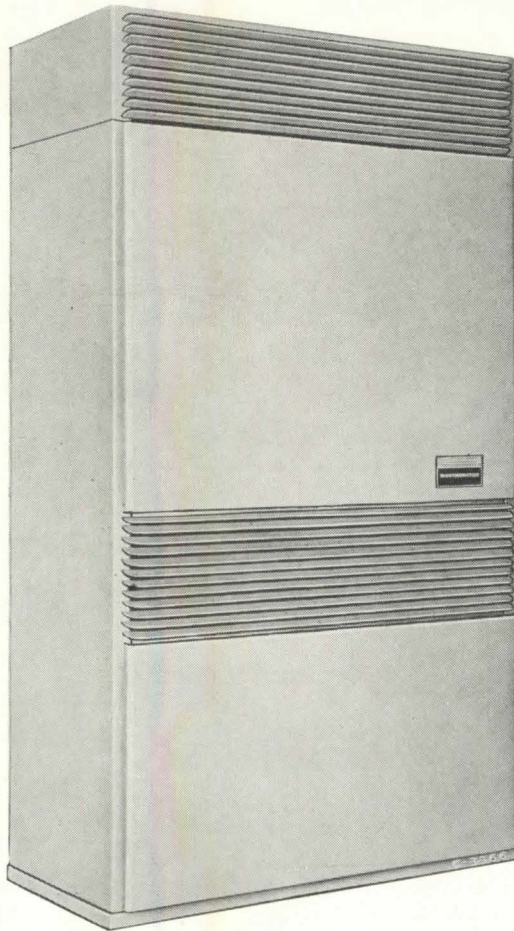
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Worthington Pump & Machinery Corporation, Harrison, New Jersey

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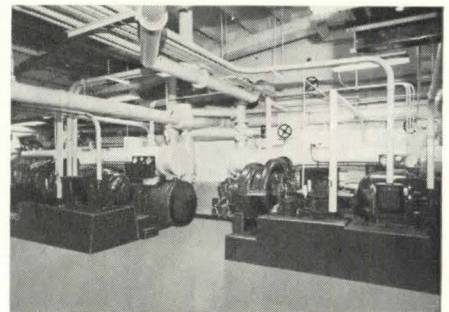
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"Integration" Is A Worthington Specialty

Making more of the "vital innards" of its systems from compressors to fittings, Worthington can supply completely "integrated" air conditioning or refrigeration for maximum efficiency and economy . . . another reason why *there's more worth in Worthington*. See your nearby Worthington Distributor for further information.

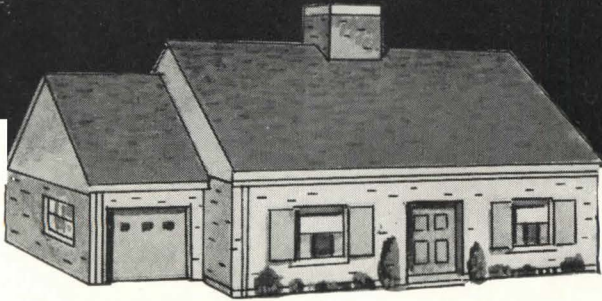
A6-16

WORTHINGTON



*Air
Conditioning
and
Refrigeration*

Luxurious Winter Comfort



....FOR SMALLER HOMES

MODERN radiant heating is neither luxury-priced nor limited only to larger homes. Smaller homes, too, can feature more healthful, more comfortable, more luxurious winter living with radiant heating, and that means added prestige for home-builder and home-owner.

THE "100" SERIES HEAT EXTRACTOR



This highly efficient radiant heating boiler was designed especially for smaller homes. A water insulated base provides extra safety in kitchen or utility room installations, and a copper coil within the boiler may be included to provide plenty of domestic hot water both winter and summer. The "100" Series Heat Extractor is designed for either manual or automatic firing.

For more healthful, comfortable living . . .
send for your *free* copy of our booklet—

"PLAN TO BE COMFORTABLE"



The NATIONAL RADIATOR Company

JOHNSTOWN, PENNSYLVANIA

A Screwdriver is all you need

To Adjust
Tru-sized
REG. U. S. PAT. OFF.
Door Jamb
to Variations
in a given
Door Size!

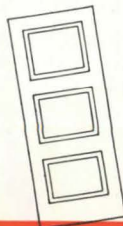


Only 10 minutes to install!

**SHOCK-ABSORBER LEAF SPRINGS
MAKE ACCURATE VERTICAL
ALIGNMENT QUICK AND EASY!**

Variations in door sizes used to require extra work to make doors and jambs fit accurately. The new Tru-sized Door Jamb eliminates this, because it is quickly and easily adjusted with only a screwdriver!

This variable adjustability is just one of the many advantages of Tru-sized Door Jamb! Add together all its many advantages, and you'll find installation time cut from 1-1½ hours for ordinary jambs to 8-10 minutes for Tru-sized Jamb!



Use Tru-sized
Doors in
Tru-sized Jamb
for a perfect
Installation

The Shock-Absorber Leaf Springs assure accurate fit for life . . . and there's *no* planing, *no* trimming, *no* squaring, with Tru-sized Jamb—all this time-consuming work is either eliminated or done at the factory!

Investigate the many advantages of the new Tru-sized Jamb TODAY!

THE WHEELER, OSGOOD COMPANY

Plants and General Office: Tacoma 1, Washington

NEW YORK OFFICE 1326 Empire State Building, New York 1, New York Phone: Penn. 6-2954
CHICAGO OFFICE 134 So. LaSalle Street, Chicago 3, Illinois Phone: State 5335-6-7
SAN FRANCISCO OFFICE 3045 19th Street, San Francisco, California Phone: Valencia 2241
LOS ANGELES OFFICE P. O. Box 7685 Del Valle Station, Los Angeles 15, Calif. Phone: Vandike 6326
TACOMA OFFICE 1216 St. Paul Avenue, Tacoma 1, Washington Phone: Main 8101

Performance COUNTS



Performance of a drawing pencil counts just as much as the performance of any fine instrument or tool. A pencil needs smoothness, strength and accurate grading. KIMBERLY Drawing Pencils have these "built-in-qualities" and there are 22 fine degrees from 6B to 9H—Tracing degrees 1-2-3-4 and Extra B intense black for artists' layout work. Try them—convince yourself that *Kimberlys* will perform.

Write to Dept. P for a free trial pencil selecting your favorite degree from the 22 Kimberlys. Mention your dealer's name and address.

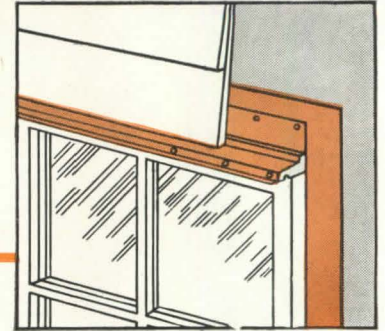
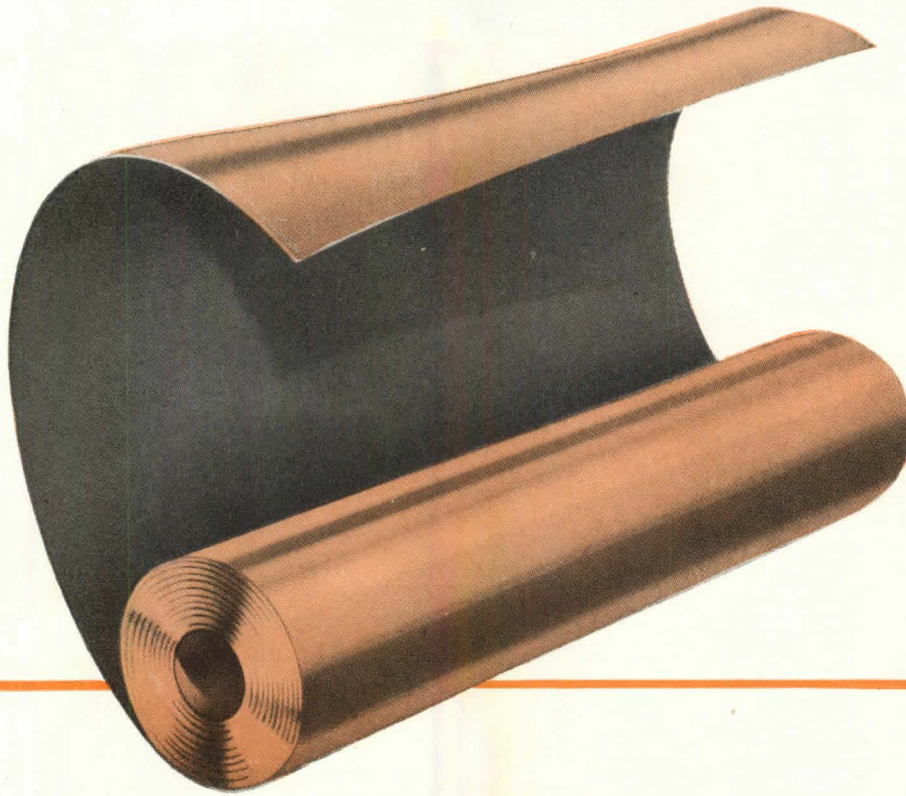
(This offer good only within U. S. A.)

Makers of Fine Pencils since 1889

GENERAL PENCIL COMPANY 67-73 FLEET STREET, JERSEY CITY 6, N. J.

KIMBERLY
Carbo-weld
DRAWING PENCILS

22 Degrees



"Electro-Sheet"

an outstanding material for concealed flashing applications

Anaconda "Electro-Sheet" is pure copper formed in thin sheets by an exclusive process of electro-deposition. The resultant product has been widely used for water-proofing and damp-proofing because of these salient features:

Produced in weights of 1, 2 and 3 oz. per square foot.

Non porous; water-tight and air-tight.

Made in wide, continuous lengths, (width up to 60").

Can be bonded firmly to high-grade building papers; available in this form from several manufacturers.

Also available coated both sides with special asphaltic compound.

Flexible, easy to handle, form and apply.

Moderate in price, since it makes a little copper go a long way.

In addition to the window flashing, illustrated,

"Electro-Sheet" is extensively and successfully used for spandrel beam flashing, as a foundation damp course between masonry and sills, as a damp course between sheathing and brick veneer, as a vapor seal for insulation, as flashing for roof ridges, in forming water-tight pans for shower stall floors, and in other concealed flashing applications. Further information in Sweet's, 1946, 8C-1. 4718

ANACONDA
TRADE MARK TO CONSUMERS

Anaconda
COPPER

THE AMERICAN BRASS COMPANY
General Offices: Waterbury 88, Connecticut
Subsidiary of Anaconda Copper Mining Company
In Canada: ANACONDA AMERICAN BRASS LTD.,
New Toronto, Ont.



"There were giants in the earth..."

America, above all lands, is blessed with Nature's lavish gifts.

And since it was given to *man* to have "dominion over all the earth," it is fortunate for *mankind* that Americans are custodians of so great a store of the world's natural resources . . . modern-day giants in the earth. For Americans are not a race but a *melt* of peoples, combining the wisdom, strength, ingenuity and idealism of many. A people whose blended characteristics act to stimulate the development of natural resources for the uses of all humanity.

So it is that America has become the cornucopia of the world!

For generations the harnessing of Nature's giants was accomplished only by laborious effort. But as American inventiveness expressed itself in better ways to "subdue the earth" the utilization of natural resources was complete.

No single development has contributed more than the plentiful production of durable, reliable *steel pipe*. Pipe to make the great resource of pure water the available servant of the people, pipe to distribute natural gas, to carry compressed air to quarry hammers, to expel mine water, for use in extracting valuable minerals . . . pipe for a thousand-and-one jobs that multiply and accelerate the utili-

zation of our natural resources.

Just as in other phases of modern American life, the development of natural resources has paralleled the development of steel pipe so that it becomes a truism to say *steel pipe makes it possible!*

The interesting story of "Pipe in American Life" will be sent upon request.

*Committee on
Steel Pipe Research*
OF
AMERICAN IRON AND
STEEL INSTITUTE

350 FIFTH AVENUE, NEW YORK 1, N. Y.

STEEL PIPE MAKES IT POSSIBLE!



. . . better living through pipes of steel for plumbing and heating purposes.

THE CARLTON



THE CONTINENTAL



THE CARLTON

Washington, D. C., M. Mesrobian, Architect

CHATEAU LAURIER

Ottawa, Canada, Ross & MacFarlane, Architects

THE COMMODORE

New York City, Warren & Wetmore, Architects

THE CONTINENTAL

Chicago, Walter W. Ahlschlager, Inc., Architects

DETROIT ATHLETIC CLUB

Albert Kahn, Inc., Architects

THE DRAKE

Chicago, Marshall & Fox, Architects

LOS ANGELES-BILTMORE

Schultze & Weaver, Architects

NEW YORK ATHLETIC CLUB

York & Sawyer, Architects

THE ROYAL ALEXANDRA

Winnipeg, Canada, Ross & McDonald, Architects

THE ROYAL YORK

Toronto, Canada, Sproatt & Rolph
and Ross & McDonald, Architects

THE STATLER

Washington, D. C., Holabird & Root, Architects

THE STEVENS

Chicago, Holabird & Roche, Architects

THE WALDORF-ASTORIA

New York City, Schultze & Weaver, Architects

THE WASHINGTON

Washington, D. C., Carrere & Hastings, Architects

Distinguished Hosts Choose The Stone of Distinction . . .

★ These are only a few of the continent's many fine hotels and athletic clubs built of Indiana Limestone.

Our Technical Division, with a century's experience in all applications of the nation's most frequently specified building stone, offers you personal counsel on questions unanswered by our Sweet's File Catalog.

You are invited to forward plans and specifications to the Institute for competitive cost estimates by our member companies.

INDIANA LIMESTONE INSTITUTE

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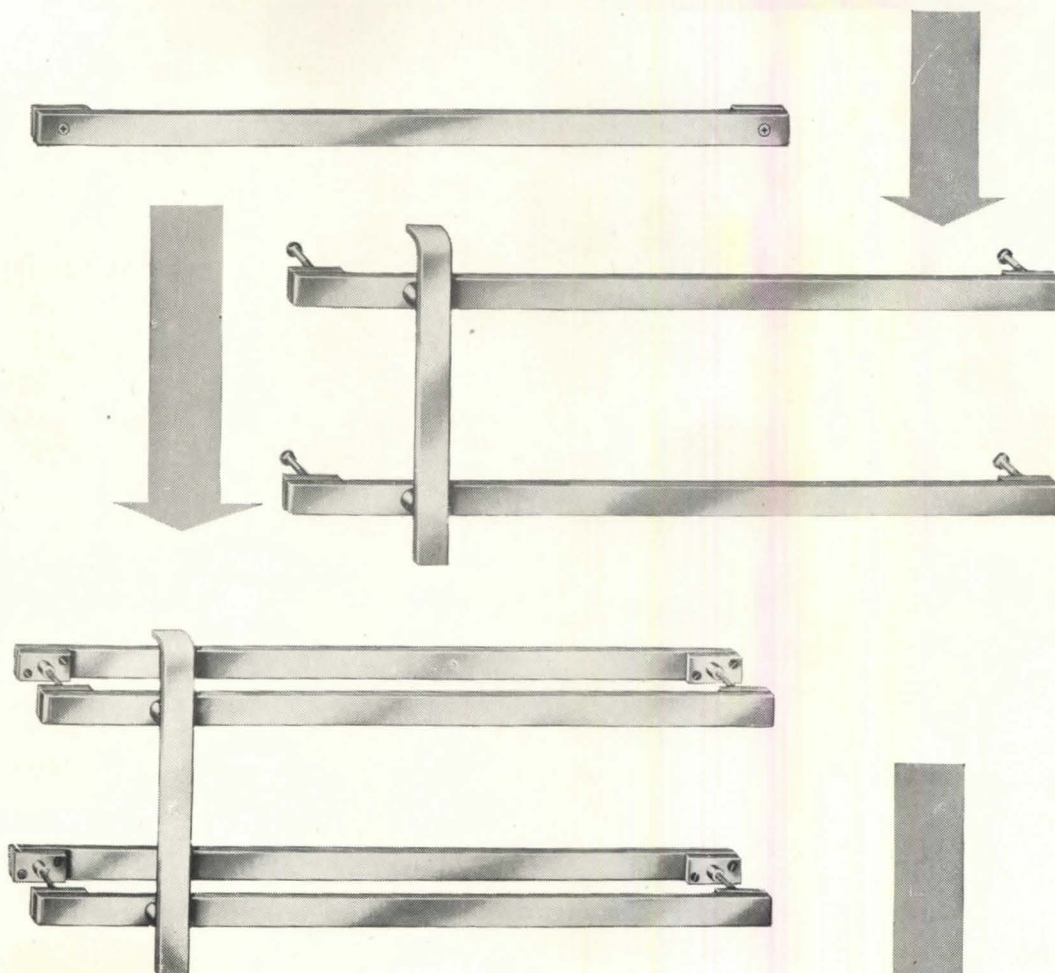


THE WALDORF-ASTORIA



THE STEVENS

ANOTHER NEW SARGENT PRODUCT...



PUSH AND PULL BARS OF EXTRUDED ALUMINUM ALLOY

SARGENT & COMPANY now offers you a modern line of push and pull bars made in two stock sizes—25" center-to-center, and 31" center-to-center—which take care of 90% of your requirements. Stock sizes can be shipped promptly. Other sizes can be furnished to order.

This is in accordance with Sargent's constructive policy of simplification which enables you to carry a reduced inventory devoted to those items most architects want. Sargent thus gives you maximum coverage of the market with minimum stock. This lessens the burden of your investment and assures you of faster turnover at a higher rate of profit.

The new Sargent push and pull bars are of extruded aluminum alloy with an impervious finish. Now available from Sargent Distributors.

SARGENT & COMPANY

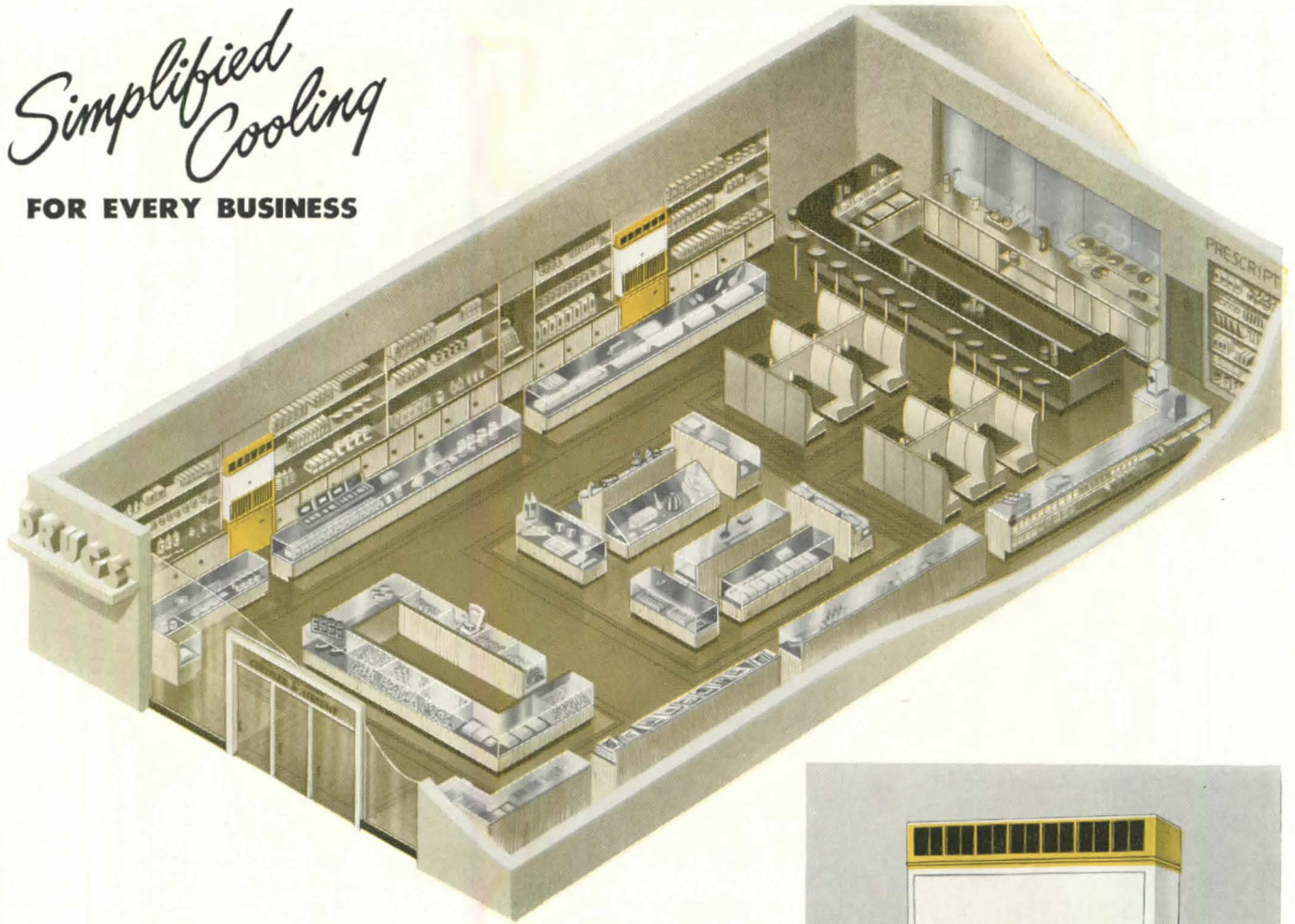
NEW YORK • NEW HAVEN, CONN. • CHICAGO

MAKERS OF "LIFETIME LOCKS FOR LIFETIME USE"



Simplified Cooling

FOR EVERY BUSINESS



A Drug Store Designed to Draw More Customers

A BUSINESS-MINDED architect planned it that way. He knew that air conditioned stores get more traffic—that cool, comfortable customers stay longer, *buy more*, and that employes are more contented, efficient, and that there is less absenteeism.

Chrysler Airtemp Packaged Air Conditioners were chosen because they simplify air conditioning installations in stores large and small. They can be installed singly or in multiples. Each is a complete, self-contained, automatic, "fool-proof" air conditioner. Packaged Air Conditioners are noted for great dependability, long life, low operating and upkeep costs. For details, write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio; in Canada—Therm-O-Rite Products, Ltd., Toronto.



Any Chrysler Airtemp Packaged Air Conditioner can be converted to a year-round air conditioner simply by adding a heating coil.

Automatically Yours

© 1947 Chrysler Corporation



PACKAGED AIR CONDITIONERS

HEATING

AIR CONDITIONING

COMMERCIAL REFRIGERATION



"The only thing they've agreed on so far is Lumite screens."

There's many a change made 'twixt first sketch and finished house, as architects and builders know. But window screens? Just one answer there from the start: Lumite, the amazing screen cloth that cannot stain!

Yet this is only one of Lumite's many advantages!

Where are your houses going up? In a coastal area? Biting salt air quickly corrodes ordinary screens, but leaves Lumite unharmed. Fac-

tory area? Smoke, soot and acid fumes have no effect on Lumite. Rainy region? Lumite will not rot or rust in any weather from snow to burning sun.

Lumite (woven of Dow's Saran) is a modern material for you to work with—the screen for every part of the country! When you design or build that "perfect" house, be sure to recommend Lumite screens for windows, doors and porches. Write for our A.I.A. 35P folder and free sample.

Sold through Hardware and Lumber Dealers and Screen Manufacturers

LUMITE DIVISION, Chicopee Manufacturing Corporation
47 Worth St., New York 13, N. Y.

LUMITE

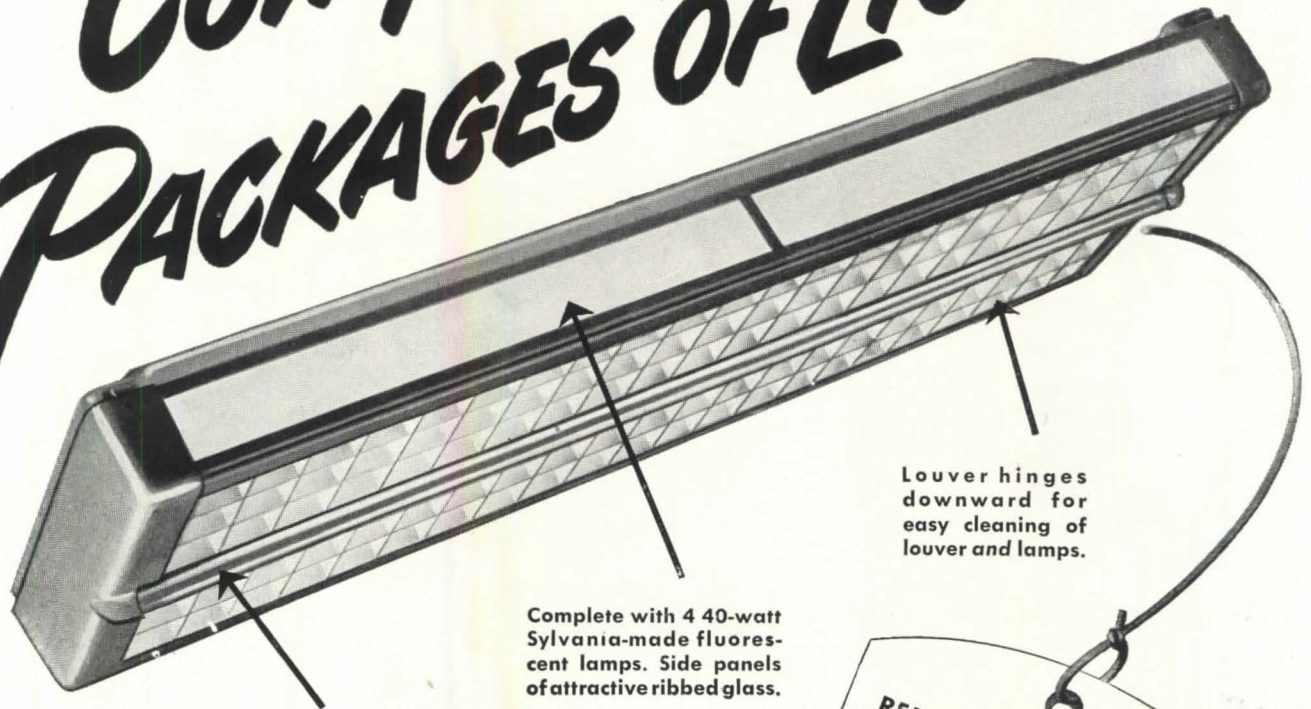
MODERN INSECT SCREEN CLOTH

**HERE'S WHY
LEADING ARCHITECTS
AND BUILDERS
SPECIFY LUMITE:**

- Cannot stain
- Won't rust or rot
- Never dents or bulges
- Needs no painting
- Strong! (Lumite is woven of heavy gauge filament—0.015")

SPECIFY THE QUALITY FLUORESCENT FIXTURES THAT ARE

Complete PACKAGES OF LIGHT!



Louver hinges downward for easy cleaning of louver and lamps.

Complete with 4 40-watt Sylvania-made fluorescent lamps. Side panels of attractive ribbed glass.

Not necessary to remove a single nut or screw to change starters or lamps.

CL-440—one of Sylvania's line of modern, attractive commercial fluorescent fixtures—tops in streamlined-styling—with *every part*—housings, lamps, ballasts—guaranteed by *one* manufacturer.

Sylvania's complete packages of light embody the best in engineering and quality... beautiful lines... an ease of maintenance that's especially important to every one of your clients! And there's an ideal fixture for every lighting need.

Specify guaranteed *complete* packages of light. Less trouble for you... the best in lighting for your clients! Sylvania Electric Products Inc., Salem, Mass.



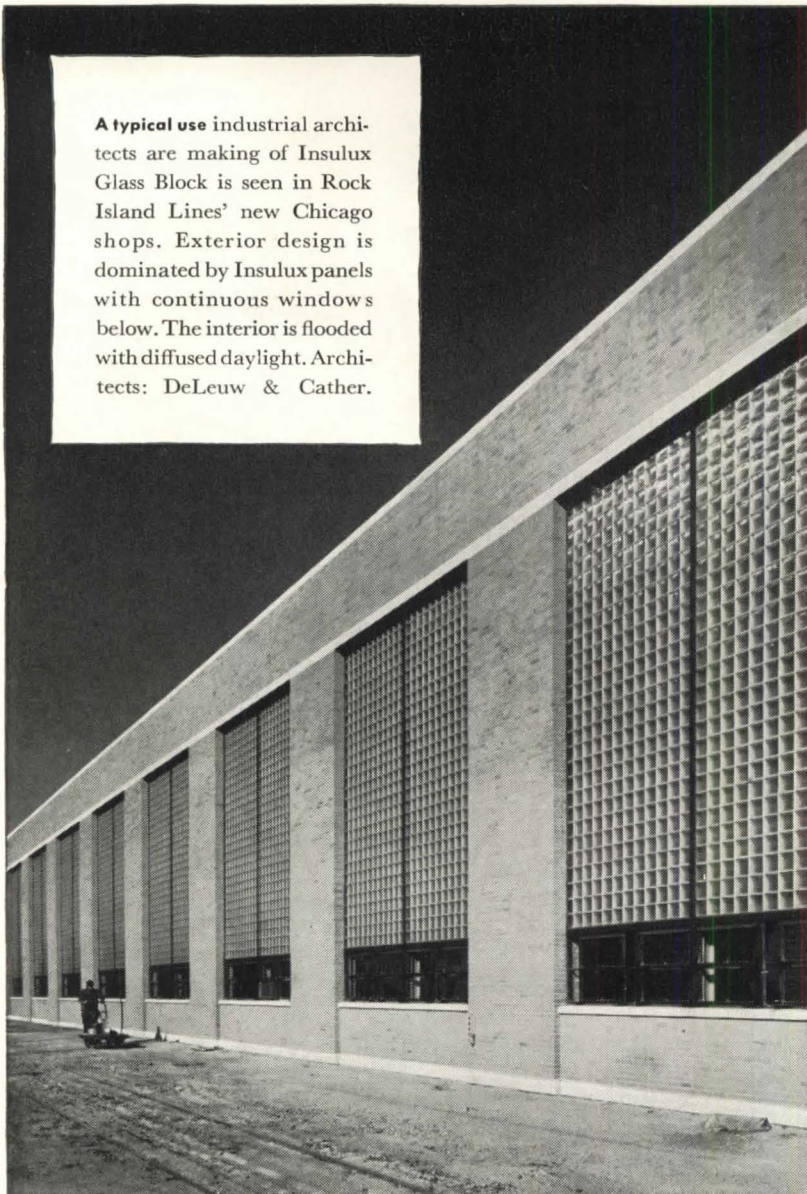
They have all the rugged qualities, brilliance and the many refinements that will far surpass the standards of the most critical buyers.

"Fluorescent at its Finest!"

FOR OFFICE, STORE, HOME, FACTORY

SYLVANIA ELECTRIC

A typical use industrial architects are making of Insulux Glass Block is seen in Rock Island Lines' new Chicago shops. Exterior design is dominated by Insulux panels with continuous windows below. The interior is flooded with diffused daylight. Architects: DeLeuw & Cather.



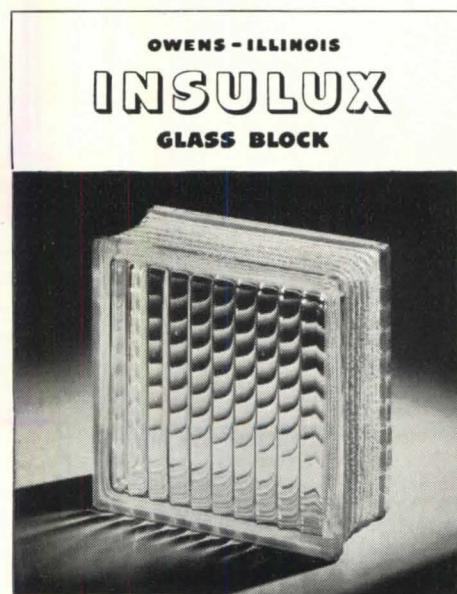
Ceiling-high Insulux panels distribute daylight across broad work areas, cut off distracting views. Clear windows furnish ventilation and vision out. Insulux Glass Block has proven advantages in all classes of construction.

How an architectural material works for industry

IMPROVED working conditions and low maintenance costs come automatically with Insulux Glass Block—a material of recognized architectural merit.

In key with contemporary architectural thinking for industrial buildings, Insulux has also won enthusiastic industrial approval. Management favors the prevention of rot, rust and corrosion—elimination of painting—the ease of cleaning. High insulating value makes possible *economical* air conditioning of wide areas. Heat loss in winter and heat gain in summer are materially reduced.

For the many practical uses of Insulux Glass Block in industrial, commercial and residential construction, consult the "Glass" section of Sweet's Architectural Catalog. You will find technical data, specifications and installation details. Or write Dept. D-27, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.



Insulux Glass Block is a functional building material—not merely a decoration. It is designed to do many things other materials cannot do. Investigate!

Yes...
Here's a family...



...that's a happy
triangle



Thanks to a far-sighted architect
who specified "oversize" pipe

IT'S cleanup time" in this happy home,
and that means right now, for everybody! No stand-
ing around to wait your turn at the bath. No dis-
tressing dribble at Dad's shower while the tub runs
for Junior.

It was a far-sighted architect who set the stage for
this happy scene--an architect who installed ade-
quately sized steel piping--pipe that some people
might call "oversize," big enough to supply all the
water all the members of the family want all the time.

Every architect and builder can contribute to sit-
uations like this in America's homes, new and
remodeled ones alike. A few dollars more, invested
in larger diameter steel pipe, will provide amply for
the extra shower to go in later, the automatic laun-
dry equipment, the garbage disposal unit, the lawn
sprinkler, and those other modern home conveni-
ences that make far more pleasant living.

So do your bit for happier, healthier homes--spec-
ify steel piping adequate for tomorrow's needs.

FOR HAPPIER HOMES

.... INSTALL STEEL PIPING
ADEQUATE FOR TOMORROW'S NEEDS



YOUNGSTOWN

THE YOUNGSTOWN SHEET AND TUBE COMPANY

GENERAL OFFICES - YOUNGSTOWN 1, OHIO

Export Offices - 500 Fifth Avenue, New York City

Manufacturers of

CARBON - ALLOY AND YOLOY STEELS

Pipe and Tubular Products - Sheets - Plates -
Electrolytic Tin Plate - Coke Tin Plate -

Conduit - Bars - Rods - Wire - Cold Drawn
Carbon Steel Rounds - Tie Plates and Spikes.

What keeps the lobster laughing can keep your clients happy, too!



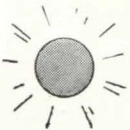
The Lobster laughs in crustacean glee at the dangers of life in the briny deep. Nature provided him not only with fierce, offensive claws but also with *armored protection*.

The Barrett Specification* Roof, with its armored wearing surface of gravel or slag, provides comparable protection for building structures. It's so tough and long-wearing it can be bonded against repairs and maintenance expense for as long as 20 years.

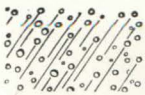
Over 90 years of successful roofing experience has demonstrated the sound value of the gravel or slag wearing surface of a Barrett Specification Roof:



1. It holds in place the heavy-poured (not mopped) top coat of coal-tar pitch—providing a doubly thick waterproof covering.



2. It provides protection against the sun's actinic rays which otherwise dry out the valuable oils in roofing bitumens.



3. It protects the roof against mechanical damage, hail and wind, wear and tear.



4. It interposes a surface of fireproof rock between the building and flying embers—makes a roof that carries Fire Underwriters' Class A Rating.

Built up of alternate layers of coal-tar pitch and felt, topped by a thick *pouring* of pitch to anchor the gravel or slag wearing surface, it is the toughest, longest-lasting built-up roof made. It is waterproof, fire-safe, sun-resistant, and armored against mechanical damage. Provide the best for the buildings you design. Include Barrett Specification Roofs in your building specifications. The Atomic Bomb Plant at Oak Ridge, Tenn., the Chrysler and R.C.A. buildings in New York, the Field Building in Chicago and many other famous American buildings—all Barrett-roofed—will confirm the soundness of your choice.



THE BARRETT DIVISION

Allied Chemical & Dye Corporation
40 Rector Street, New York 6, N. Y.

2800 So. Sacramento Ave. Birmingham
Chicago 23, Ill. Alabama

In Canada: The Barrett Company, Ltd.,
5551 St. Hubert Street, Montreal, Que.

*Reg. U. S. Pat. Off.

A.W. FABER'S *CASTELL* LOCKTITE

the professional man's
refill drawing pencil which
embraces 7 exclusive features

for drawing
sketching
retouching

CLEAN—No need to touch the lead and get graphite particles or dust on your fingers or smudges on your drawing. Hold point to paper, press button, lead can be adjusted by upward or downward movement of hand.

NON-BREAKAGE—An unusually fine precisioned collet supports the graded lead all the way around and prevents it from breaking or snapping off under greater than normal pressure during the pointing or sanding process or when in actual use.

NON-SLIPPAGE—The same precision collet holds the lead in a bulldog grip. Lead positively cannot slide back into the holder.

QUICK—Just press your thumb on the button release. Eliminates two-hand screwing or turning operation.

STURDY—Finest quality plastic and metal used in every part, exposed metal parts gold plated, all expertly assembled.

BALANCED—Every part is well proportioned giving you a drawing instrument which is perfectly balanced in your hand.

GUARANTEED—If your Castell Locktite does not perform perfectly, return it to your dealer or to us for exchange immediately.

Holds all standard makes of refill graded drawing and retouching leads. We recommend WINNER Techno-TONE 1930.

only \$1 at your Art Supply House, Drawing Material Dealer,
Blue Printer, Stationer or
Photographic Supply Shop.

A.W. FABER INC.
NEWARK, N. J.



Only \$400 per classroom
brings 40% greater educational growth

With the elements pictured above, you can get the correct p/l/f/s* in a schoolroom at about \$400 additional per room if done when a 20-room school is under construction. Most existing schoolrooms can be so modernized at a moderate cost.

The benefits of correct p/l/f/s as revealed by accurate tests and measurements in Texas schools are: (a) 10 months educational gains in 6 months, and (b) significant improvements in the physical well-being of the school children.

*p/l/f/s—the initial letters of the words "painting; lighting; fenestration; seating" which are the essential elements of the Harmon Technique for schoolroom improvements as developed under the supervision of Dr. Darell B. Harmon, Executive Director of the Inter-Professional Commission on Child Development.

Luminall paint is used in these p/l/f/s programs because it combines high light reflection and complete light diffusion. Covers in one coat; dries in 40 minutes; is very economical. Comparable efficiencies to those obtained in schools may be expected in many types of factories, workrooms and offices.

The makers of Luminall will be glad to forward a copy of Dr. Harmon's "LIGHT ON GROWING CHILDREN," reprinted from Architectural Record. On receipt of sketches showing dimensions and details of schoolroom, specifications will be furnished according to the Harmon Technique without cost or obligation. NATIONAL CHEMICAL & MFG. CO., 3617 S. May Street, Chicago 9.

**Paint New Plaster
with Luminall**

You can use Luminall over new plaster—the moisture in the plaster will not damage it. Luminall has a porous film that allows moisture to escape through it. No long waiting for plaster to dry before delivering a structure fully decorated! Send for your copy of PAINTING FOR LIGHT AND DECORATION, a useful and comprehensive 24-page book on casein paste paint and specifications for applying Luminall.

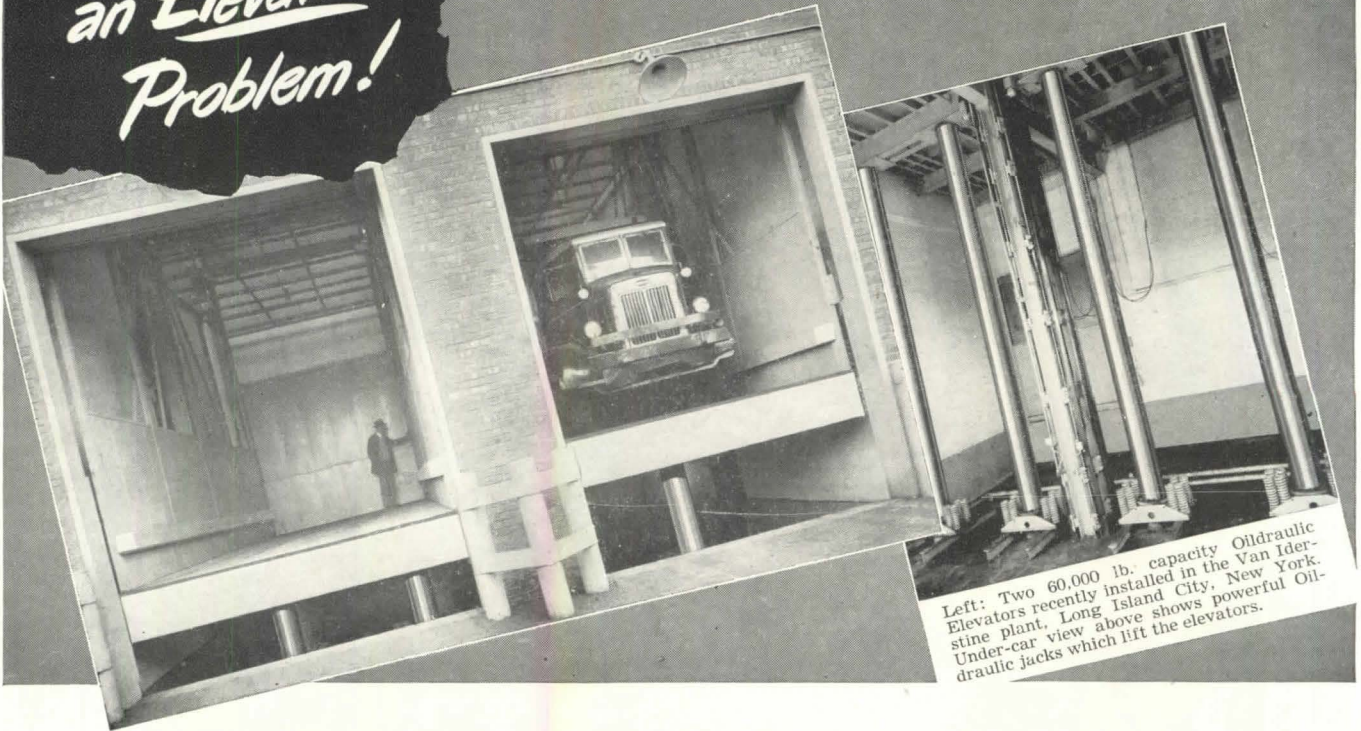


LUMINALL

the light-reflective
 paint for interiors

Solution to an Elevator Problem!

When you're planning a 2, 3 or 4 story building and heavy duty elevators are required . . .



Left: Two 60,000 lb. capacity Oildraulic Elevators recently installed in the Van Idersine plant, Long Island City, New York. Under-car view above shows powerful Oildraulic jacks which lift the elevators.

You get these important advantages by specifying "the elevator that's pushed up"



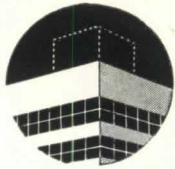
LIGHTER SHAFTWAY STRUCTURE

No need for heavy, load-bearing supporting columns to carry the elevator and its load. The Rotary Oildraulic Elevator is pushed up from below by a powerful hydraulic jack . . . not pulled from above.



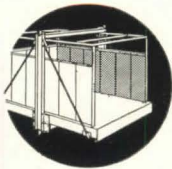
ACCURATE LANDING STOPS

Guided by the highly efficient "Oildraulic Controller," this modern elevator operates smoothly and stops at floor landings with accuracy. Very important where loading and unloading is by power vehicles.



NO COSTLY, UNSIGHTLY PENTHOUSE

The Oildraulic Elevator does away with the penthouse that interferes with modern, streamlined designs. No special machine room required either . . . compact power unit can be located in any convenient space.



RUGGED, HEAVY-DUTY CONSTRUCTION

Every Rotary Oildraulic Elevator is built to take hard wear. Construction is extremely rugged, with heavily reinforced sling and platform. Owners everywhere say this elevator gives dependable, lowest cost service.

For data to help solve your elevator problems

ROTARY LIFT CO.,
1010 Kentucky,
Memphis (2), Tenn.
Send complete information and Architect's Preliminary Layout Data.

Name

Address

City & State

Rotary

OILDRAULIC ELEVATORS



Soon after Edison Electrified the World

OTIS Electrified the Elevator

Otis installed the world's first successful *electric* elevator in 1889... soon after electricity became commercially available. • *Hydraulic* elevators, currently in use at that time, required bulky, heavy equipment and were expensive to install and operate. • The *electric* elevator, compact and more simple to install, made elevator service economically practical for buildings of every size. • This important step in the development and improvement of elevator service typifies the basic pioneering which has maintained Otis leadership for nearly a century.



**ELEVATOR
COMPANY**

OFFICES IN
ALL PRINCIPAL CITIES

For the latest in vertical transportation call Otis today.

1818 HOPE'S 1947

LOK'D BAR STEEL WINDOWS

PIVOTED WINDOWS

COMMERCIAL PROJECTED WINDOWS

$1'-8\frac{7}{8}"$ A12120				$3'-8\frac{7}{8}"$ B22140				$3'-8\frac{7}{8}"$ A32160				$4'-5\frac{0}{8}"$ A42140				$4'-5\frac{0}{8}"$ A42140			
$1'-8\frac{7}{8}"$ A13121				$3'-8\frac{7}{8}"$ B23141				$3'-8\frac{7}{8}"$ A33161				$4'-5\frac{0}{8}"$ A43141				$4'-5\frac{0}{8}"$ A43141			
$1'-8\frac{7}{8}"$ A14121				$3'-8\frac{7}{8}"$ B24141				$3'-8\frac{7}{8}"$ A34161				$4'-5\frac{0}{8}"$ A44141				$4'-5\frac{0}{8}"$ A44141			
$1'-6\frac{0}{8}"$ A15121				$3'-6\frac{0}{8}"$ B25141				$3'-6\frac{0}{8}"$ B25142				$4'-3\frac{0}{8}"$ A35161				$4'-3\frac{0}{8}"$ A35162			
$1'-6\frac{0}{8}"$ B26141				$3'-6\frac{0}{8}"$ B262414				$3'-6\frac{0}{8}"$ A36161				$4'-3\frac{0}{8}"$ A362614				$4'-3\frac{0}{8}"$ A46141			
$1'-6\frac{0}{8}"$ B27141				$3'-6\frac{0}{8}"$ B272414				$3'-6\frac{0}{8}"$ A37161				$4'-3\frac{0}{8}"$ A372614				$4'-3\frac{0}{8}"$ A47141			
$1'-6\frac{0}{8}"$ B28141				$3'-6\frac{0}{8}"$ B282415				$3'-6\frac{0}{8}"$ A38161				$4'-3\frac{0}{8}"$ A382615				$4'-3\frac{0}{8}"$ A48141			
$1'-2\frac{0}{8}"$ B29141				$3'-2\frac{0}{8}"$ A39161				$3'-2\frac{0}{8}"$ B29141				$4'-2\frac{0}{8}"$ A39121				$4'-2\frac{0}{8}"$ A39121			

NOTE
TYPES MARKED "W" ARE CARRIED IN WAREHOUSE STOCKS. REMAINING TYPES CAN BE PROMPTLY SHIPPED FROM FACTORY.

NOTE
ALL VENTS SHOWN TO PROJECT OUT MAY BE MADE TO PROJECT IN, PROVIDED ALL VENTS IN THE SAME UNIT PROJECT IN.

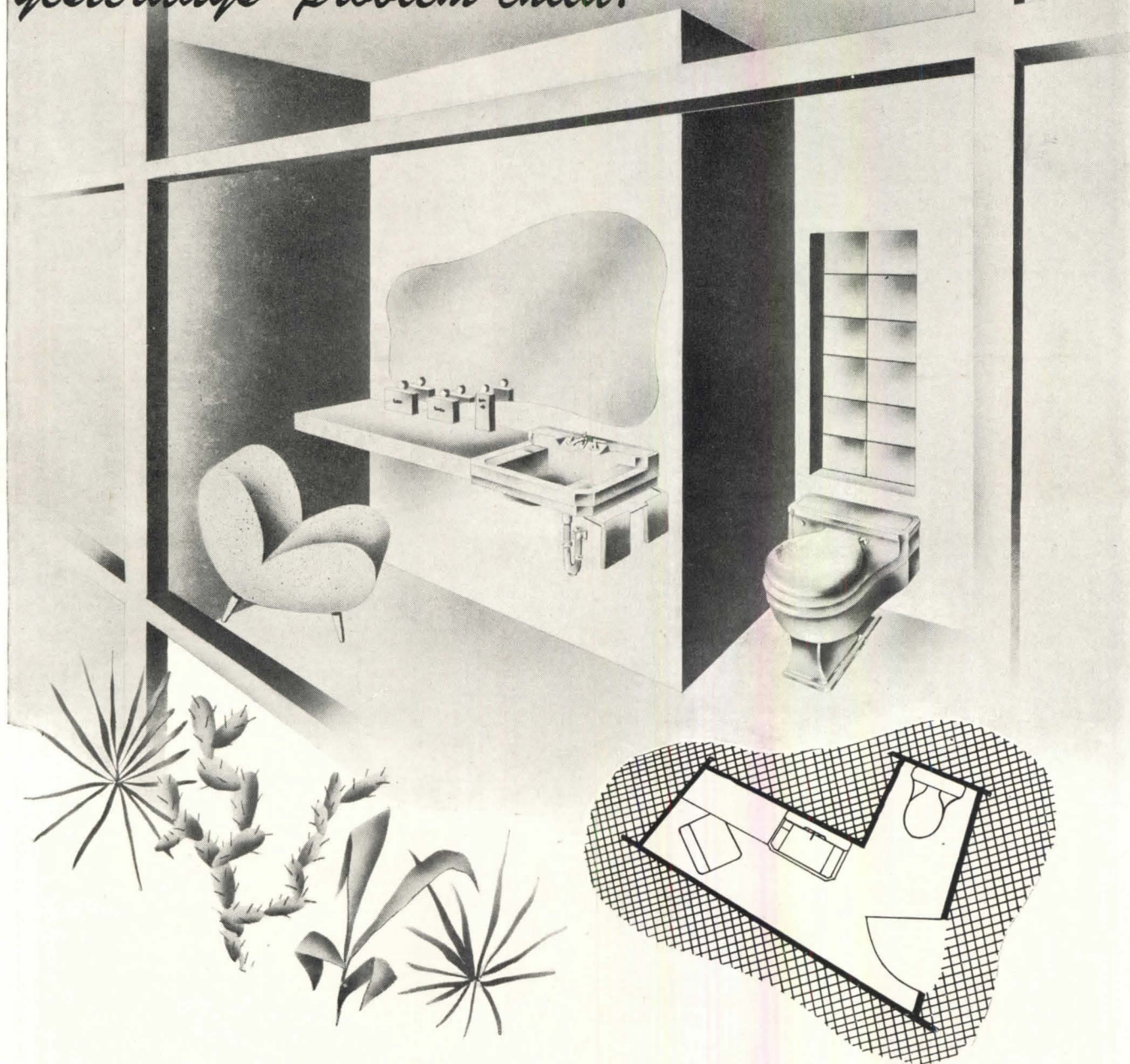
STANDARD TYPES AND SIZES

HOPE'S LOK'D BAR STEEL PIVOTED AND COMMERCIAL PROJECTED WINDOWS OFFER EXTRA STRENGTH—DOUBLE THAT OF ORDINARY SASH—LOW MAINTENANCE COSTS AND FREEDOM FROM TROUBLE. THERE ARE NO LOOSE OR APPLIED WEATHERINGS TO CORRODE AND BREAK AWAY BUT VENTILATORS ARE BUILT AS SOLID WELDED CASEMENTS AND FRAMES HAVING SOLID SECTION WIDE WEATHERING FLANGES ROLLED AS INTEGRAL PARTS OF THE SOLID STEEL BAR. NO OTHER PIVOTED OR COMMERCIAL PROJECTED STEEL WINDOW HAS THESE ADVANTAGES.

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A Timely Tip for Your Customers!

TURN OFF the Regular Heating System

On Days



CHILLY MORNINGS

'Like' These



WARM AFTERNOONS



COOL EVENINGS

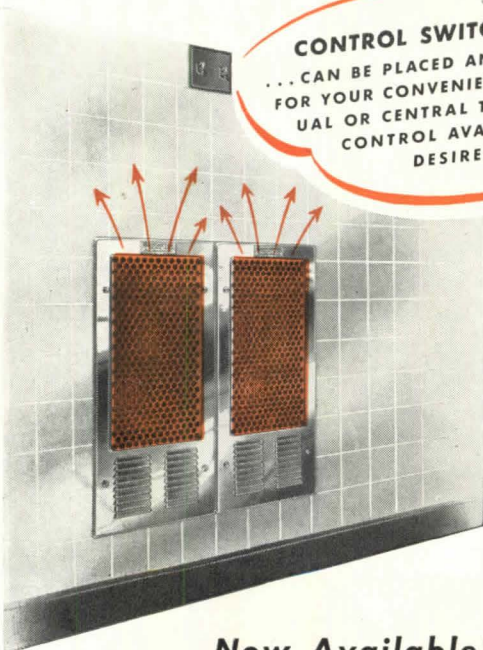
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Frank Adam Quikheters are excellent for any day on which heat is needed, but they are particularly ideal for days when the weather is extremely variable... damp and chilly mornings, warm afternoons and cool evenings... days when the regular heating plant sends forth an uncomfortable amount of heat, and yet, it is too cool to be without some warmth in the house.

Easy to operate, requiring only the flip of a conveniently-located switch, **FA** Quikheters send forth billows of warm air that will warm an average room in less time than it takes to build a fire in the regular heating plant. And when the desired temperature has been reached, you simply turn it off. Or should you want it, thermostatic control is available at slight additional cost.

Encourage your customers and clients to install one or more of these attractive, convenient, fuel-saving, comfort-giving units and thus help to insure a balanced heating system.

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ELECTRIC COMPANY
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SERVICE EQUIPMENT
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LOAD CENTERS
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The Crane Drexel Bathroom Group

Quality Plumbing

**for every type
of construction**

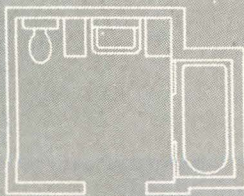
No matter what type of dwellings you are planning, you will find just the equipment your clients want in the Crane line.

This line includes bathroom groups, kitchen sinks, laundry tubs in a size and style to fit every plan—a price to suit every building budget. The public has always expressed a preference for Crane quality, and in this new Crane line they will find the finest fixtures Crane has ever produced.

The Crane line of quality heating equipment,

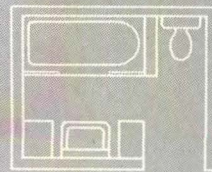
too, is complete, including boilers and furnaces for coal, coke, oil or gas, radiators, convectors, controls, water specialties, pipe, valves and fittings.

Your Crane Branch will be glad to discuss your needs and help you prepare specifications to suit your requirements, giving approximate delivery dates. If you have not received a copy of the colorful new book, "Presenting the 1947 Crane Plumbing and Heating Line," ask for one.



ROOM SIZE—7' x 9'

At the left is a floor plan of the room, shown above, built to permit photographing in actual room settings. The Drexel Group can, of course, be used in smaller bathrooms which you are planning, as suggested in the two layouts at the right.



ROOM SIZE—7½' x 6'



ROOM SIZE—5½' x 5'

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DAUPHIN COUNTY COURT HOUSE, Harrisburg, Pa.

Lawrie & Green, architects — Harrisburg, Pa.

William A. Berbusse, Jr., Inc., general contractor — New York City

The Dauphin County Court House at Harrisburg, Pa. is one of the finest examples of court house construction in the country.

In this distinctive, modern building—hollow metal was supplied by Jamestown Metal Corporation.

● Jamestown Metal Corporation requests an opportunity to work with architects on plans for Elevator Enclosures, Interior Trim, Hollow Metal Doors, Office Partitions and Cold Rolled Moulding in Bronze, Aluminum, Steel and Stainless Steel.

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Quality

EXT. - D. F. P. A.



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In Countless Applications — in Peace and in War
— Douglas Fir Plywood Has Proved Itself

More Fir Plywood Soon Will Be Available for All Uses

The unusual demands of today's home building program have made the supply of Douglas fir plywood temporarily critical. But more plywood is being manufactured today than in pre-war years, and as controls are lifted an ever-increasing supply will flow into normal trade channels. Keep in touch with your regular source of supply!

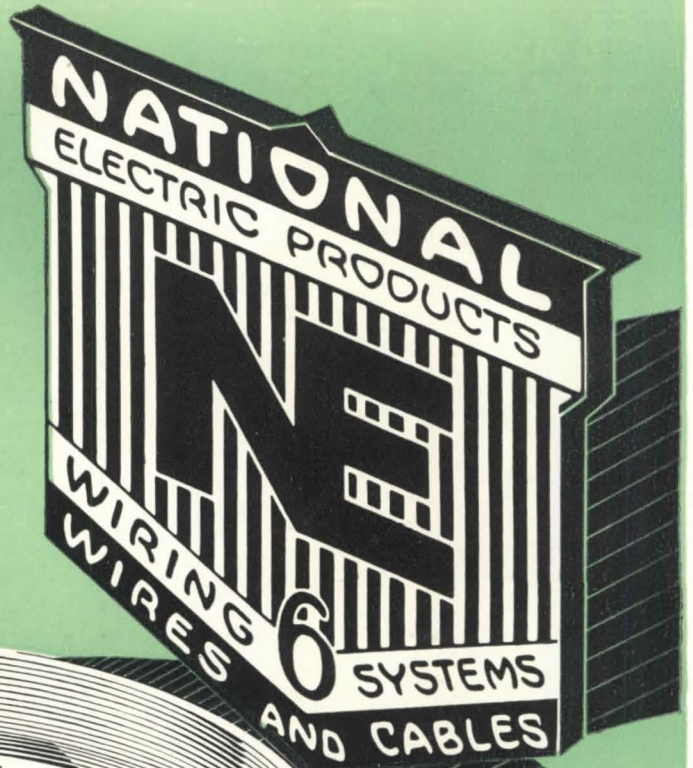
Builders and specifiers have learned to turn to Douglas fir plywood whenever the need is for a material which is durable yet easy to work, light yet strong and rigid, economical yet dependable. This modern "miracle wood" is made in many grades, each engineered for particular jobs. Each is thoroughly tested in the Douglas Fir Plywood Association laboratory and proved in actual use conditions. Douglas fir plywood has served with exceptional performance in home building, in general construction, in industry, in marine work . . . for outdoor

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When Mr. Mayers specifies PETRO,

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FRANCIS L. S. MAYERS, prominent architect of New York, is at present designing a number of large churches and schools, including plans for a substantial church, parish house and rectory for St. Paul's Episcopal Church in Riverside, Conn. Mr. Mayers makes these comments on oil heating, especially its use in Churches:

"I consider oil heating in three terms, quickness in getting results, efficient heat, and a clean building. Oil heating is especially applicable to churches and subsidiary buildings which call for spasmodic heat and oftentimes for heat at a moment's notice. Oil heat results in considerable saving in space over other types of heating and this space can be put to good use in the church basement.

"With the Petro System you get splendid service with less cost in operation. Petro has made a number of installations for me resulting in very satisfied clients."

WHAT Mr. Francis L. S. Mayers says about the never-failing satisfaction Petro Systems are giving his clients has been repeatedly confirmed by other prominent architects and engineers for over forty years.

A Petro Oil Burning System *can* be counted on for good heating at low-cost. It responds promptly to fluctuating demands . . . assures freedom from drudgery, costly maintenance and annoying interruptions . . . conserves valuable floor-space . . . contributes to building cleanliness . . . promotes occupants' comfort and health.

All of these make for that fine performance which is the architect's best guarantee of client satisfaction.

INDUSTRIAL MODELS: No. 5 or No. 6 fuel oil; manual, semi- or automatic operation; 8 sizes up to 450 bhp. Thermal Viscosity preheating.

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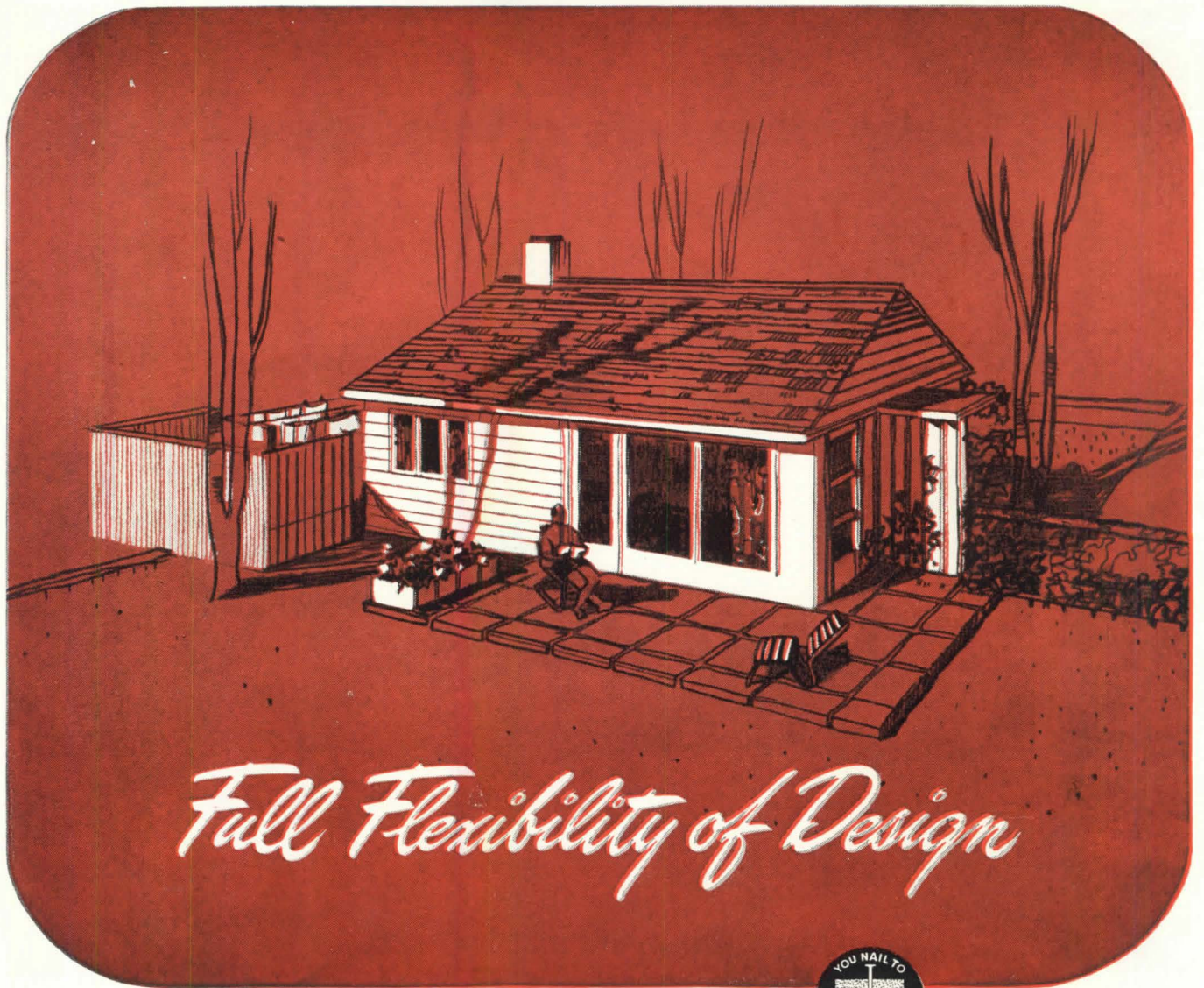
FULL DATA on Petro Industrial Burners are in catalog files of Sweet's and Domestic Engineering. Details on Petro Domestic Burners available in separate catalog. Copy of either sent gladly on request.

PETRO

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cuts steam costs

PETROLEUM HEAT AND POWER CO. • Makers of Good Oil Burning Equipment Since 1903 • Stamford, Conn.



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Stran-Steel framing is a building product of Great Lakes Steel Corporation



Stran-Steel is versatile. It gives full scope to architectural planning, asks no compromise of beauty, utility or individuality of design. Its great flexibility is mainly the result of three factors:

The Nailing Groove. This patented feature, found exclusively in Stran-Steel members, permits collateral materials to be *nailèd directly to the frame*. Nails are bent and clenched in a "grip of steel," held 40% more firmly than in wood.

Assembly Methods. Practically any type of joint or connection can be accomplished, simply and efficiently, with Stran-Steel. Members are joined directly by self-threading screws or with the aid of specially designed Stran-Steel fittings. On large construction projects, erection can be further speeded by welding.

Pre-Cut Members. Stran-Steel members are cut to architect's exact specifications, for fast erection at the building site. Designing is simplified because the Stran-Steel system is simplified, utilizing only a few basic members.

Stran-Steel is especially economical for multiple dwelling units . . . highly practical for all light-load buildings. Fire-resistant, rigid and durable, it protects the building investment. For further information, see Sweet's File, Architectural, Sweet's File for Builders, or the January issue of Building Supply News.

BUILD WITH

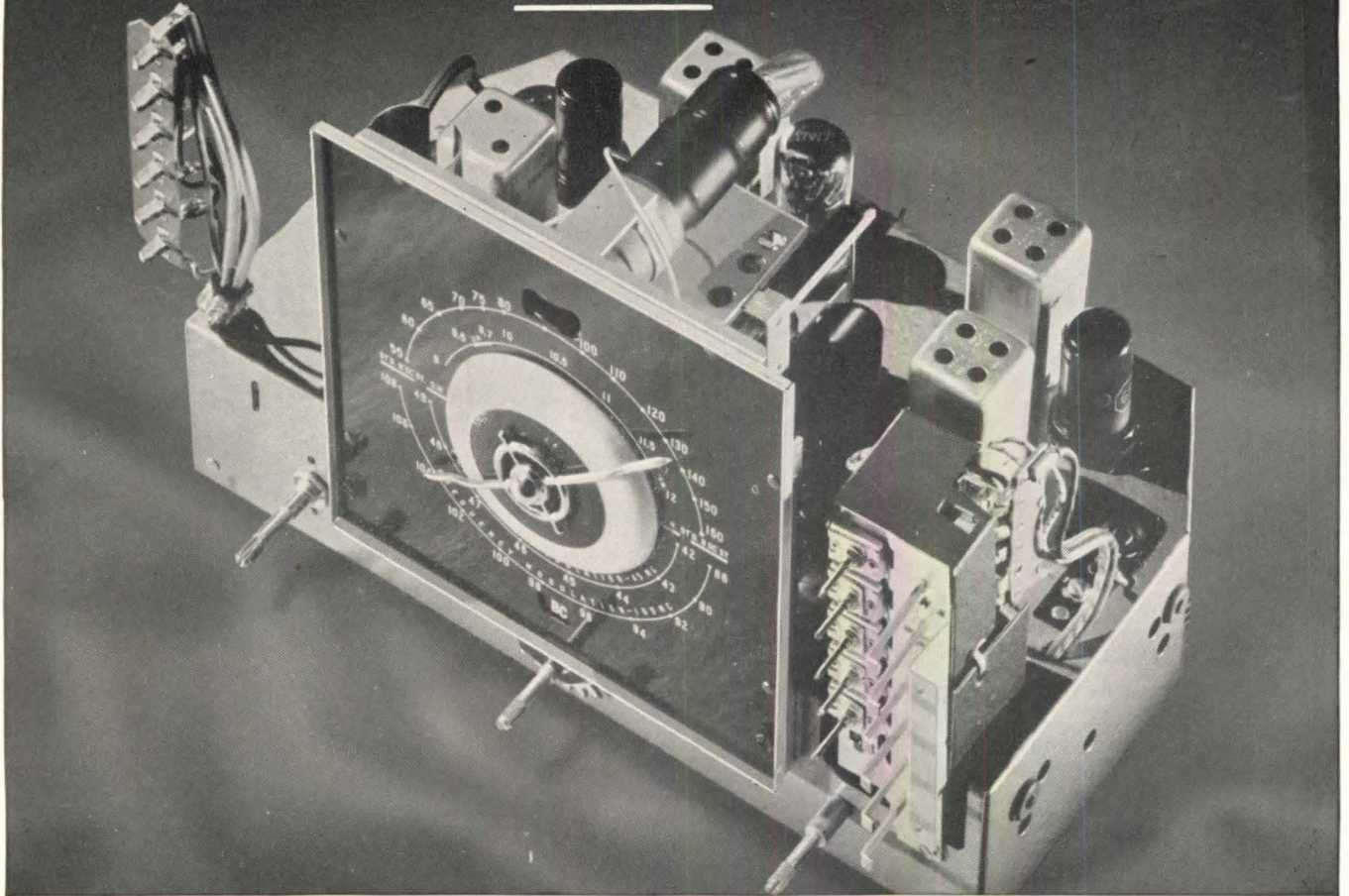


GREAT LAKES STEEL CORPORATION

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They make a big difference in performance . . . in long life and low cost maintenance. A difference that has proved its value on hundreds of thousands of building jobs of every kind.

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There aren't enough of these famous Celotex products to go around *now*—but our plants throughout the country are working day and night to increase production. Everything possible is being done to speed the time when we can supply you with all the Celotex products you need.

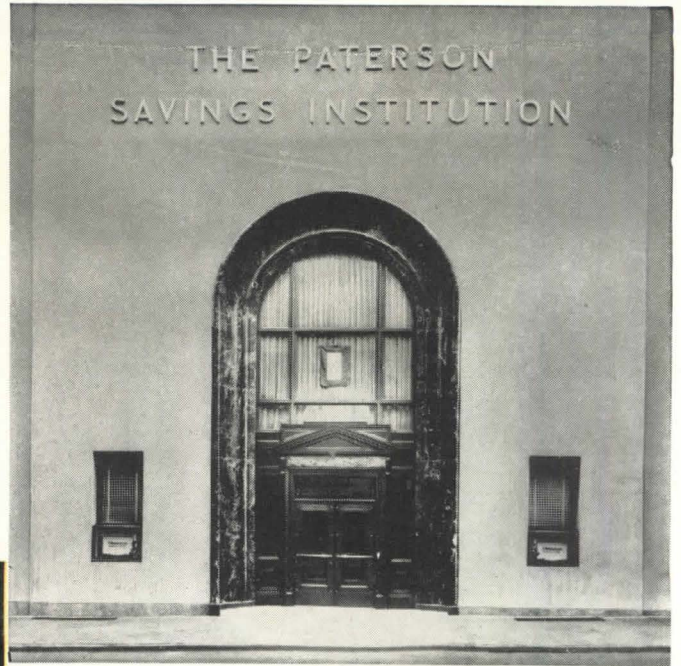
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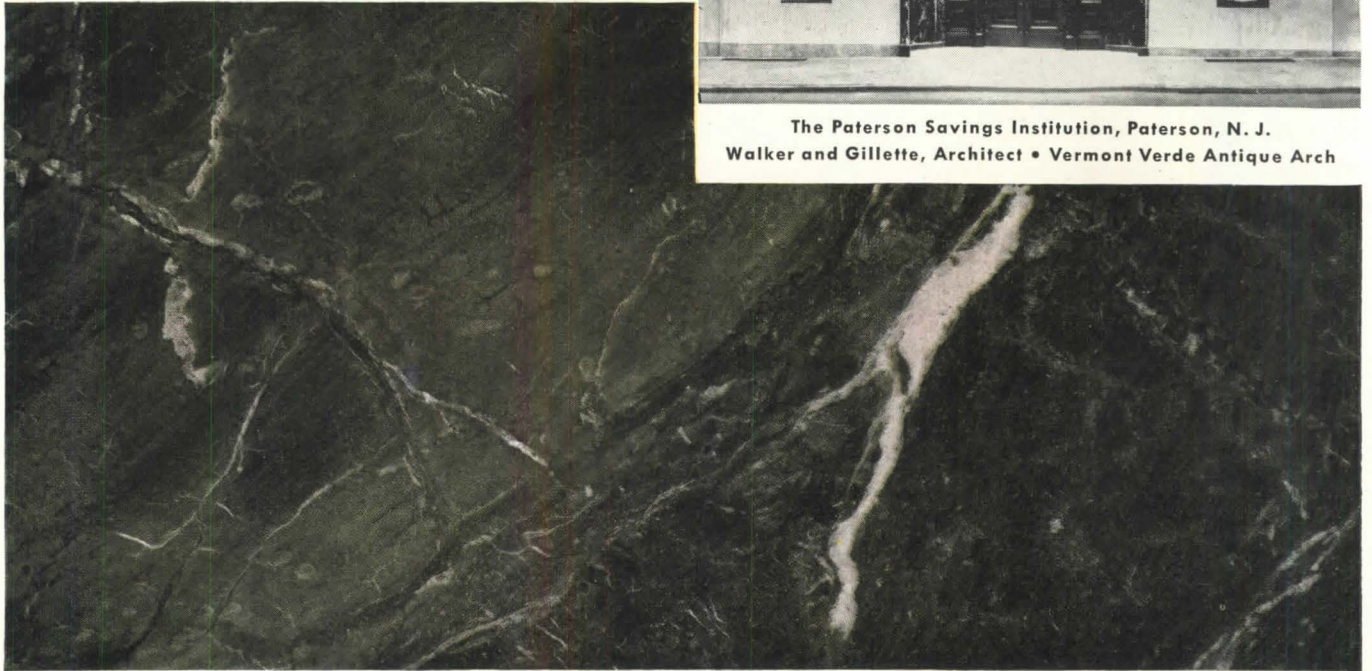
THE CELOTEX CORPORATION • CHICAGO 3, ILLINOIS

**MODERN BLENDING OF
COLOR AND DESIGN...**

with
Vermont Marble



The Paterson Savings Institution, Paterson, N. J.
Walker and Gillette, Architect • Vermont Verde Antique Arch




Rich color in marble, so often believed to be obtainable from foreign lands only, is not missing in the rugged slopes of the Green Mountains. Like the green in other products of nature, it blends in color with a wide variety of ornamental and utilitarian materials.

At the entrance to the Paterson Savings Institution it points the way for a large and busy population to stability and security, and its attractive color and contour make that way pleasing.

A recital of the many uses to which architects are putting Vermont Verde Antique would overrun this page. From doorway to powder room, and from floor,

to ceiling, plain or ornamented, either walked upon in your corridor or admired at your fireplace, there is no material that is quite so generally desired.

VERMONT

MARBLE

VERMONT MARBLE COMPANY • PROCTOR, VERMONT

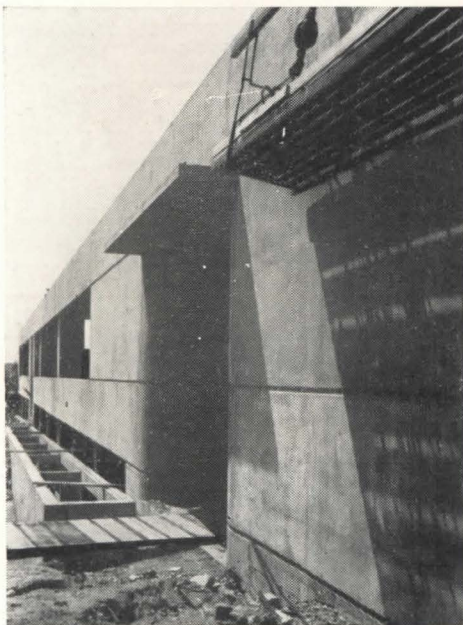
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FIREMEN KNOW WHAT IS
FIRE-SAFE



**'INCOR' SPEEDS CONCRETING
OF HUGE, NEW REPAIR SHOP
FOR NEW YORK CITY'S
FIRE DEPARTMENT**



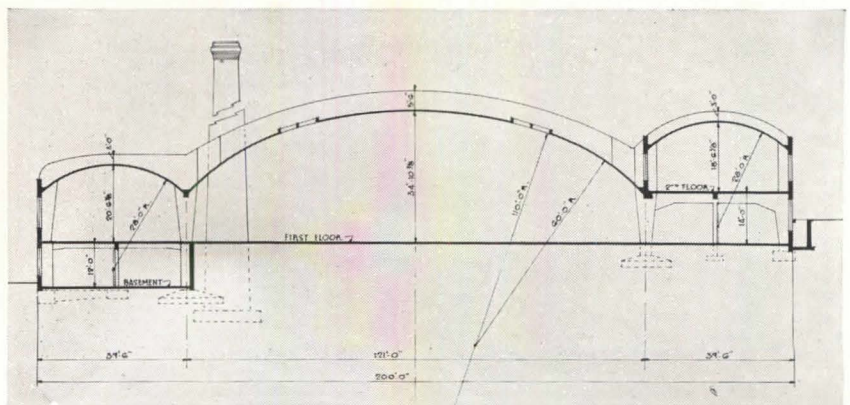
NEW YORK CITY'S FIRE DEPARTMENT repairs its own equipment—21,000 repair jobs a year. Replacing old cramped quarters is this new, all-concrete Repair Shop, covering two city blocks in Long Island City. After analyzing various types of construction, final decision was architectural concrete for utmost fire-safety and barrel-arch construction for maximum unobstructed floor space. The repair unit, with elbow room for handling 90 vehicles at a time, is located under the central arch with its 120-ft. clear span. Side and end sections house related facilities.

'INCOR' 24-HOUR CEMENT was used in barrel-arch structures; elsewhere, LONE STAR CEMENT was used. 'INCOR'* saved time waiting for concrete to harden; even in cool weather, safe stripping strengths were obtained within 48 hours. Here is the initial and long-time economy of architectural concrete . . . good functional design at its fire-safe best.

*Reg. U. S. Pat. Off.

New York City Fire Dept. Repair Shop, Long Island City. City of New York, Department of Public Works; Architects: A. G. Lorimer, former Chief; A. J. Daidone, present Acting Chief, Bureau of Architecture. Engineers, Roberts & Schaefer Co., Chicago. Ready-Mix Concrete, Central Concrete, Inc., Brooklyn, N. Y.

General Contractor:
Corbetta Construction Co., New York



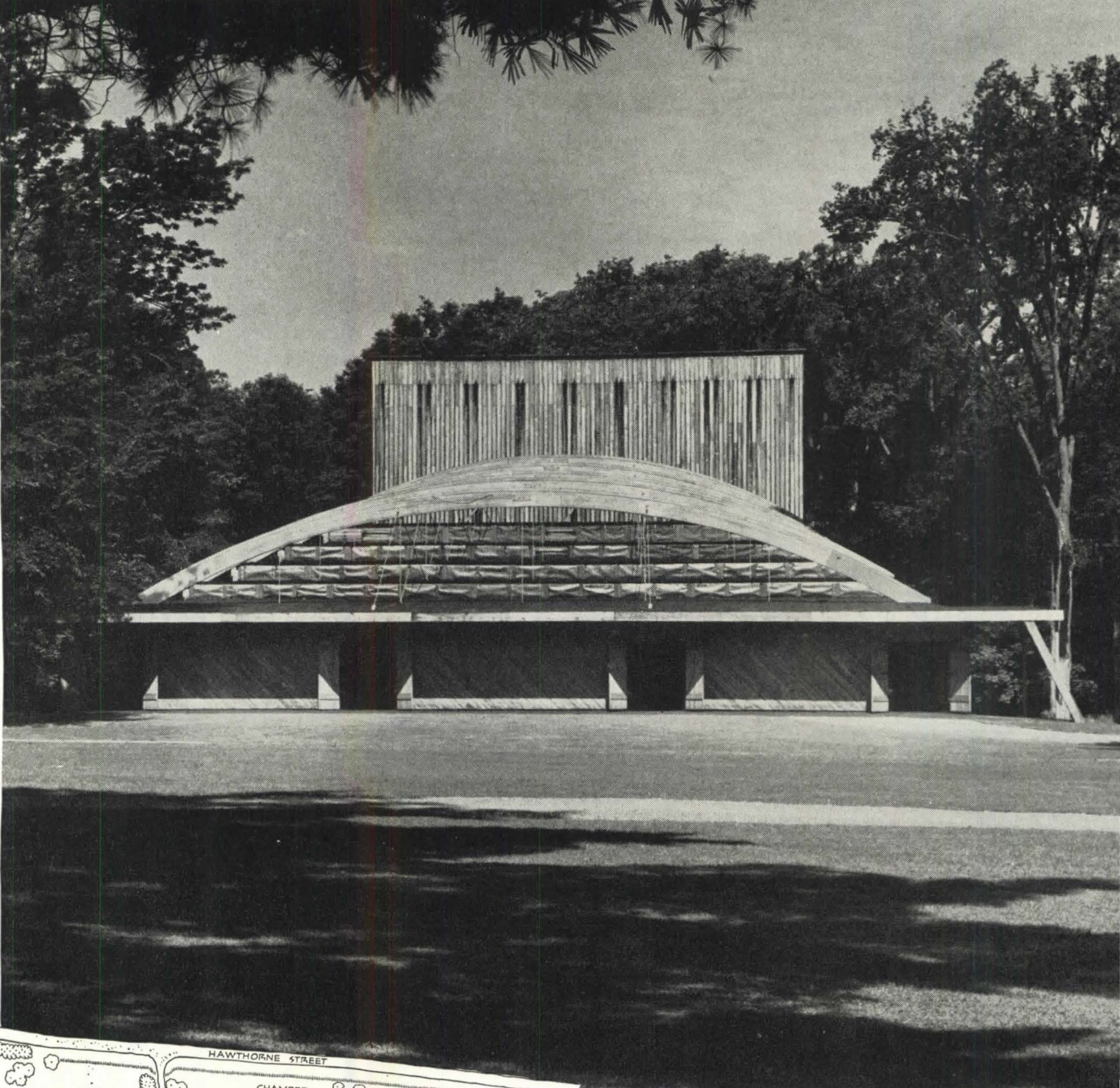
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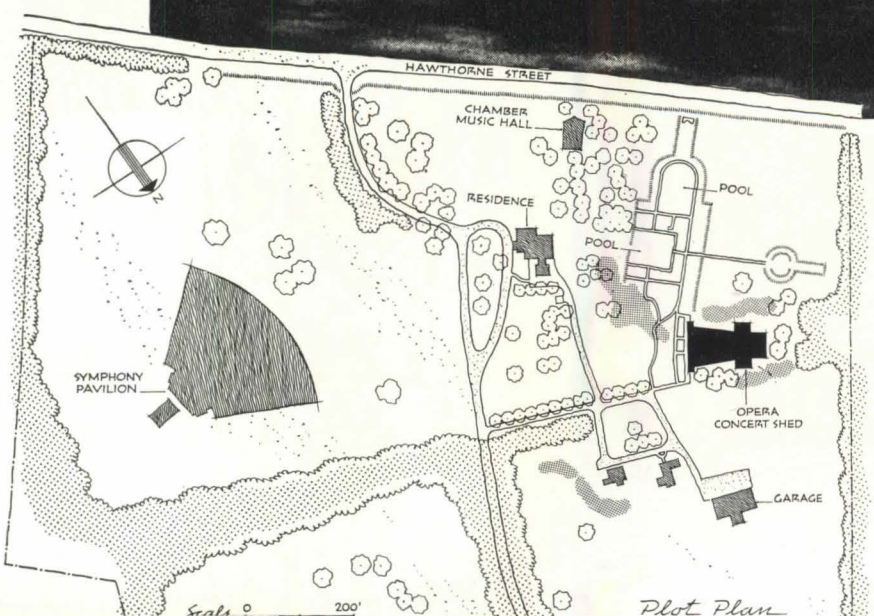
LONE STAR CEMENT, WITH ITS SUBSIDIARIES, IS ONE OF THE WORLD'S LARGEST CEMENT PRODUCERS: 15 MODERN MILLS, 25,300,000 BARRELS ANNUAL CAPACITY

OPERA SHED

SAARINEN, SWANSON and SAARINEN, Architects



Photos by GOTTSCHO-SCHLEISNER



THE BERKSHIRE MUSIC CENTER "TANGLEWOOD," STOCKBRIDGE, MASS.

Charles C. Potwin, Acoustical Consultant
Stanley McCandless, Lighting Consultant

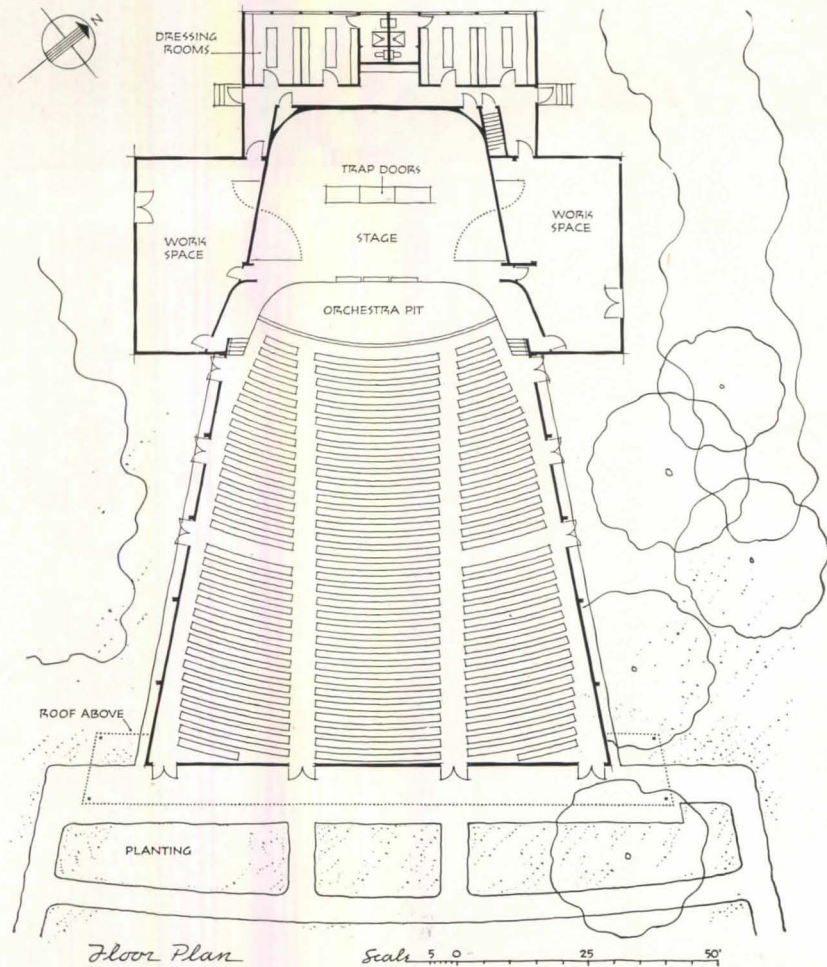
OPERA SHED

SAARINEN, SWANSON & SAARINEN
Architects

Charles C. Potwin, Acoustical Consultant
Stanley McCandless, Lighting Consultant

The latest addition to the famous Berkshire Music Center where the Boston Symphony Orchestra, under the direction of Dr. Serge Koussevitzky, holds its summer concert series, the opera shed was designed for a dual purpose—to house productions of small operas and for orchestral concerts.

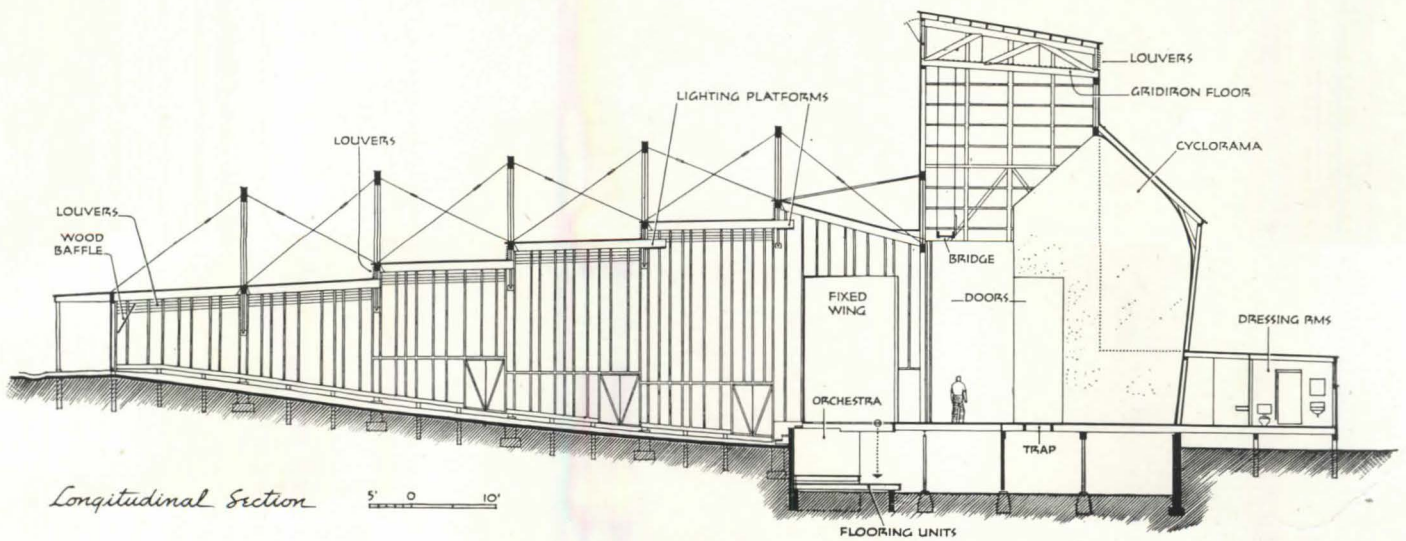
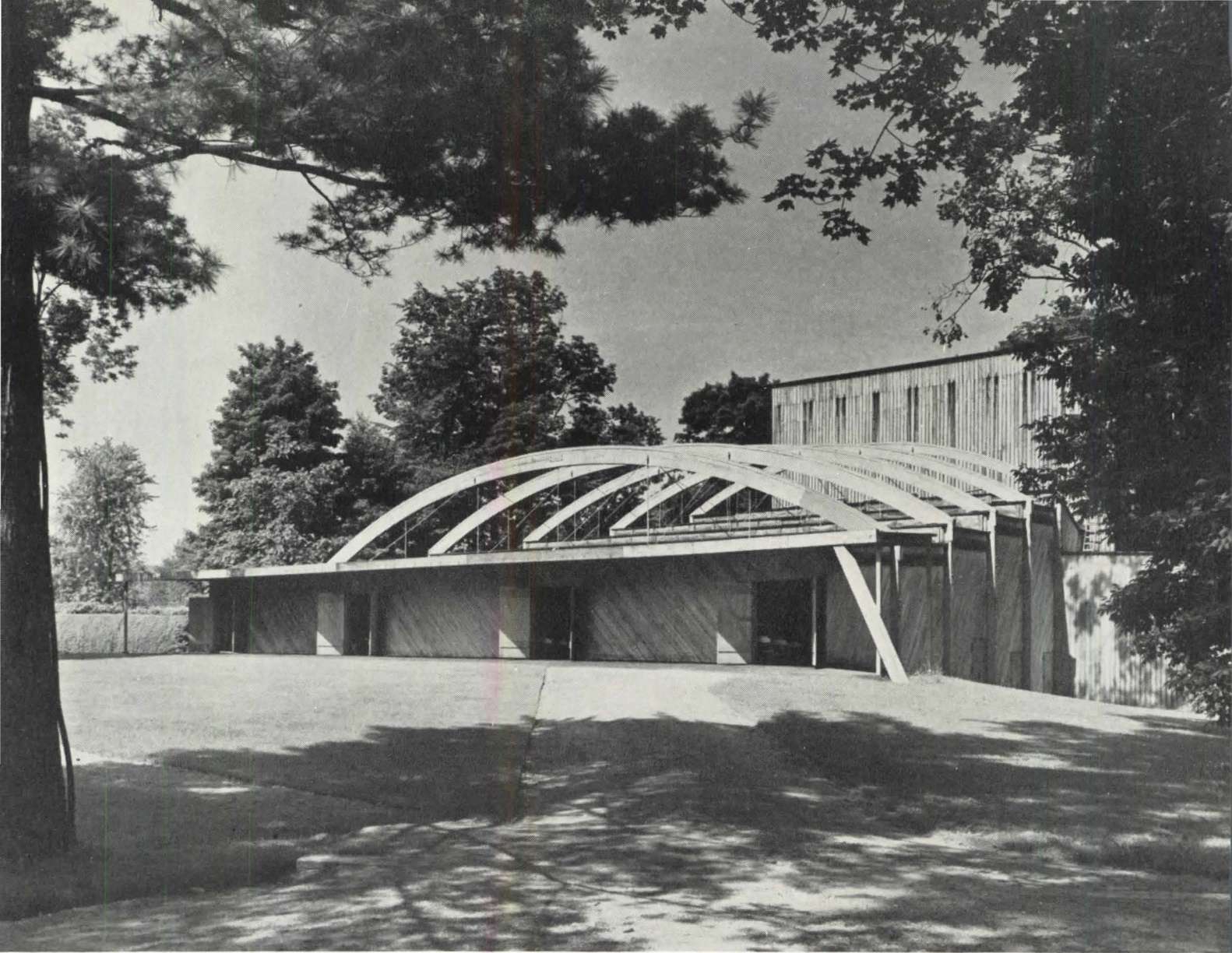
The plan is worked out in a direct, functional arrangement; the development of the section, with its downsloping ceiling, happily emphasizes good seeing and hearing conditions rather than "packing in the customers"; the frankly expressed rationalized structural system (see pages 57-58) produces a finished design of great vitality; and, in the opinion of Oliver Daniel, of the Music Division of the Columbia Broadcasting System, the acoustics of the shed are "well nigh perfect." All of these elements are fused into an imaginative, integrated design—progressive architecture of a high order.



The auditorium was designed to break up sound waves and distribute them equally. Ventilation handled by slot at ground level and sidewall and ceiling louvers.



THE PLACING OF THE LAMINATED ARCHES above the roof was necessary "to achieve the right volume for the auditorium."



The shape of the plaster cyclorama is a compromise between the best shape for lighting and the best acoustical shape; the sound focus is centered far above the stage floor.

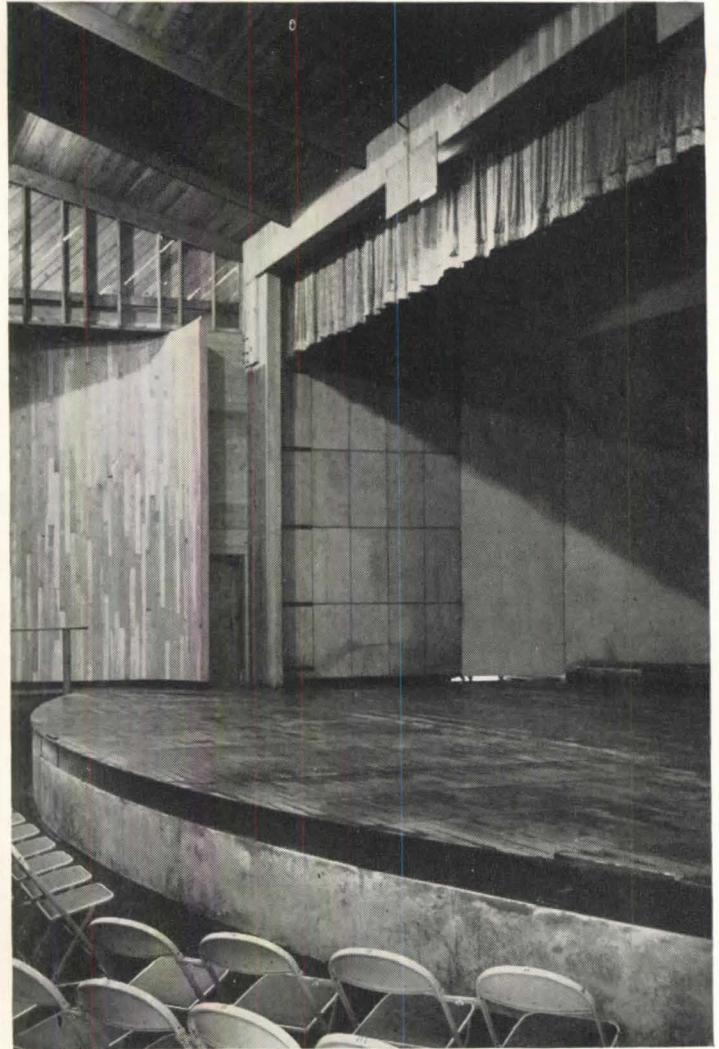
OPERA SHED

SAARINEN, SWANSON & SAARINEN
Architects

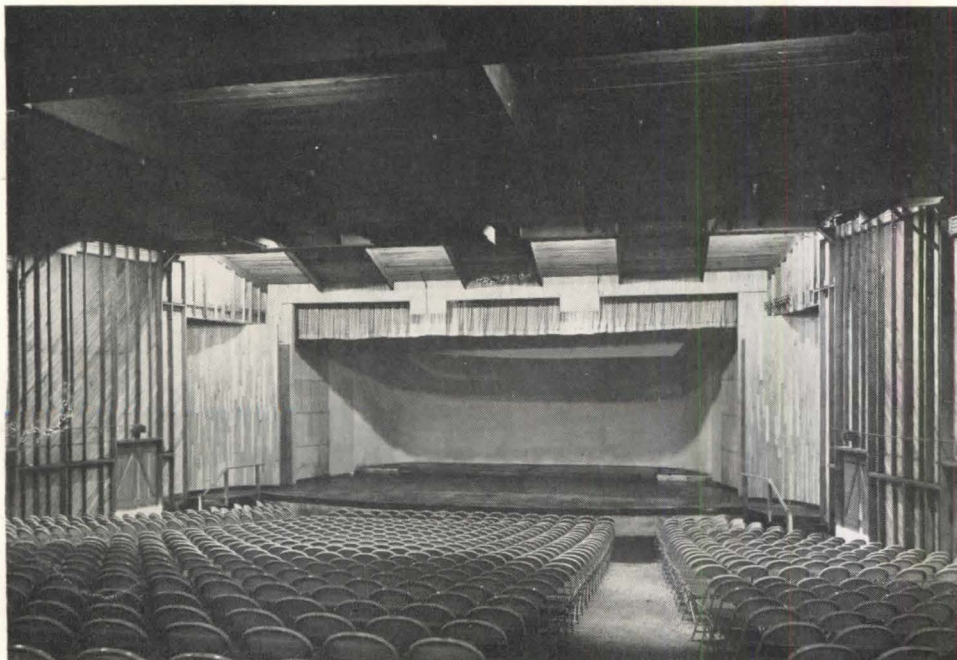
Charles C. Potwin, Acoustical Consultant
Stanley McCandless, Lighting Consultant

The architects report: "The volume and shape of the auditorium were so designed that no sound-absorbing material had to be added to give it the right reverberation time." The exposed studs placed at random distance apart and of random size are also arranged with acoustical considerations in mind. Bituminous paving, used for flooring, was specified for its acoustical properties as well as its economy.

Mr. Daniel of CBS comments: "One can credit the designers with having achieved next to the impossible." He questions whether the comparative "barniness" may not be a major factor in its success. The "flooring seems to have much the same effect of softening acoustical properties that an audience usually does," he remarks. "The wood floor on the stage adds a definite resonant quality to the orchestral sound." Then, strictly from the broadcaster's point of view, he adds a word of criticism: "The usual failure to provide adequate space for radio equipment naturally is a drawback."



STAGE. For concert use, hinged, side members of the proscenium swing back to form part of the orchestra shell. Platform flooring raised to stage level over the orchestra pit provides space for an orchestra of 110.



THE AUDITORIUM is an enclosed structure so that orchestra practice can proceed without interference with things going on across the lawn in the great symphony pavilion.



Gottischo - Schleisner

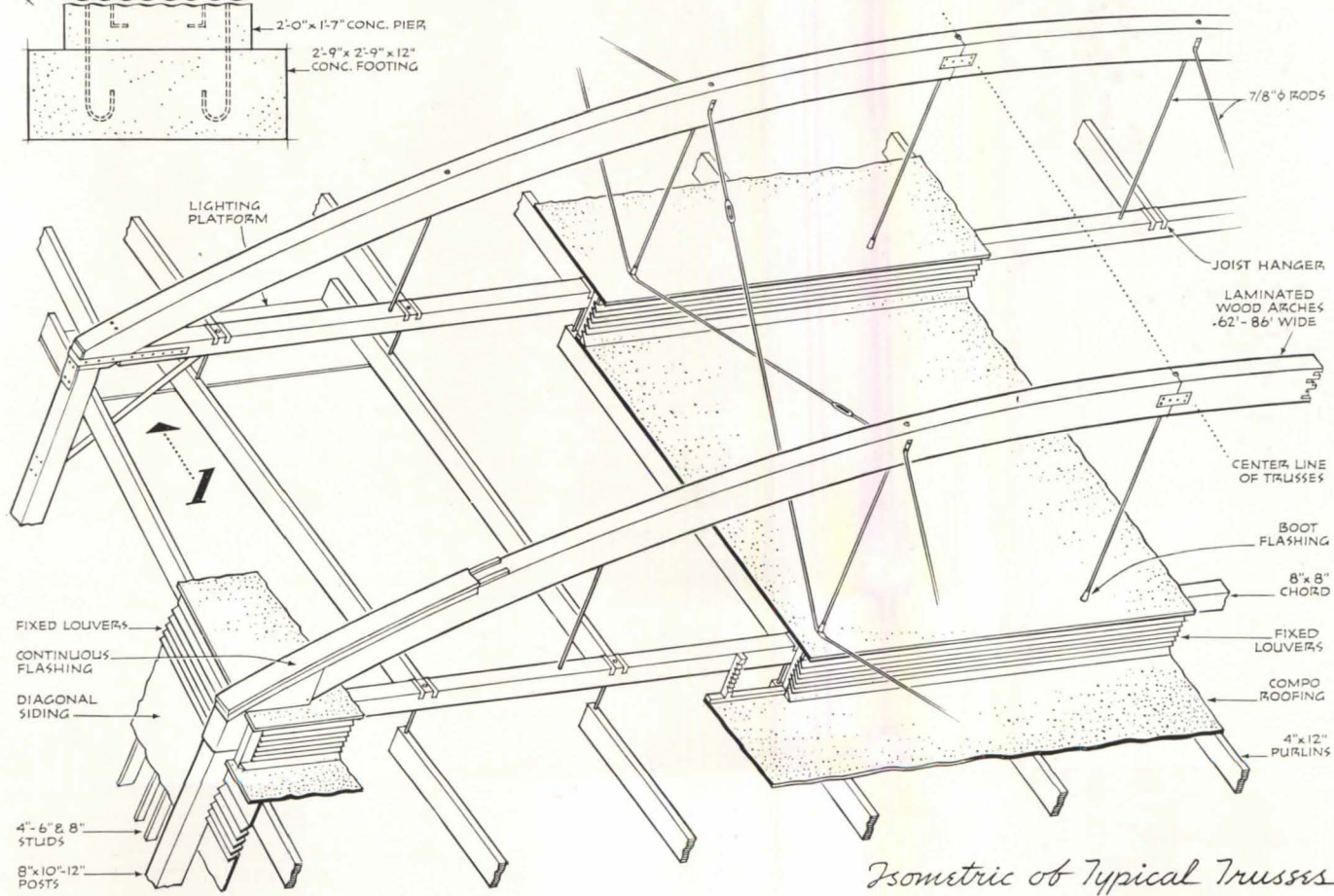
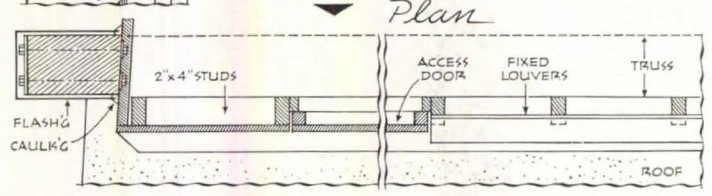
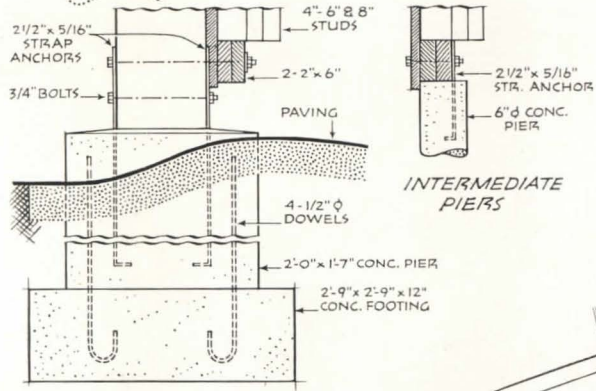
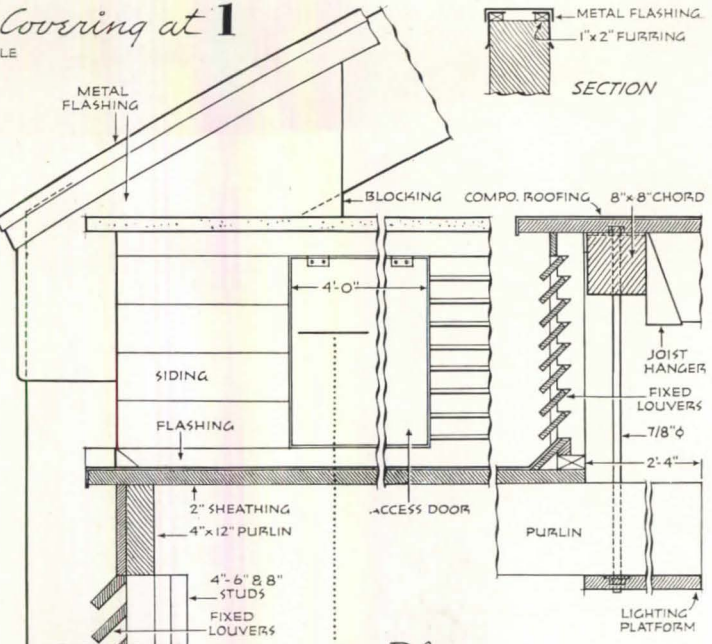
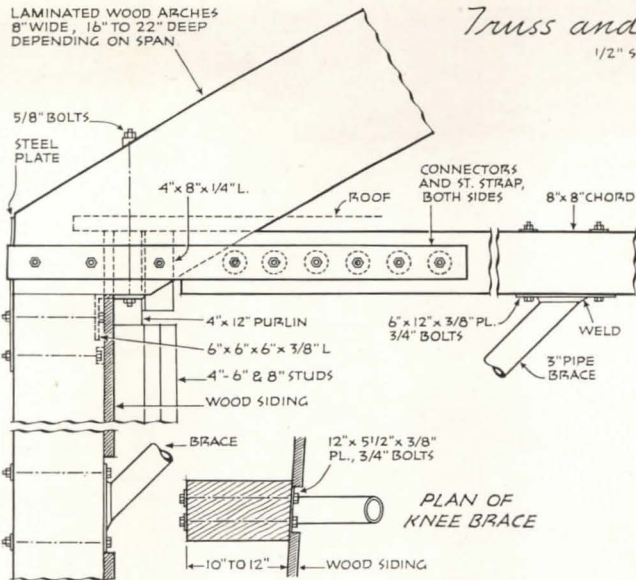
STRUCTURAL DETAIL

OPERA SHED, STOCKBRIDGE, MASS.

SAARINEN, SWANSON & SAARINEN
ARCHITECTS

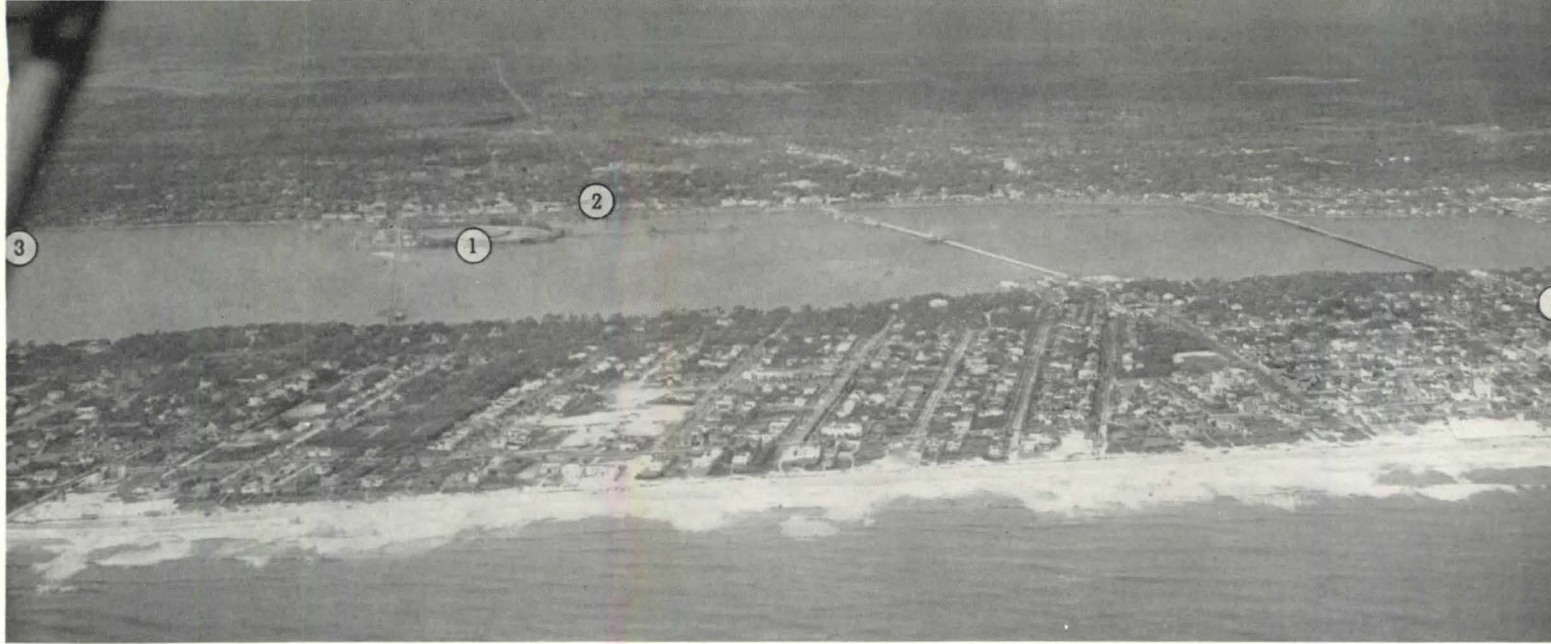
The auditorium is supported by a series of trusses with the laminated-wood arch upper chords exposed above the roof. The step-down roof itself lies in the planes of the bottom chords of the trusses, which also serve as girders. Tension chord members of the bowstrings are steel rods. Incorporation of the roof framing with the truss structure considerably simplifies the roof construction. Louvers were introduced in the risers as part of the ventilation system. As with most louver constructions, difficulties were encountered with water penetration during rainstorms, particularly with water dropping and splashing from higher levels. Addition of gutters alleviated the difficulty somewhat, but even so, it has been found necessary to insert cover panels over a considerable portion of this louvered area.

Truss and Covering at 1
1/2" SCALE



STRUCTURAL DETAIL
OPERA SHED, STOCKBRIDGE, MASS.

SAARINEN, SWANSON & SAARINEN
ARCHITECTS



1. CITY ISLAND.

2. BEACH STREET.

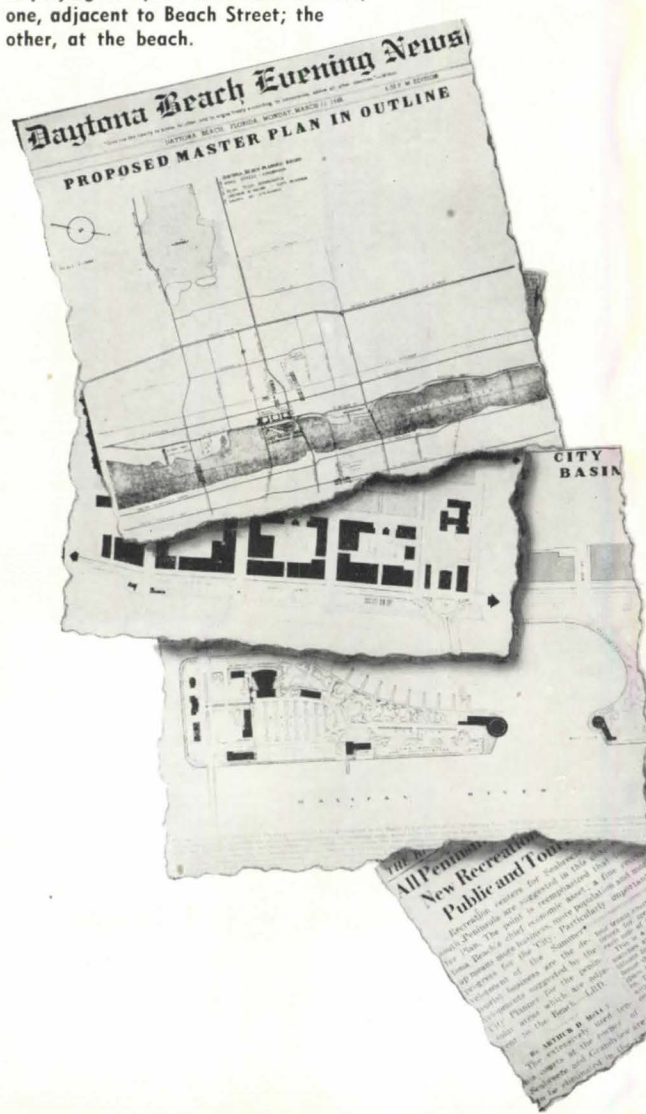
3. BETHUNE POINT.

4. MAIN STREET.

Not the least important part of the story is the success Mr. McVoy has had in winning public interest in the project. Witness the newspaper clippings, a few from the series of 29 presented by the *Daytona Beach News-Journal*, with introductory summaries by Lillian Davidson, the editor's wife. Lectures and broadcasts have all played their part. And, at time of going to press, we learn that two billboards displaying the plan have been erected, one, adjacent to Beach Street; the other, at the beach.

DAYTONA BEACH MASTER PLAN

DAYTONA BEACH PLANNING BOARD—DANA STEELE, Chairman
ARTHUR D. McVOY, City Planner



Like most American cities, Daytona Beach has a serious traffic problem, inadequate civic and recreational facilities, and it is growing in a sprawling, unplanned way. In addition, this coastal city, with a population of 26,000, is a resort city, counts on about 25,000 visitors a year to support its main business as a tourist center, and it has a very special interest in seeing that it is as pleasant and inviting as possible. The master plan, therefore, has dual importance. Not only does it solve problems that are familiar to a great many communities, but it is a thoroughgoing plan that takes into account the needs of year-round citizens as well as the rather elaborate provisions required of the "showplace" community. Perhaps most significant of all, the master plan has been approved "in principle" by the City Commission, and some elements are already scheduled for action.

The master plan is a careful integration of the several separate elements of which it is constituted. Most important of these is a basic traffic plan and attack on the problem of parking congestion; a civic and recreational center proposed for the dramatic City Island site; an athletic center at Bethune Point; and shopping center proposals for Beach Street and Main Street.

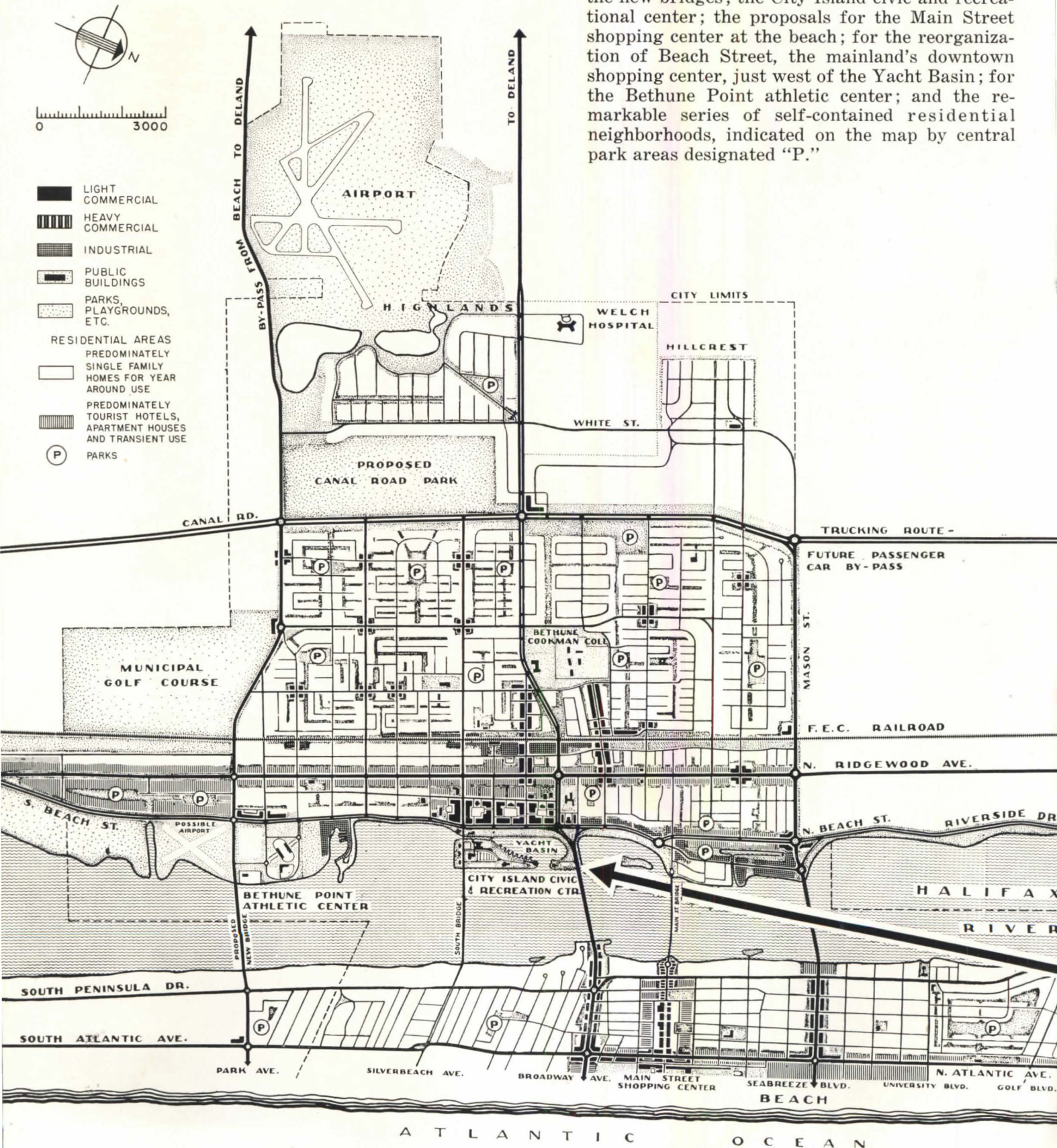
BEACH STREET, at left; CITY ISLAND, right.



Courtesy Daytona Beach Ch. of Comm.

DAYTONA BEACH MASTER

This Master Plan map shows the integration of all of the remedies proposed for the city's ills and plans for healthy future growth—the traffic plan; the new bridges; the City Island civic and recreational center; the proposals for the Main Street shopping center at the beach; for the reorganization of Beach Street, the mainland's downtown shopping center, just west of the Yacht Basin; for the Bethune Point athletic center; and the remarkable series of self-contained residential neighborhoods, indicated on the map by central park areas designated "P."



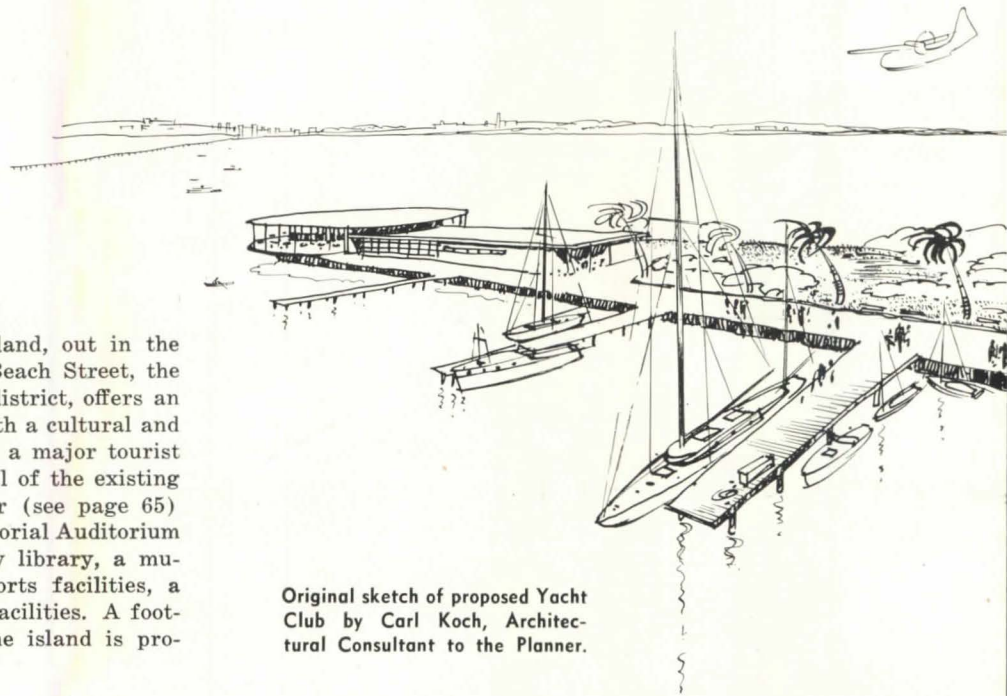
TRAFFIC PLAN

Outer Belt Highway System: Canal Road, to the west, named as a trucking route (already approved) and passenger car bypass; Atlantic Avenue, along the beach front; Seabreeze Boulevard-Mason Street east-west highway (to the north) and the Park Avenue-Deland bypass (to the south). With this outer circulatory system, a trip (for instance) from any point on the beach to the airport could be made without entering the mainland downtown district at all; through trucking is kept away from the center, and the two inter-

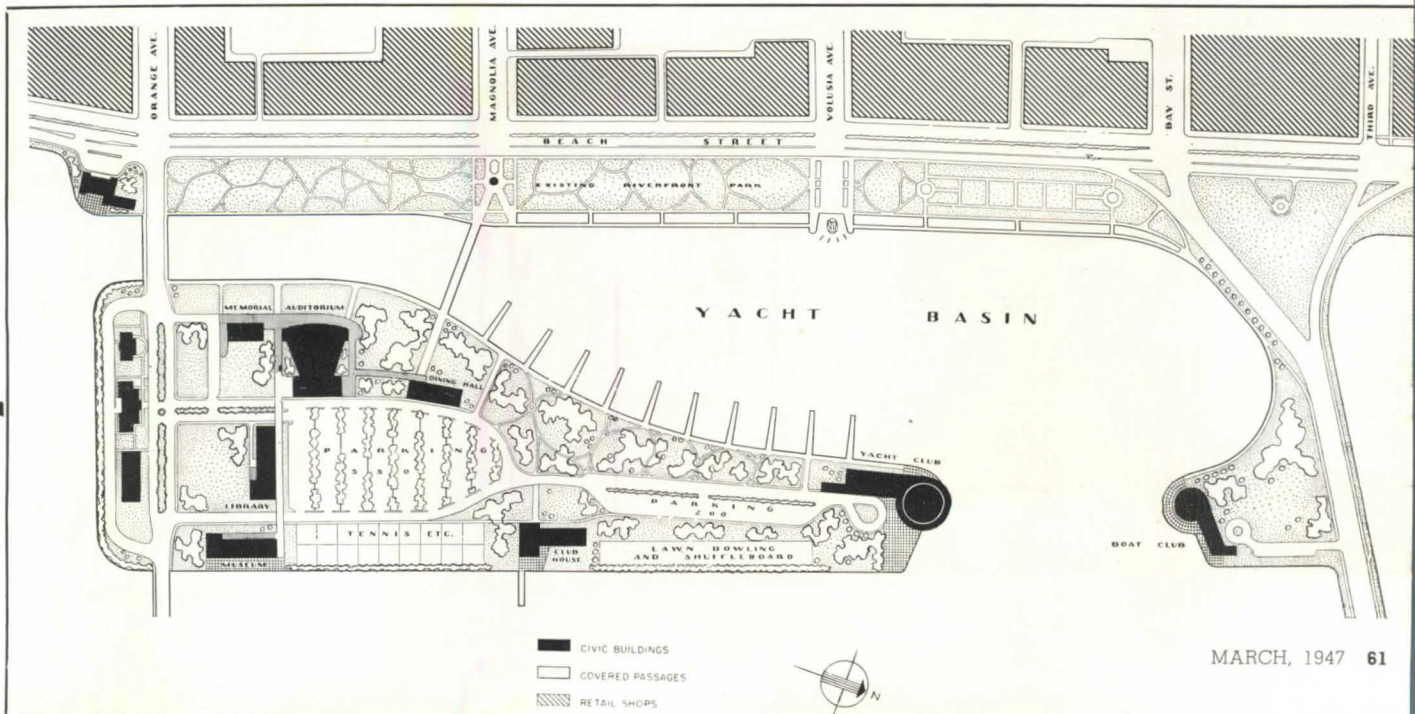
mediate north-south traffic channels are freed to function properly for their planned uses—Beach Street for one-way local access to downtown shops or as a scenic riverfront drive (see Beach Street plan, page 64), and Ridgewood Avenue for handling heavy local traffic and for travelers' access to lodgings or other local services. Completing this arterial system is the important intermediate east-west highway, starting at Broadway at the beach across the new bridge to Bay Street (skirting the mainland downtown section) and so, by a viaduct, west, toward Deland.

I. CITY ISLAND

The prominent location of City Island, out in the Halifax River, just offshore from Beach Street, the mainland's park-bordered business district, offers an exceptional opportunity to create both a cultural and recreational center for the city and a major tourist attraction. Recommended is removal of the existing ball park to the new athletic center (see page 65) and a development to include: a Memorial Auditorium (location already approved), a city library, a museum, tennis courts, and other sports facilities, a Yacht Club, and sheltered docking facilities. A foot-bridge from Riverfront Park to the island is provided for pedestrians.

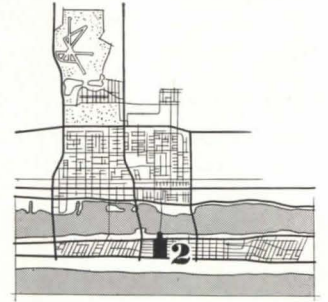
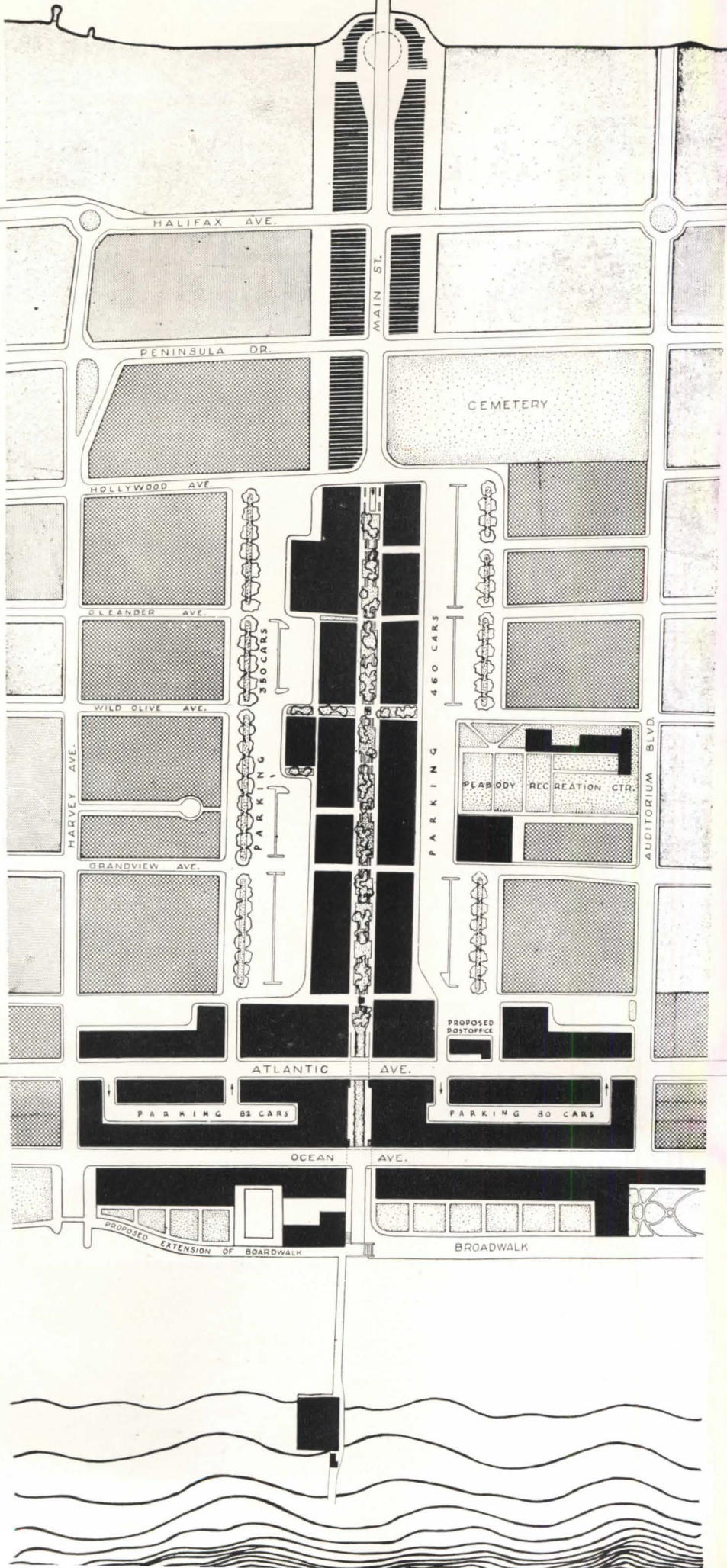


Original sketch of proposed Yacht Club by Carl Koch, Architectural Consultant to the Planner.



HALIFAX

RIVER



-  RETAIL SHOPS
-  HEAVY COMMERCIAL
-  COMMERCIAL HOTELS & APARTMENTS
-  TOURIST & SINGLE FAMILY HOMES
-  PARKS & PLAYGROUNDS
-  PUBLIC BUILDINGS

DAYTONA BEACH MASTER PLAN

2. MAIN STREET SHOPPING CENTER

The city's No. 1 traffic headache, Main Street (at the beach) accounts for 50 percent of all traffic accidents and is at present snarled with two-way auto traffic, heavy pedestrian movement (the street is essentially an extension of the oceanfront boardwalk), and parking along both curbs. When the new Broadway Bridge from the mainland is constructed (see Master Plan map), motor traffic will be somewhat lessened, but Main Street promises to remain an important commercial-entertainment center.

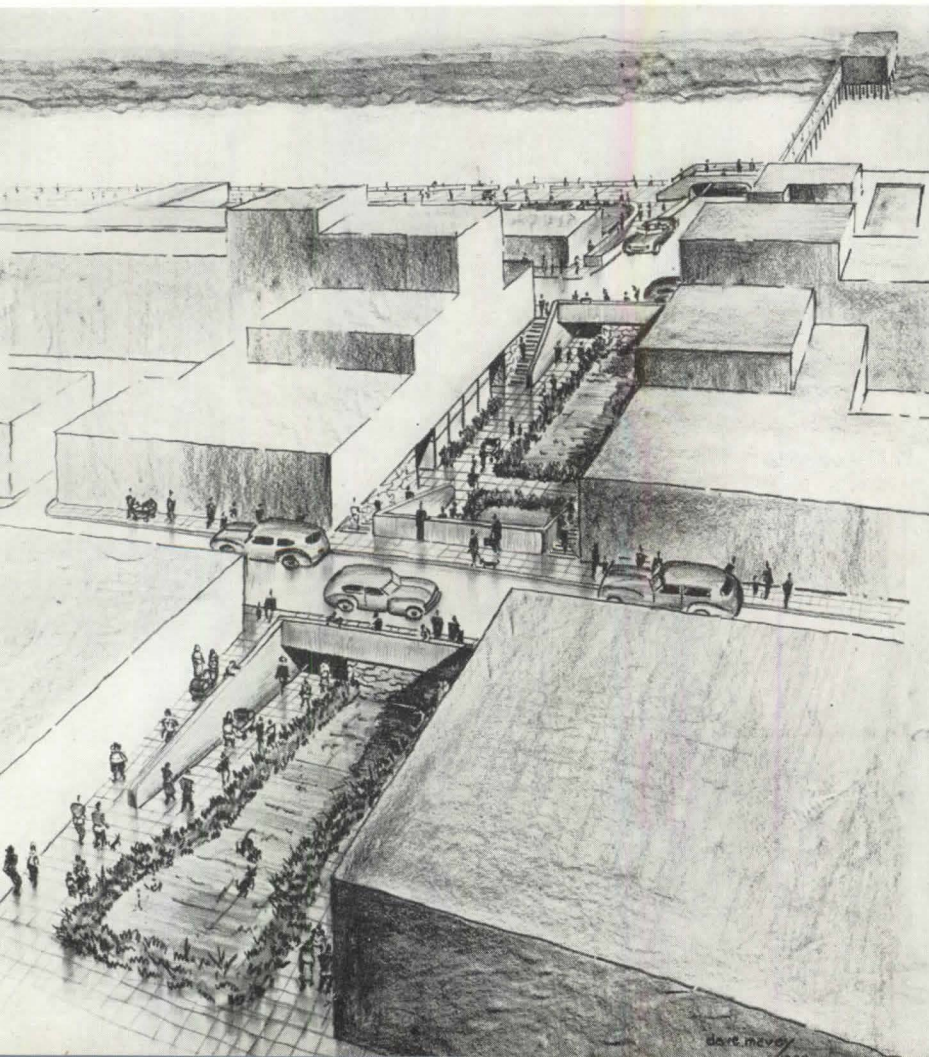
To solve these extreme problems, Mr. McVoy makes the radical and exciting proposal of converting Main Street (from Hollywood Avenue to the beach) into a pedestrian promenade, completely free from vehicular traffic, with parking space (and secondary shopfronts) provided in planned lots at the rear of the stores. Near the boardwalk exit, as shown in the sketch below, north-south car traffic would be carried on bridges across the promenade.

Since such a development would be costly (but less so than proposals to widen Main Street), a gradual plan is suggested:

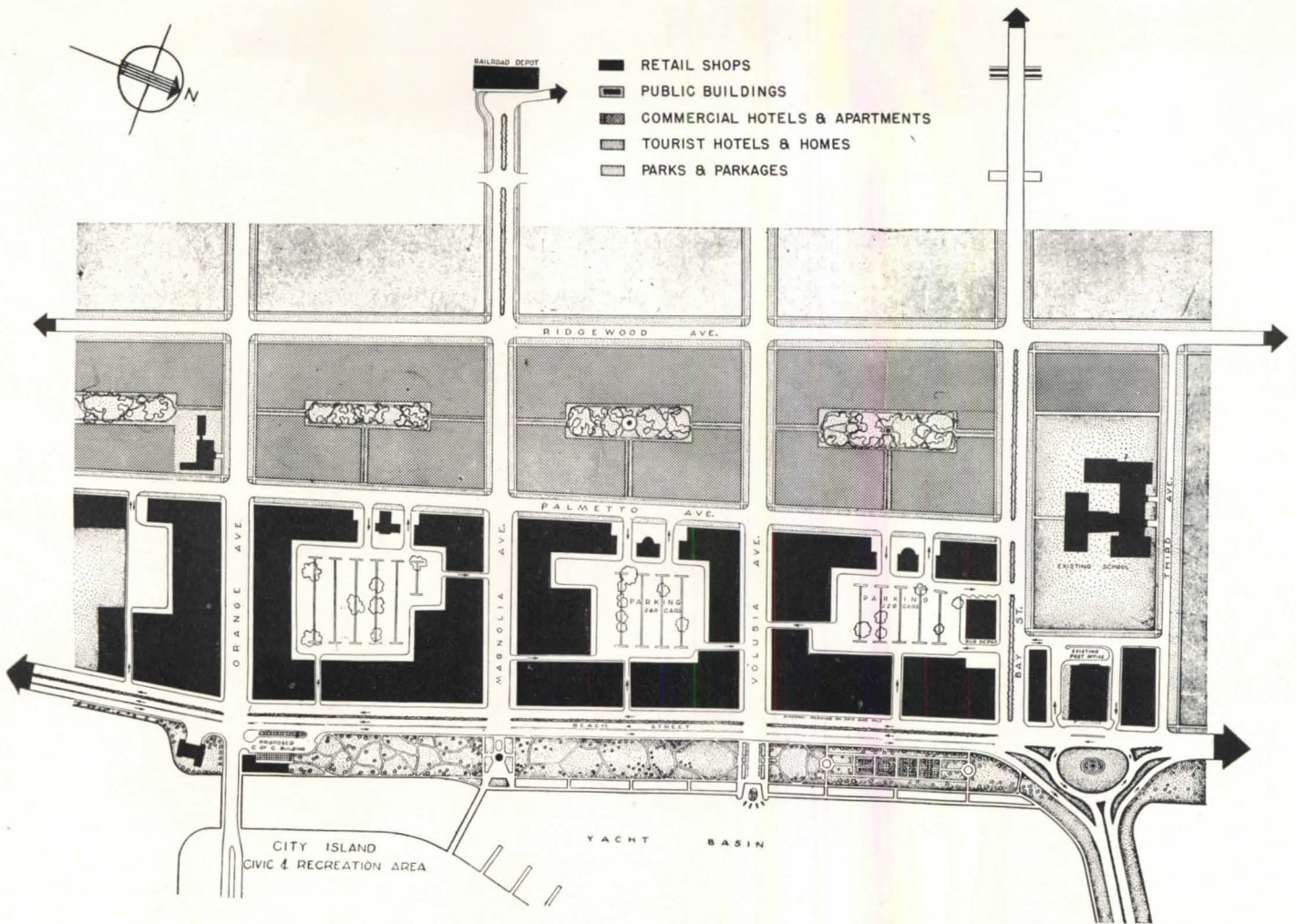
1. Make Main Street a one-way traffic street.
2. Provide several carefully placed rear parking lots.
3. Finally, eliminate automobiles entirely, completing the parking facilities, as shown.



PRESENT. Main Street, but 50 feet in width (32 feet of paving), has to support two-way traffic, two curb lanes of parking, and crowds of pedestrians from the boardwalk and beach—a cluttered, noisy jumble.



PROPOSED. Entire beachward end of street closed to vehicular traffic, made into pedestrian promenade (with important north-south traffic streets spanning it); parking lots arranged in back of present shops—a quiet, leisurely, landscaped shopping, entertainment, and recreational center. Shops given new "fronts" facing the rear parking lots.

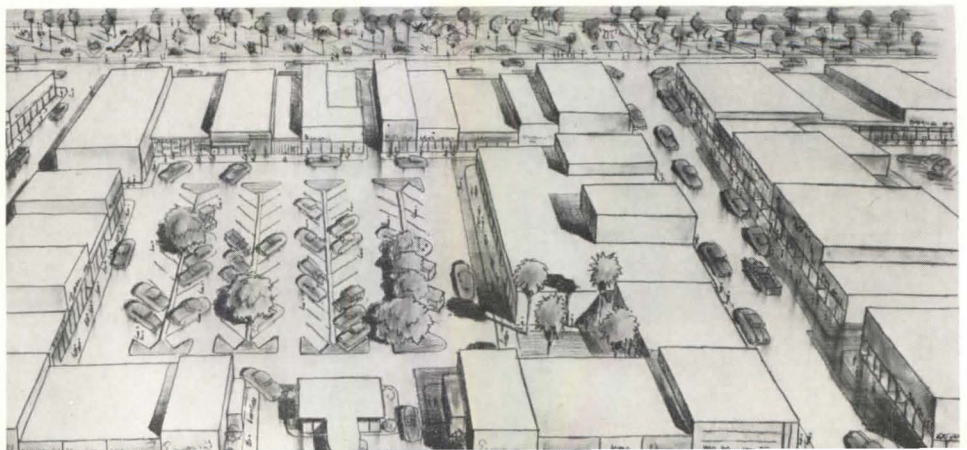


3. BEACH STREET SHOPPING CENTER

Along Beach Street, the park and riverfront heart of Daytona Beach's mainland business district, the chief improvements suggested are for handling traffic and car parking. With traffic for the beach channeled along Bay Street toward the north, Canal Road to the west designated for through truck traffic, and Ridgewood Avenue (two blocks west) available for other north-south traffic, Beach Street is freed for its two planned uses: one-way local access (with diagonal curb parking next to shops) to the stores, and as a two-way, four-lane scenic drive along the park side. These two functions are separated by a 6-foot planting strip placed near the center of the street. To handle the parking problem, McVoy takes advantage of the interior space of the exceptionally large blocks (circ. 500' by 700') of which this section is composed (see below). The plan also suggests a footbridge from the park across to the City Island civic area.

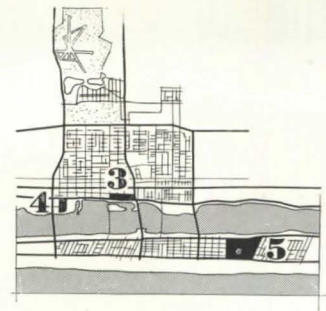


PRESENT. Interiors of the large business blocks adjoining Beach Street are occupied by a miscellany of frame boarding houses, hotels, and warehouses. Beach Street itself is a jumble of car parking on both curbs, and indiscriminate traffic, including through trucking.



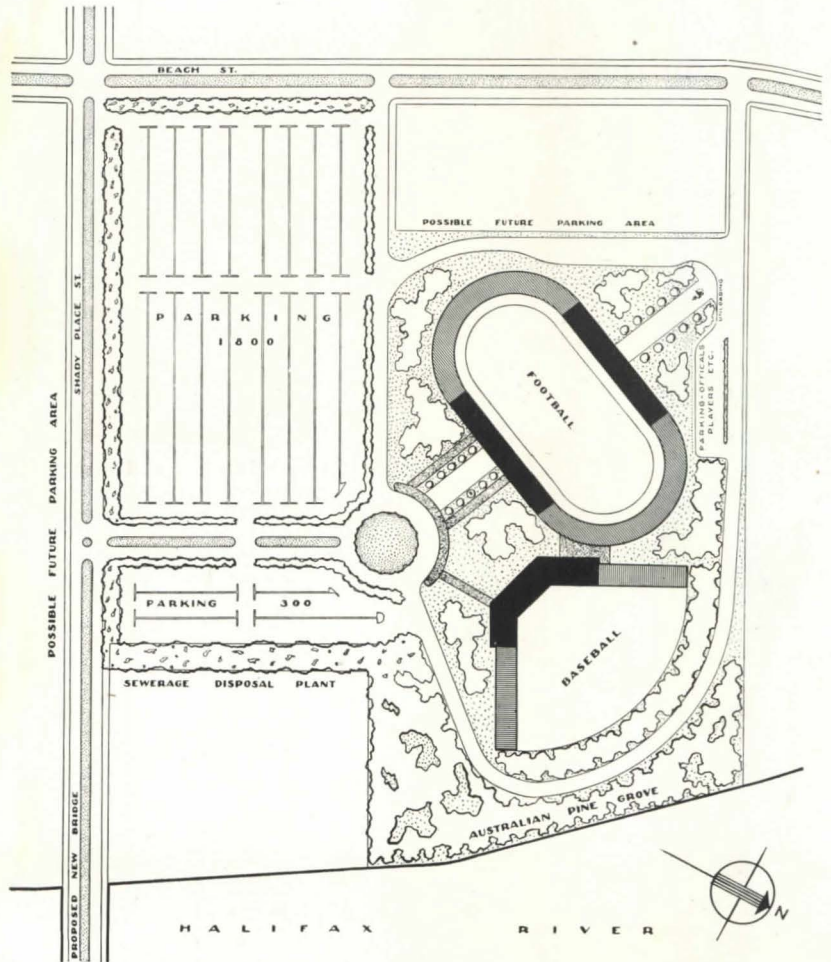
PROPOSED. Complete elimination of interior-block structures, with this space turned into off-street car parking for shoppers, accessible from entrances along Palmetto Avenue (foreground).

DAYTONA BEACH MASTER PLAN



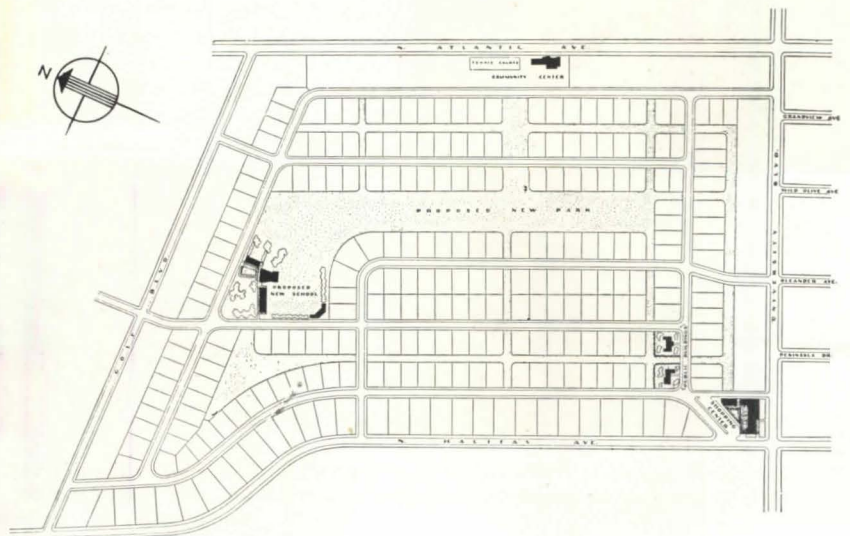
4. BETHUNE POINT ATHLETIC CENTER

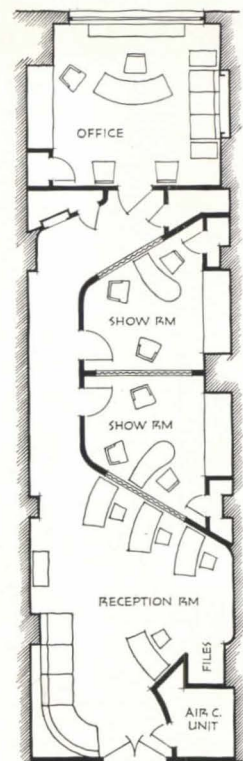
Though numerous lesser recreational facilities are recommended in the overall plan (extension of the boardwalk at the beach, toward the south; small neighborhood parks, certain recreation buildings, etc.), the two major recreational proposals are for City Island (page 61) and Bethune Point, shown here. The proposal is to locate in this major sports center both a new football stadium and a baseball diamond to replace the one at present on City Island. Because of a fairly serious wind condition, a grove of Australian pine is recommended on the Halifax River border of the property. The proposed traffic plan (see Master Plan map) recommends a bypass artery and new bridge across to the beach immediately south of this area, providing a natural location for car parking alongside this highway.



5. NEIGHBORHOOD PLAN

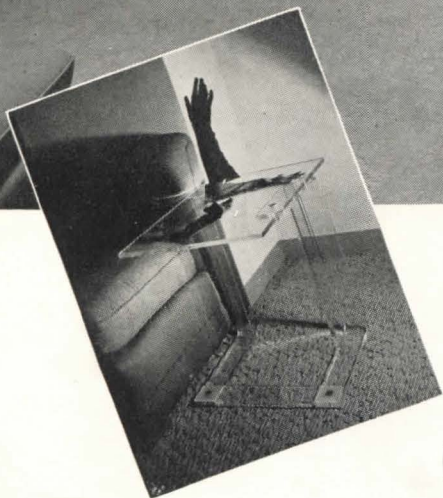
Planned residential neighborhoods throughout the city are an integral part of the master plan. Though the schemes are exceedingly various, the principles are the same: each is an entity, with an elementary school within it. Through-traffic arteries bound the property so that children will not have to cross them to reach school. Intersections are kept to a minimum, protecting the area from invasion of traffic and making the arteries safe and efficient. A park is provided near the center, adjoining the school site. A shopping center occurs near artery intersections. Long blocks and dead-end streets are freely used.





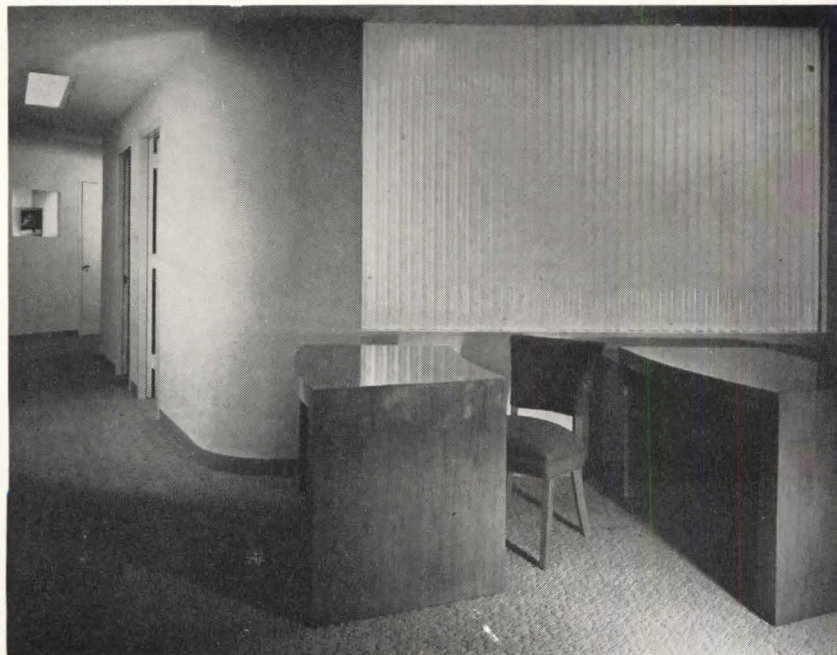
Floor Plan 0 5'

RECEPTION ROOM. Panels of corrugated glass occur in showroom partitions.

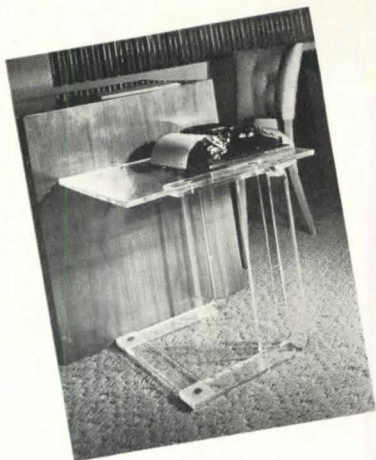


OFFICE-SHOWROOMS

All photos of finished job by Ben Schnell



RECEPTION ROOM. Placement of showroom walls at 60 degrees to the side wall increases the apparent width of the area, produces a wall long enough to accommodate three desks, and minimizes strictly corridor space. The flush ceiling light fixtures are placed parallel to the angled wall of the showroom.



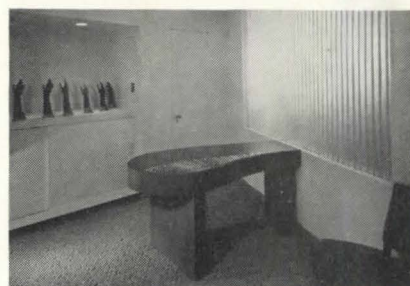
HANSEN GLOVE CORP., NEW YORK

KIM HOFFMANN & STEPHEN HEIDRICH, Designers

This series of offices and showrooms is schemed within the familiar, alley-like, rental bay of a city office building. The designers have achieved a surprising illusion of space through the plan device of the splayed wall. Glass, integral lighting, and coloring assist the illusion.

Overall dimensions of the space are but 18 by 60 feet, with windows at one end. The need was for a reception room, with space for three salesmen's desks; two individual showrooms, and an executive office. The area is divided roughly into thirds, the showrooms occupying the middle third, reception room and executive office at the ends.

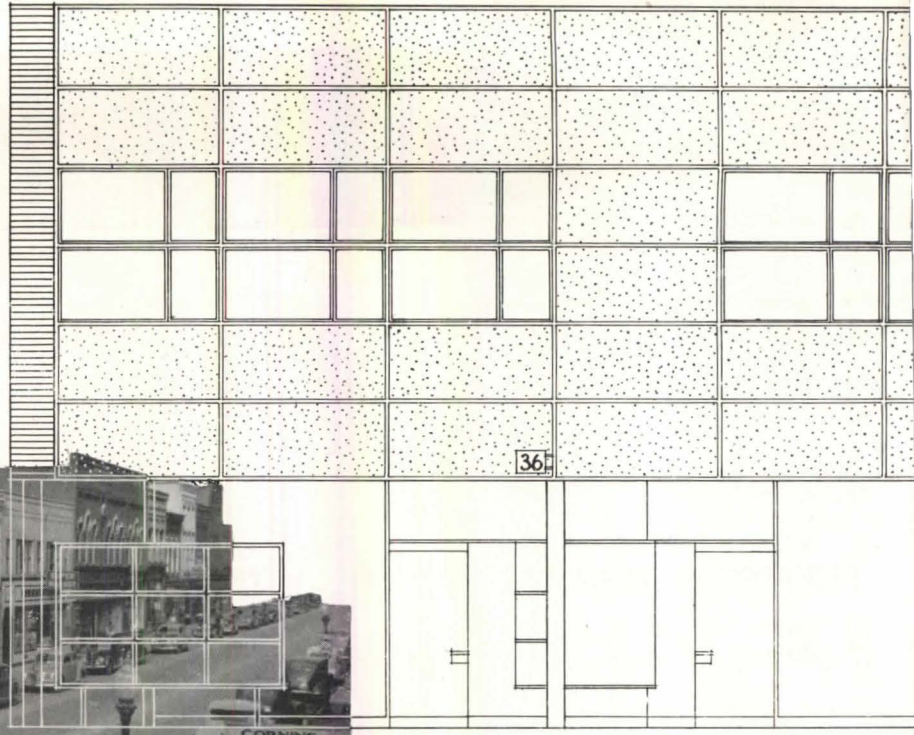
All design elements are kept extremely simple, so that the cabinets and recesses provided for display of the company's products are emphasized as much as possible.



PROGRESS SHOTS. The under-construction photograph is a remarkable illustration of integration—plan, structure, lighting, air conditioning, built-in equipment, and plaster base. Partition walls are plastered cinder block. Complete air conditioning is provided.



EXECUTIVE OFFICE. Flush, fluorescent fixtures combine pink-white and blue-white tubes to produce a natural, bright light. Custom-made walnut furniture and cabinetwork are stained light gray. Wall colorings are off-white tones of blue-green and rose, upholstery fabrics repeating these hues, but in strong values and chromas.



**PROJECT: 2-48 E. MARKET ST
CORNING N.Y.**

SANDERS & MALSIN, Architects

Corning, New York, which had just over 16,200 inhabitants in 1940, also has a shopping thoroughfare—East Market Street—like thousands of others throughout the United States. The buildings along East Market Street between Numbers 2 and 48 are—again like thousands of others—substantial yet undistinguished; products of the expansionist era; mostly on deep, narrow lots; outdated in appearance and in their impression on potential customers. They could not be completely rebuilt; local pocketbooks could not stand that. At about this point the firm of Sanders and Malsin found a key to a design solution when they discovered that, disparate as the buildings were, there existed a planning module: each lot was either exactly 21 ft wide (or a multiple), or so close to it that the variation could easily be utilized for necessary tolerances. Application of a new surface seemed indicated rather than any extensive structural change; the modular concept was applied again, and it was found that most sheet materials and windows could be obtained in a uniform size, 3 x 6 ft.

From such considerations developed the prefabricated metal grid or frame designed to cover the entire upper portion of the block front once the dated “ornament” had been cleaned off it. Into the grid can be fitted almost any desired material, from metal lath to plywood to marble or structural glass. If one material isn’t available, another can be used with a minimum of disturbance to the design as a whole.

PURPOSE

TO INCREASE THE OPERATING EFFICIENCY OF A BLOCK OF STORE FRONTS FROM THE STANDPOINT OF:

- 1 MERCHANT
- 2 OWNER
- 3 CUSTOMER
- 4 COMMUNITY

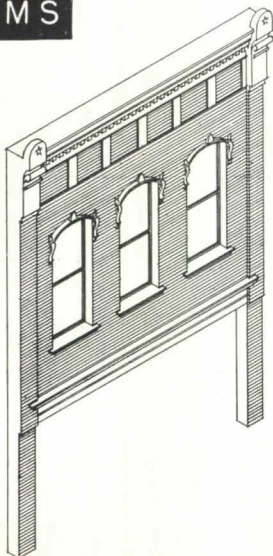
AIMS

- 1 EFFECT CONTINUITY OF DESIGN AND RETAIN INDIVIDUALITY CONSISTENT WITH MERCHANDISING REQUIREMENTS
- 2 PRESERVE TITULAR CONVENIENCES OF INDIVIDUAL OWNERSHIP, FREE OF ENCUMBERING EASEMENTS
- 3 INTEGRATE STORE FRONTS SO AS TO EMPHASIZE THE PROMINENCE OF INDIVIDUAL DISPLAYS
- 4 UTILIZE TO THE MAXIMUM THE EXISTING STRUCTURAL SOUNDNESS OF THE INDIVIDUAL STORE FRONTS
- 5 PROVIDE FLEXIBILITY OF DESIGN TO MEET THE REQUIREMENTS OF FUNCTION, APPEARANCE, AND COST
- 6 SIMPLIFY CONSTRUCTION FOR EASE OF ERECTION, ECONOMY, MINIMUM INTERFERENCE WITH NORMAL STORE OPERATION

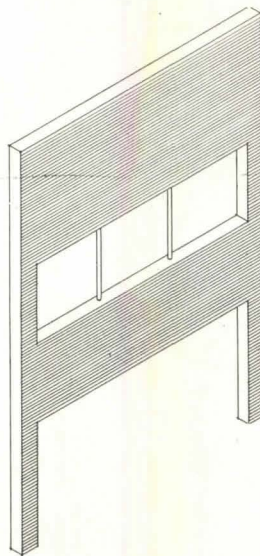
MEANS

- ▶ UTILIZE STANDARDIZED SECTIONS IN THE FORM OF A MODULAR GRID WORK OR FRAME
- ▶ DESIGN EACH FRONT AS AN INDEPENDENT UNIT, PERMITTING OF INDIVIDUAL ERECTION AND RESPONSIBILITY
- ▶ EMPLOY COMMON LOBBIES, ENTRANCES, AND SET-BACKS TO RELATE COMPLEMENTING STORE FRONTS
- ▶ PLAN NEW FRONTS SO AS TO REQUIRE THE MINIMUM OF DEMOLITION AND ONLY MINOR STRUCTURAL CHANGES
- ▶ ALLOW SELECTION FROM A WIDE RANGE OF STOCK FACING-MATERIALS THAT MEET MODULAR REQUIREMENTS
- ▶ PROVIDE FOR SHOP FABRICATION AND UNIT FIELD-ERECTION OF STANDARDIZED BUILDING SECTIONS

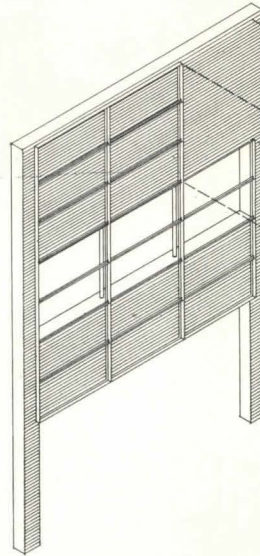
FORMS



1 EXISTING CONDITION



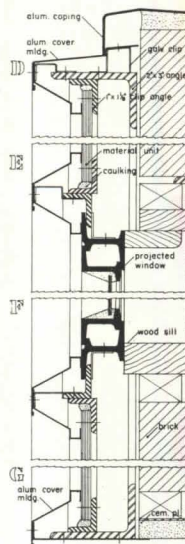
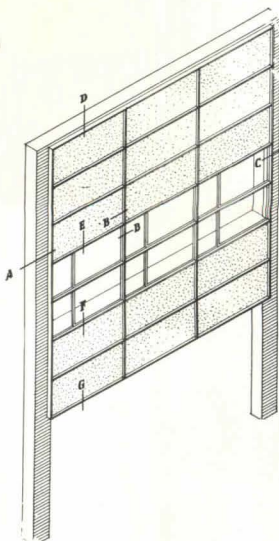
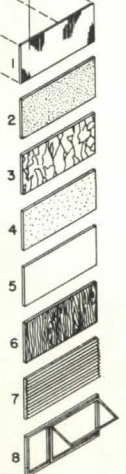
2 MASONRY ALTERATION



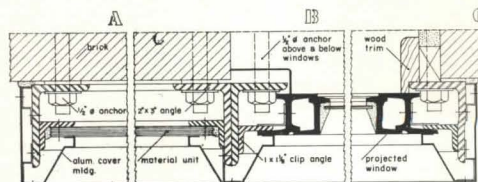
3 PREFABRICATED FRAME

ERECTION UNIT

MATERIAL UNIT



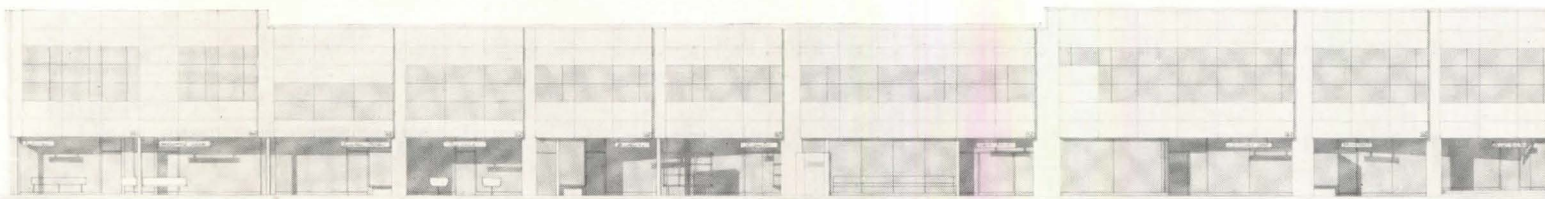
- | | |
|-----------------|------------|
| 1 STRUCT. GLASS | 5 PLASTICS |
| 2 SHEET METAL | 6 WOOD |
| 3 MARBLE | 7 LOUVRES |
| 4 SYNTHETICS | 8 WINDOWS |



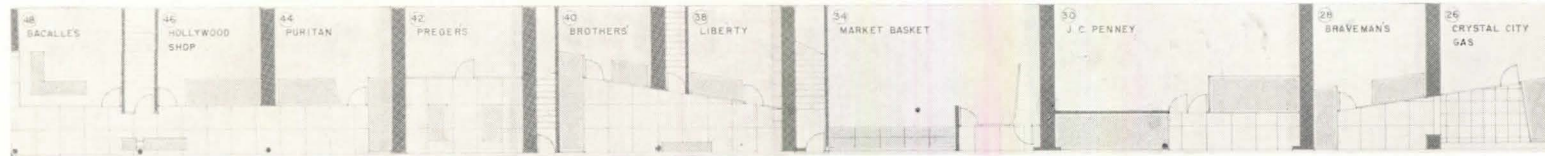
PRESENT



PROPOSED

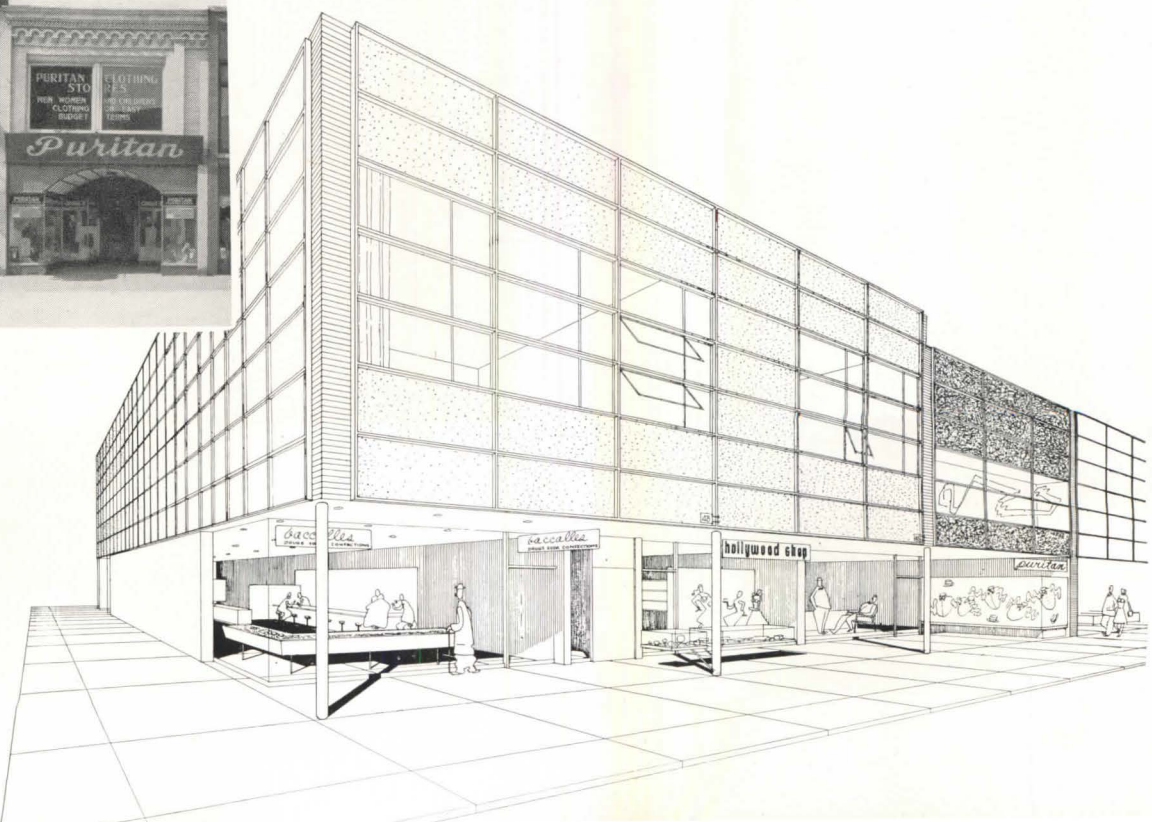


ELEVATIONS

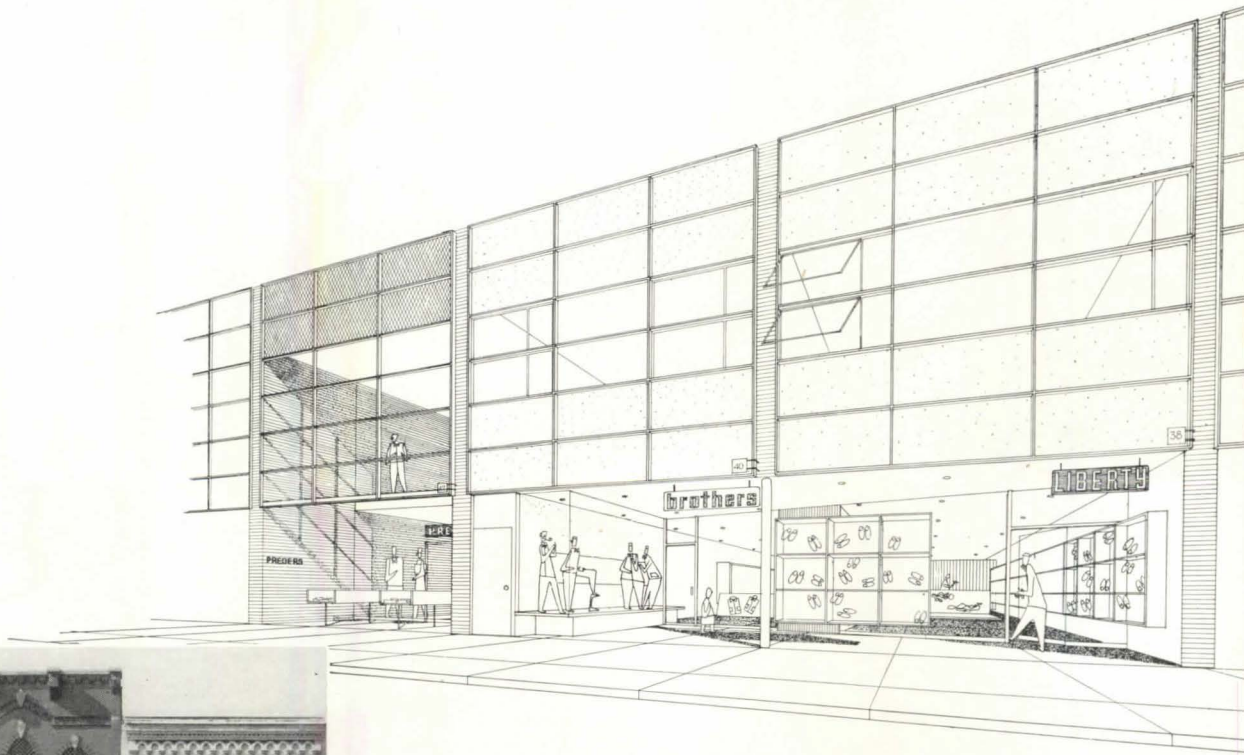
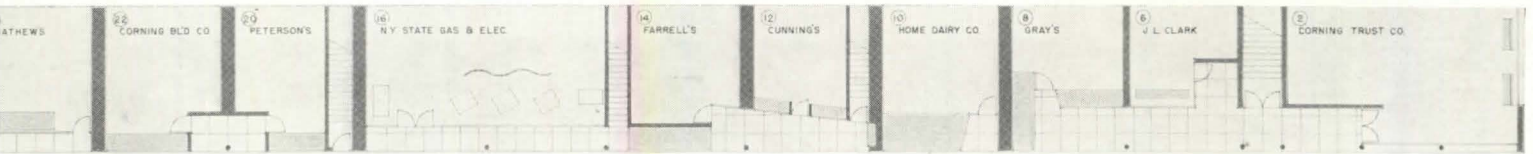
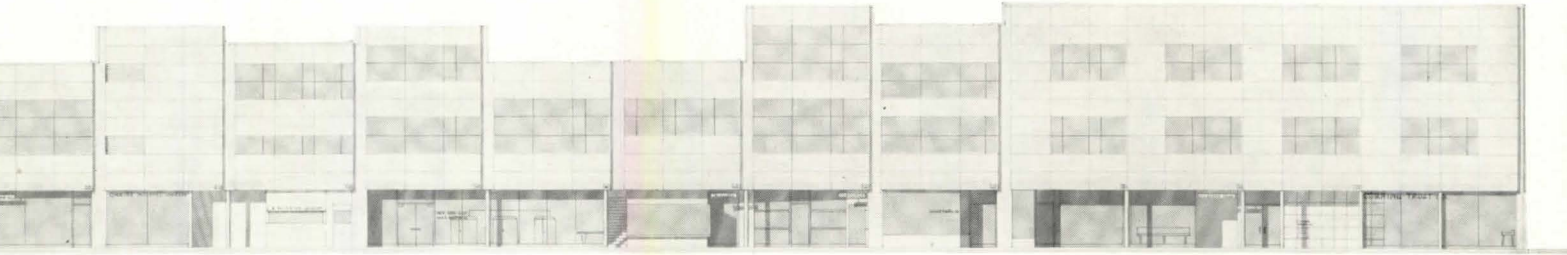


PLANS

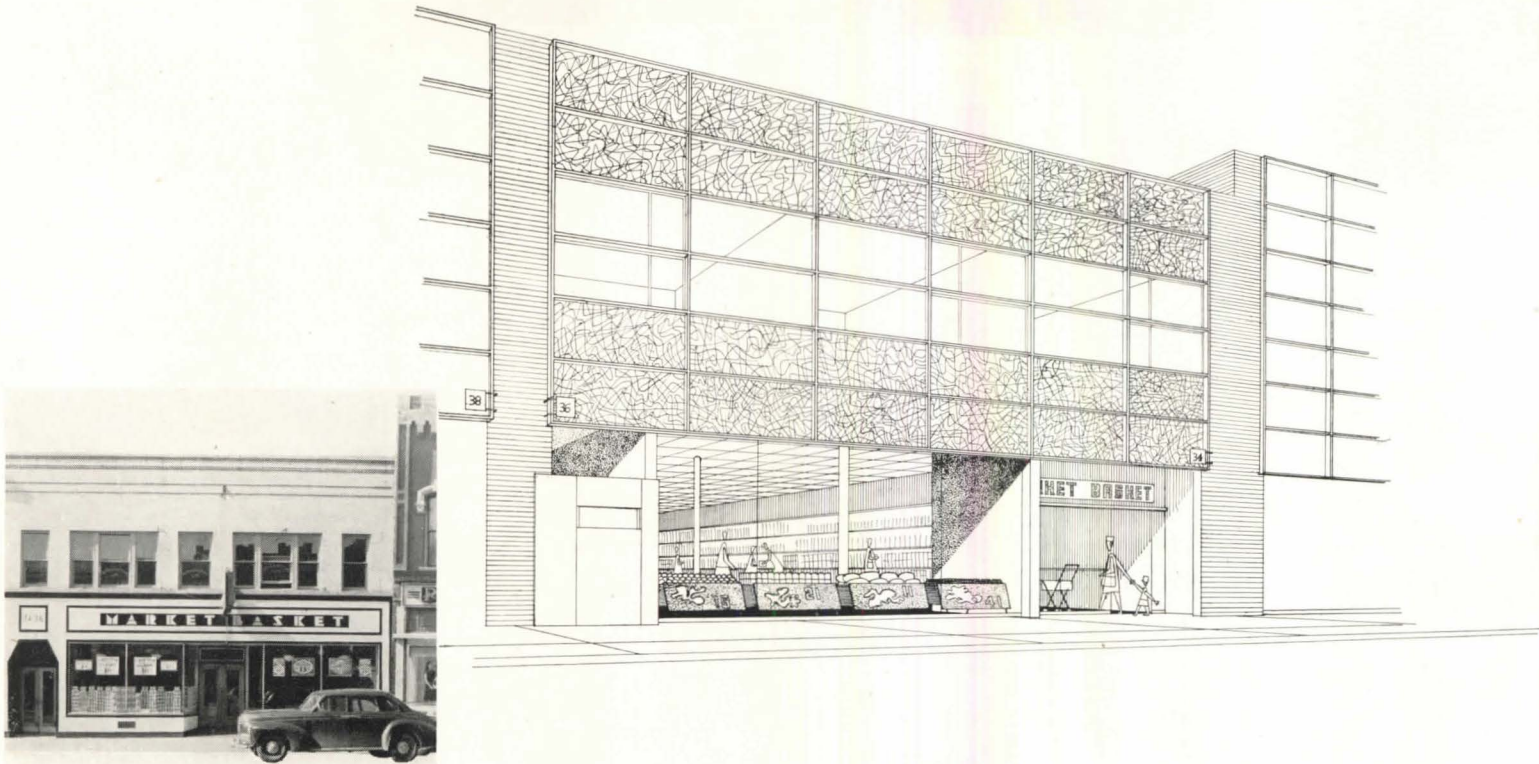
Photo at top of both pages shows the module which made possible the type of development pictured in the drawings. Five buildings at the left appear at larger scale below.



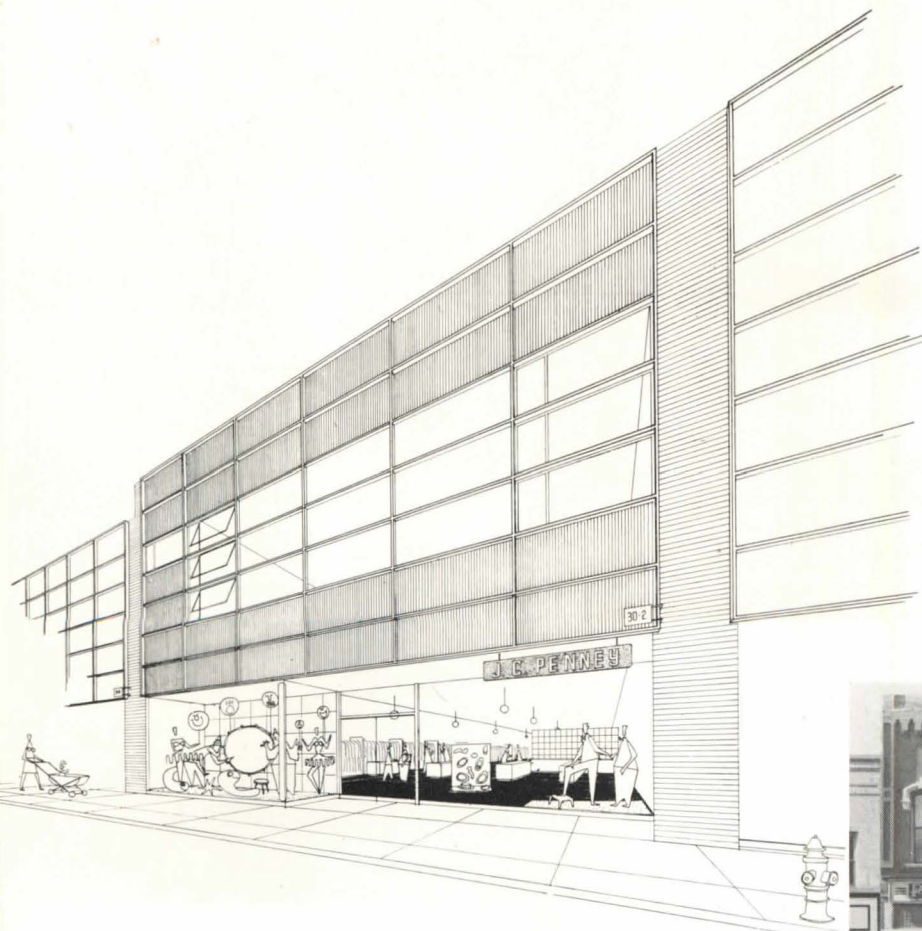
CORNING STOREFRONTS

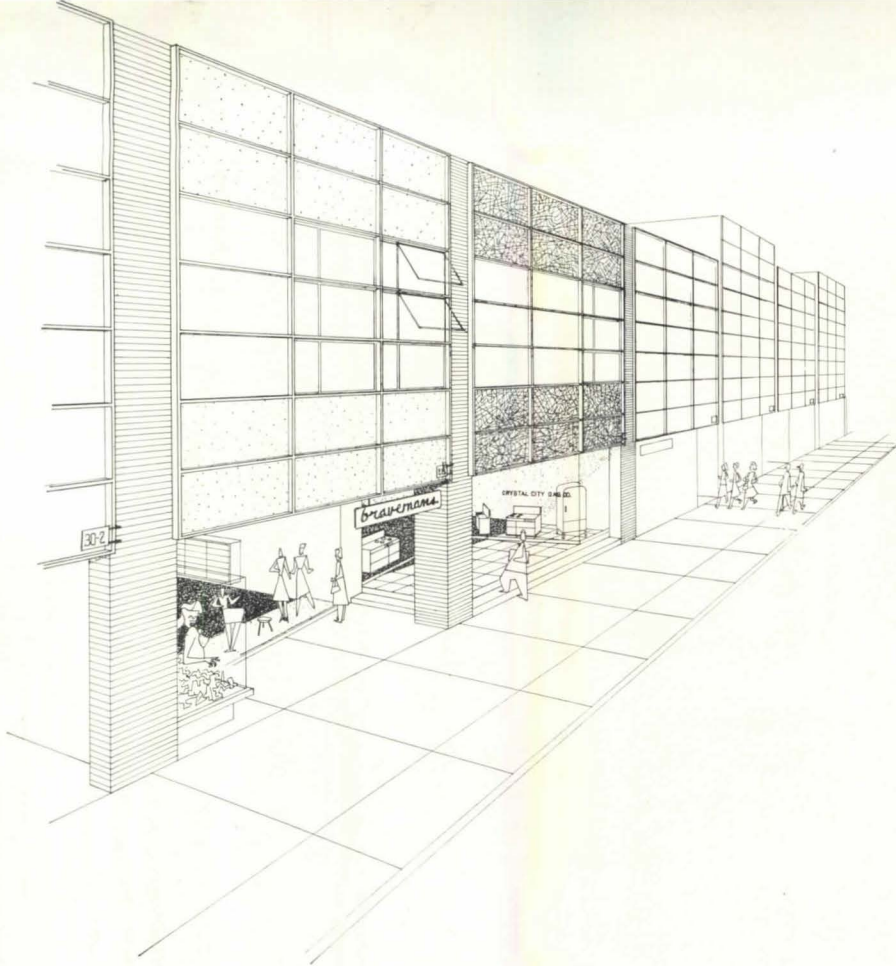


CORNING STOREFRONTS

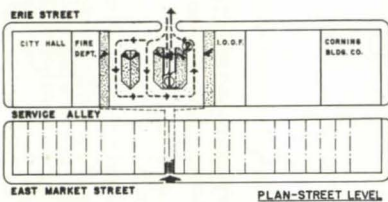


The next four stores, shown here at larger scale, demonstrate the individuality of treatment possible within the group scheme.

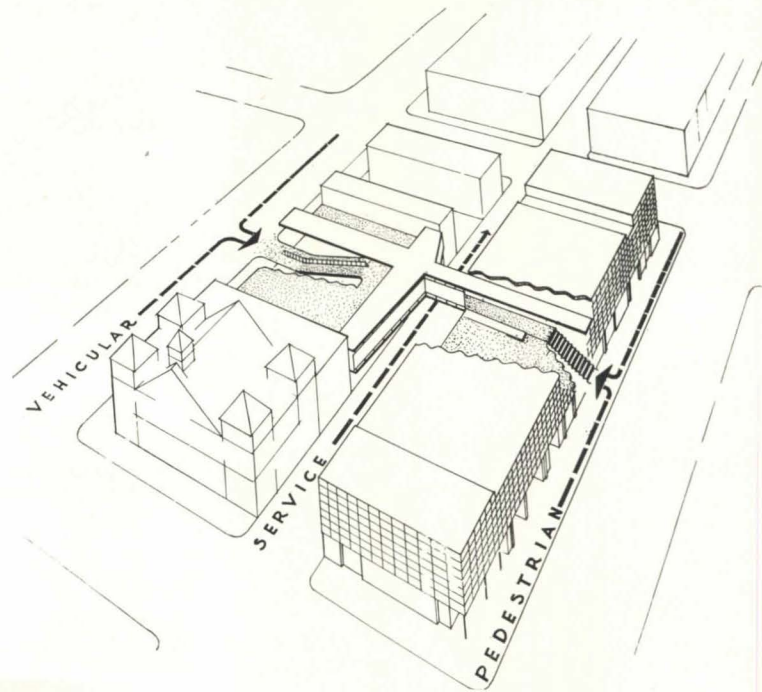
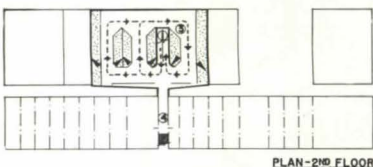




As well as modernization of obsolete buildings, the architects point out, problems of traffic, parking, and service access must be dealt with so that group rehabilitation will not be compromised.



- ①-AUTO RAMP TO 2ND FLOOR
- ②-LONG INTERVAL PARKING
- ③-SHORT INTERVAL PARKING
- ④-BRIDGE AND STAIR ACCESS FROM PARKING TO SHOPPING AND 2ND FLOOR ENTRANCE TO SHOPS



SITE

Although site and community factors were not part of the program handed the architects, they probed existing conditions sufficiently to assure themselves and their clients that nothing in the proposed scheme would conflict with future planning on a larger scale. First came the immediate site. Vehicular traffic on such a street is an abomination during shopping hours. Fortunately the block had an interior alley to which service traffic could be restricted, and a plot across the service alley, next to a block of municipal buildings, on which could be built double-decked parking facilities for customer traffic; a bridge across the alley could connect with the store group. The architects pointed out to their clients the problems confronting other business, industry, and Corning's residential sections; the need for recreational facilities; transportation problems; and flood control requirements.

They further state: "On a community basis it is important that the 2-48 East Market Street project, and all future local improvement enterprises, be part of a planned development if the entire community is to benefit and enjoy a continually improved environment."



Photos by P. A. DEARBORN

HOUSE IN SOUTHBRIDGE, MASSACHUSETTS

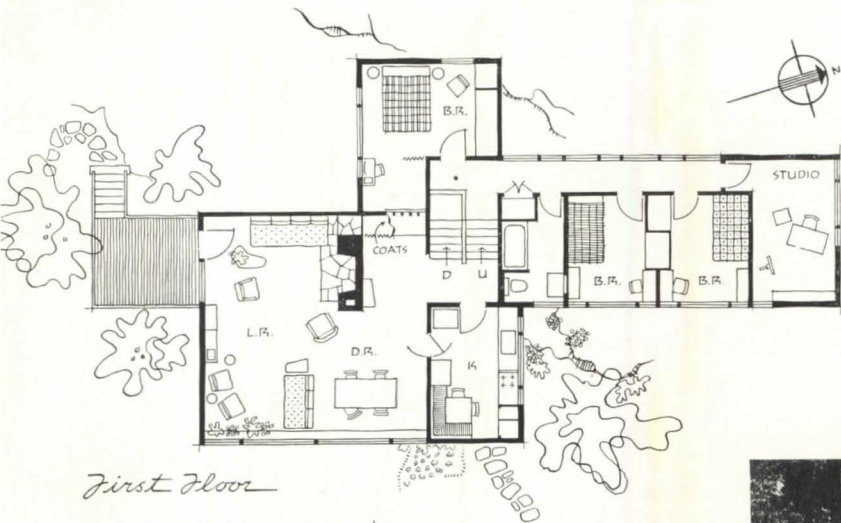
In addition to the interest that this house holds as a straightforward scheme for a particular family's needs, the handling of a difficult site condition, and the pleasing domestic character that the architect has achieved are factors that particularly recommend it.

HUGH STUBBINS, JR.

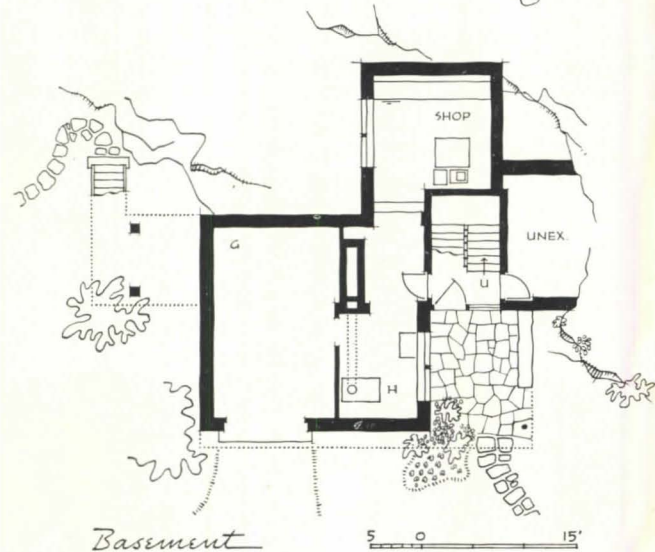
Architect

The hillside site consists of an irregular ledge formation. "The fieldstone foundations rest on this ledge," Mr. Stubbins tells us, "and the main floor is elevated to minimize blasting and excavation, to give ease and privacy of access, and to provide a woodland view from the living-room windows." Stepping up the house plan to conform to the ledge slope places the bedrooms and studio on a level six steps above the main living room.

This is the home of the Arne Oker family. Mr. Oker is an artist; hence, the studio. At the time the house was being designed, Mr. Oker comments, "Our two children were approaching college age and for that reason we asked Mr. Stubbins to keep dimensions of their bedrooms to a minimum. Our theory on this has proved practical, since the children are now away most of the time."



First floor



Basement



GARAGE AND MAIN ENTRANCE occur at the lower level. By having the garage next to the furnace room, Mr. Oker states, "we get enough heat from steam pipes that pass through the garage to keep it at a temperature much higher than in an unheated garage."

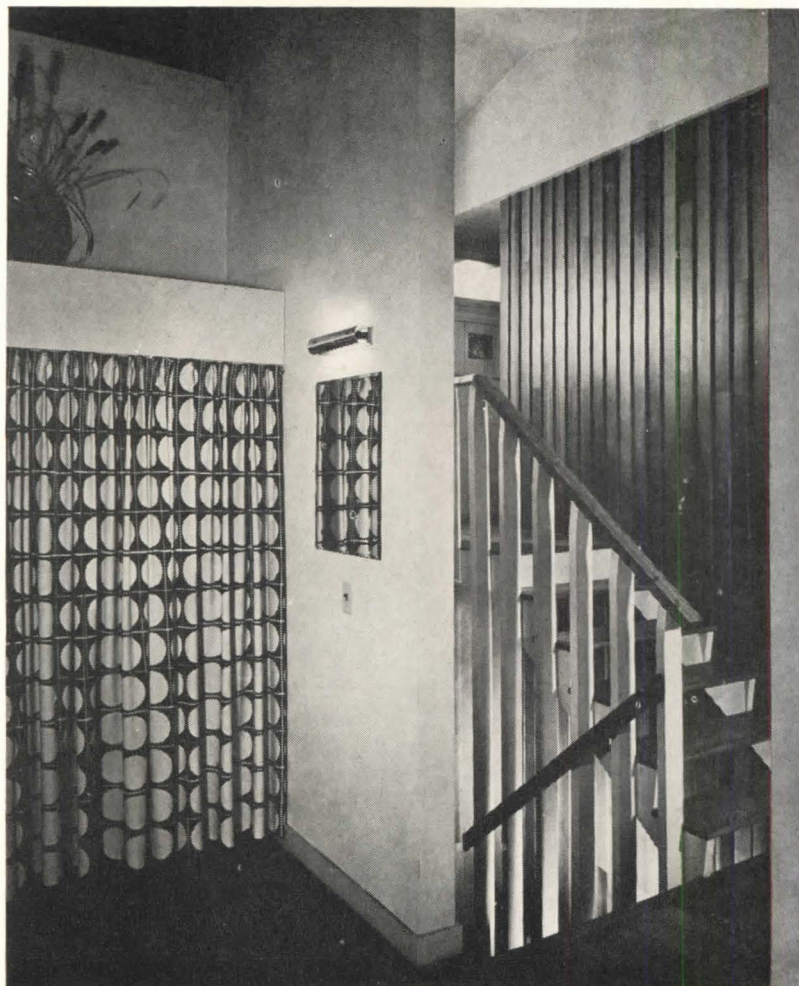
KITCHEN WINDOWS, left; BED-ROOM WING, at right. The house is of frame on fieldstone foundations. Exterior surface is tongue and groove eastern pine.



HOUSE

IN SOUTHBRIDGE, MASS.

HUGH STUBBINS, JR., Architect



ABOVE THE CURTAINED COAT CLOSET is a shelf, with an opening over it into the master bedroom. This device was introduced, according to the architect, "to carry a feeling of space from one area to the other."

From the ground floor entrance, a flight of stairs leads up to a compactly organized "central distribution" point. Directly ahead is the door to the kitchen; in an alcove at right is a curtained coat closet; a six-step flight of stairs leads up from this area to the bedroom wing, and the open side of the space leads directly into the well organized combined living and dining room, with its great windows overlooking the woods on the down-slope. Placement of the fireplace at right angles to the back wall of the room produces a sheltered fire-side area; a door at the corner of the room opens out to a raised sitting deck.

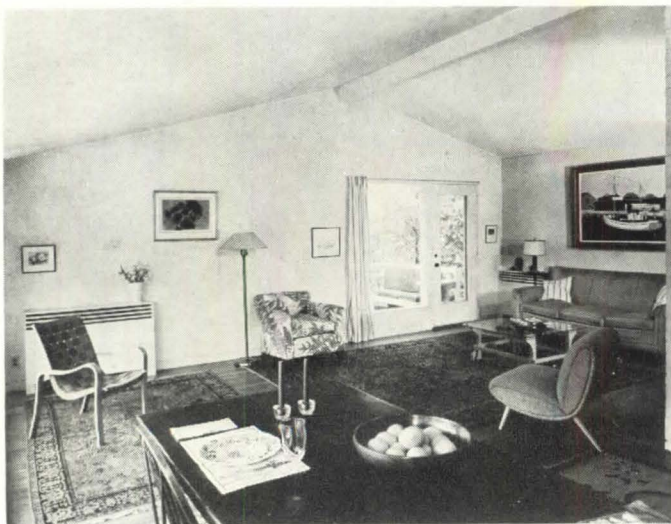
"Many people have asked us if we find it quite a chore to keep the large windows clean," Mr. Oker remarks. "Our answer is that it is much easier to clean one window of plate glass than it is to clean several small panes in a sash."

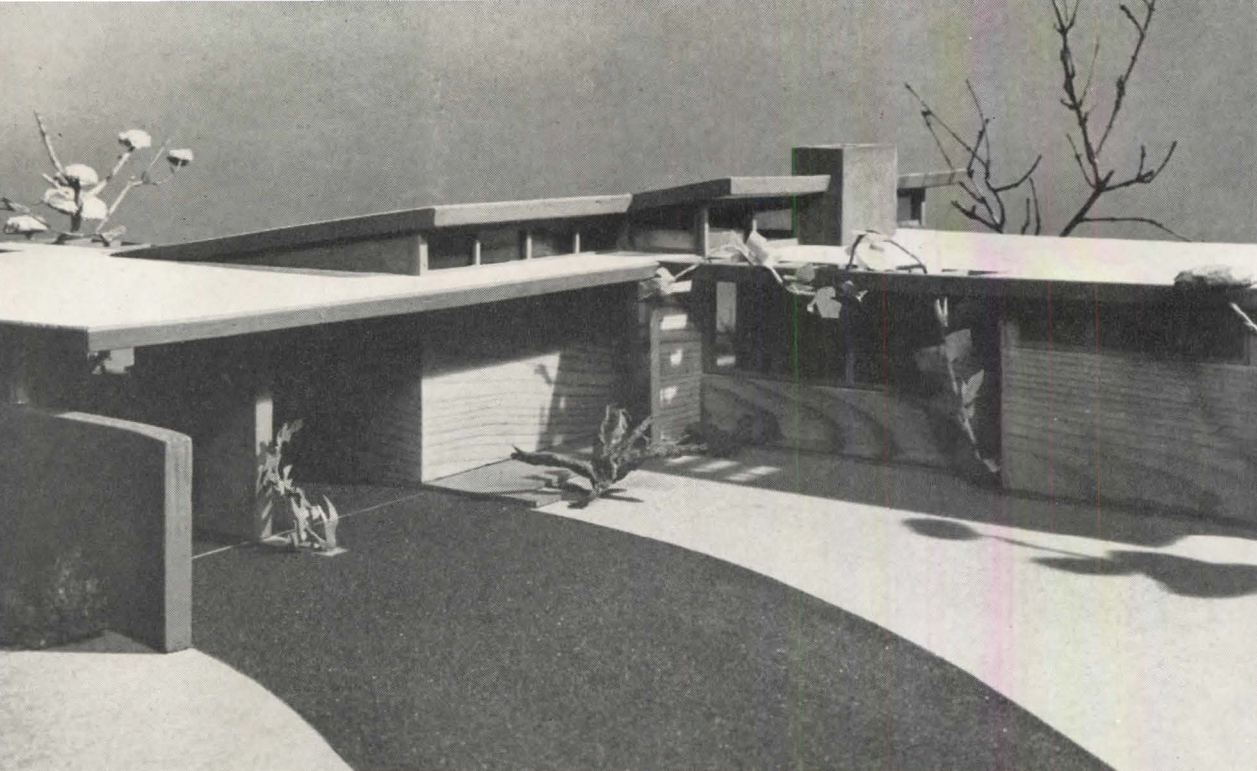
THE APPARENT NEARNESS of the hillside seen through the kitchen windows (and of the trees in the large photograph on the facing page) is somewhat deceptive, as will be seen by comparing these pictures with the exterior views shown on preceding pages.





THE OWNERS SAY that "the arrangement of living and dining space meets our needs very well. It adapts itself equally well to small groups and large parties." The roof overhang above the big windows not only controls the sun's rays but "we find we can leave our casement windows open during rain storms."





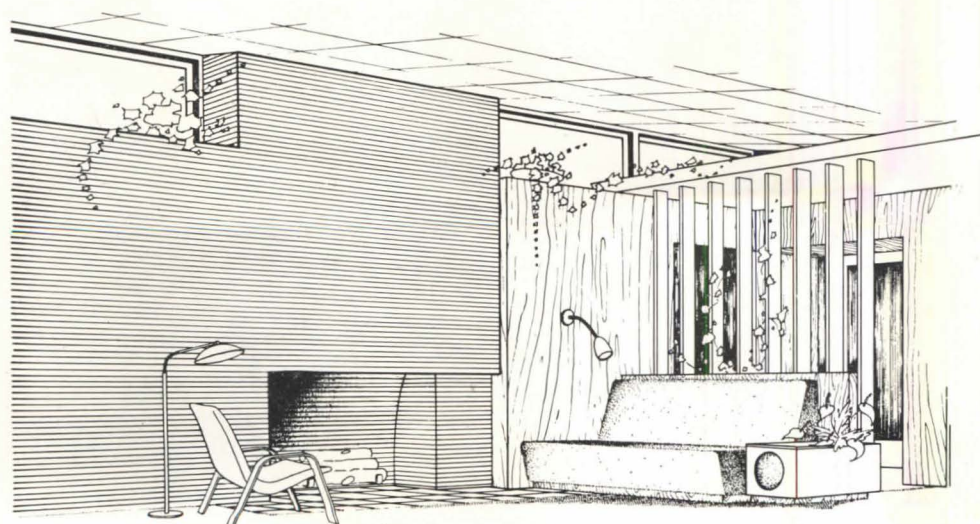
REDWOOD AND BRICK are the exterior materials of this house built on a waterproofed concrete slab. Bearing posts are milled to receive glazing directly.

HOUSE FOR ARCADIA, CALIFORNIA

The element that particularly distinguishes this small house from other well planned houses of about its size is the space provided for social entertainment. Otherwise, the plan is notable for its functional organization around a centrally located entrance and the privacy that has been provided for the three major living areas.

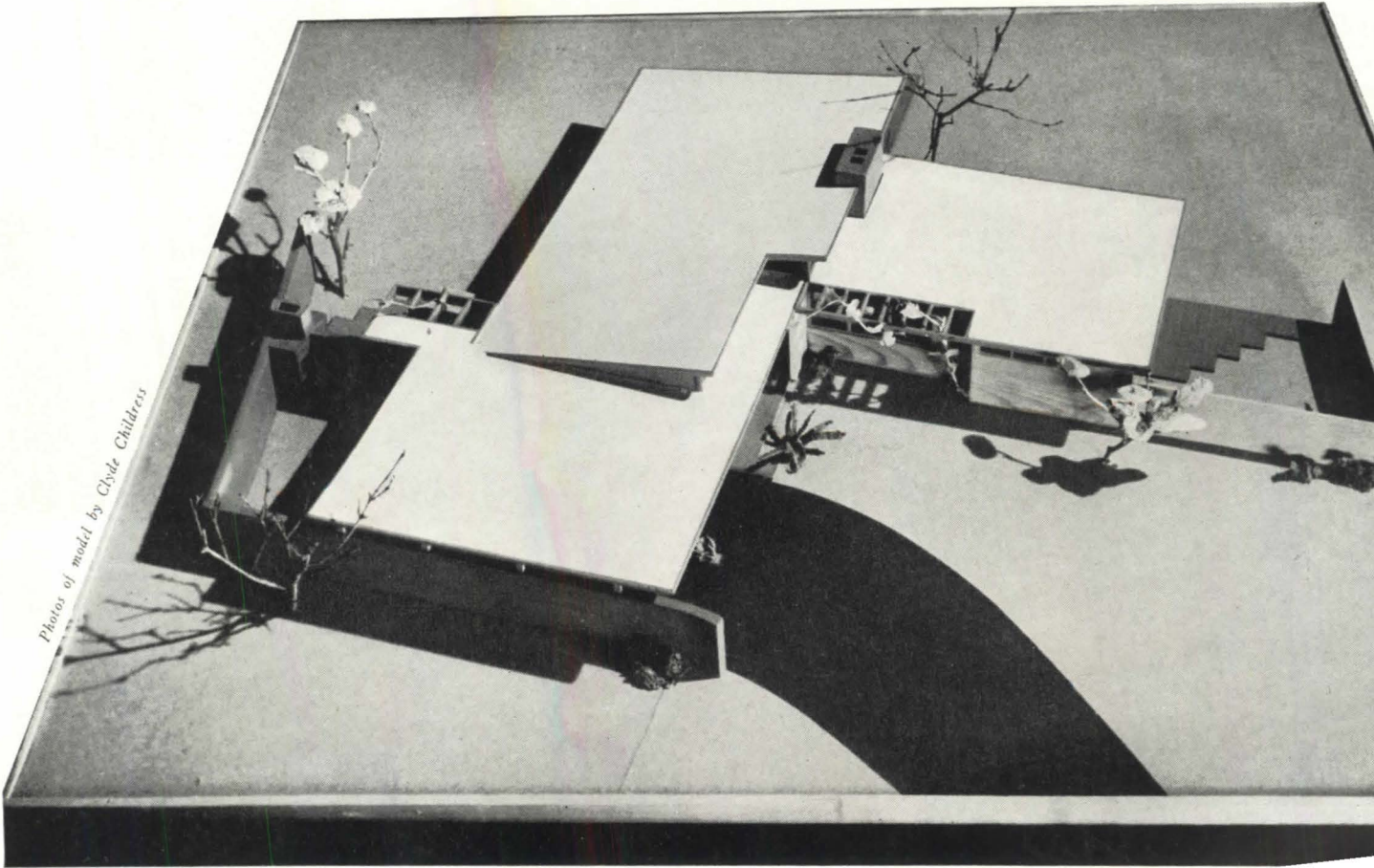
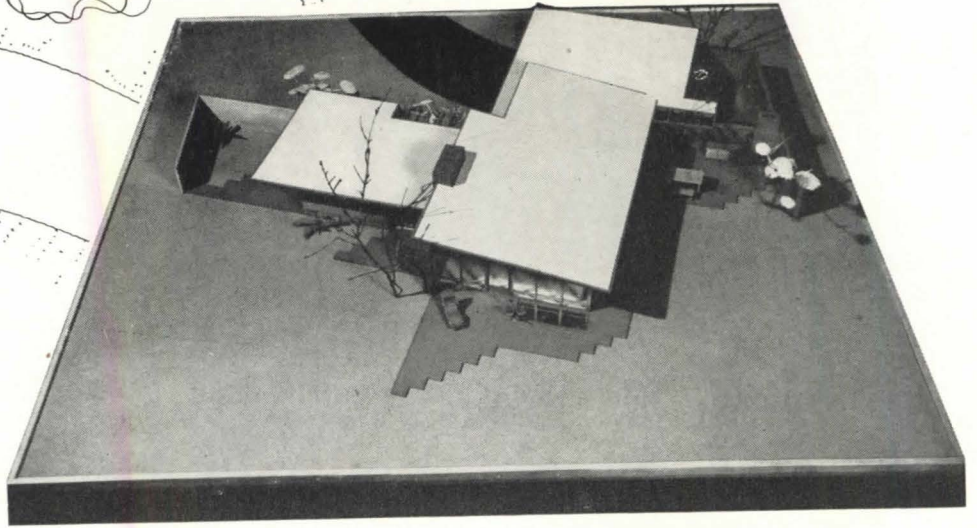
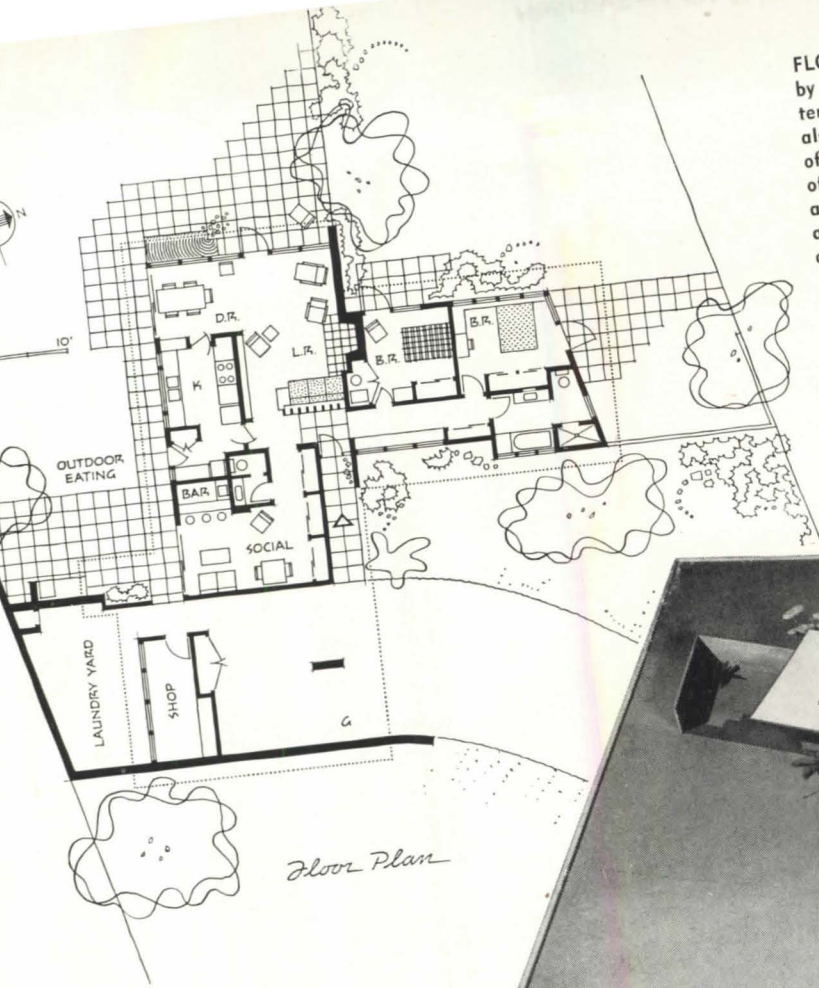
WILLIAM T. DREISS
Designer

Frequent entertaining is a business necessity for this particular client. His wife expressed a desire to restrict this activity to a separate room without seeming to shut guests out of the living-room area. An additional, unusual requirement was for storage space and some sort of stage where the owner could exercise his talent for doing magic tricks. This is also organized in the social room, a small platform folding down from the wall, and a curtain hung from a ceiling track shielding the stage and the closets behind (where magic paraphernalia is stored) from view.



LIVING-ROOM FIREPLACE CORNER. Unfinished brick and natural wood serve as both interior and exterior finish materials. Note clerestory window strip at ceiling height providing balanced lighting and cross ventilation in this area.

FLOOR PLAN. The social room may be opened by folding doors to the outdoor cooking and dining terrace; service to this terrace from the kitchen is also direct. The bedrooms are organized in a wing of their own. An admirable feature is the amount of storage space—numerous closets within the house as well as a shop and cupboards between the garage and laundry yard. Separate outdoor living areas occur adjacent to the bedrooms, the main living rooms, and the social room.



Photos of model by Clyde Childress

STANDARD SPECIFICATIONS FOR CONCRETE CONSTRUCTION—II

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By JAMES D. BEACHAM, A.I.A.

Editor's Note: Progressive Architecture presents the concluding portion of an invaluable document; the first appeared in December 1946. With the author's approval, these specifications have been checked by Fred

N. Severud, Consulting Engineer. Though not wholly "streamlined," these specifications may be incorporated in project specifications by reference and modification as shown in the "Specimen" on page 82.

PART S-8 (Cont'd.)

- B) Seal-coating method:** When called for in project specification or drawings, or when authorized, concrete cured by covering exposed surfaces with an approved seal-coat material.
- 1) Seal-coating material consists of an approved, non-staining, liquid curing compound, with non-permanent color added, applied uniformly to all exposed surfaces, using a spray distributor, at the rate of not less than 1 gallon to each 30 sq. yds. of surface.
 - 2) Surfaces cured by seal-coating protected from direct rays of sun for not less than 24 hours after application.

S8-03. CURING PERIODS.—Minimum periods applicable to normal (standard) Portland cement concrete follow.

- 1) For general construction including concrete in contact with the ground, not exposed to frost or salt water, nor submerged in water7 days
- 2) For concrete subjected to frost14 days
- 3) For precast piles for use in fresh water or for shore use; waterfront structures on fresh water; decks, etc., over but not ordinarily wetted by salt water18 days
- 4) For structural members in contact with salt water, salt spray, alkali soil or waters, or similar destructive agents28 days

A) Modifications of curing periods: Time periods specified or authorized for use with normal Portland cement concrete modified when special cements used, as follows:

- 1) High early-strength cement: normal cement curing time decreased not more than 60%.
- 2) Moderate low-heat cements: normal cement curing time increased not less than 25%.
- 3) Other special cements: normal cement curing time modified as directed.

S8-04. ADDITIONAL CURING (beyond the curing periods specified or authorized) applied and maintained when tests of representative parts of structure show strengths of more than 10% below the anticipated or required 28-day strengths; such deficient parts given additional curing to extent directed and/or necessary to develop the desired strength.

S8-05. REMOVAL OF FORMS.—Supporting forms or shoring not removed until the concrete members have attained sufficient strength to support their own weight and all loads imposed thereon.

- A) Removal time (minimum) after pouring,** when temperature of weather is above 60 Deg.°: Wall forms and side forms of beams, 2 days
Column forms and forms under slabs of span less than 4', 4 days
Forms under slabs of span between 4' and 10', 6 days
- 1) **Maintenance period (minimum) for supports or shoring under horizontal members:**
Beams, girders and slabs, 21 days
Floors upon which building materials will be placed during construction, 35 days

*In weather of temperatures below 60 Deg., forms, supports and shoring removed only after longer periods than specified in preceding provisions, as approved or directed by the Architect or Engineer.

- B) Method of removal:** in manner preventing damage to concrete in place; hammering or prying against the concrete avoided.

SURFACE FINISHING

PART S-9.

S9-01. GENERAL REQUIREMENTS. — Types: "Standard" surface finish and/or one or more of the several special types, all described herein, or other types designated by the project specification or drawings. In absence of specific designation, "Standard" type finish used.

S9-02. REPAIRING AND PATCHING SURFACES.—Upon removal of forms, defective surfaces repaired and patched as necessary, leaving the concrete free from objectionable surface imperfections, with patched places matching surrounding surfaces as to texture and color.

A) Repairing: On all exposed concrete, fins and other projections removed and offsets leveled.

- 1) At voids and damaged places on concrete surfaces **not exposed** to weather, laitance and loose particles removed; all defective places saturated with water and filled with mortar mixture of same composition as that used in the concrete; the mixture thoroughly compacted into place and finished with a wood float.
- 2) Tie rods removed in manner preventing spalling the exposed surfaces; tie holes filled solidly with mortar, at least 2 days before final cleaning of concrete.

B) Patching: At voids and damaged places on concrete **exposed** to weather, such places strongly and neatly patched.

- 1) **Preparation:** Honeycomb and other defective areas chipped out to depth of 1", with edges perpendicular to face; area to be patched cleaned of loose particles and thoroughly wetted.

2) **Patching mixture:** Materials and proportions the same as used for concrete, but using 1/2" (max.) aggregate, and with sufficient white Portland cement substituted for part of the normal (standard) cement to attain color matching.

3) **Placing patching mixture:** Areas first grouted with wash of Portland cement and sand followed immediately by application of patching mortar; mortar applied in not less than 2 coats and thoroughly compacted into place, and screeded off so as to leave the patch slightly higher than surrounding surface. When partially hardened, patch finished to match adjoining surface. Use of steel trowels in finishing avoided.

- 4) When unlined forms are used, board marks carried across patches by striking off the surface with a straight-edge spanning the patch, held parallel to the direction of the form marks. When screeding patch, straight-edge lifted at each joint between board forms.

S9-03. STANDARD SURFACE FINISH.—All exposed surfaces smooth and uniform, practically free from unsightly surface imperfections, streaks and discolorations; of uniform color and appearance.

S9-04. SPECIAL SURFACE FINISHES. — (used only when designated by the project specification or drawings) Types and methods of finishing as described following; prior to finishing, surfaces repaired and patched as specified in S9-02.

A) Rubbed finish: Where practicable, forms removed before concrete has attained a hard set. Concrete surfaces wetted thoroughly and rubbed with carborundum brick or other abrasive to a smooth, even finish of uniform appearance. All grout used in rubbing thoroughly removed.

B) Brushed finish: Forms removed while concrete is still green; surfaces brushed with stiff fiber or wire brushes, using water freely, until aggregate is exposed to the desired extent.

- 1) Should portions of surface have become too hard to brush to equal relief, diluted hydrochloric acid, (1 part acid to 4 parts water) used to facilitate brushing; all traces of acid thoroughly removed with clean water.

C) Sand-blast finish: Thoroughly cured surfaces air-blasted with hard, sharp sand until the aggregate is in uniform relief.

D) Tooled finish: The thoroughly cured surfaces dressed with suitable tools in such manner as to produce the finish designated in the project specification or drawings, to a uniform texture and even face.

CONCRETE FLOOR FINISHES

PART S-10.

S10-01. TYPES OF FINISH.—Types "A" to "E", inclusive, as specified herein, and/or other types (or modifications of specified types) designated in the project specification or drawings. In absence of specific indication as to type(s) required, Type "A" used.

S10-02. TYPE A.—Standard topping finish: A hard, durable surface practically free from dusting and disintegration when in normal use intended; applied **before** (designated "monolithic"), or **after** (designated "separate"), the base slab has hardened.

A) Proportions: By volume, 1 part Portland cement, 1 part fine aggregate, and 2 parts coarse aggregate (aggregates as specified following); not more than 5 gals. water, including unabsorbed water on the aggregates.

B) Aggregates: clean, hard, sound material; suitability for use as approved by Architect or Engineer.

- 1) Fine aggregate: natural sand or crushed stone screenings.
- 2) Coarse aggregate: suitable pea gravel, or crushed stone of dense traprock, fine-grained granite, or quartz; material having a large percentage of elongated or thin pieces avoided.

C) Grading:	total passing	% by weight
1) Fine aggregate:	1/4" sieve	100
	No. 16 "	45-80
	" 50 "	5-15
	" 100 "	0-15

	total passing	% by weight
2) Coarse aggregate:	1/2" sieve	100
	3/8" "	95-100
	No. 4 "	40-60
	" 16 "	0-5

D) Mixing: generally, as specified for structural concrete; by machine unless otherwise authorized; in manner preventing segregation of ingredients; a stiff non-plastic mix.

E) Preparation of base slabs: Slabs struck off true at level not less than 3/4" (for ordinary-duty floors; 1" or more if specified for heavy-duty floors), below designated floor grades. Prior to placing finish topping, all grounds and strips installed for items of adjacent finish specified; all dirt and debris removed.

1) Preparation for "monolithic" topping: All water and laitance removed before topping is applied.

2) Preparation for "separate" topping: Before base slab has fully hardened, surface water, laitance, and loose aggregate removed by use of wire broom, leaving the aggregate slightly exposed; the slab wet-cured for at least 5 days. Just prior to placing topping, base slab thoroughly cleaned by scrubbing; a short distance ahead of the topping mixture, a thin, neat, cement grout broomed into slab surfaces.

F) Application of topping: "Monolithic" topping placed within 45 minutes after base slab is placed; "separate" topping placed after base slab is hardened, cured and prepared, as specified.

- 1) **Placing:** Mixture spread and thoroughly compacted by tamping and/or rolling; floated to a true surface; surfaces sloped towards drainage outlets indicated, unless otherwise directed.

- 2) **Troweling:** Surfaces troweled to a smooth, hard finish, after topping mixture has hardened sufficiently to prevent excess fine materials from working to the top; no additional cement applied to surfaces during finishing operations.

S10-03. TYPE B.—Special topping finish: The best class of concrete floor finish, free from dusting and disintegration; of unusually good durability; dense and water-tight; applied after the base slab has hardened; full 1" thick (more if specified); machine floated.

- A) **Proportions:** as specified for Type A. finish (S10-02) except that 1-3/4 parts coarse aggregate used in lieu of 2 parts as in Type A finish.
- B) **Materials:** as specified for Type A. finish, except as to coarse aggregate (1/2" to 1/4" size aggregate used); aggregate specially selected for hardness and density; as approved.
- C) **Mixing:** by suitable, mechanical, batch-type mixer; for not less than 1 1/2 minutes after all materials, including water, are in the mixer.
- D) **Preparation of base slabs:** as specified for Type A. finish, ("separate" topping).
- E) **Application of topping:** Temperature of not less than 50 deg. F., required in area during placing; after mixture is placed and screeded, excess water removed by absorption with cloth mats or by other effective means. Topping compacted thoroughly with motor-driven float of metal-disc type, or with rollers weighing at least 10 lbs. per linear inch. No additional cement applied to surface during floating.

- 1) **Troweling:** Compaction followed by as many hand-troweling operations (but not less than 3) as necessary to obtain a smooth, hard, impervious surface free from marks and blemishes. No additional water or cement applied to surfaces during finishing or troweling operations. Surfaces burnished by troweling to show a shine or gloss. Sufficient time allowed prior to starting final troweling so that cement paste does not adhere to the edge of trowels; trowels held at an angle of approximately 30 deg. to surface, with edge pressing vigorously into surface, producing an audible, ringing sound from the trowel.

S10-04. TYPE C.—Ground finish: Topping as required for Type A finish applied as specified. When cured, surfaces finished by grinding uniformly with an approved type grinding machine shod with free, rapid-cutting carborundum stones; grinding continued until coarse aggregate is exposed; surfaces kept wet during grinding.

S10-05. TYPE D.—Non-slip finish: Topping mixture as required for Type A. finish, applied as specified. Prior to final troweling, particles of aluminum oxide (Al₂O₃) or chemically bonded abrasive aggregate, (not less than 1/4 lb. per sq. ft.), spread uniformly over floor surface. Size of aggregate as follows:

- 1) Ordinary-duty floors, between 0.015" and 0.100".
- 2) Heavy-duty floors, between 0.03" and 0.25".

A) **Application of aggregate:** Materials thoroughly dampened before spreading; uniformly spread and tamped flush with surface, using a steel trowel and taking care not to bury the chips. Surface troweled as specified for Type A. finish; after curing, floor rubbed with abrasive brick and water sufficiently to slightly expose the abrasive aggregate.

S10-06. TYPE E.—Dusted-on finish: A hard, smooth, integral surface suitable in light-duty locations where a limited amount of dusting or crazing is not objectionable; or as a base for applied floor coverings.

A) **Methods and materials:** Surface of base slab struck off at finish floor grade; surface water, dirt, laitance, and debris removed. A dry mixture consisting of 1 part Portland cement and 1 1/2 parts fine aggregate, (by volume) applied to surface at rate of approximately 1 cu. ft. of mixture to each 100 sq. ft. of floor surface.

B) **Finishing:** Surface floated until the dry material becomes wet; when it has dried out for 20 to 30 minutes (depending on weather conditions), surface brought to final grade with a wood float; when surface has hardened sufficiently to prevent excess fine materials from working to top, floor areas troweled to a smooth, hard finish.

S10-07. CURING FLOORS.—Objective: maximum strength and resistance to wear; water-tightness; prevent early loss of moisture and shrinkage through evaporation.

- 1) Curing started as soon as practicable after surface is finished and material has set.

A) **Curing method (except for Type B):** Finished surfaces water-cured for not less than 7 days (longer, as directed, in unfavorable weather) with saturated straw, sawdust, cloth mats, or other approved coverings; or by ponding and spraying.

B) **Curing Type B. finish:** Surface cured by covering with an approved type of waterproof, non-staining membrane having sufficient strength to resist wear and abrasive action, and weighing not less than 15 lbs. per 100 sq. ft. The covering laid with air-tight joints; kept in place for not less than 14 days.

C) **Curing with seal-coat:** used only when and as called for in project specification or drawings or when authorized; applicable to all types of floor finishes, but not used at any locations where surfaces are exposed to direct rays of sun for period of less than 24 hours after finishing.

1) **Material:** an approved, non-staining liquid curing compound with suitable, non-permanent color added; a composition of oils, wax, and resinous varnish, which will harden rapidly when applied on a wet surface, forming an impervious, membrane coating.

2) **Application:** Material uniformly applied by a spray distributor at the rate of not less than 1 gallon to each 30 sq. yds. of surface in such manner as to coat and effectively seal the surface in one operation.

S10-08. SCORING, AND DIVISION STRIPS.—Scope: Floor areas subdivided at all contraction joints, unless otherwise directed, and at other locations indicated, by scoring the surface; or, when called for, dividing the surface areas into panels indicated through use of approved metal division strips.

A) **Scoring:** Areas accurately and neatly marked off as indicated or approved, with use of a suitable grooving tool.

B) **Division strips:** Metal division strips of the kind and size indicated used to extent called for in the project specification or drawings; strips accurately cut and fitted; located at the exact finish level.

S10-09. CEMENT BASE.—Used only where and as called for in the project specification or drawings.

A) **General:** Base installed, preferably, when floor finish is placed; otherwise, prior to installation of any finish on walls or similar surfaces above base.

1) **Thickness:** 1" (more if designated), with 1/4" rounded corner at top, and 3/4" radius cove at bottom bonded to and making smooth connection with floor surface.

2) Base reinforced with suitable metal fabric where material is erected against woodwork.

B) **Materials:** 1 part Portland cement, 2 1/2 parts fine aggregate as specified for Type A. finish, hydrated lime (10% of the weight of cement used), and the minimum amount of water affording workability.

C) **Application and finishing:** generally, as required for Type A. floor finish, including troweling and curing, and protection against staining and other injury.

S10-10. CLEANING AND PROTECTION.—General: All work thoroughly cleaned upon its completion and maintained in such condition; adequate protection against staining and mechanical injury provided at all times.

A) **Cleaning:** Surfaces swept with ordinary brooms to remove loose dirt; wet with soap-suds and thoroughly rubbed with a device fitted with a wire brush or fine steel wool; suds mopped up and surfaces flushed with clean, warm water.

1) Surfaces given a final scrubbing with soap-suds applied with a fiber brush, followed by a final scrubbing.

APPENDIX I. RUBBLE AND CYCLOPEAN CONCRETES

SA1-01. RUBBLE AND CYCLOPEAN CONCRETES comprise the use of the class of concrete designated, proportioned, mixed and placed as specified, and the incorporation therein of large, individual stones to extent required by the project specification or drawings.

SA1-02. AGGREGATES.—Materials: clean, sound, durable stone or gravel meeting the specified requirements for normal-size coarse aggregate, graded as follows:

1) Kind	Size	Weight
Rubble	4" (Min.)	100 lbs. (Max.)
Cyclopean		100 lbs. (Min.)

SA1-03. PROPORTIONING.—Total volume of rubble or cyclopean stone used not more than 1/3 the total volume of the concrete.

SA1-04. PLACING.—Aggregate thoroughly saturated with water; each stone surrounded with the amount of the specified class of concrete, according to table following.

- 1) Rubble aggregate, not less than 6"; Cyclopean aggregate, not less than 12".
- 2) Stones placed carefully; not dropped or cast; in manner which will avoid injury to forms, reinforcement and adjoining construction; each stone thoroughly embedded in the concrete mixture.

SA1-05. CURING.—Requirements specified for curing concrete made with normal-size coarse aggregate apply.

APPENDIX 2. LIGHTWEIGHT CONCRETE

SA2-01. INTENT.—Used in portions of structures where lightness of weight is desirable, where and as called for in the specification or drawings; strong, durable concrete. Requirements, generally, the same as specified for ordinary concrete.

SA2-02. AGGREGATE.—Material: Generally, in accord with A.S.T.M. C 130-42; pumice, lava, tufta, cinders (see (2) following), specially prepared slag, coke, burnt clay, or other approved material having similar characteristics.

- 1) **Weight of aggregate (dry and loose, per cu. ft.):**
- | | |
|-------------------|------------|
| Fine aggregate, | 40-70 lbs. |
| Coarse aggregate, | 30-55 lbs. |

2) **Cinders:** screened residue from the quick combustion of bituminous coal, containing not more than 25% combustible material and 5% volatile material.

3) **Deleterious substances:** Maximum allowable, 1 1/2%.

4) **Grading:** as required for normal-weight concrete.

SA2-03. PROPORTIONING: As called for in project specification or drawings. In absence of specific proportioning requirements, adequate approved materials furnished, and proportioned and mixed, in quantity and manner insuring lightweight concrete of strength equal to specified requirements for normal-weight concrete.

SA2-04. PLACING AND CURING.—Mixture placed and compacted, and surfaces cured, in manner specified for normal-weight concrete.

APPENDIX 3. CONCRETE FOR FIREPROOFING

SA3-01. INTENT.—Material used for fireproofing structural members, at locations and to extent called for in project specification or drawings; thorough, reliable protection against injury from heat or fire. Requirements, generally, the same as specified for ordinary concrete.

SA3-02. AGGREGATES FOR FIREPROOFING.—Material: Specific requirements for aggregates for general use apply. Approved aggregate from Group 1 following used unless Group 2 materials are called for in project specification or drawings.

1) **Group 1 materials:** Blast-furnace slag, limestone, calcareous gravel, traprock, burnt clay, cinders (see (3) following), or other approved materials having similar characteristics.

2) **Group 2 materials:** Granite, quartzite, silicious gravel, sandstone, gneiss, cinders (see (3) following), or other approved materials having similar characteristics.

3) **Cinders:** Screened residue from the quick combustion of bituminous coal, containing not more than 40% combustible material.

4) **Deleterious substances:** Maximum allowable, 1 1/2%.

5) **Grading:** as required for concrete for general use, of class designated. Maximum size of coarse aggregate 1"; smaller size used in close places.

SA3-03. PROPORTIONING.—as called for in project specification or drawings; in absence of specific designation, materials mixed in proportion (by volume) 1 part Portland cement, 2 parts fine aggregate, and 4 parts coarse aggregate (using the aggregates approved for fireproofing)

with the minimum amount of water required to make a workable mix.

SA3-04. REINFORCEMENT.—as called for in the project specification or drawings.

SA3-05. PLACING AND CURING. — Mixture placed and compacted, and surfaces cured, in manner specified for ordinary concrete.

APPENDIX 4.

CONCRETE PLACED UNDER WATER

SA4-01. GENERAL.—At locations called for in project specification or drawings, concrete placed under water; methods, forms, materials, concrete mixture, and equipment as designated or approved by the Architect or Engineer, before any such work is started.

- 1) Temperature of water not below 35 deg. F., when concrete is placed or if freezing temperature is imminent within 24 hours.
- A) **Form requirements:** sufficiently tight to reduce the flow of water through which concrete will be placed to not more than 10' per minute; sufficiently tight in still water to prevent loss of mortar through the walls. Pumping to clear or retard flow of water in forms not allowed while concrete is being deposited.
- B) **Concrete mixture requirements:** Not less than 658 lbs. of cement per cu. yd. of concrete.
- 1) **Coarse aggregate:** by volume or weight, not more than twice that of the fine aggregate.
- 2) **Water:** sufficient to produce concrete having a slump between 4" and 7", as approved by the Architect or Engineer.
- 3) **Temperature of concrete mixture:** not less than 60 deg. F. nor more than 120 deg. F., when deposited.
- C) **Depositing:** Concrete deposited continuously in uniform horizontal layers until required height is reached; concrete disturbed as little as possible while it is being deposited; all laitance removed upon completion of a

unit or section of concrete. As designated or approved by the Architect or Engineer, one of the following depositing methods used.

- 1) **Tremie:** Equipment water-tight and large enough to allow a free flow of concrete; operated with discharge end submerged in fresh concrete, and the shaft kept filled with fresh concrete at all times; concrete discharged and spread by raising and moving the tremie so as to maintain a uniform flow; dropping concrete through the water avoided; tremie redrawn and refilled should charge be lost while depositing.
- 2) **Drop-bottom bucket:** an open-top bucket equipped with bottom doors which open freely, downward and outward, when tripped. Bucket filled completely and lowered slowly to prevent backwash; dumping delayed until bucket rests upon the surface on which concrete is to be placed; bucket withdrawn slowly when charge is placed until it is clear of fresh concrete.
- 3) **Bags:** capacity of at least 1 cu. ft., made of jute or other coarse cloth, free from deleterious materials. Bags filled about 2/3 full of the approved concrete and securely tied; placed carefully in "header" and "stretcher" courses so that the whole mass is interlocked.

APPENDIX 5.

HEAT-CURING OF CONCRETE

SA5-01. HEAT-CURING.—Method used, when specified or authorized, to protect and cure concrete placed when atmospheric temperature is around 40 deg. F., and when lower temperatures are imminent; under such conditions, aggregates and water heated, prior to mixing, sufficiently to insure a temperature within the mixture of approximately 65 deg. F., when concrete is placed.

- 1) Temperature of concrete in place maintained at 50 deg. F., (min.), for not less than 5 days, or more as required for adequate curing of the material.
- 2) Heating of concrete in place effected by use of salamanders, or with steam coils

SPECIMEN

SPECIFICATION FOR AN OFFICE BUILDING

(A "Project Specification" showing application of the Standard Specification)

DIVISION C.

CONCRETE CONSTRUCTION

C-01. GENERAL REQUIREMENTS

- A) **SCOPE OF WORK:** Concrete construction necessary for the completion of the work shown on the drawings or called for in the specifications.
- 1) **Incidental and related construction included:** Concrete fireproofing for structural steelwork to extent indicated; roof fills; cast-in-place concrete trim.
- B) **GENERAL CONDITIONS OF THE CONTRACT.**—See Division A.
- C) **STANDARD SPECIFICATION.**—The Contractor's attention is called to the accompanying data entitled "Standard Specification for Concrete Construction, of _____, Architects and Engineers" hereinafter referred to as the "Standard Specification." All provisions found therein which are applicable to the work under the contract shall be considered as part of the contract conditions and included in estimates covering the construction to be built. (See Par. S1-01(A) of the Standard Specification.
- 1) **Intent:** Except as may be otherwise specified herein and/or shown on the drawings, or otherwise specifically authorized, materials and workmanship for all concrete construction shall conform to the requirements of the Standard Specification.
- 2) **Modification and/or amplification** of the provisions of the Standard Specification shall include the following specific and miscellaneous requirements.

C-02. SPECIFIC REQUIREMENTS

- A) **MATERIALS.**—See Part S-2 of the Standard Specification.
- 1) **Grade of reinforcing bars:** Intermediate.
- 2) **Wire fabric for fireproofing:** 3" x 4" mesh; #12 ga. wire.

- B) **PROPORTIONING AND MIXING.**—See Part S-3 of the Standard Specification.
- 1) **Method of proportioning:** Method A. required throughout.
- 2) **Classes of concrete to be used:** Bids shall be based on the use of the classes following.
Class B—1 1/2 for footings and walls;
Class D—3/4 for thin floors and slabs;
Class D—1 1/2 for use generally.
- 3) **Mixing:** Approved ready-mixed concrete may be used throughout the work.
- C) **FORMWORK.**—See Part S-4 of the Standard Specification.
- 1) **Forms for joist-and-slab construction:** removable metal-pan forms and accessories equal to standard Meyer "Steelforms"; 20", 15", and 10" width forms furnished as required.
- D) **FORMING AND PLACING REINFORCING.**—See Part S-5 of the Standard Specification.
- 1) **Placing lath-type reinforcement:** Paper-backed wire fabric reinforcement required for slabs over steel joist framing shall be stretched taut over the framing and secured in place, all in the manner recommended by the manufacturer of the reinforcing material.
- E) **CONVEYING AND PLACING CONCRETE.**—See Part S-7 of the Standard Specification.
- 1) **Mechanical vibration** is required for all concrete mixture placed in forms.
- F) **CONCRETE FLOOR FINISHES.**—See Part S-10 of the Standard Specification. Finishes shall be as follows:
For floors on ground, Type A;
for floors generally, Type E.

C-03. MISCELLANEOUS REQUIREMENTS

- A) **CONCRETE FIREPROOFING.**—Except where masonry protection is indicated or approved, all steel columns, beams and girders that support masonry walls shall be protected with reinforced concrete fireproofing placed in direct contact with the steelwork.
- 1) **Class and thickness of concrete for fireproof-**

under tarpaulins, or by other approved means; with provisions made for free circulation of air within enclosures; temperature of concrete determined by use of suitable thermometers placed against the surfaces at points directed.

- 3) Adequate moisture applied to concrete surfaces during the heating period, or high degree of humidity supplied and maintained by other means, to prevent early drying-out.

APPENDIX 6.

SPECIAL SURFACE FINISHES

SA6-01. TOOLED FINISH.—The thoroughly cured concrete surfaces dressed with suitable tools in such manner as to produce the finish designated in the project specification or drawings, to a uniform texture and even face.

- 1) Prior to placing concrete, tests made to determine suitability of coarse aggregate for tooled effect specified.
- 2) Several sample surfaces prepared as directed for approval of the Architect or Engineer.

SA6-02. COLORED AGGREGATE FINISH made by placing not less than 3/4" of facing concrete against the form, in advance of the concrete backing, in such manner as will insure its bonding therewith.

- 1) **Facing mixture:** 1 part white Portland cement, 1 1/2 parts fine aggregate, and 2 1/2 parts designated coarse aggregate.
- 2) **Coarse aggregate:** crushed stone; crushed, colored ceramics, or other material designated by the project specification or drawings.
- 3) Molds used to retain facing mixture against forms while backing is being placed, removed before initial set has taken place; molds jarred frequently and raised at short intervals to prevent formation of seams and air spaces between facing and backing.
- 4) Finally, upon removal of forms, defective surfaces repaired and aggregate exposed as specified or directed.

ing: Class B-3/4; thickness of protection shall be not less than 2", except that outer edges of lugs and brackets of the steelwork may extend not nearer than 1" to the outer surface of the protective covering.

- B) **CONCRETE TRIM.**—Poured-in-place concrete trim and finish (not to be confused with pre-cast trim indicated as "cast stone" or "architectural masonry") shall be provided at locations shown on the drawings.
- 1) **Class of concrete required:** Class A-3/4.
- 2) **Workmanship:** All exposed surfaces shall be hard, dense and smooth. Corners and arrises shall be sharp. Care shall be taken to avoid staining adjacent materials.
- C) **POROUS FILL UNDER FLOORS.**—See Part S-2 of the Standard Specification, for materials required.
- 1) **Workmanship:** The fills shall be well compacted so as to provide unyielding support for the concrete slabs.
- D) **ROOF FILL.**—Fill material shall consist of vermiculite concrete made by mixing portland cement, water and "Zonolite Stabilized Aggregate", proportioned and placed in the manner recommended by the Zonolite Company.
- 1) **Workmanship:** The roof fills shall be compacted and screeded to a true surface at the levels or inclines indicated. Surfaces shall be floated smooth and made ready for the application of the specified roofing materials. Roof "cants" shall be provided at walls and similar vertical surfaces.

— NOTE —

The foregoing illustration covers the specified provisions for concrete construction in connection with a steel-framed store and office building. The original specification, prepared early in 1946 by the author of the Standard Specification, using the conventional method of writing, required 13 pages for its purposes.

Fig. 1. Three locations for a 40 cubic foot freezer chest in one plan: (A), preferred location for use convenience; windows may remain open for winter economy. (B), if the utility room is preferred for the laundry, the second best location for the freezer is the garage. (C), freezer may be located in boiler room to increase use convenience over "B" but at increased power cost.

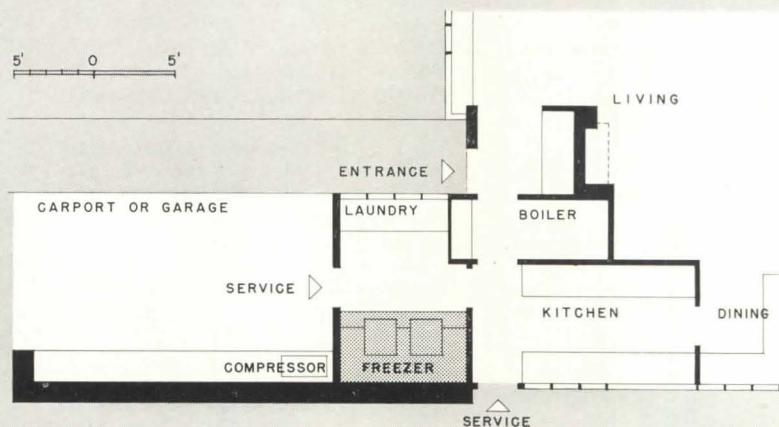
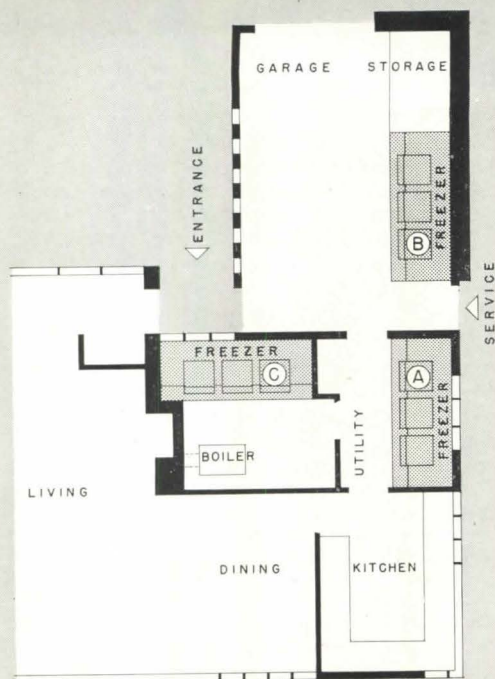


Fig. 2. The utility room becomes an ideal location for the freezer chest providing the heating plant is located elsewhere.

HOME FREEZERS

By PHILIP F. HALLOCK¹ and G. J. STOUT²

PART I: PLANNING LOCATION

(Part II, on construction of custom-built equipment, will appear in a future issue.)

Home freezing of foods was given an enormous impetus during the war. This was logical because: freezing provided a simple way to hoard hard-to-get items; it is a simpler, surer method of preservation, for vegetables, than home canning; it is a superior method for storing meats, and the quality of frozen fruits is higher than that of heat-processed fruits; higher storage costs were no deterrent because people generally had money. Equipment and construction materials for storing frozen foods at home were not generally available

and locker plants constituted the only important means. Now the trend is very strongly in favor of some kind of home freezing facilities.

Some of the reasons for this are: inconvenience of a home food supply located 2 to 10 or more miles away; home freezing facilities can be used for many purposes for which locker storage is not practical; locker space itself is nearly always inadequate; in many localities entire locker plant facilities are either inadequate or entirely lacking; many people can now afford the extra expense. Once considered a luxury, home freezing facilities, like mechanical refrigerators before them, are becoming a necessity.

Until now, the home freezer has not been an architect's problem, but there are indications that consideration will have to be given to freezers in a large percentage of new houses. Exceptions may be those located in strictly urban areas. It is also probable that apartment houses will be built with a locker unit in the basement for exclusive use of the tenants. The latter is a separate problem, beyond the scope of the present article.

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² G. J. Stout, Ph.D., Food Technologist, Pennsylvania State College, State College, Pa.
 All drawings were prepared by Mr. Hallock. Those noted as "From Home Freezer Handbook" are reprinted with permission from that volume, published November 1946 by D. Van Nostrand Co., New York, N. Y.

General recommendations are impossible without first considering the problem of freezer size. There are no set rules to follow and information published has been little more than guesses, many of which are already out-of-date because freezer usage has increased so rapidly. The estimates given here are based on the writers' own experience and on personal contacts with freezer users in general, nearly all of whom have found that the equipment they were using was too small. The most serious faults with existing installations result from disregard of future developments or of expansion. In the following table, families have been classified according to their needs for freezer space.

Type of Family	Cu ft freezer space per person in family
Strictly urban, high income, apartment house tenants.....	0 — 1
Ditto, but single dwelling residents.....	1 — 2
Strictly urban, medium to low income, single dwelling, producing none of own food.....	1 — 3
Suburban, high income, non-producing.....	3 — 5
Suburban, medium income, producing part of food supply	5 — 8
Suburban, low income, producing part of meat supply, some fruit, nearly all vegetables.....	7 — 10
Rural families, producing most of garden and meat supplies and other products to be stored.....	10 — 15

Size requirements are seen to be much higher than has been assumed in the past. For example, a rural family of four persons should have not less than 40 cu ft of freezer storage. In some cases needs have been greater than those listed, particularly in instances where some commercial use was made of the freezer, as for example where fruits, vegetables, meats, or poultry have been frozen and held for later sale. At this point two factors familiar to architects must be considered: first, what kind of equipment meets the needs; and second, what are the requirements as to location?

Not over 2 cubic feet of space needed

Many new kitchen refrigerators have a separate freezing compartment, which provides about 2 cu ft for holding one or two weeks' supply of frozen food in addition to ice cube trays. When such equipment is available, separate freezer space need not be provided. In some cases the architect will be responsible for specifying equipment for apartment houses or rental subdivisions. This type of kitchen refrigeration is the simplest solution.

Family requires 4 to 8 cubic feet of freezer space

In this case, the kitchen may be so arranged that the additional space necessary for a small freezer can be provided. Some of the new types provide work space above; that is, they are low cabinets which fit in with the other kitchen equipment. We will very likely have available, fairly soon, combination equipment providing 5 or 6 cu ft of refrigerator space plus an equal amount of freezer storage space. These,

if and when they reach the market, will solve another problem for the architect.

If a small freezer is to be located other than in the kitchen, a variety of types and shapes is available. The top-opening (or chest) type and the vertical (or cupboard) type are most important. Of these, the former is less difficult for the manufacturer to fabricate and is likely to be longer-lived and somewhat cheaper to operate. However, it requires more floor space than the vertical for the same capacity. Round or other peculiar shapes are difficult to fit into the planning scheme.

In addition to floor area requirements there are other reasons for planning freezer space in locations other than the kitchen. Inside the kitchen, the temptation is to open the freezer more frequently than is essential, which frosts the interior more quickly and is otherwise objectionable. Also, the kitchen is the warmest part of the house, which places an additional load on the machine.

Capacity of from 10 to 30 cubic feet needed

These sizes will undoubtedly be most popular among people who produce and freeze at least part of their own home food supply. Commercial models available are similar to the 4 to 8 cu ft sizes, but because they are larger the kitchen is rarely a suitable location. Vertical models require about 0.5 sq ft of floor area per cu ft of capacity, while horizontal freezers require about 0.75 sq ft. Larger machines do not include the condensing unit in the cabinet itself; in this case some space can be saved by installing the condenser either in the basement or in a garage. Possible locations for freezers of these sizes are:

House basement. This is suitable for freezer location under certain conditions. It must be well drained, with no danger of flooding. Side-hill locations are excellent. A good stair, well lighted and safe, is necessary. An outside entrance to the basement is an advantage. There must be sufficient headroom, particularly if a vertical freezer is employed.

Utility room. Many modern houses, with or without basements, have a room on the first floor in which the laundry, water-heating equipment, and sometimes the furnace are located. This is generally reasonably convenient to the kitchen. The floor has to be adequately supported and built of material that will not be affected by condensation from the cabinet or oil from the motor. This room may or may not be cooler than other locations, depending on ventilation and on the type and location of heating equipment. There must be sufficient room for all the utilities.

Breeze-way location. The "breeze-way," a screened-in porch-like area between the house proper and a semi-detached out-building such as a garage, is unheated, hence has low year-round temperatures which result in low operating costs for the freezer. The breeze-way is usually on the service side of the house, and so is convenient to the kitchen. It must have

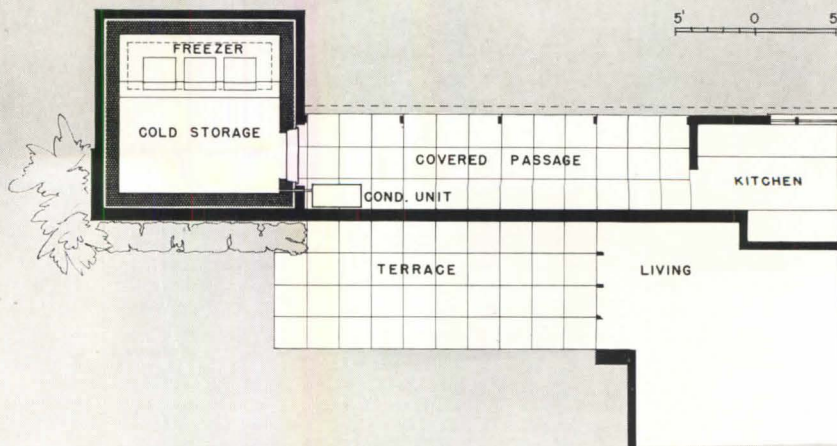
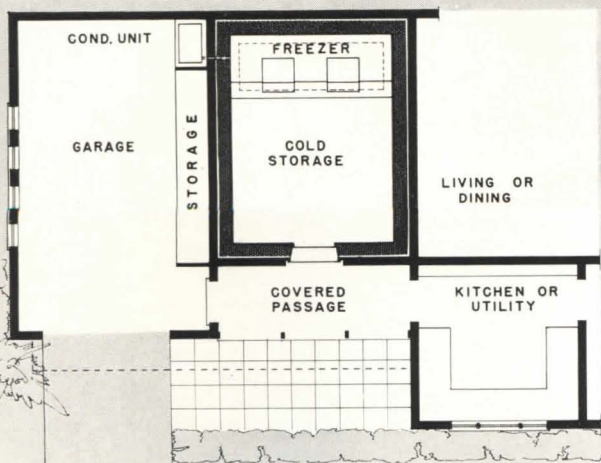


Fig. 3. Freezer chest—cold storage combination with outside entrance for ease in handling bulky packages. (Drawing courtesy "Home Freezer Handbook.")

Fig. 4. Freezer chest—cold storage combination in separate building. This solution finds more acceptance in rural homes and is more easily adaptable to existing homes where a cold storage room is required. (Drawing courtesy "Home Freezer Handbook.")

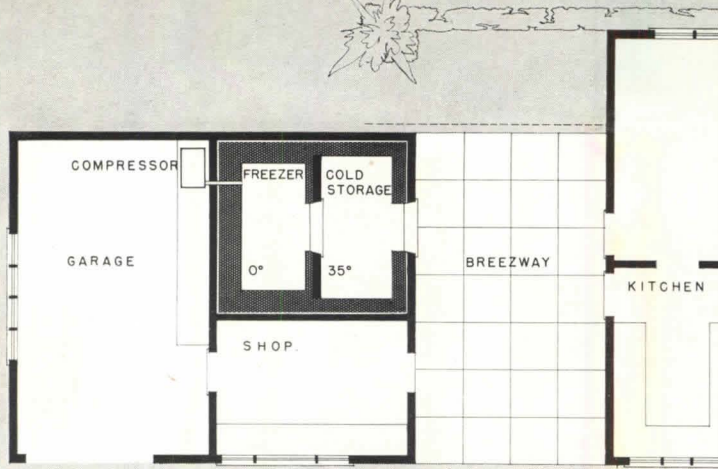


Fig. 5. Freezer room—cold storage combination used primarily in rural locations where increased freezer space is required. Freezer space shown is 273 cubic feet.

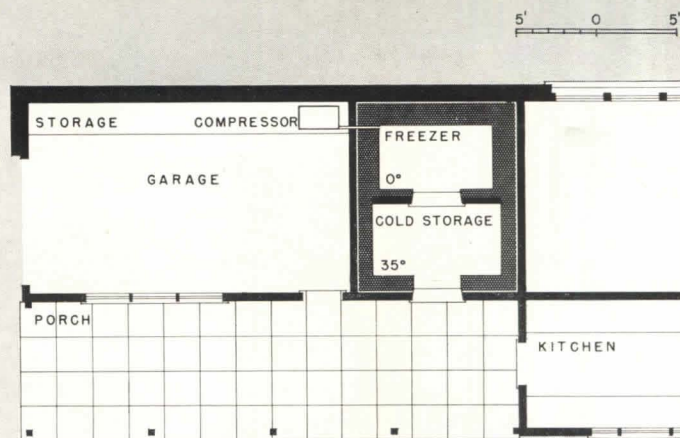


Fig. 6. Another freezer room—cold storage combination with a common service porch to garage and kitchen.

satisfactory floor construction and finish, and the condensing unit requires protection so that rain or snow cannot blow in on it. The freezer should probably be provided with a lock to forestall theft.

Attached garage. By a slight increase, either in length or width, of the garage, sufficient room may be provided for a freezer. If well ventilated, the garage has the same temperature advantages as the breeze-way. It usually has a solid floor, and the condensing unit is protected from weather. The garage is not advisable unless it is attached to the house, or is so near it can be reached by a covered walk. It should contain sufficient space so it isn't necessary to move the car in order to reach the freezer.

Freezers larger than 30 cubic feet capacity

Few factory-built freezers are now made in sizes larger than 30 cu ft, though more will undoubtedly become available in the future since the demand is constantly for larger sizes. Some families need 75 to 90 cu ft capacities, or even more. For such amounts two or more smaller freezers may be employed, or one large freezer can be built in place. Some clients will want space provided where the freezer can be installed at a later date. Very probably in the near future it will be part of the architect's business to design the compartment and oversee its construction just as he now does for any other utility.

Custom-built freezers occupy from 30 to 60 or more sq ft of floor space. Smaller sizes may be only 4 x 8 ft but 4½ x 10 is more common, and 5 x 12 or 5 x 15 may well be common in the future. Locations for bulky equipment of this type are:

Back porch. This is probably one of the most desirable locations provided it meets certain requirements. It usually provides the lowest year-round temperatures, hence low operating cost and longer life for the equipment. Porches are generally screened in the South, often glazed in the North, and either in central localities, so the freezer is protected. They are nearly always convenient to the kitchen, and are easily enlarged if more floor area is needed. Poor floor construction must be avoided. A loaded freezer may weigh 3000 lbs or more.

Utility room is desirable but rarely adequate in size unless proper provision is made in the original plans. Then the advantages are similar to those outlined in the section on freezers of 10 to 30 cu ft.

Breeze-way may be less suitable for custom-built equipment if the space is used for outdoor living because the installation is bulky.*

House basement. A large percentage of machines is built here because no other suitable space is available. Precautions given about locating factory-built freezers in basements hold.

However, in case of flooding, etc., built-in equipment cannot be moved. If the basement is subject to such hazards it should not be used.

Attached garage. The width of custom-built freezers being from 48 to 54 or more inches, a one-car garage would have to be increased about 50% in width, or 25% in length, to accommodate a freezer. Neither of these should increase total costs beyond reason. Increasing the width will provide considerable space for tools or for a workbench in addition to freezer space.

Combination freezer and cold storage room

A combination of this type is the ultimate development in refrigerated facilities for suburban and country homes. Indications are that these will be very common in a few years. The small cold storage room is held at a temperature of from 32° to 40° F. It is nearly as important as the freezer for families who slaughter animals for meat and grow apples, potatoes, and other bulky perishable crops for home consumption. While it would be difficult to establish definite rules as to sizes, the cold room should be of a walk-in type, about two or three times the capacity of the freezer. The larger size is necessary because access to the freezer is from the cold room, some of whose space thus becomes unusable for storage. A cold room of 150 cu ft is very nearly the minimum usable size; capacities of from 200 to 400 cu ft are most popular. These will hold from 50 to 100 or more bushels of food.

The freezer to be included in the cold room can be any one of three types. If not more than 75 cu ft of space is needed, either a chest (top-opening) or a side-opening (cupboard) freezer can be built. The former is easier to construct but is less economical of space—some people consider it less convenient. Larger freezers, for which there appears to be increasing preference, should be of walk-in type similar to the cold room itself. An entrance to the freezer through the cold room reduces operating costs and eliminates troubles due to frosting around the freezer-room door. On specialized farms, where it is necessary to freeze and hold some produce for market, a 200 to 500 cu ft freezer may be necessary.

The type of freezer included in the combination has little to do with the location of the equipment except as it affects the overall size and the use to be made of these facilities. The smallest practical size is about 9 x 10 ft by 8 ft high; larger outfits may require 200 or more sq ft of floor space. Both size and usage are important in the selection of a location.

* Editor's Note: As familiarity with home freezer equipment grows, and the ways in which it affects living habits (and hence design requirements) are appreciated, undoubtedly a designer's approach to the problem of integrating the equipment and the house will progress and this type of problem will disappear. The author's approach, of considering possible equipment locations by their familiar titles, seems valid under present-day circumstances.

House basement is the location where space can be spared most readily. On the other hand, drainage problems are often serious.

Basement headroom is generally insufficient; 8 to 12 inches of insulation is required in floor and ceiling. Some space may be saved by excavating, so that floor insulation is installed below basement floor level and finish floor of storage will be even with it. This puts insulation where it is most likely to be affected by damp conditions. The basement should not be used unless there is an outside entrance nearly at ground level. Carrying bushels of produce and quarters of meat up or down a basement stair is inconvenient and dangerous, and should be avoided. If the house is located on a hillside, this difficulty may be overcome, and drainage can be effected easily.

While the basement is undoubtedly one of the poorest locations, many combination outfits have been built in basements and owners claim the arrangement is satisfactory.

First floor of house is the most nearly ideal location; convenient, easily constructed, economical to operate. It lends itself readily to inclusion of kitchen refrigerator so a separate appliance is not necessary for this purpose. Floor supports must be adequate for the weight of structure and product load. Arrangement should be given full consideration, particularly when rebuilding or remodeling over-sized country houses. The chief objection is the additional floor space needed, yet this may be little or no more costly than some other arrangements. Some floor space may be saved by putting the condensing unit either in the basement or on the back porch.

Back porch or service porch. Many factors favor this as a location for a refrigeration plant. Usually one wall is common to the kitchen. Entrances to the kitchen and storage room can be near each other; it permits kitchen refrigerator advantages; proper arrangement is very simple. At the same time, it is easily reached from outdoors to put in or remove bulky products. Low year-round temperatures make for longer life and economical operation. On the other hand, the location is undesirable unless floor construction is adequate and the roof is good.

Attached or detached garage. Width of a single garage is

generally at least 10 ft, which is also convenient for the combination cooler-freezer. Garage can be lengthened 10 or more ft and storage put in the end ahead of the car, or a two-car-width garage can be built, using one side for refrigeration equipment and any extra space for tools, etc. This will provide enough space for a large storage and walk-in freezer of ample size. Garage and storage can thus be under one roof and at ground level so floor construction presents no problem. The location is ideal for a condensing unit, but ventilation should be possible in hot weather. If storage-room door is located in outside wall, it should be sheltered by an over-hang of eaves or otherwise protected from weather.

Separate building or suitable out-building. If no other arrangement can be made, a separate small building can be constructed to house the cooler-freezer combination. In remodeling, an out-building, such as an old summer kitchen, can be adapted. The building should be near the house and, if possible, accessible by a covered passageway. A condensing unit may be placed outside the structure but must be sheltered and arranged so there is free air circulation over it. An outside door should be protected by over-hang or porch. The building should have overall dimensions about 3 ft greater each way than the planned interior. This allows for 6" wall thickness and 12" of insulation.

Kitchen refrigerator

It is a simple matter to arrange for kitchen refrigerator facilities to operate in conjunction with storage and freezing equipment. A separate condensing unit is not required. If the rooms abut, shelves are framed into space in the wall between the kitchen and the cold room. Refrigerator doors are then used on kitchen side, screening on the other.

Refrigerators of 12 to 20 cu ft are readily provided in this way; these sizes are often desirable in country homes. Even larger sizes may be built. The freezer provides ice cubes, and a long coil of copper water tubing through the cold room, with a faucet in the kitchen, provides cold drinking water. The regular walk-in entrance to the cold room should not be from kitchen side; that is too inconvenient for bulky products. If such a close arrangement is impractical, a large separate kitchen refrigerator may be connected to the condensing unit required by other refrigeration equipment.

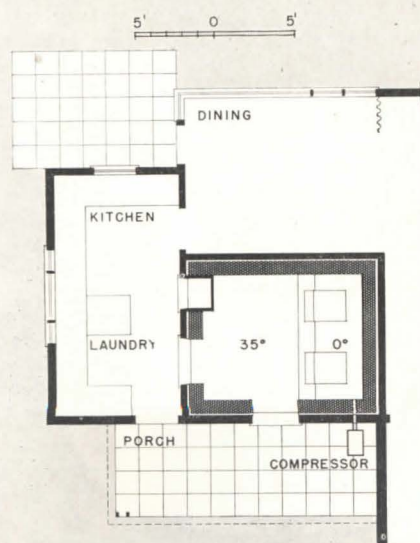


Fig. 7. Suburban cold storage—freezer chest combination incorporating a built-in refrigerator. Both doors to the cold storage room would not be installed. The individual requirements of the cold storage would dictate which door should be installed. (Drawing courtesy "Home Freezer Handbook.")

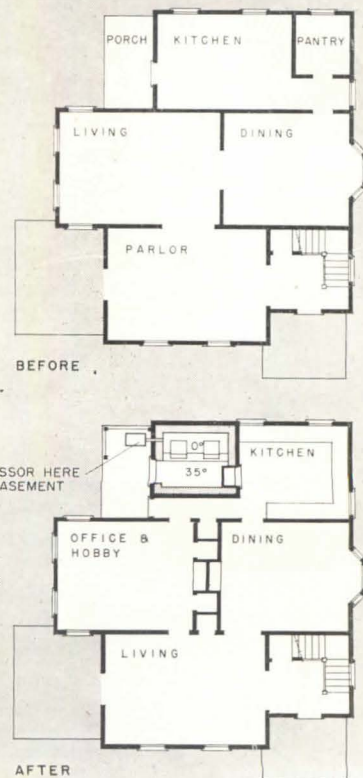


Fig. 8. An economical solution in a typical old farmhouse alteration. A built-in refrigerator is shown opening into the kitchen.

MANUFACTURERS' LITERATURE

PROGRESSIVE ARCHITECTURE—330 West 42nd Street, New York 18, N. Y.

I should like a copy of each piece of Manufacturers' Literature listed.

We request students to send their inquiries directly to the manufacturers.

No.	No.	No.	No.
No.	No.	No.	No.
No.	No.	No.	No.
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HOME BUSINESS

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★ *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

1-87. *New High Velocity Agitair Type "FM" Air Filter, AIA 30-J (Bulletin FM-101)*, Air Devices, Inc. Reviewed February.

1-88. *Hydro-Flo Radiant Heating (C-1145)*, Bell & Gossett Co. Reviewed February.

1-89. *The Bethlehem Dynatherm (Bulletin D-3)*, AIA 30-C-14, Bethlehem Foundry & Machine Co. Reviewed February.

1-90. *Electric Unit Heaters, AIA 31-K-3 (Bulletin 45-U)*, Electromode Corp. Reviewed February.

1-91. *What Does I.B.R. Mean to You?*, Institute of Boiler and Radiator Manufacturers. Reviewed February.

1-96. *Minneapolis-Honeywell Presents the New '47 Chromotherm*, illus. folder on an automatic thermostat with electric clock for time-setting temperatures in house heating systems. Minneapolis-Honeywell Regulator Co.

★ 1-97. *Panelaire, The Warm Air Panel Heating System*, by H. F. Randolph, 36-p. illus. manual on calculation, design, and installation of hot air radiant heating in ceiling panels. Tables on Btu requirements, Btu heat loss for indoor-outdoor temperatures. Construction data and detailed layouts. Suggested specifications. Sheet Metal Publication Co. (\$1.00 per copy—make check or money order payable to Sheet Metal Publication Co.)

1-92. *Heat Recovery from Internal Combustion Engines (Booklet HR-2)*, The Sims Co. Reviewed February.

1-93. *"Taco-One" Venturi System (Form 471)*, Taco Heaters, Inc. Reviewed February.

1-98. *Evaporative Condensers (Bulletin 87)*, 12 pp., illus. Information and specifications on a quiet cooling unit for condensing refrigerants. Selection charts. United States Air Conditioning Corp.

1-94. *U. S. Airco Air Conditioning Equipment*, United States Air Conditioning Corp. Reviewed February.

★ 1-100. *Steam-Pak, Facts and Figures (No. 1D-46-1)*, 10-p. illus. booklet. Data on steam generator unit for heating apartments, offices, stores, and for industrial process steam; high or low pressure. York-Shipley, Inc.

Doors and Windows

4-80. *Hollow Metal Doors, Jambs and Trim (15a-1)*, 7-p. illus. booklet; details of hollow metal doors, frames, designs, standard types, and construction. Specifications. Aetna Steel Products Corp.

4-76. *Allied Special Catalog of Builders Hardware*, Allied Hardware Corp. Reviewed February.

4-79. *Enter Into Beauty*, Curtis Companies Service Bureau, Dept. of Curtis Companies, Inc. Reviewed February.

4-81. *The Perfected Sash Balance (Form 42-SB-2)*, AIA 27-A-1, 6-p. illus. booklet on a concealed sash balance. Complete installation details. Perform-

ance and corrosion tests, specifications. Grand Rapids Hardware Co.

4-82. *Steel Windows and Biltin Sub-Frames in Glass Block (No. 105)*, 4-p. illus. folder on steel windows used in conjunction with glass block in industrial, commercial, and public buildings. Full-size details, outside elevations, dimensions. Hope's Windows, Inc.

4-77. *Mesker "American Home" Metal Windows*, Mesker Bros. Metal Windows. Reviewed February.

4-83. *Revolving Doors (1946 Cat.)*, AIA 16-G, 18-p. illus. booklet on revolving doors for commercial and public buildings. Features electric-eye revolving door which operates automatically when infra-red beam is crossed; also safety door on which, when too crowded, wings release and doorway is cleared. Installation details, dimensions, master specifications. Revolving Door Div., International Steel Co.

4-78. *Truscon Steel Doors (1946 Ed.)*, Truscon Steel Co. Reviewed February.

Electrical Equipment and Lighting

5-59. *Viz-Aid Commercial Fixtures, AIA 31-F-2 (Bulletin 10-B-1, superseded Bulletin 10-B)*, 10-p. illus. pamphlet on continuous fluorescent fixtures for commercial installation. Includes brief descriptions of models, order numbers, and prices for 40- and 100-watt fixtures. Installation data and details. Tables on foot-candle intensities. Day-Brite Lighting, Inc.

5-56. *Planning Your Home for Better Living . . . Electrically*, General Electric Co., Home Bureau. Reviewed February.

5-53. *General Electric Lamps (Bulletin LD-1)*, General Electric Co., Lamp Dept. Reviewed February.

5-54. *Lighting for the Modern Restaurant, (Y-549)*, General Electric Co., Lamp Dept. Reviewed February. (5 cents per copy—make money order or check payable to General Electric Co.)

5-55. *Colovolt Cold Cathode—Low Voltage Lighting, AIA 31-F-2 (S-47)*, General Luminescent Corp. Reviewed February.

5-58. *Firefly Fluorescent Fixtures*, Kahn Mfg. Co. Reviewed February.

5-60. *Lightmore Fluorecents*, 16-p. illus. booklet on fluorescent lighting fixtures for commercial, industrial, and residential installation. Order numbers and prices, installation data. Lightmore Appliance Corp.

2 booklets on a fluorescent lamp holder that automatically locks fluorescent tubes in place; grips both sides of lamp pins insuring electrical contact. Installation data, order numbers, and prices. Also features fluorescent starter. Lloyd Products Co.

5-61. *"Flex-Loc."*

5-62. *Lloyd's New Flexible Lamp Holder.*

5-63. *Fluorescent Lighting Fixtures (Cat. 286)*, 8-p. illus. catalog on fluorescent fixtures in 4- and 2-light units for industrial and commercial use. Brief descriptions, installation and servicing data; order numbers. Mitchell Mfg. Co.

★ 5-64. *Hazard Aluminum Building Wire (Tech. Bulletin H407, H407A)*, on aluminum electrical conductors, Underwriter approved, for ordinary uses. Employs Type R-H heat-resisting insulation. Cost comparable to copper, which is scarce. Tables of capacities, comparative weights; method of determining voltage drop, conductor sizes, circuit length and currents, for both copper and aluminum. Also price list (*Bulletin 302-A1*). The Okonite Co.

5-57. *The Star (Section 5-46)*, F. W. Wakefield Brass Co. Reviewed February.

Finishers and Protectors

6-85. *Wolmanized Lumber*, 4-p. illus. folder on "a vacuum-pressure treated lumber, impregnated with an odorless, paintable, non-corrosive, non-leachable preservative for protection against wood-destroying fungi and termites." Application data, residential construction details. American Lumber & Treating Co.

★ 6-86. *Color Harmony Manual, (Large Chip Ed.)*, 12 handbooks containing 680 movable color chips (with both shiny and dull surface), a work chart, removable gray scale holder, 24-p. illus. text discussing basic Ostwald principles of color order. Serves as a set of standards for gen-

eral use. Container Corp. of America. (\$125.00 per copy—make check or money order payable to Container Corp. of America.)

6-87. *Termite Control*, loose-leaf folder on "The Hill Termite Sprinkler Systems." Consists of installing a series of slotted pipes in inaccessible places, at time of construction, into which a perforated pipe is inserted annually and areas are sprayed with a toxic chemical. Installation data, specifications. Hill Termite Control Systems.

6-84. *Colors of the Year . . .*, O'Brien Varnish Co. Reviewed February.

6-88. *Lignophol Quick Drying*, illus. folder on a preservative and finish for wood floors in houses, offices, stores. One application needed, satin gloss finish said not to chip or peel. Data on application, coverage. L. Sonneborn Sons, Inc.

Insulation (Thermal, Acoustic)

2 booklets on sound-insulated doorless telephone booths for industrial and commercial buildings. Construction data, order numbers, and prices. Dimensions, specifications. Burgess-Manning Co.

9-58. *Acousti-Booth, Model 210 (Bulletin 166)*.

9-59. *Acousti-Booth Industrial Model 211 (Bulletin 450)*.

★ 9-60. *New Gold Bond Hollow Wall System, AIA 20-B-11*, 16-p. illus. booklet on a fireproof, free-standing, sound-insulating partition. Comparison of acoustic value, recommended specifications, installation data, section and scale details. National Gypsum Co.

9-57. *For Greater All Around Comfort Insulite Pipes, Ducts & Furnace (Form BP-5)*, Keasbey & Mattison Co. Reviewed February.

Load-Bearing Structures

12-103. *Fire-Resistive Apartments Yield Better Income*, American Iron and Steel Institute, American Institute of Steel Construction, Steel Joist Institute. Reviewed February.

12-101. *Stone Data Folder*, Conco Building Products, Inc. Reviewed February.

12-102. *Cemenstone, AIA 4-K*, The Cemenstone Corp. Reviewed February.

12-104. *Structural Details*, 35-p. (11½ x 17), binder, of cut stone details. Covers spandrels, entrance features, window trims and sills, terraces, supports and anchors, jambs and arches, interiors, flashings, stairways, etc. Indiana Limestone Corp.

12-105. *Modern Homes by Modern Methods*, 24-p. illus. consumer booklet on construction, erection, financing, and distribution of permanent factory-built houses. Prefabricated "Home" Manufacturers Institute.

★ 12-106. *Open Truss Steel Joists, AIA 13-G (Cat. E-170)*. 28-p. illus. booklet on open truss steel joists for floors and roofs. Dimensions, sections, loading tables, specifications, construction details, calculations, and installation data; S.J.I. standards and specifications. Truscon Steel Co.

Materials of Installation

13-49. *A New Idea in Metal Trims (Form 114-A)*, B & T Floor Co. Reviewed February.

13-50. *Pre-Engineered Sway Brace*, Grinnell Co., Inc. Reviewed February.

13-51. *Pyramid Mouldings in Stainless Steel (Form W3)*, Pyramid Metals Co. Reviewed February.

Non-Load-Bearing Structures

14-19. *The ABC's of Modern Plastics*, 36-p. illus. booklet; non-technical discussion of origin, preparation, and uses of plastics. Thermosetting and thermoplastic materials, molding and extrusion, impregnating, sealing, and calendering materials, etc. Bakelite Corp.

14-18. *Molding With Lumarith Celanese Plastics*, Celanese Plastics Corp., Div. of Celanese Corp. of America. Reviewed February.

14-14. *Mahon Steel Decks, AIA 12-C (Bulletin 46)*, R. C. Mahon Co. Reviewed February.

14-20. *Penmetal Lath and Plastering Accessories, AIA 20-B-1*, 18-p. illus. booklet on copper alloy metal lath plaster base. Types available, dimensions, use; engineering data, specifications, accessories. Penn Metal Co., Inc.

14-15. *Welding and Brazing Copper and Copper Alloys*, C. E. Phillips & Co. Reviewed February.

14-16. *Plasteel Engineers Handbook*, Protected Steel Products. Reviewed February.

14-17. *Modern Skylights, AIA 12-J (Cat. S-46)*, J. Merrill Richards. Reviewed February.

★ 14-21. *Snead Mobilwalls*, 18-p. illus. booklet on sound-insulated, fireproof movable steel walls for interiors. Details of construction, dimensions, characteristics; specifications for all types. Snead & Co.

Sanitary Equipment, Water Supply & Drainage

19-90. *Plenty of Hot Water for Less Than 4¢ a Day (WHC-455)*, 6-p. illus. booklet on "Duo-Therm" automatic fuel oil water heater for average family. Two sizes. Dimensions, capacity data, order number. Duo-Therm, Div. of Motor Wheel Corp.

19-89. *Automatic Oil Storage Water Heater (Series 70), AIA 29-D-2*, Rheem Mfg. Co. Reviewed February.

19-84. *Hydrafilter*, Wade Mfg. Co. Reviewed February.

19-91. *Weisteel Compartments (Cat. 18)*, 6-p. illus. pamphlet on steel compartments and hardware for toilet, shower, etc. Types available, construction and installation details. Specifications. Henry Weis Mfg. Co., Inc., Metal Compartments Div.

19-92. *Water Supply and Booster Systems, AIA 29-D-5 (Bulletin 1500)*, 16-p. illus. catalog on water supply and booster systems for large commercial and industrial buildings. Data on head and capacity requirements, typical piping and pump installations, engineering data and specifications. Yeomans Brothers Co.

Specialized Equipment

19-93. *Laundry Equipment for Hospitals of Every Size (D-2)*, 12-p. illus. booklet on hospital laundry equipment: washing machines, dryers, ironers, etc.; includes sizes, capacity, use. American Laundry Machinery Co.

19-85. *Duplex Tubing (Tech. Bulletin 746)*, Bridgeport Brass Co. Reviewed February.

19-94. *Does Your Home Have A Place for Living?* 22-p. illus. (10½x13 booklet on residential laundry equipment. Suggested plans and layouts for laundries in kitchens, pantries, breeze-ways, etc. Brief description of equipment needed, capacities, sizes. General Electric Co., Home Laundry Equipment Div. (10 cents per copy—make check or money order payable to General Electric Co.)

19-95. *Duraline*, 4-p. illus. folder on all-steel cabinets in bathrooms and kitchens. Brief description of each, order numbers, and sizes. Lennox Metal Mfg. Co.

19-86. *Majestic Incinerator (Form 1-2)*, Majestic Co. Reviewed February.

19-87. *Your Kitchen and You (Form 137)*, St. Charles Mfg. Co. Reviewed February. (10 cents per copy—make check or money order payable to St. Charles Mfg. Co.)

Surfacing Materials

19-96. *Arketex, AIA 3-F-21 (Cat. S-45)*, 18-p. illus. booklet on ceramic glazed structural tile and brick for interior and exterior use in stores, factories, schools, etc. Sizes and colors available. Standard specifications. Also details of shapes and cuts of units for jambs, corners, etc. Arketex Ceramic Corp.

19-88. *Low-Cost Wall of Lasting Beauty*, Armstrong Cork Co. Reviewed February.

19-97. *Choose Your Roof for Rain and Shine*, 24 pp., illus. Simple consumer booklet on choosing color schemes for asphalt shingled roofing and trim. Asphalt Roofing Industry Bureau.

★ 19-98. *Plan With Plymetl (1d-1)*, 6-p. illus. folder on Plymetl (veneer or plywood core surfaced on one or both sides with sheet metal); can be used for partitions, panels, furniture, etc. Data on bending, molding, and fastening. Tables of standard sizes, comparison charts. Haskellite Mfg. Co.

19-99. *Architects Floor Manual, AIA 231*, 64-p. illus. booklet on conditioning and maintaining many types of floors. Recommends treatment for specific problems. Specifications for each type of floor—wood, terrazzo, rubber tile, asphalt, linoleum, cork, masonite, etc. List of floor maintenance products. Midland Chemical Lab's., Inc.

Traffic Equipment

20-33. *Chelsea*, Chelsea Elevator Co. Reviewed February.

20-36. *Utilize the Air Rights of Your Ceilings (Form 645)*, 18-p. illus. booklet on overhead chain conveyor systems for industrial use. Advantages, construction, installation, and operation data. Lamson Corp.

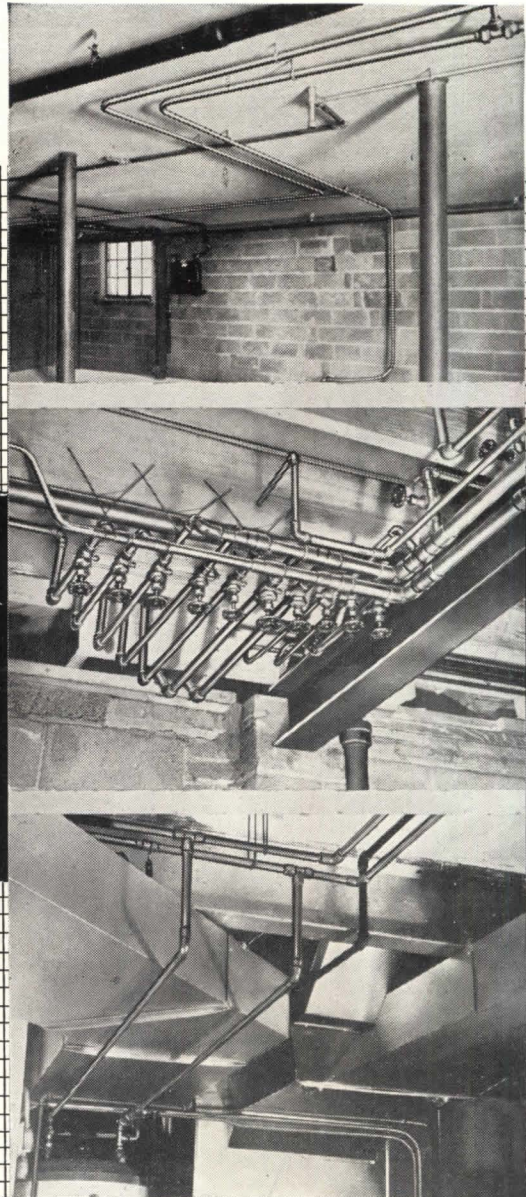
From Rotary Lift. Co. Reviewed February:

20-34. *Levelators, AIA 33-Y (Cat. RE-201)*.

20-35. *Oilraulic Elevators, AIA 33 (Cat. RE 301)*.

Note: For "Technical Press" please turn to page 98. Hereafter, it will be found in the "Reviews" section.

**Any type of system
works better,
lasts longer with
REVERE COPPER**



REVERE Copper Water Tube, because of its smooth gun-barrel interior finish and its permanent immunity to rust, makes superior lines for heating and water service. Hot water can circulate freely at high velocity. Steam return lines stay corrosion-resistant. Hot and cold water flows unobstructed to the taps, remains rust-free and clear. Joints made with either soldered or compression fittings help further to minimize friction loss.

Revere Copper Water Tube is made for water supply, heating, air conditioning and other services in all types of buildings. The Revere name and the type, stamped on this tube at regular intervals, are your assurance of full wall thickness and the close gauge tolerances essential for tight sweated joints.

Remember, when you specify this product you are saving money for your clients, because *trouble always costs more than Revere Copper Water Tube.*

You can also specify such long-lived Revere materials as Red-Brass Pipe; Sheet Copper for tanks, ducts, pans and trays; Dryseal Copper Refrigeration Tube (dehydrated and sealed); Copper oil burner, heat control and capillary tubes . . . and, of course, Sheet Copper for roofing, flashing and other sheet metal construction.

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COPPER AND BRASS INCORPORATED

Founded by Paul Revere in 1801

230 Park Avenue, New York 17, New York

*Mills: Baltimore, Md.; Chicago, Ill.; Detroit, Mich.;
New Bedford, Mass.; Rome, N. Y.*

Sales Offices in Principal Cities, Distributors Everywhere.

Here's a suggestion for a low-cost house with a wide awake, down-to-earth look about it! This ad appears in full color in the Saturday Evening Post and is another in the Gold Bond series, now in its second year. Stresses the use of Gold Bond Building Materials, sure, but it also plays up the Pride of Home Ownership angle and really does a job for the whole building industry. Thousands of folks will write us for plans of this home and the answer will be, "See your local architect!" National Gypsum Co., Buffalo 2, N. Y.

You'll build or remodel better with Gold Bond



You can start building sooner if you start planning now. See your local Gold Bond Dealer!

Wonder how many Post readers feel the way I do?

"Someday we're going to have our house, Bill and I. With grass around it, and the blue bowl of the sky over it, and a tree of our own to carve a couple of hearts on if we want to. We're saving, and planning, and each day brings us closer to moving in!"

The house you will build will be a "wonder house" too. For, since Dad built, modern science has taken a hand in new construction materials and methods. Outer walls, for example, now add greater strength and fireproofing when Gold Bond storm sealed gypsum sheathing supplies the base for outside finish. Inside walls and ceilings will give years of trouble-free service when they're made

of Gold Bond fireproof gypsum lath and plaster.

Heating costs are reduced as much as 40% in new and old homes with fireproof high-efficiency Gold Bond Rock Wool insulation. And summer comfort is doubled.

You can plan on these scientific building improvements and many more to give you a house that is better in every respect than any that has ever been built before. A house that will serve for many long and happy years with the least amount of repair and upkeep expense.

There are over 150 research produced Gold Bond products that cost no more to specify and use than

ordinary building materials. Each of them is engineered to do a specific job better. If you want Gold Bond results, be sure to speak to your architect and builder about using Gold Bond products!

Today our entire production can't keep up with demand. But just the same our more than 10,000 Gold Bond lumber and building material dealers are doing their best, helping veterans to get housed, helping their customers in every way they can. See your Gold Bond dealer first whether you plan to build or remodel. He can help you get what you want, and get it better. Not always right away but tomorrow sure! National Gypsum Co., Buffalo 2, N. Y.

Over 150 tested Gold Bond Building Products for new construction or remodeling add greater permanency, beauty and fire protection. These include wallboard, lath, plaster, lime, sheathing, wall paint, insulation, metal and sound control products.

DEMAND THESE SIX GOLD BOND FEATURES IN YOUR NEW HOUSE

GOLD BOND FIREPROOF GYPSUM SHEATHING



Big, weatherproofed panels of Gold Bond Storm Sealed Gypsum Sheathing add structural strength and built-in fire protection. Costs less than old-style sheathing.

GOLD BOND FIREPROOF GYPSUM LATH



Gold Bond Gypsum Lath is the perfect plaster base. Can't warp, expand or contract. Adds fire protection and structural strength for better wall and ceiling construction.

GOLD BOND FIREPROOF GYPSUM PLASTER



Gold Bond Gypsum Plaster is especially processed to bond perfectly with gypsum lath. Builds fire-safe, rock-like walls and ceilings with greater durability and beauty.

GOLD BOND FIREPROOF FINISH LIME



Over the plaster, goes a coat of Gold Bond Finish Lime. This is the smooth white finish that you see in a new house before the wallpaper or paint is applied.

GOLD BOND FIREPROOF ROCK WOOL INSULATION



Builds a fireproof blanket of insulation around the house for greater year 'round comfort, family health, and fuel savings up to 40%. Available for new or old homes.

GOLD BOND SUNILER 1-HOUR WALL PAINTS



Dries in one hour with no objectional painty, after-odor. Easier to apply. This modern decoration is now available at your dealer's in a full range of colorful tones.

LONG LASTING

GOOD LOOKING

EASY TO INSTALL

Alcoa Aluminum

Window Sills

... and Thresholds



For quick, low-cost installation, freedom from stain, and reduced maintenance, include Alcoa Aluminum Window Sills and Thresholds in the buildings you are designing for future construction.

Years of trouble-free service in hundreds of commercial and industrial buildings in every part of the country have proved their value.

The Alcoa booklet illustrated (A.I.A. File No. 14-B) will give you detailed information. For additional copies write to ALUMINUM COMPANY OF AMERICA, 1868 Gulf Building, Pittsburgh 19, Pa.

MORE people want
MORE aluminum for
MORE uses than ever

ALCOA FIRST IN **ALUMINUM**

REG. T. M.



IN EVERY COMMERCIAL FORM

FLEXSTONE BUILT-UP ROOFS

"Made of asbestos,
each ply is a flexible
covering of stone"



RESISTS FIRE: Burning embers or brands, blown from neighboring fires, burn out harmlessly on Flexstone Roofs. In spite of the intense heat and flame, the asbestos felts prevent the roof deck from catching fire. Here's further assurance that you get greater fire-safety with Johns-Manville Flexstone Built-Up Roofs.

BUILT-UP with asbestos felts which are fireproof, rotproof, and weatherproof, Johns-Manville Flexstone Roofs offer the most enduring and reliable protection for your buildings.

Flexstone Roofs are *smooth-surfaced*, permitting quick and thorough roof drainage. They won't dry out from the sun . . . require no periodic coating. Upkeep expense is minimized, as actual roof can be seen—any damage is easily found and repaired.

All Johns-Manville Flexstone Roofs are engineered to the particular requirements of your building—whether it's new construction or a re-roofing project. To insure skilled application, they are applied by Johns-Manville Approved Roofers.

Three grades are available: *Flexstone Super "A"*, *Flexstone Standard*, and *Flexstone Service*—each the finest that can be specified for its purpose. Write for our brochure BU-5 1A. Johns-Manville, Box 290, New York 16, N. Y.

Because of unprecedented demand, there may be times when we cannot make immediate delivery of materials. Please anticipate your needs.

Johns-Manville **FLEXSTONE BUILT-UP ROOFS**



first impressions are lasting



The entrance door should create a first impression of friendliness and hospitality . . . expressed in its fine architectural detail and rich, graceful hardware.

Lockwood Entrance Door Handle Sets, in enduring brass and bronze, offer a wide range of choice in authentic design with quality and workmanship insuring lasting security.

Other handles and Lockwood designs are shown in Sweet's Architectural Catalog 1946, Section 17b1. Reprint on request.

L-3A

LOCKWOOD HARDWARE MANUFACTURING COMPANY

Division of Independent Lock Company

• Fitchburg, Massachusetts

Lockwood

**lockwood
builders'
hardware**



Now... a home completely

Greater construction efficiency and year-round comfort made possible by Servel All-Year Gas Air Conditioning

When Howard M. Sloan commissioned architect David S. Barrow to design his new home, he was particularly anxious to maintain an ideal indoor climate the year round.

After careful investigation of every available type of residential air conditioning, Mr. Sloan and Mr. Barrow finally chose the Servel *All-Year* Gas Air Conditioner. This equipment alone, they discovered, would permit them to build a completely



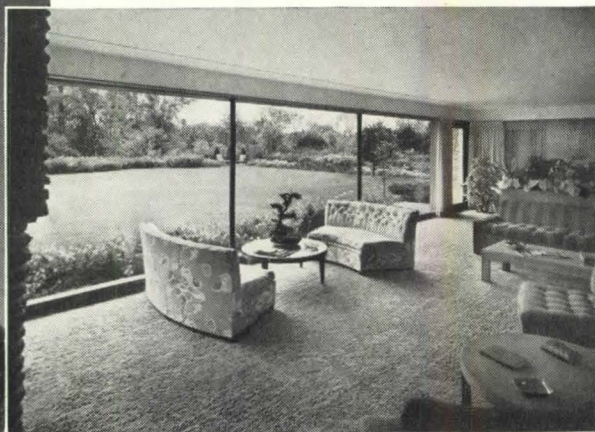
sealed!

sealed home. One compact unit, it not only provides an ideal indoor climate in summer, but winter heating and humidification as well. And draft-free circulation of cleaned air the year round, too.

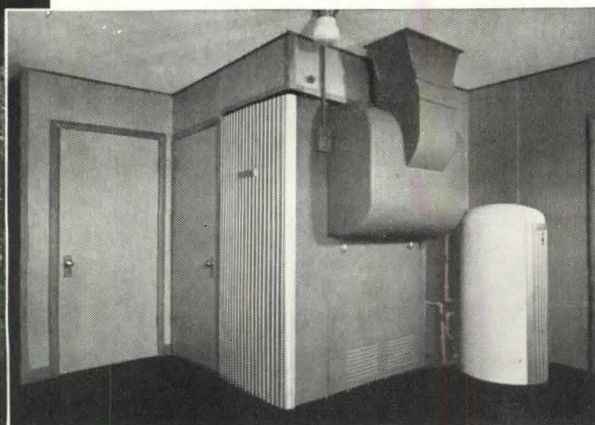
Achieving year-round freedom from oppressive weather did not add to the cost of the house. For, Mr. Sloan states, "The use of fixed windows and the elimination of window screens, window hardware, weather stripping, a screened porch, and

other economies in design and construction made possible by the Servel *All-Year Gas Air Conditioner* actually made it cost little, if any, more than an ordinary heating system!"

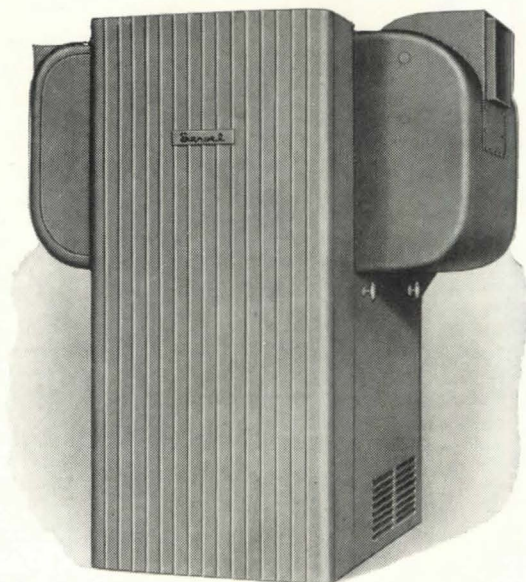
The Sloan house is one of the first specifically designed and built to take *full* advantage of the "new quality of living" made possible by Servel *All-Year Gas Air Conditioning*. Whether or not you plan to build a sealed house, it points the way to greater livability which you can design into any home—without appreciably increasing the cost. For full information about Servel *All-Year Gas Air Conditioning* get in touch with your local Gas Company, or write to Servel, Inc., 4703 Morton Ave., Evansville 20, Indiana.



LIVING ROOM of Sloan's new home in Glenview, Ill., features indoor-outdoor living with three panes of glass, each seven feet high by nine feet wide, opening on rear terrace.



IN ADDITION to Servel *All-Year Gas Air Conditioning* and Servel Gas Water Heater, shown above, the Sloan house contains Servel-designed New Freedom Gas Kitchen and Servel Gas Refrigerator.



TRIED . . . PROVED . . . SUCCESSFUL

*From Boston to San Diego
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The *All-Year Gas Air Conditioner* is already operating successfully in hundreds of installations from coast to coast . . . some for more than four years. It is tried, tested and approved by users everywhere.

Servel
All-Year
GAS AIR CONDITIONER



MUCH DEPENDS ON THESE DEVICES

Of prime importance in a school, theater, auditorium, church, or industrial building is the safety of the occupants. Without it, beauty and comfort and convenience become valueless.

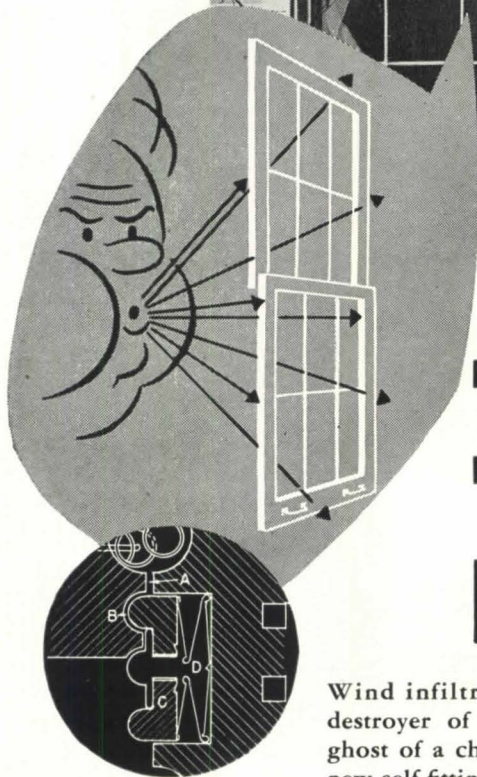
A vital part of a building's safety is safe exit—the positive assurance that the occupants can get out quickly and easily, no matter what the emergency.

That is a problem which can be settled easily, simply, and at surprisingly low cost. It is merely a matter of insisting that every exit door be equipped with the world's top quality fire and panic exit devices . . . the fast, sure, safe devices of drop-forged bronze which carry the name

Von Duprin

TRADE MARK

VON DUPRIN DIVISION, VONNEGUT HARDWARE CO., INDIANAPOLIS, IND.



**HARDLY A GHOST OF A CHANCE
FOR *Wind* TO GET THROUGH
NEW SELF-FITTING SILENTITE**

Wind infiltration—that fuel-eating destroyer of comfort—has hardly a ghost of a chance to get through the new self-fitting Silentite window.

Thanks to scientific engineering, the new Silentite has “floating” weather-stripping. The wood sliding bars, which are seated on full-length bronze weather-strips, press tightly against moving parts of window and keep each in firm contact with the sash, regardless of its position.

At the head, a spring leaf is compressed by the top rail when the sash is closed, providing a weather-tight fit. At the meeting rails, interlocking weather-strip members solve an age-old problem. At the sills, another spring leaf weather-strip foils infiltration.

No wonder this new Curtis self-fitting Silentite is *20% more weather-tight* even than the original Silentite—which was America’s first “insulated” window!

Here are some additional reasons why you'll want to specify CURTIS SILENTITE!

- * Silentite is a Wood Window—and wood is a natural non-conductor of heat and cold. It is toxic-treated to give it longer life.
- * Amazingly easy operation—famous Silentite spring suspension. No weights, cords or pulleys to get out of order.

- * New locking safety—new self-fitting Silentite locks in two positions. Window can be left open 6 inches for ventilation and yet be securely locked.
- * Easy installation—sash put in with minimum effort. Windows accurately pre-fitted at factory—no fitting required on job.
- * Streamlined beauty—sturdy, one-piece narrow mullion, more glass area for given openings.



MAIL THE COUPON FOR COMPLETE FACTS ABOUT THIS AMAZING WINDOW IMPROVEMENT

CURTIS COMPANIES SERVICE BUREAU
PA-3S Curtis Building
Clinton, Iowa

Gentlemen: Please send me your new book on the new Silentite Window line.

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REVIEWS

From the TECHNICAL PRESS

By JOHN RANNELLS

STORE LIGHTING

Functional Store Lighting Development and Application, No. 28. *Frederic C. Winkler.* A Field Study of the Practical Factors Affecting Illumination Design for Merchandising Areas, No. 27. *William F. Rooney.* Papers presented at the Annual Convention of the Illuminating Engineering Society, Quebec, Canada, Sept. 1946. To be published in *Illuminating Engineering.*

The first of these papers analyzes present-day luminaires on the basis of specific store requirements and proposes a fluorescent-incandescent design especially for store use: fluorescent direct general illumination with luminous side panels and egg-crate louvers to control brightness contrast, combined with swiveling spotlight incandescent units for "emphasis lighting."

The second paper is a much richer general study of lighting from the merchandising point of view: "1) What do customers look for? 2) What does the merchandise look like? 3) How does the interior look? 4) What related factors affect lighting design? 5) What are the elements of a store lighting system?"

1) From the customers' point of view, "impulse items" (for quick sale) require "punch lighting"; "utility items" (comprising the great variety of merchandise to satisfy everyday needs) require the most natural appearance; while "exclusive items" require a carefully planned atmosphere to enhance their value and appeal. Lighting systems must be designed for great flexibility to allow for changing layouts of departments.

2) "Quality of lighting" must be understood for effective display of merchandise with "brightness engineering" as a guide.

3) Interiors should employ "non-directional" fixture layouts. Lines of fixtures across traffic lanes are preferred. "Brightness analysis" of display areas as seen by the customer are useful to emphasize the three-dimensional nature of store lighting.

4) Layouts of lighting equipment are controlled by the structure while interior color schemes have much to do with "atmosphere" in the merchandising setting. *Flexibility in lighting effect is the universal demand in department store lighting.*

5) The store lighting system must have *general illumination, accent lighting, showcase illumination, and wall display lighting* to meet today's merchandising demands.

In conclusion, store lighting is primarily a display tool. "Countertop foot-candles" supplemented by "accent

lighting" can (in intelligent hands) give the quality of illumination required for the best display of the various types of merchandise.

Light and Sales. *C. J. Allen.* **Lighting Planned for Profit.** *Wentworth M. Potter.* Magazine of Light, No. 5, 1946. General Electric Co., Lamp Dept., Nela Park, Cleveland, Ohio.

"Light and Sales" answers the question, "How much can I afford to spend on re-lighting?" This article analyzes in detail the actual costs of equipment, current, and maintenance, pointing out the relationship between sales and lighting costs and showing how better lighting can more than pay for itself in increased sales.

"Lighting Planned for Profit" illustrates a particularly effective design for a medium sized retail store. General lighting is both fluorescent and incandescent (recessed ceiling fixtures), taking advantage of the qualities of each. Counter case lighting and spotlighting plus perimeter lighting for goods in wall cases complete the lighting environment. Photographs show the effect of each lighting element and various combinations as well as full lighting.

SCHOOL LIGHTING

Integrated Lighting for Classrooms, No. 25. *R. L. Biese, Jr.* Paper presented at the Annual Convention of the Illuminating Engineering Society, Quebec, Canada, Sept. 1946. To be published in *Illuminating Engineering.*

Aiming at "ideal visual environments in classrooms" the author goes several steps further than the mechanical concept of "amount of illumination" (foot-candles at the working level). More important for quality of lighting are "brightness ratios," especially between the visual task and its immediate surroundings and between light sources and their backgrounds. Illuminating studies have been more concerned with analysis of separate categories of data than with the entire visual environment.

Based on available evidence Mr. Biese sets up the following criteria to define the ideal visual environment for any sustained, close, visual-centered activity:

1. Average brightness level in the visual field of 20 foot-lamberts or more.
2. Brightness ratio between visual task and entire visual field less than 3 to 1.
3. No brightness ratios between adjacent areas in the field of view greater than 3 to 1.
4. No extended areas in the field of view having brightness greater than three times that of the visual task.

5. No areas in the field of view having brightness greater than ten times that of the visual task.

6. No extended areas in the field of view having brightness less than one tenth that of visual task.

7. The light flux toward the eyes from the four quarters of the field of view should be nearly equal.

8. The light should be sufficiently directional to produce three-dimensional modeling, sufficiently diffuse to prevent harsh shadows or pronounced specular reflection.

9. The visual task should have large details of high contrast with their immediate surroundings.

The author reports an attempt to realize these ideals in studies made with two nearly identical rooms in the University Park School, Dallas, Texas.

One room was unchanged, the other was rearranged and redecorated. In the latter, seats were placed in arcs so that no student has a window within 50 degrees of his normal line of sight. Direct sun was blocked by muslin diffusers placed in front of the upper half of the windows and by opaque ventilating baffles at the sills. With lighter ceiling and walls, including the tackboard (and scrubbed floors), the improved room meets nearly all the ideals under daylight conditions. (In new construction prism glass block in the upper half of the window would serve better than the diffusers to direct incoming light to the ceiling.)

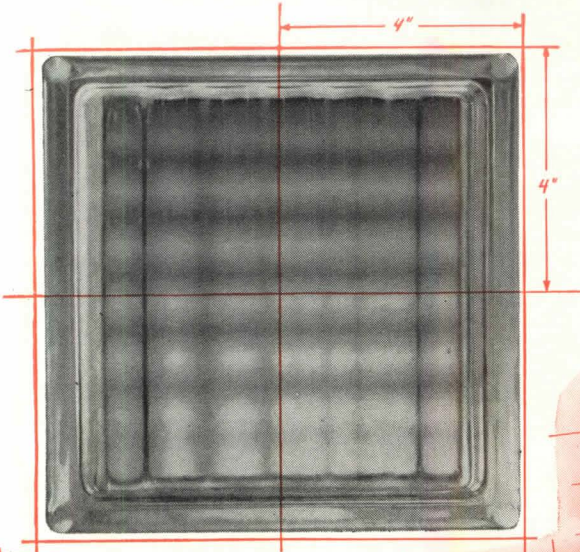
Having achieved satisfactory results with natural light, the artificial lighting is not so serious a problem. With six 500-watt incandescent plastic bowl luminous indirect units the lighting comes close to accomplishing the ideals.

The changes made to improve the visual environment are simple and, except for possible rewiring, they are inexpensive and could be absorbed in regular maintenance budgets.

New Light on School Lighting. *R. L. Biese, Jr.* The American School Board Journal, 330 W. 42 St., New York 18, N. Y. July 1946.

This article is a more general discussion of the relationship between visual surroundings and classroom work illustrated by the same studies as "Integrated Lighting for Classrooms" reported above. Functional response to environment is emphasized, particularly the effects of disturbing contrasts in the field of view. The discussion is pertinent to all similar visual work except perhaps that satisfactory results with natural light are not so generally obtainable outside of schools.

(Continued on page 100)



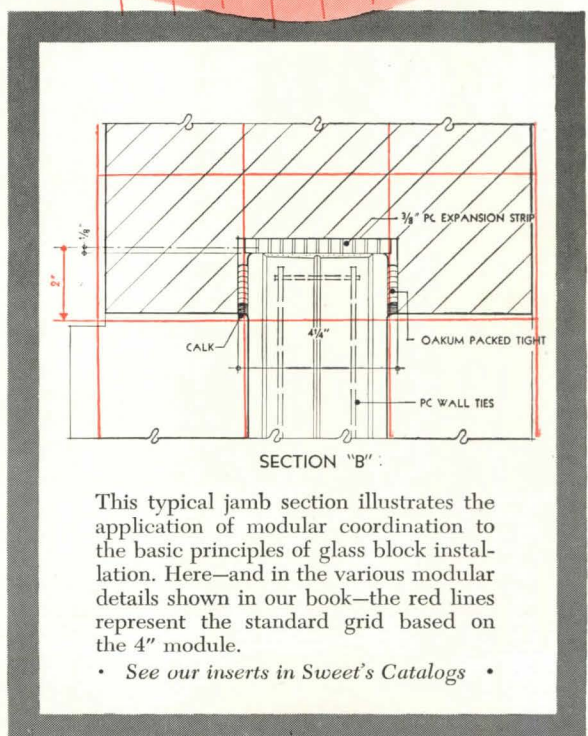
MODULAR COORDINATION WITH PC GLASS BLOCKS

PC GLASS BLOCKS are manufactured in 6", 8" and 12" sizes, which are Standard Coordinated Dimensions. And you know what important savings in time and money accrue—from preliminary planning to final construction—when you use modular products.

This is just one of the reasons why PC Glass Blocks have been so widely specified for light openings in outer walls and for interior partitions. For PC Glass Blocks also transmit daylight generously. They provide excellent insulation. They deaden outside noises, preserve privacy, and are exceptionally attractive in appearance wherever used.

Send for this Free Book

We have recently published a 36-page book in which the many and varied uses of PC Glass Blocks are described and illustrated. The book also contains many detail drawings—such as the one shown here. We shall be glad to send you a *free* copy. Just mail the convenient coupon to Pittsburgh Corning Corporation, Room 612, 632 Duquesne Way, Pittsburgh 22, Pennsylvania.



This typical jamb section illustrates the application of modular coordination to the basic principles of glass block installation. Here—and in the various modular details shown in our book—the red lines represent the standard grid based on the 4" module.

• See our inserts in Sweet's Catalogs •



GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY and by W. P. Fuller & Co. on the Pacific Coast

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Please send along my free copy of your new book on the use of PC Glass Blocks for Commercial Buildings. It is understood that I incur no obligation.

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REVIEWS

(Continued from page 98)

Latest Techniques in School Lighting. R. C. Putnam and J. R. Anderson. *Magazine of Light, No. 2, 1946. General Electric Co., Lamp Dept., Nela Park, Cleveland, Ohio.*

Emphasis in this article is entirely on artificial lighting (of course). Excellent illustrations are given of various installations which show especially the value of light finishes for woodwork and luminous fixtures (to reduce brightness contrasts).

Detailed cost analysis tables are given for various systems, both incandescent and fluorescent, for new classrooms and for relighting existing classrooms.

FROM OTHER PUBLICATIONS

Progress Report on the Heat Pump. Four articles in Heating and Ventilating. *The Industrial Press, 148 Lafayette St., New York, N. Y. Dec. 1946.*

The four basic types (air-to-air, air-to-liquid, water-to-water, water-to-air) are diagrammed and discussed in the first article by E. R. Ambrose, Air Conditioning Engineer, American Gas and Electric Service Corp., New York, N. Y.

Economic possibilities are explored in the second article by E. N. Kemler, Southern Research Institute, Birmingham, Ala.

The remaining articles describe the Marvaire Unit (water-to-air) produced by Muncie Gear Works, and the Airtopia Unit (air-to-air) by Airtopia Distributors, Los Angeles, Calif.

Transcripts of Technical Committee Meetings, New York Chapter, A.I.A., Sept., Oct., Nov. 115 E. 40 St., New York, N. Y. Mimeo.

The New York Chapter, A.I.A., is benefiting from the investigations by its technical committee under the chairmanship of Harold R. Sleeper. Meetings have been addressed by representatives of industry on hardware (standardization of installation), thin setting materials (for tiling, flooring, attachment of accessories, etc.), precast concrete floor construction (Flexicore, a unit slab or beam 6 inches deep), and other subjects.

Welded Frame for a 16-Story Building. A. E. Poole and L. F. Booth. *Engineering News-Record, 330 W. 42 St., New York 18, N. Y. Oct. 31, 1946.*

Greater knowledge and improved techniques of welding developed by extensive uses are being capitalized in design and construction of structural frames of buildings.

Main columns of the same section were butted directly together and connected by simple splice plates on the outside of the flanges. For connections between columns of varying sections a $\frac{3}{4}$ inch butt plate was welded between the sections. Eccentric floor beam connections at columns permitted utility piping to be carried upon column lines. A force of 10 men kept abreast of the erection. (26 would be required for a riveted job.)

PAMPHLETS, REPORTS

Hardware For the Home. *Small Homes Council, University of Illinois Bulletin, Urbana, Ill. 8 pp., illus.*

This pamphlet covers door hardware especially, with illustrations of various installations and types.

The Mahogany Book. *Mahogany Association, Inc., 75 E. Wacker Drive, Chicago, Ill. 72 pp., 7" x 10", illus.*

This booklet tells the history of mahogany, its characteristics and uses. Though a trifle reluctant about very light finishes it is commendably insistent on "leaving the wood alone"—on finishes for bringing out the natural colors.

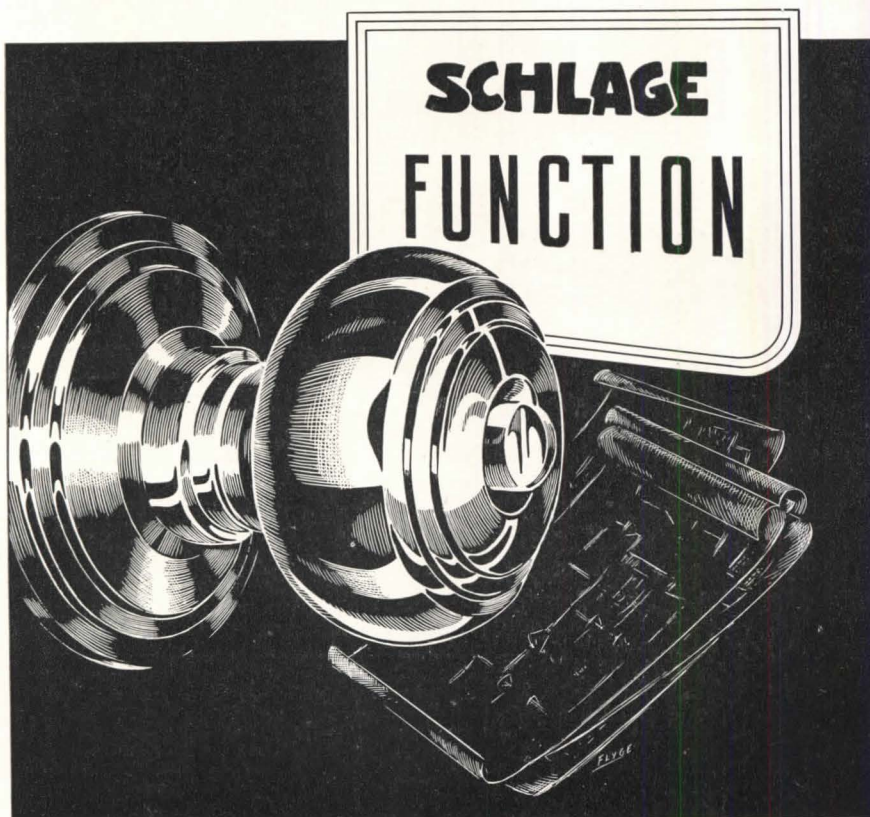
BOOKS

National Fire Codes, Vol. V, National Electrical Code. *National Fire Protective Assn., 60 Batterymarch St., Boston, Mass. 408 pp., 6" x 9". \$2.00*

A collection of rules governing the installation and, to a certain extent, the use of electrical equipment. Uniform with the other volumes of the National Fire Codes.

(Continued on page 102)

IMPLEMENT OF ARCHITECTURE



Schlage locks offer security, privacy, utility and convenience. The standardized Schlage cylindrical chassis allows locks to be interchanged as door usage conditions change. The cylindrical design affords a variety of lock functions to provide the perfect operation for every door. For further information see your builders' hardware man, or write direct to Schlage Lock Company, P. O. Box 3324, San Francisco.

SCHLAGE
LOCK COMPANY

SAN FRANCISCO • NEW YORK

SL-12

ORIGINATORS OF THE CYLINDRICAL LOCK

This front of L·O·F Polished Plate Glass says "welcome" in clear, bright tones. The view of the interior creates an impression of pleasant efficiency.

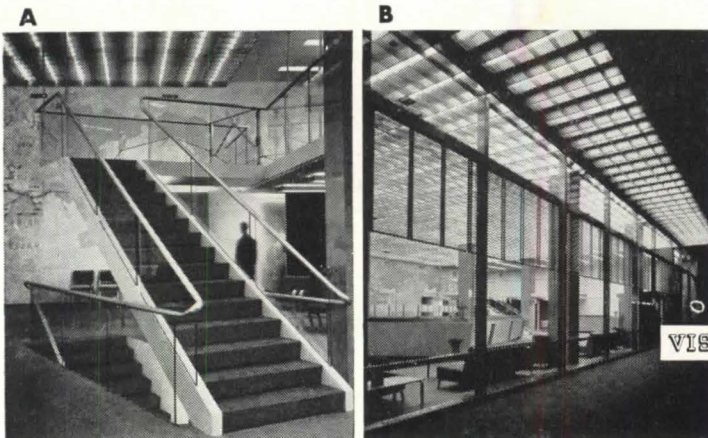


TWA

**URNS AN OPEN FACE
TO ITS PUBLIC**

Count on this modern business to use up-to-date architectural treatment in its new Chicago ticket office.

Designed by Architects Skidmore, Owings & Merrill of Chicago for Trans World Airline, this beautiful "store" uses glass to let people see in—to invite them in. Its pleasant atmosphere owes much to intelligent use of glass. It is another example of a Visual Front—the "open" type front that puts more appeal, more zest and more selling power into business places. Libbey-Owens-Ford Glass Co., 7137 Nicholas Bldg., Toledo 3, Ohio.



A This stairway is smart in more than appearance. The transparent panels of glass are L·O·F Tuf-flex®—plate glass that is tempered for greater resistance to impact.

B Light from the "egg crate" ceiling streams through diffusing panels of Flutex Patterned Glass. Note how the fixtures extend through the front to provide a lighted marquee.

*Reg. U.S. Pat. Off.

VISUAL FRONT **LIBBEY·OWENS·FORD**
a Great Name in **GLASS**

REVIEWS

(Continued from page 100)

HARMONIOUS PLANNING

Georgian London. John Summerson. Charles Scribner's Sons, 597 Fifth Ave., New York, N. Y., 1946. 315 pp., illus. \$5.00

John Summerson, the curator of the Soane Museum and the most scholarly of recent English architectural historians, has performed in *Georgian London* an extraordinary task. He has given us the biography of the outward form of the world's largest city during its most important formative years. He

has shown the forces that engendered its growth—the parts played by the court, by great nobles, by land speculators, by architects—so that one realizes not only the changes in appearance, both general and in detail, which the centuries brought, but also much of the causes which lay behind those changes. He gives us the teleology of the form. In the course of his fascinating analysis, he brings alive many important and forgotten or misunderstood individuals—the astonishing seventeenth-century Barbon, real estate speculator, architect, financier; James Burton, brilliant Bloomsbury builder-architect; John Nash, intriguer, courtier, diplomat, but above all a com-

manding genius in creative large-scale conceptions; and behind so much of the later work the gross figure of the Regent, later George IV, who is here rescued from some of the obloquy which later ages have lavished on him and is seen as the great driving force behind the improvement of London—a builder, a planner, more than a king.

The whole story is set out with perfect clarity in text, line drawing, and carefully selected half-tones. All are presented with an exquisite economy of choice; where the material is so vast in amount, this economy can only be the result of a deep and thorough digesting of the material and of a definite knowledge of what the author wished to convey. An appendix lists a selection of remaining important buildings and streets. The whole book forms a superb introduction, unique in its approach, to the study of the history of town architecture.

There are lessons galore for us in the London story. One lies in the enormous advantages for coherent and harmonious development which arise from the development of large areas under leasehold. Another is the necessity for the kind of large-scale thinking which lay behind Nash's design for Regent's Park and Regent Street, as well as the fact that its quality derived from the simultaneous design of the street and park layout and the structures which bordered it.

One wishes that other authors here in the United States might essay similar histories of our own cities. But only years of patient study in each case could assemble the salient material which Summerson has for the city of London so completely under his command. This is an excellent and readable book; it is a milestone because of its comprehensive and discriminating approach.

TALBOT HAMLIN

REGARDING OUR CITIES

Cities Are Abnormal. A Symposium. Edited by Elmer Peterson. University of Oklahoma Press, Norman, Okla., 1946. 236 pp. \$3.00

Apparently it is now the vogue to talk glibly of "organic decentralization," "ribbon cities," and "a foot on the soil." All the evils of modern society are ascribed to the cities; the benefits resulting from our urban civilization are glossed over and the remedy is a half-baked proposal to disintegrate ourselves along our major highways and byways in units of some 5,000 to 20,000 souls.

This symposium, written by twelve supposedly intelligent citizens, each a top specialist in his own field, is one of the worst bits of tomfoolery ever launched on a gullible public. Filled with engaging catchphrases, it attempts to convince Mr. Average Man that he has a good chance of landing in an asylum, going out on a lost weekend, or losing his reproductive powers if he remains a city dweller.

(Continued on page 104)

January 20, 1945

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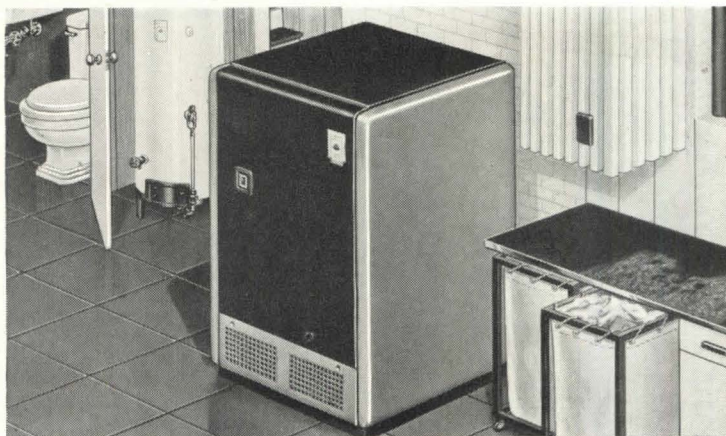
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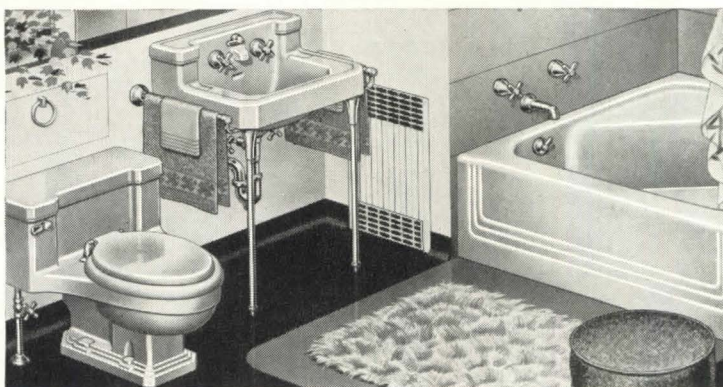
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REVIEWS

(Continued from page 102)

Mr. Peterson asks: "Empires and commonwealths are born of farms. Must they die of cities?" His statement is so patently erroneous it seems hardly necessary to point out that villages and towns may be born of farms, yes, but certainly not empires. The Roman Empire indeed illustrates the very opposite, having achieved its zenith after Rome had become the largest city of its day and mother to the key (and sizable) cities scattered throughout its domain; its dissolution coincided with the retreat of the gentry to their country estates.

Throughout, the "homestead" or "one foot on the soil" movement is cited as the means by which the American worker can achieve security and a higher living standard. Catherine Bauer in *Modern Housing* expressed fears about the consequences of an American homestead movement and it seems equally suspect now. When Louis Bromfield quotes Henry Ford as "one of the first to understand the perils and disadvantages of huge industrial-urban concentrations," and comments on how the establishment of factories in small towns and agricultural areas, among its other advantages, made for "a good deal less trouble from strikes and labor disputes," we begin to understand one force behind this decentralization surge. Coupled with this is the unstated fact that cities have always been the seat of liberal movements, incubators for reform. Even Lewis Mumford, who throughout is referred to as a "decentralizationist," points out in his latest book, *Values for Survival*, that were Germany to be reduced to an agricultural nation, it "would be more primitive in its mentality and more reactionary; for whatever opposition to Germanism existed in the past, came from the radical industrial workers of the big cities, not excluding Berlin." Instead of homesteads, how about giving city workers more social security and higher wages? Mr. Peterson and his contributors have no answer to this.

The sad part is that in jumping so completely overboard on decentralization the authors ignore the positive, constructive role a limited decentralization movement could play. Many sound points might have been made to further their plea. There is need for a more equitable distribution of the nation's industry, and the findings of the McCarran Committee (see the Senate *Hearings on Industrialization Centralization* and the *Graphic Guide to Decentralization*) are part of the answer. Furthermore, if the distinction had been made between dispersion and decentralization, as the British are trying to do, the problem of super-metropolitanism could be approached more sensibly. The plans for the London area propose the de-centering of over a million in popula-

(Continued on page 106)

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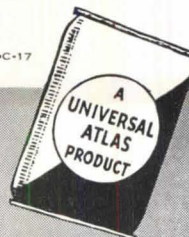
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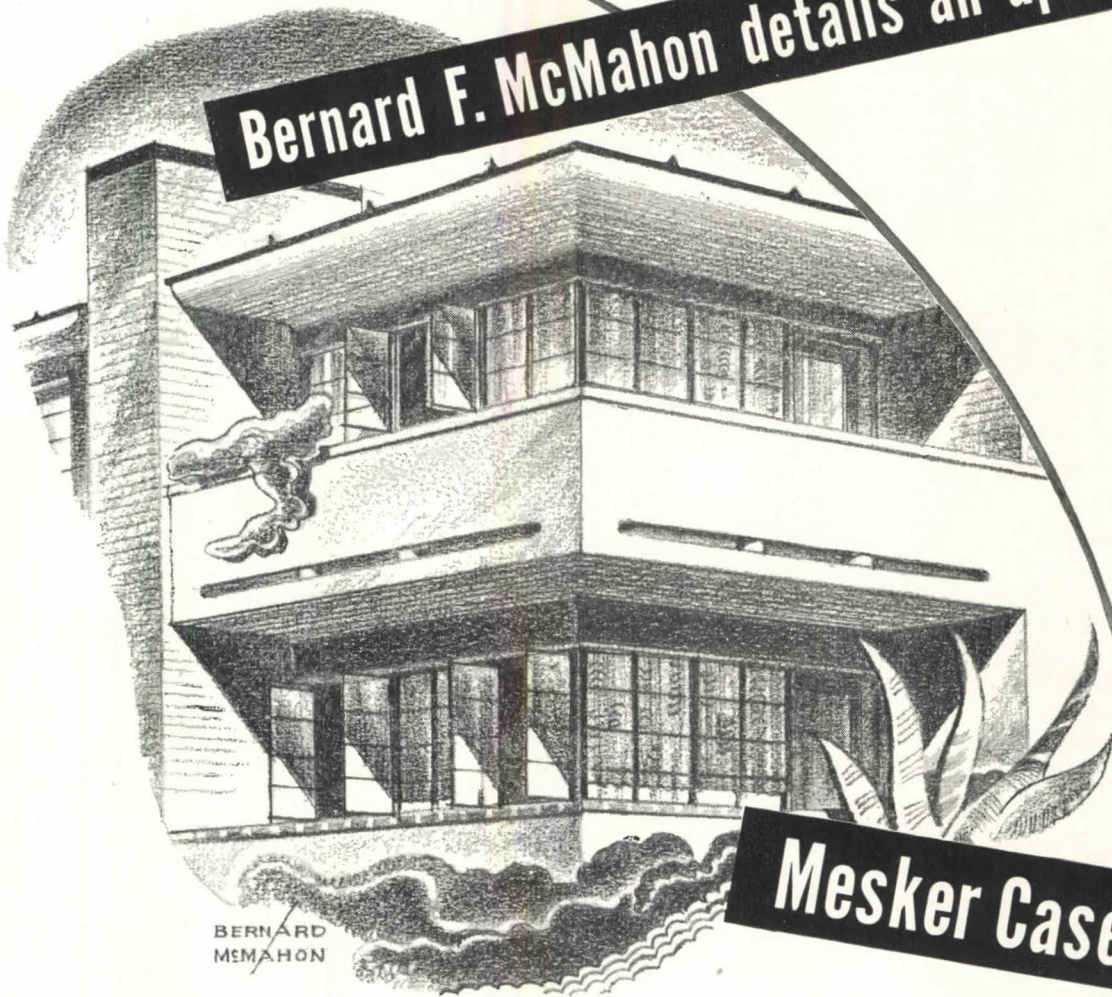
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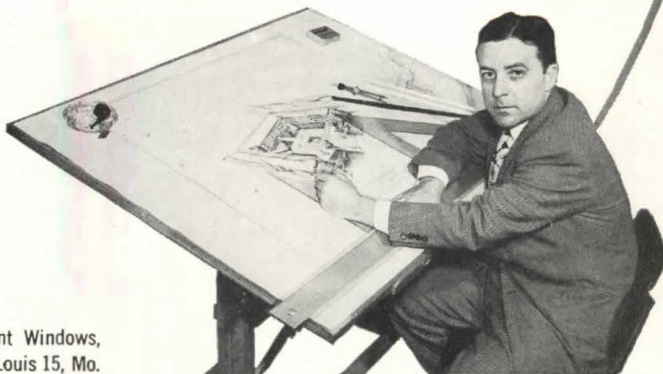
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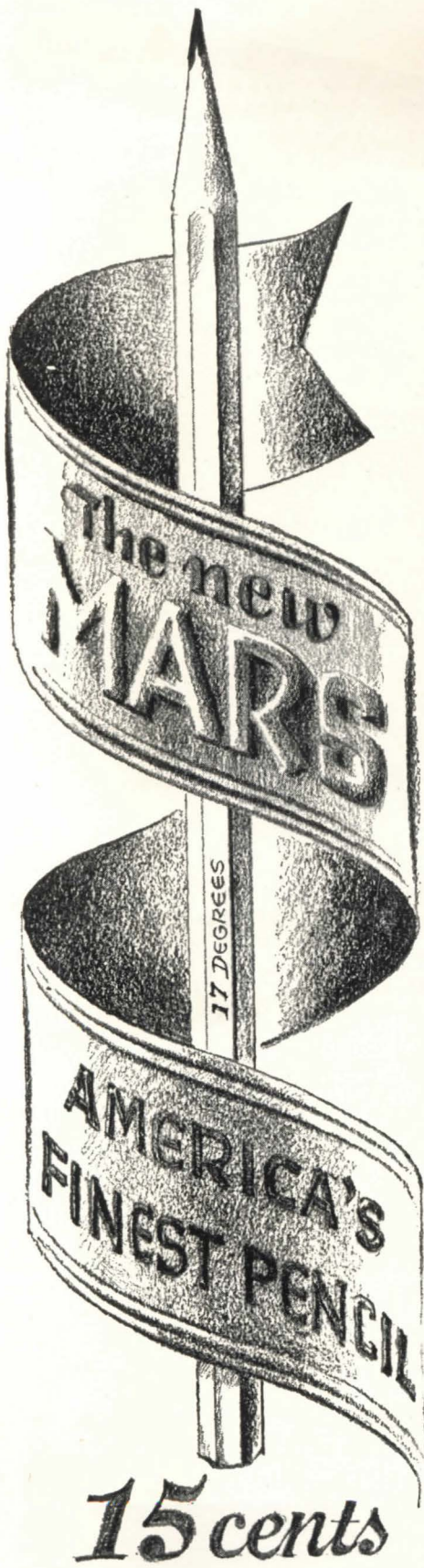
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REVIEWS

(Continued from page 104)

tion, which surplus, instead of being turned loose in ribbon cities along the countryside, is to be located in self contained satellite offshoots of the mother city. The British also are thinking in terms of a more rational distribution of the industrial population (witness the Barlow *Evidence and Report* and the *Distribution of Industry* legislation) and they plan to relieve excess congestion by controls over business licensing, the establishment of trading estates, and the building of new satellite towns.

Peterson et al are also completely unrealistic. They proudly state that their book is "not concerned with the building of more cities, nor with the salvaging of those that have grown without plan or with plans that came too late. . . ." What about the dollars-and-cents aspect of scrapping existing urban centers (even if we thought it desirable, which is highly questionable)? Communist Russia, which does not work on our bookkeeping system, found it definitely uneconomical to scrap her existing cities and build anew along more rational lines. The Soviet Union has retained its existing cities but have placed maximum population limits on the largest ones, and have established a range of from 50,000 to 500,000 persons as desirable urban size.

The evils of the big cities—stress and strain, crowded unpleasant environment with the concomitant mental disease, lowered birth rate, and general instability—are not irremedial. If upper population limits were clamped on our cities, if urban redevelopment laws were given teeth, if cities were replanned from the living unit on up to provide every family with sufficient space and amenity (and it can be done—the room is there, but we have failed to organize it properly), there would be no need for this talk about cities being abnormal.

Hilberseimer, Wright, and Saarinen, here quoted as the arch proponents of these ribbon cities, have never concerned themselves sufficiently with the economic and political aspects of their civic design schemes. If, as the authors patly claim, "The idea obviously is . . . to eliminate the cities as centers . . ." there are few in the social sciences who could take their suggestions seriously. To include Lewis Mumford with this group indicates misunderstanding of his criticisms. He may object to megalopolis (and rightfully so) but far from urging the elimination of cities as centers, he sees the cities rebuilt on a neighborhood scale and planned humanely and for human needs.

It is not the cities but the contributors to this symposium who are abnormal. They have obviously failed to grasp the impossibility, and undesirability, of a de-urbanized civilization.

RITA DAVIDSON
(Continued on page 108)

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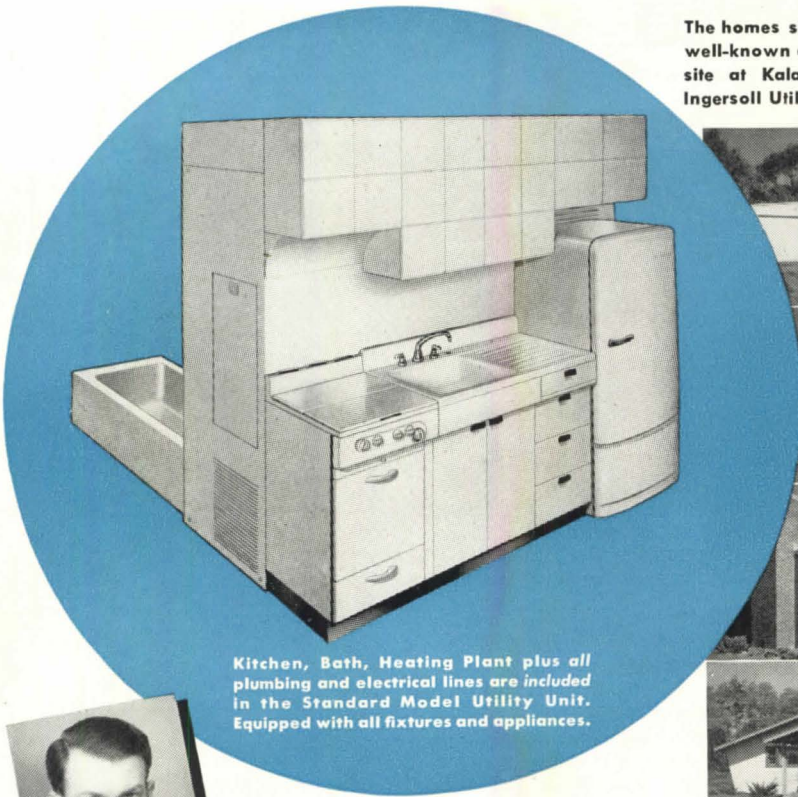
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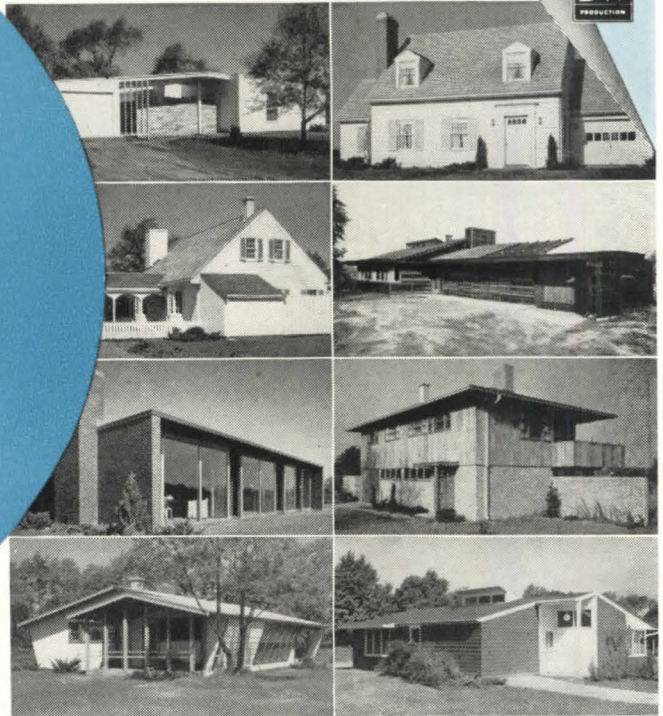
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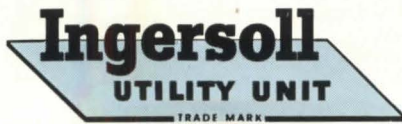
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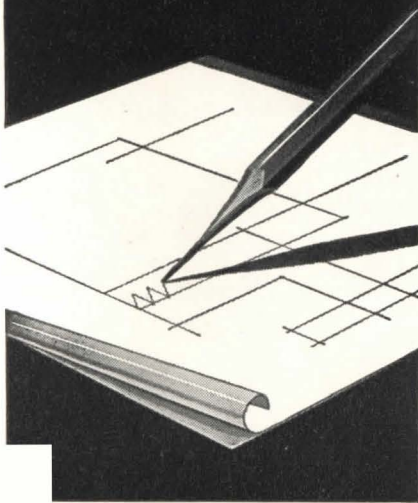
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REVIEWS

(Continued from page 106)

READILY ADAPTABLE

Sunset Western Ranch Houses. The Editorial Staff of Sunset Magazine in collaboration with Cliff May. Lane Publishing Co., 576 Sacramento St., San Francisco, Calif., 1946. 160 pp., illus. \$3.00

The old western ranch house form is now generally accepted as especially adapted to the application of modern design principles without distortion of its basic nature. The inherent simplicity of the form, its directness, honest beauty, and freedom of plan are exemplified by most of the plans, sketches, and photographs of this book. These were assembled by the editorial staff of the western magazine, *Sunset*, and include work of some of the best western architects.

This collection significantly demonstrates the endless possibility of plan arrangement with the ranch type of house. The better designs make no attempt to re-create the sentimental atmosphere of the romantic past but show a straightforward adaptation of the ranch house form to modern living habits and practices. The ranch house style with its spaciousness, *corredors*, and patios is, of course, indigenous to the West and Southwest and admirably suitable for these regions; its unmodified use elsewhere might not be so easily justified.

The numerous pencil illustrations are examples of good rendering technique and the plans and photographs are well reproduced. In summary, the book is sound, practical—and of particular interest to western home builders.

LAWRENCE E. MAWN

QUESTIONS UNANSWERED

Muebles de Estilo Ingles. Jose Claret Rubira. Editorial Gustavo Gili, Calle de Enrique Granados, 45, Barcelona, 1946. 475 pp., illus. Ptas 195

It is nothing short of astonishing that such a book as *Muebles de Estilo Ingles* should emerge from Spain at this time of all others in history. The bookshops are full of books on the subject of English furniture of all previous styles. That a Spaniard would go to the trouble Sr. Rubira has obviously taken to compile his book is hard to understand, other than as propaganda aimed for England—a "dove of peace" gesture.

It is regrettable that the same energy, time, and trouble had not been spent compiling a volume on modern Spain, about which we know too little. Is there a new furniture style emerging? What are the materials available for export? What are new Spanish houses like? What is used to furnish them? What are the laws governing export and import of material for buildings and their

(Continued on page 110)

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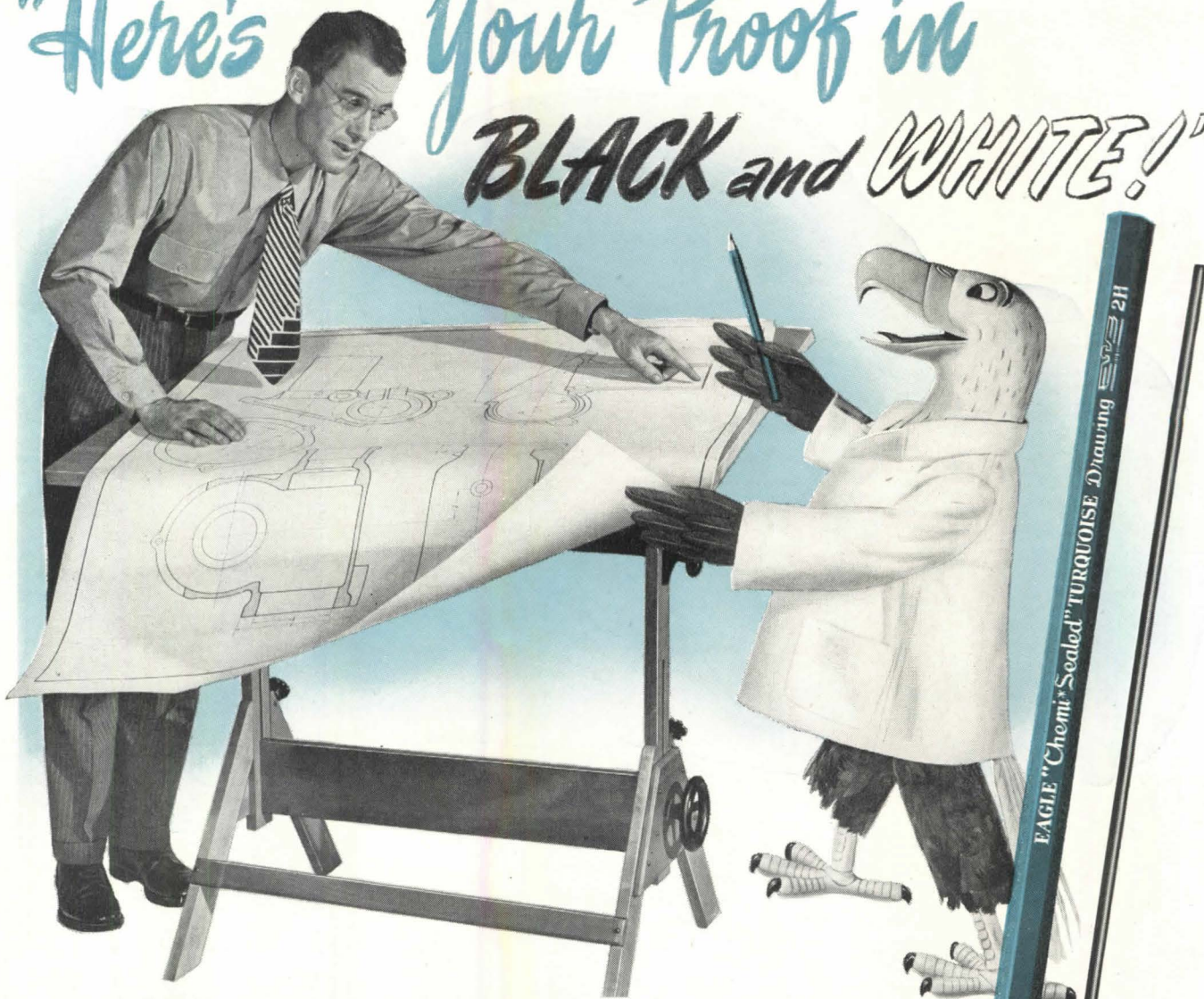
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REVIEWS

(Continued from page 108)

possible contents? Such a work would be of interest to us here.

I'm afraid those who want to know about English furniture will find better reference books in ample supply. Nor are the drawings included in this book accurately proportioned, which gives a clumsy appearance to the graceful English furniture they mean to portray.

DAN COOPER

INFORMATIVE DISCUSSIONS

Furniture For Your Home. Gladys Miller. M. Barrows & Co., Inc., 114 E. 32 St., New York, N. Y., 1946. 290 pp., illus. \$3.50

In contrast with many recent books on home design and decoration, this work contains liberal amounts of sound information on home backgrounds appropriate for modern living. Its pages also offer interesting, informative discussion of the uses and possibilities of various woods, of furniture design and construction, and of color, texture, pattern, form, and line in decoration. A comprehensive glossary of terms commonly used in reference to furniture, furnishings, and fabrics is given.

While much of the material presented is familiar to most architect-readers, the manner and style of presentation invite reading. After a survey of furniture styles which have lived to be reproduced, the text generally favors modern design, and without taking an all-exclusive stand on its side adequately presents the case for functional modern design. Many of the photographic illustrations, however, and most of the pen sketches pictorializing the traditional styles of the past are out of harmony with the modern spirit.

More careful proofreading would have prevented such minor inaccuracies as the persistent misspelling of the name of Marcel Breuer, the use of "abolescence" for "obsolescence."

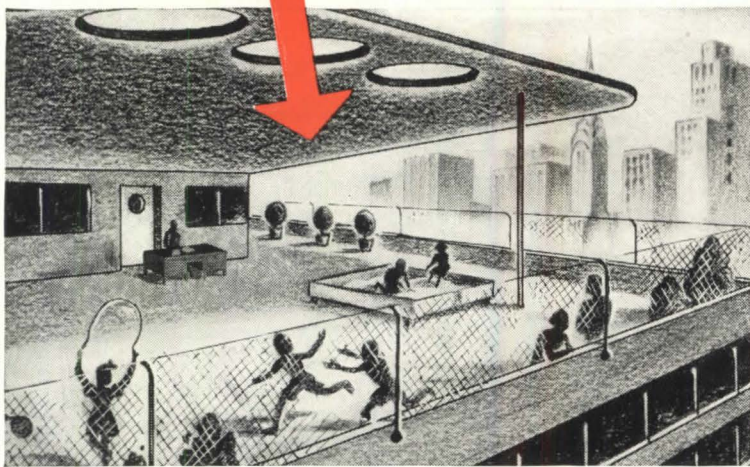
Interior Decoration for Today and Tomorrow. Walter Murray. Murray & Gee, Inc., 1622 N. Highland St., Hollywood 28, Calif., 1946. 96 pp. \$2.50

This is essentially another preceptive book on home decoration. Do's and don'ts are arranged in parallel columns to make up a great part of the text. The information is specific, generous; sound or unsound, it touches most of the facets of home decoration. The range of text and photographs is kept broad enough to allow appeal to readers of many tastes, but some of the arrangements illustrated have little esthetic merit. Advertising releases from merchandising and manufacturing sources furnish most of them; some are from motion picture studios. The result is a heterogeneous collection lacking in consistency and discrimination.

LAWRENCE E. MAWN



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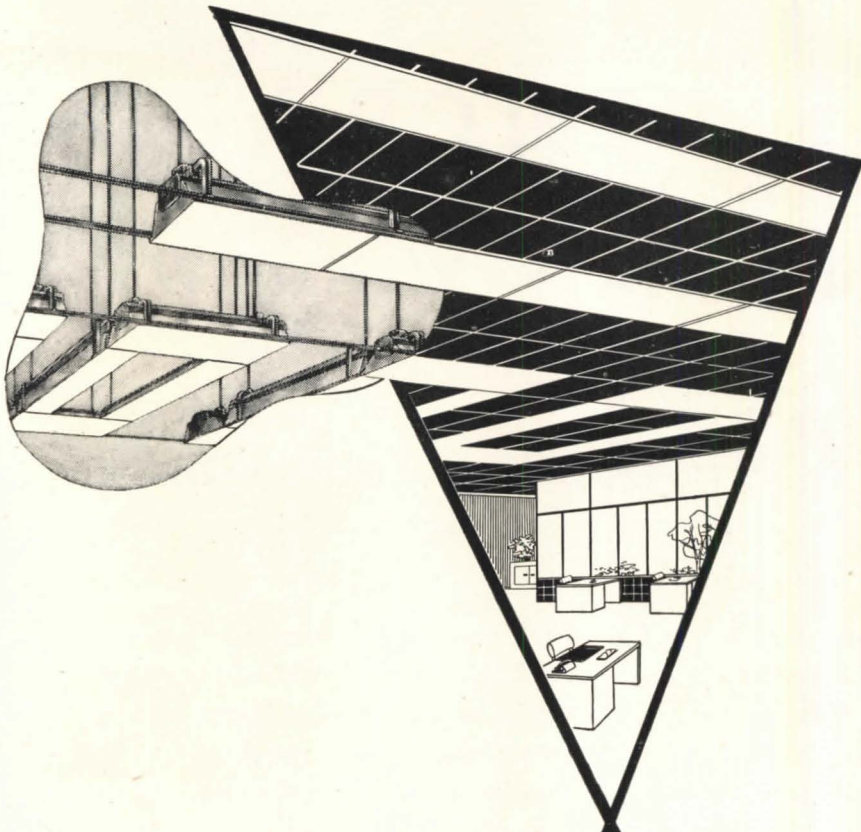
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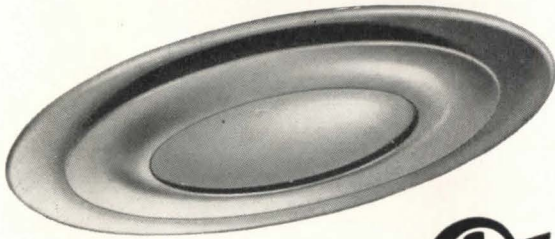
The Brasco line of unified members, in stainless steel or aluminum, blends harmoniously with either new or standard building materials and beautifies the entire front. Engineered for complete safety and expertly fabricated, Brasco meets every demand for modern, trouble-proof store front construction, easily installed.



BRASCO MANUFACTURING CO.
 HARVEY • (Chicago Suburb) • ILLINOIS

National Distribution Assures Effective Installation

BARBER - COLMAN



venturi-flo



**CEILING
OUTLETS**

**GUARANTEED
AIR DISTRIBUTION**

Data based on complete tests enables us to recommend exactly the right outlet for any condition and **GUARANTEE** results. You are assured of uniform, properly diffused air of the desired temperature at specified level, with required air movement and elimination of hot, cold, or drafty areas. Use **ENGINEERED AIR DISTRIBUTION** — see your Barber-Colman representative. Write for descriptive bulletin.

BARBER - COLMAN COMPANY

1230 ROCK STREET
ROCKFORD • ILLINOIS

That's* for Me!

decides

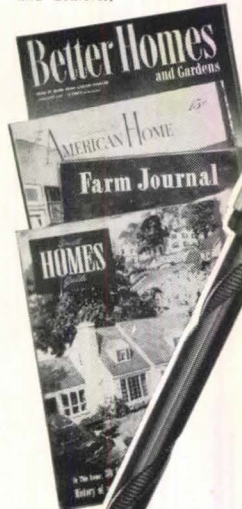
Mrs. Doakes

Trust a good housekeeper to know what's what in smooth-working window hardware . . .



And 134,456,000 magazine readers agree with her. Forceful advertising in leading home service magazines is now carrying the Grand Rapids "Invisible" story to millions of convenience-conscious home-planners and home-makers. (Also widely advertised in trade journals to architects, builders and dealers.)

*She means the



**GRAND RAPIDS
Invisible
SASH BALANCE**



SEE OUR CATALOG IN SWEET'S

**The dependable
spiral sash balance**

Quickest and easiest of all balances to install—three screws do the trick. Performance-tested in the laboratory and in windows of thousands of pre-war homes. Perfect for large volume building operations because of speed and economy in installation. Simple adjustment without removing sash. Same size balance fits upper and lower sash. 10 standard sizes meet 95% of all your residential installations.

Complete data on specifications and installation
Write today for fully-illustrated, complete information on planning, sizes, installations, etc. for Grand Rapids Invisible Sash Balance.

GRAND RAPIDS HARDWARE COMPANY
Grand Rapids, Michigan

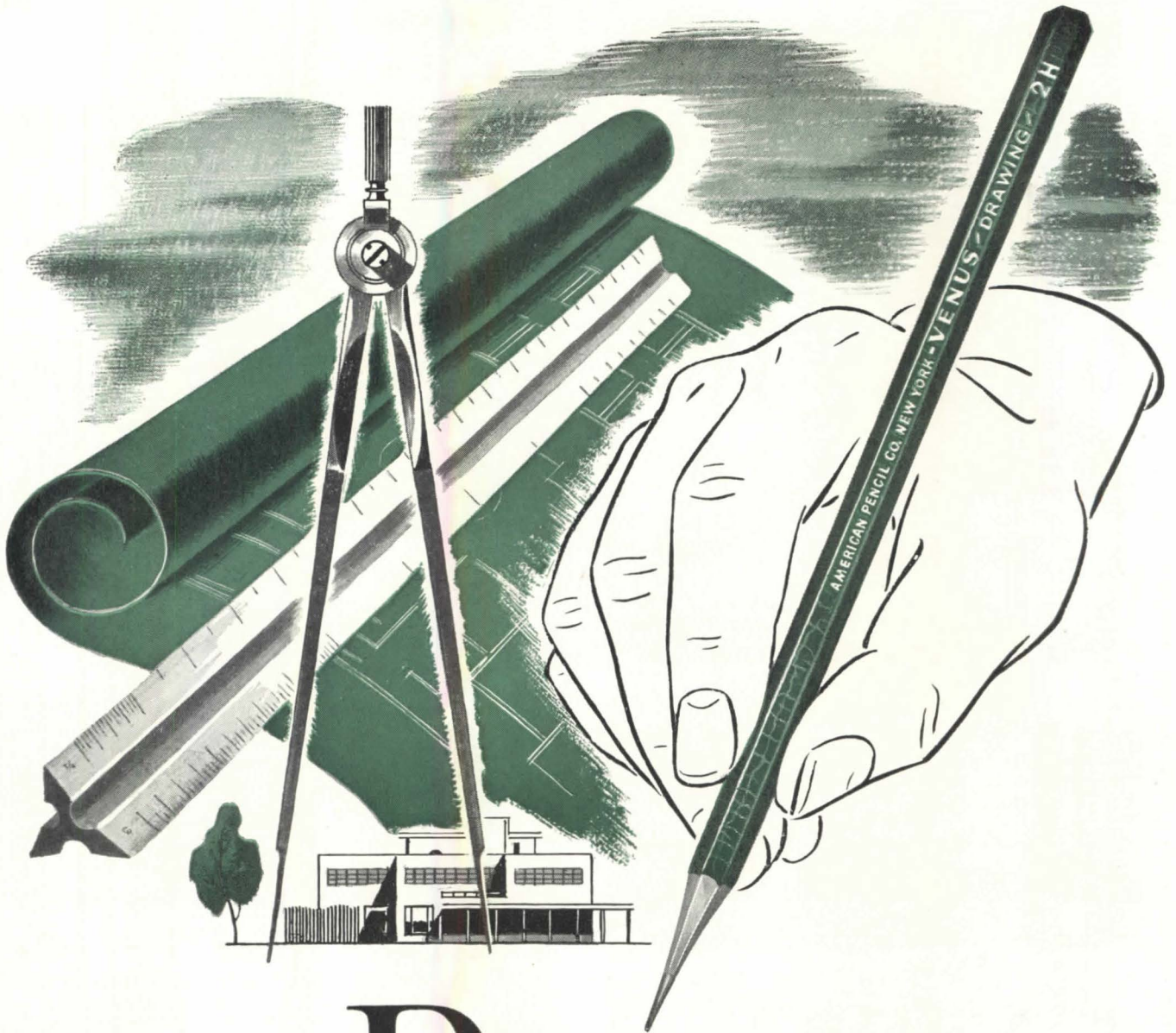


Grand Rapids Sash Pulleys

"The recognized standard of quality for a half century"

No. 103 face plate, cone bearing type and Nos. 175, 109, 110 sawtooth drive type sash Pulleys cover 95% of all sash pulley requirements.





Precision



FROM the first design on the drawing board to the manufacture of a machine or the construction of a building, precision tools are essential. Foremost in the design stage is the need for dependable drawing pencils, precision tools in the hands of skilled draftsmen.

VENUS Drawing Pencils are engineered to give you drafting perfection without failure: accurately *graded* to assure uniformity in all 17 degrees... *strong* in performance... *smooth* and *clean* in action.

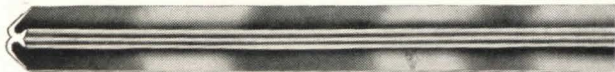
VENUS *DRAWING*
PENCILS

AMERICAN LEAD PENCIL COMPANY, HOBOKEN, NEW JERSEY

Designed for FUNCTIONAL BEAUTY

Chromtrim METAL MOULDINGS

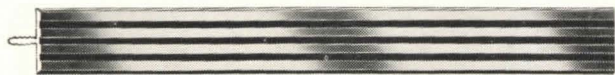
The design symmetry and dignity of line which Chromtrim Metal Moulding imparts to modern interior planning is one of the many reasons for its increasing popularity with architects, industrial designers and builders.



Wall paneling and surface covering of any color or texture is enhanced by the functional beauty of this easy to install metal trim. You can specify Chromtrim with complete confidence.



Chromtrim's fine quality, mechanical specifications, durable finish and ease of handling will contribute to the appearance and durability of every installation and bring equal satisfaction to you, your client and the mechanic who installs it.

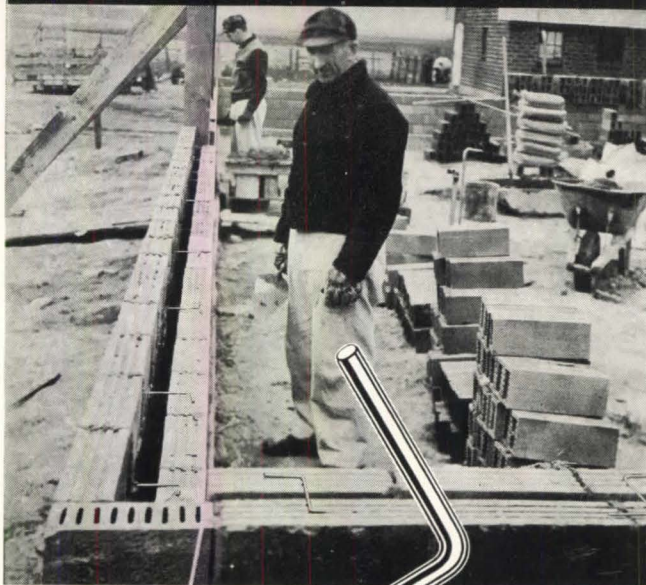


80 dimensionally accurate profiles, designed in matching groups to serve every installation requirement. Sold only through a nationwide distributor organization. See insert in Sweet's Architectural File. Write for Chromtrim Catalog No. 2 today.

R. D. WERNER CO., INC.

Manufacturers of Metal and Plastic Products
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Factories: New York, N. Y. — Greenville, Pa.

FOR STRONGER CAVITY WALLS



... ALWAYS SPECIFY

NON-RUSTING

Copperweld WALL TIES

● You can be sure of permanent strength and safety in cavity wall construction when you use Copperweld Wall Ties to bond the walls together.

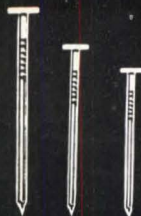
Copperweld Wall Ties give you the high strength of alloy steel—made permanent by a heavy protective covering of non-rusting copper. The two metals, inseparably united by our exclusive Molten-Welding Process, provide a breaking strength of about 2 tons—a breaking strength that remains constant since these ties cannot rust and will not deteriorate in the wall.

These cavity wall ties are available for immediate shipment. They are made in two sizes—6" and 8"—and are packed 500 of one size to a box.

Specification Bulletin mailed on request.

COPPERWELD STEEL COMPANY
GLASSPORT, PA.

SALES OFFICES IN PRINCIPAL CITIES



Time-Tested
Copperweld Nails
will help you do
a better job!

Specify **ANEMOSTAT**

**DRAFTLESS AIR-DIFFUSION for an
air-conditioning job
you'll be proud of!**



HOW ANEMOSTATS COMPLETE AIR-CONDITIONING

The patented Anemostat distributes air—of any duct velocity—in all directions and in a multiplicity of planes. Simultaneously, counter-currents created by the device siphon into the Anemostat room-air equal to about 35 per cent of the volume of the supply air. This room-air is mixed with the supply-air within the diffuser before the air-mixture is discharged into the room. Furthermore, velocity of the incoming air is instantly reduced within the Anemostat by air-expansion.

In this way, the Anemostat noiselessly diffuses air of any duct velocity throughout the entire room . . . eliminates drafts . . . closely equalizes temperature and humidity . . . prevents air-stratification. There is no substitute for Anemostat air-diffusion!

The best "advertising" for functional-minded architects, engineers and contractors is the excellence of their own craftsmanship . . . represented by modern structures that make living and working more pleasant. That is why they invariably regard an air-conditioning installation with Anemostat draftless air-diffusion as a job well done. A job that advertises them. A job to be proud of!

Anemostat takes the "raw materials" of air-conditioning and actually "processes" them into COMFORT. There are no draft-producing grilles or registers, for Anemostat air-diffusers distribute the conditioned air in pre-determined, controlled patterns. Result: there are

no drafts . . . no dead air pockets . . . room temperature and humidity are equalized throughout.

Because Anemostat wall or ceiling diffusers permit employment of stepped-up duct velocities and greater temperature differentials, duct sizes and duct outlets may be reduced—an important economy feature. Because Anemostats have no moving parts to wear out, maintenance cost is nil.

Thousands of Anemostat installations throughout the country—in virtually every industry—are putting new comfort into air-conditioning. So, remember to specify Anemostat draftless air-diffusion for an air-conditioning job you'll be proud of!

Write for
information.

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ANEMOSTAT CORPORATION OF AMERICA
10 East 39th Street, New York 16, N. Y.

REPRESENTATIVES IN PRINCIPAL CITIES

"NO AIR-CONDITIONING SYSTEM IS
BETTER THAN ITS AIR DISTRIBUTION"

AC-1117

TERRAZZO the Lifetime Hospital Floor



Terrazzo

**CLEAN, COLORFUL,
DURABLE, ECONOMICAL**

PROVEN UTILITY, combined with colorful and faithful reproduction of designs and patterns has demonstrated the value of fine TERRAZZO for Hospital installations.

Sanitary, easy to clean and keep clean, economical to install and maintain, TERRAZZO offers permanence and long life under the heaviest foot traffic.

TERRAZZO provides an atmosphere of dignity, rest and quiet that Hospitals require. TERRAZZO in entrances, reception rooms, corridors, wards and private rooms assures durability and fire safety plus easy maintenance and unfading beauty.

Plan your TERRAZZO Requirements with this

FREE A.I.A. KIT

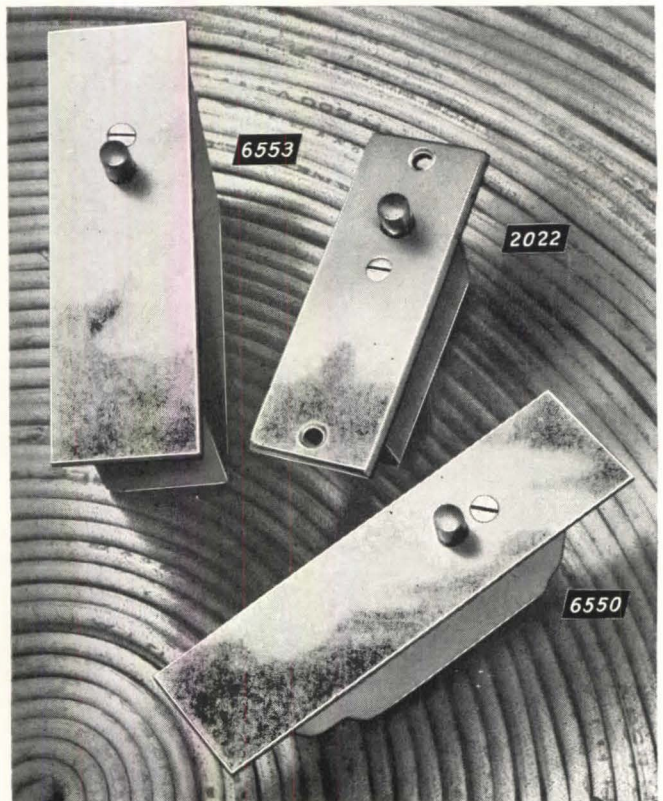
This fact-filled, handy reference kit will show you how and why TERRAZZO is ideal for every Hospital installation.



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H&H AUTO- MATIC DOOR SWITCHES



Automatically control the lights by opening and closing of doors as in closets, storage and refrigeration chambers, vaults etc. Numbers illustrated here are designed to switch on lights when door is opened; others available for lighting when door is closed. No. 6553 comes complete in an approved box with 23/32" and 1/2" knockouts and clamp for flexible metallic conduit. No. 2022 is mounted in a steel box, porcelain lined. No. 6550 is mounted in a porcelain base; fits all standard door switch boxes. Ratings: 6 Amps., 125 V.; 3 Amps., 250 V. Striker plates furnished with each switch.

Write for specification-
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HART & HEGEMAN DIVISION

**ARROW-HART & HEGEMAN ELECTRIC
COMPANY, HARTFORD 6, CONN., U.S.A.**

Balsam-Wool APPLICATION DATA SHEET SEC. A No. 4

THERMAL RESISTANCE VALUES OF BUILDING MATERIALS

The thermal resistance values of various building materials in the table below are taken from the Guide of the American Society of Heating and Ventilating Engineers. These resistances may be used to calculate heat transmission coefficients, as described in Data Sheet No. 3. The values listed in the "Per one inch thickness" column are for building materials as normally used in construction. The adjacent "R" column is for building materials as normally used in construction.

Material	Per One Inch Thickness	R
Asph. Flt. (1/2")	0.075	13.33
Asph. Flt. (3/4")	0.112	8.93
Asph. Flt. (1")	0.149	6.71
Asph. Flt. (1 1/2")	0.214	4.67
Asph. Flt. (2")	0.280	3.57
Asph. Flt. (2 1/2")	0.345	2.89
Asph. Flt. (3")	0.410	2.44
Asph. Flt. (3 1/2")	0.475	2.10
Asph. Flt. (4")	0.540	1.85
Asph. Flt. (4 1/2")	0.605	1.65
Asph. Flt. (5")	0.670	1.49
Asph. Flt. (5 1/2")	0.735	1.36
Asph. Flt. (6")	0.800	1.25
Asph. Flt. (6 1/2")	0.865	1.16
Asph. Flt. (7")	0.930	1.08
Asph. Flt. (7 1/2")	0.995	1.01
Asph. Flt. (8")	1.060	0.94
Asph. Flt. (8 1/2")	1.125	0.89
Asph. Flt. (9")	1.190	0.84
Asph. Flt. (9 1/2")	1.255	0.80
Asph. Flt. (10")	1.320	0.76
Asph. Flt. (10 1/2")	1.385	0.72
Asph. Flt. (11")	1.450	0.69
Asph. Flt. (11 1/2")	1.515	0.66
Asph. Flt. (12")	1.580	0.63
Asph. Flt. (12 1/2")	1.645	0.61
Asph. Flt. (13")	1.710	0.58
Asph. Flt. (13 1/2")	1.775	0.56
Asph. Flt. (14")	1.840	0.54
Asph. Flt. (14 1/2")	1.905	0.52
Asph. Flt. (15")	1.970	0.51
Asph. Flt. (15 1/2")	2.035	0.49
Asph. Flt. (16")	2.100	0.48
Asph. Flt. (16 1/2")	2.165	0.46
Asph. Flt. (17")	2.230	0.45
Asph. Flt. (17 1/2")	2.295	0.44
Asph. Flt. (18")	2.360	0.43
Asph. Flt. (18 1/2")	2.425	0.42
Asph. Flt. (19")	2.490	0.41
Asph. Flt. (19 1/2")	2.555	0.40
Asph. Flt. (20")	2.620	0.39
Asph. Flt. (20 1/2")	2.685	0.38
Asph. Flt. (21")	2.750	0.37
Asph. Flt. (21 1/2")	2.815	0.36
Asph. Flt. (22")	2.880	0.35
Asph. Flt. (22 1/2")	2.945	0.34
Asph. Flt. (23")	3.010	0.34
Asph. Flt. (23 1/2")	3.075	0.33
Asph. Flt. (24")	3.140	0.32
Asph. Flt. (24 1/2")	3.205	0.31
Asph. Flt. (25")	3.270	0.31
Asph. Flt. (25 1/2")	3.335	0.30
Asph. Flt. (26")	3.400	0.29
Asph. Flt. (26 1/2")	3.465	0.29
Asph. Flt. (27")	3.530	0.28
Asph. Flt. (27 1/2")	3.595	0.28
Asph. Flt. (28")	3.660	0.27
Asph. Flt. (28 1/2")	3.725	0.27
Asph. Flt. (29")	3.790	0.26
Asph. Flt. (29 1/2")	3.855	0.26
Asph. Flt. (30")	3.920	0.26
Asph. Flt. (30 1/2")	3.985	0.25
Asph. Flt. (31")	4.050	0.25
Asph. Flt. (31 1/2")	4.115	0.24
Asph. Flt. (32")	4.180	0.24
Asph. Flt. (32 1/2")	4.245	0.24
Asph. Flt. (33")	4.310	0.23
Asph. Flt. (33 1/2")	4.375	0.23
Asph. Flt. (34")	4.440	0.23
Asph. Flt. (34 1/2")	4.505	0.22
Asph. Flt. (35")	4.570	0.22
Asph. Flt. (35 1/2")	4.635	0.22
Asph. Flt. (36")	4.700	0.21
Asph. Flt. (36 1/2")	4.765	0.21
Asph. Flt. (37")	4.830	0.21
Asph. Flt. (37 1/2")	4.895	0.20
Asph. Flt. (38")	4.960	0.20
Asph. Flt. (38 1/2")	5.025	0.20
Asph. Flt. (39")	5.090	0.19
Asph. Flt. (39 1/2")	5.155	0.19
Asph. Flt. (40")	5.220	0.19
Asph. Flt. (40 1/2")	5.285	0.18
Asph. Flt. (41")	5.350	0.18
Asph. Flt. (41 1/2")	5.415	0.18
Asph. Flt. (42")	5.480	0.18
Asph. Flt. (42 1/2")	5.545	0.17
Asph. Flt. (43")	5.610	0.17
Asph. Flt. (43 1/2")	5.675	0.17
Asph. Flt. (44")	5.740	0.17
Asph. Flt. (44 1/2")	5.805	0.16
Asph. Flt. (45")	5.870	0.16
Asph. Flt. (45 1/2")	5.935	0.16
Asph. Flt. (46")	6.000	0.16
Asph. Flt. (46 1/2")	6.065	0.15
Asph. Flt. (47")	6.130	0.15
Asph. Flt. (47 1/2")	6.195	0.15
Asph. Flt. (48")	6.260	0.15
Asph. Flt. (48 1/2")	6.325	0.14
Asph. Flt. (49")	6.390	0.14
Asph. Flt. (49 1/2")	6.455	0.14
Asph. Flt. (50")	6.520	0.14
Asph. Flt. (50 1/2")	6.585	0.13
Asph. Flt. (51")	6.650	0.13
Asph. Flt. (51 1/2")	6.715	0.13
Asph. Flt. (52")	6.780	0.13
Asph. Flt. (52 1/2")	6.845	0.12
Asph. Flt. (53")	6.910	0.12
Asph. Flt. (53 1/2")	6.975	0.12
Asph. Flt. (54")	7.040	0.12
Asph. Flt. (54 1/2")	7.105	0.11
Asph. Flt. (55")	7.170	0.11
Asph. Flt. (55 1/2")	7.235	0.11
Asph. Flt. (56")	7.300	0.11
Asph. Flt. (56 1/2")	7.365	0.10
Asph. Flt. (57")	7.430	0.10
Asph. Flt. (57 1/2")	7.495	0.10
Asph. Flt. (58")	7.560	0.10
Asph. Flt. (58 1/2")	7.625	0.09
Asph. Flt. (59")	7.690	0.09
Asph. Flt. (59 1/2")	7.755	0.09
Asph. Flt. (60")	7.820	0.09
Asph. Flt. (60 1/2")	7.885	0.08
Asph. Flt. (61")	7.950	0.08
Asph. Flt. (61 1/2")	8.015	0.08
Asph. Flt. (62")	8.080	0.08
Asph. Flt. (62 1/2")	8.145	0.07
Asph. Flt. (63")	8.210	0.07
Asph. Flt. (63 1/2")	8.275	0.07
Asph. Flt. (64")	8.340	0.07
Asph. Flt. (64 1/2")	8.405	0.06
Asph. Flt. (65")	8.470	0.06
Asph. Flt. (65 1/2")	8.535	0.06
Asph. Flt. (66")	8.600	0.06
Asph. Flt. (66 1/2")	8.665	0.05
Asph. Flt. (67")	8.730	0.05
Asph. Flt. (67 1/2")	8.795	0.05
Asph. Flt. (68")	8.860	0.05
Asph. Flt. (68 1/2")	8.925	0.04
Asph. Flt. (69")	8.990	0.04
Asph. Flt. (69 1/2")	9.055	0.04
Asph. Flt. (70")	9.120	0.04
Asph. Flt. (70 1/2")	9.185	0.03
Asph. Flt. (71")	9.250	0.03
Asph. Flt. (71 1/2")	9.315	0.03
Asph. Flt. (72")	9.380	0.03
Asph. Flt. (72 1/2")	9.445	0.02
Asph. Flt. (73")	9.510	0.02
Asph. Flt. (73 1/2")	9.575	0.02
Asph. Flt. (74")	9.640	0.02
Asph. Flt. (74 1/2")	9.705	0.01
Asph. Flt. (75")	9.770	0.01
Asph. Flt. (75 1/2")	9.835	0.01
Asph. Flt. (76")	9.900	0.01
Asph. Flt. (76 1/2")	9.965	0.00
Asph. Flt. (77")	10.030	0.00
Asph. Flt. (77 1/2")	10.095	0.00
Asph. Flt. (78")	10.160	0.00
Asph. Flt. (78 1/2")	10.225	0.00
Asph. Flt. (79")	10.290	0.00
Asph. Flt. (79 1/2")	10.355	0.00
Asph. Flt. (80")	10.420	0.00
Asph. Flt. (80 1/2")	10.485	0.00
Asph. Flt. (81")	10.550	0.00
Asph. Flt. (81 1/2")	10.615	0.00
Asph. Flt. (82")	10.680	0.00
Asph. Flt. (82 1/2")	10.745	0.00
Asph. Flt. (83")	10.810	0.00
Asph. Flt. (83 1/2")	10.875	0.00
Asph. Flt. (84")	10.940	0.00
Asph. Flt. (84 1/2")	11.005	0.00
Asph. Flt. (85")	11.070	0.00
Asph. Flt. (85 1/2")	11.135	0.00
Asph. Flt. (86")	11.200	0.00
Asph. Flt. (86 1/2")	11.265	0.00
Asph. Flt. (87")	11.330	0.00
Asph. Flt. (87 1/2")	11.395	0.00
Asph. Flt. (88")	11.460	0.00
Asph. Flt. (88 1/2")	11.525	0.00
Asph. Flt. (89")	11.590	0.00
Asph. Flt. (89 1/2")	11.655	0.00
Asph. Flt. (90")	11.720	0.00
Asph. Flt. (90 1/2")	11.785	0.00
Asph. Flt. (91")	11.850	0.00
Asph. Flt. (91 1/2")	11.915	0.00
Asph. Flt. (92")	11.980	0.00
Asph. Flt. (92 1/2")	12.045	0.00
Asph. Flt. (93")	12.110	0.00
Asph. Flt. (93 1/2")	12.175	0.00
Asph. Flt. (94")	12.240	0.00
Asph. Flt. (94 1/2")	12.305	0.00
Asph. Flt. (95")	12.370	0.00
Asph. Flt. (95 1/2")	12.435	0.00
Asph. Flt. (96")	12.500	0.00
Asph. Flt. (96 1/2")	12.565	0.00
Asph. Flt. (97")	12.630	0.00
Asph. Flt. (97 1/2")	12.695	0.00
Asph. Flt. (98")	12.760	0.00
Asph. Flt. (98 1/2")	12.825	0.00
Asph. Flt. (99")	12.890	0.00
Asph. Flt. (99 1/2")	12.955	0.00
Asph. Flt. (100")	13.020	0.00

Balsam-Wool APPLICATION DATA SHEET SEC. B No. 6

INSULATING MASONRY WALLS

MASONRY walls by themselves have low heat resistance. Therefore they should be insulated to conserve heat, to minimize the possibility of condensation occurring on the wall, and to effect warmer wall surfaces for greater comfort. The coefficient of heat transmission "U" of a plastered 12" solid brick wall is 25.

Application of 1" x 2" furring strips to the 12" brick wall with 1/2" Nu-Wood Insulating Lath and plaster interior, as illustrated in "A" above, lowers the "U" factor to 19. The insulating efficiency may be further increased by applying Standard Balsam-Wool between 2" x 2" furring strips attached to the wall as shown in "B" above. This wall has a "U" factor of 11, which represents a saving of 67.6% of the heat which would otherwise be lost through the uninsulated plastered 12" brick wall.

Insulation of other types of masonry construction which would otherwise be lost through the uninsulated plastered 12" brick wall.

Insulation of other types of masonry construction would result in similar heat savings, as may be noted in the table at right. Here "U" factors are listed for typical 12" masonry walls uninsulated and insulated, as shown in "A" and "B" above. With 8" masonry walls when insulated as in "B", and about 0.1 to 0.3 higher when insulated as in "A".

Masonry walls may also be insulated with Masonry Balsam-Wool, a special-blanket insulation which is available from lumber dealers in certain localities. Masonry Balsam-Wool is made with a straight flange for application between 1" x 2" furring strips. Special fibre channels are furnished for capping and fanning the ends of the blanket.

Type of Wall	Co-efficient of Heat Transmission	
	Uninsulated	Insulated
12" Solid Brick	25.00	11.00
12" Solid Brick with 1/2" Nu-Wood Insulating Lath and Plaster Interior	19.00	11.00
12" Solid Brick with 1/2" Nu-Wood Insulating Lath and Plaster Interior and 1" x 2" Furring Strips with Balsam-Wool	11.00	11.00
8" Solid Brick	15.00	11.00
8" Solid Brick with 1/2" Nu-Wood Insulating Lath and Plaster Interior	11.00	11.00
8" Solid Brick with 1/2" Nu-Wood Insulating Lath and Plaster Interior and 1" x 2" Furring Strips with Balsam-Wool	11.00	11.00
4" Solid Brick	7.50	11.00
4" Solid Brick with 1/2" Nu-Wood Insulating Lath and Plaster Interior	11.00	11.00
4" Solid Brick with 1/2" Nu-Wood Insulating Lath and Plaster Interior and 1" x 2" Furring Strips with Balsam-Wool	11.00	11.00

From No. 913-7-43

WOOD CONVERSION COMPANY
First National Bank Building
Saint Paul, Minnesota
Product of Weyerhaeuser

BALSAM-WOOL • Products of Weyerhaeuser • **NU-WOOD**

- High Thermal Efficiency
- Built for Permanence
- Non-Settling
- Flame-Proof
- Wind-Proof
- Moisture-Proof

Balsam-Wool APPLICATION DATA SHEET SEC. C No. 1

BALSAM-WOOL APPLICATION AROUND WINDOWS AND AIR DUCTS

WHEN a wall is framed for windows or doors, narrow spaces usually result on one or both sides. To insulate these irregular spaces, Standard Balsam-Wool Blanket is cut lengthwise with a saw or tin shears, approximately 2 inches wider than the space. A portion of the insulating fibre mat is removed along the cut edge so the warm and cold side liners may be brought together and folded over the edge of the stud and stapled to the stud face. The fibre which is removed may be used to caulk around window and door frames, as suggested in the drawing. Vapor barrier paper should be applied over sash weight pocket to prevent moisture vapor condensing on sheathing causing paint failure at window frame, casing and siding around window.

Cold air return ducts located in outside walls, if uninsulated, provide a means for a tremendous amount of heat to escape from a house. This loss may be easily reduced by installing Standard Balsam-Wool between the framing in the duct space directly against the outside sheathing, as illustrated. A galvanized sheet metal back is usually placed over the blanket and nailed to the sides of the studs.

Where electric outlets, switches, etc. occur in outside walls, Balsam-Wool should be carefully cut to fit tightly around these fixtures, otherwise moisture vapor may be free to pass into the outer wall space where it may contribute to condensation trouble.

From No. 917-7-43

WOOD CONVERSION COMPANY
First National Bank Building
Saint Paul, Minnesota
Product of Weyerhaeuser

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how to insulate masonry walls

...see Balsam-Wool data sheets!

Insulating masonry walls is only one of the many insulation subjects covered by Balsam-Wool Data Sheets. These handy sheets represent years of research in gathering vital facts on insulation application—solving tough insulation problems. The whole set of Balsam-Wool Data Sheets—containing 32 sheets in all—is yours for the asking. Just mail the coupon—no cost or obligation!

Balsam-Wool

SEALED INSULATION

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WOOD CONVERSION COMPANY
Dept. 117-3, First National Bank Building, St. Paul 1, Minnesota

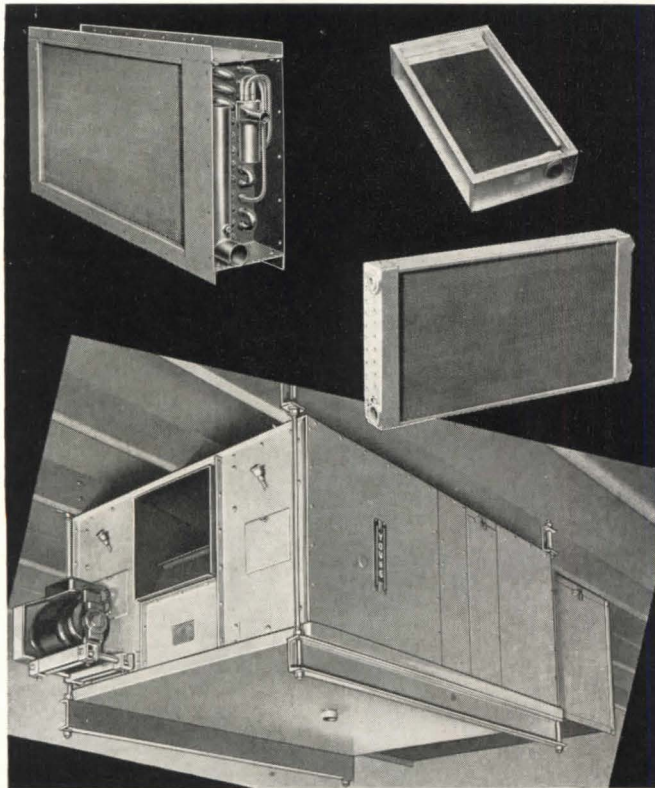
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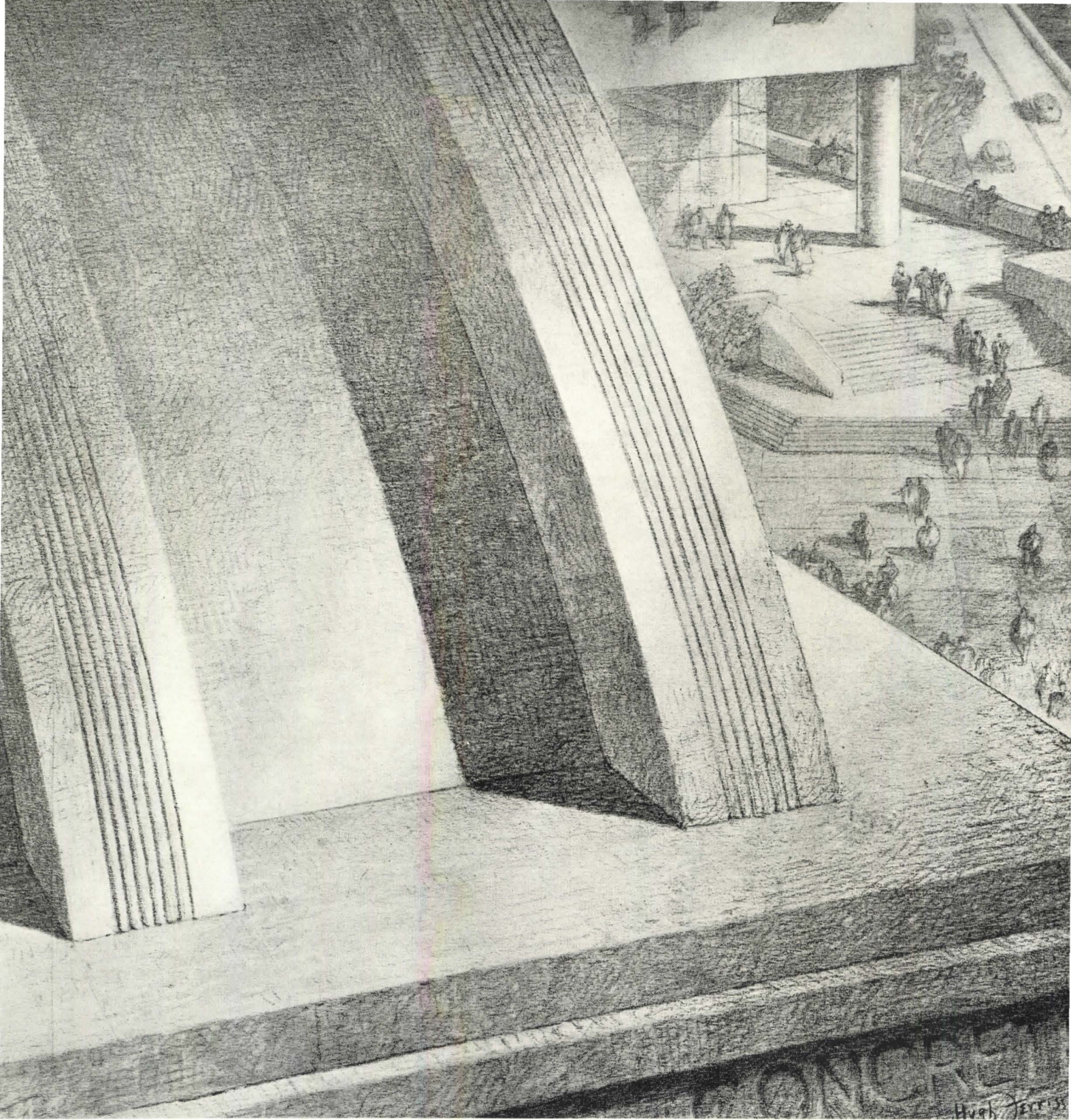
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Photo by Ezra Stoller



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An ordinary fireplace pumps 200 cubic feet (2 to 3 large rooms full) of already warmed air out of the house *each minute.* In tightly constructed homes, replacement air can't come in from outdoors in sufficient quantity to supply the chimney draft. Result—partial vacuum... back-puffs... smoke.

The *Fresh-Aire Fireplace Unit* is manufactured to help you—in designing Fireplaces for modern, fully weather-stripped homes with central heating. It draws replacement air from outdoors, into the heating chambers, and circulates it, comfortably warm, through the living quarters. No uneven temperatures, no interference with heat controls—and a net *gain* in evenly distributed warmth.

Here are four more reasons why so many *Bennett Fresh-Aire Fireplace Units* are specified:

1. Thoroughly ventilates and "refreshes" the air.
2. Complete freedom to design the mantel... normal brick firebox sidewalls... no floor grilles.
3. A complete form for *smoke-free* internal proportions of throat, damper, smoke chamber and shelf—assurance that the fireplace will be *built* as you *designed* it.
4. Small first cost is quickly offset by savings in construction and fuel.

Bennett Warm-Aire Units—for perfect fireplaces in camps, southern homes, playrooms, etc. Draws cool air from the floor, heats and recirculates it evenly throughout the room, and to adjacent rooms or upstairs.

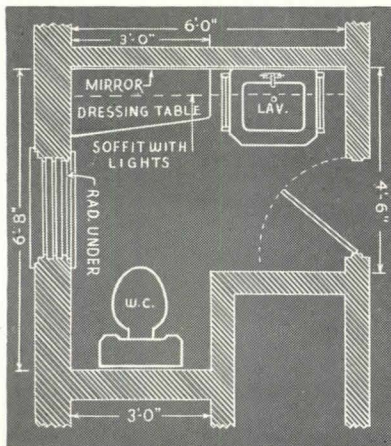
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BENNETT-IRELAND INC.

Chartered in 1906
NORWICH, NEW YORK

This compact arrangement of Kohler fixtures shows interesting economy of space. Dimensions of the longest walls are only 6' x 6'-8", yet there is free access to both the fixtures and the convenient, built-in dressing table.



A KOHLER washroom solves many problems

HOME owners are becoming more aware of the value of added sanitary convenience. The appeal of a Kohler washroom is especially pronounced, for it takes little space, yet it answers many needs—reducing through-the-house traffic, providing convenience for guests, and simplifying child training. Permanent value is added to homes where this practical extra convenience is installed.

There is further practical appeal in the fact that the name "Kohler" stands for first quality at reasonable cost. The high standards of construc-

tion and excellence of design embodied in Kohler fixtures and fittings assure long satisfactory use.

The fixtures in the washroom above are the Jamestown vitreous china lavatory, with Centra mixer-type fitting made of durable chromium-plated brass; and the quiet, smooth-functioning Bolton closet. Kohler quality is now a 74-year-old tradition, safeguarded by the fact that Kohler production is centered in one great plant, with unity of supervision. Write for latest information on products available.

Kohler Co., Dept. B, Kohler, Wisconsin.

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PLUMBING FIXTURES • HEATING EQUIPMENT • ELECTRIC PLANTS

HALLOWELL STOOLS OF STEEL



Fig. 1334



Fig. 1287

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Be sure your workers are comfortable at their work—on "HALLOWELL" STOOLS AND CHAIRS OF STEEL.

Write for the "Hallowell" Catalog for styles and information.

"Unbrako" and "Hallowell" products are sold entirely through distributors.



Fig. 1268

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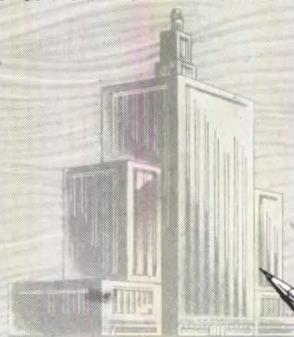
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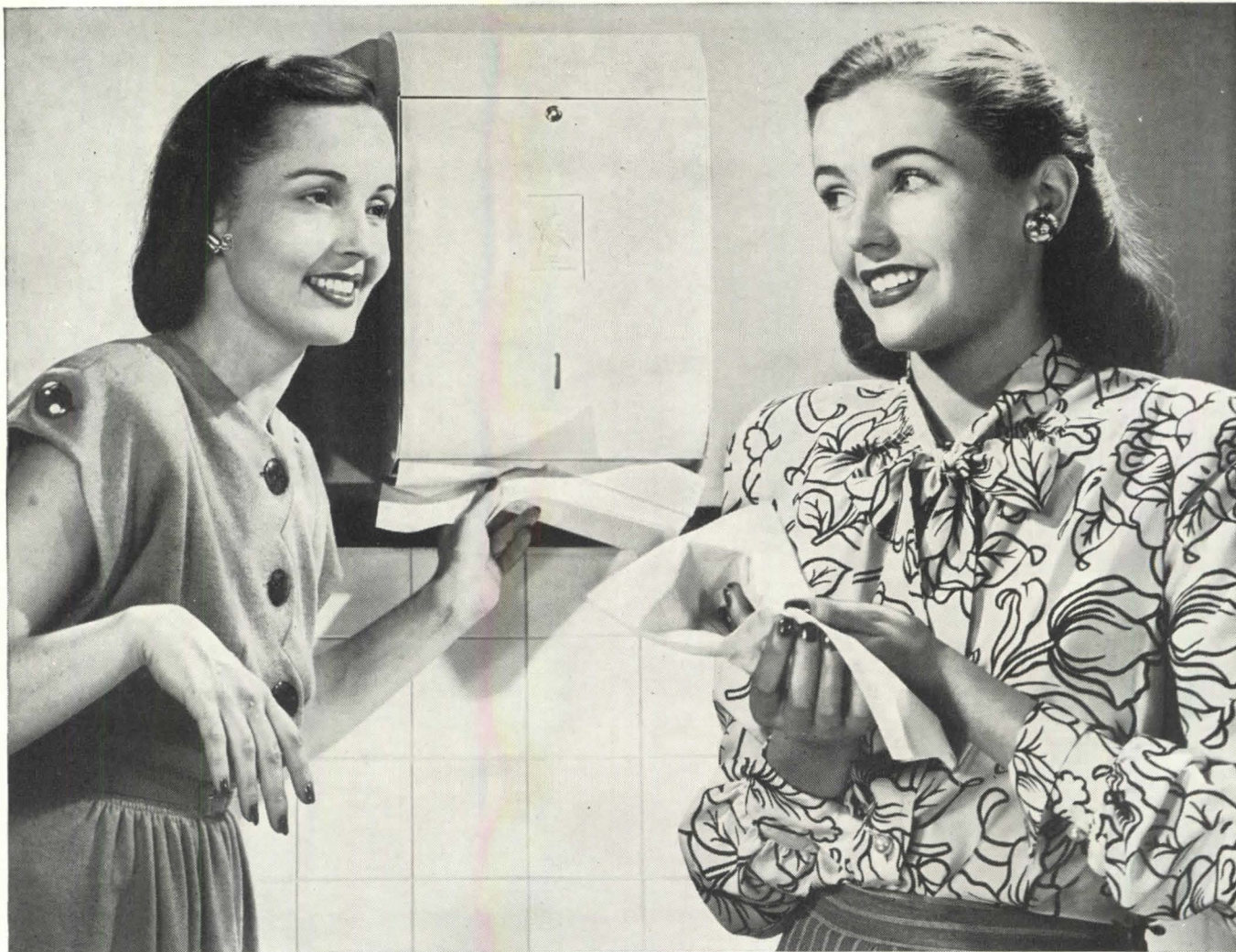


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Washrooms are one of the four most important factors in good working conditions—according to workers in 400 plants.

"I can't stand a messy washroom!"

JANE: *"It doesn't take a lot of money—just a little thoughtfulness—to keep a washroom nice like this one."*

ISABEL: *"Yes, the management here certainly knows how much good washrooms mean to us."*

EMployees judge a company a great deal by its washrooms. In a survey of men and women workers at more than 400 plants, they named these factors as the ones they considered most important in good working conditions: *good washrooms, adequate lighting, safety devices and proper ventilation.*

Besides helping morale, sanitary well-equipped washrooms, with plenty of soap, hot water and good quality individual tissue towels, help reduce the number of absences due to colds and their complications. For they encourage frequent and thorough washing that helps prevent germs from spreading.

Haven't you yourself been irritated by a poorly planned, badly equipped washroom? Washrooms should be "Health Zones," not "Germ Exchanges"—"morale-boosters," not "temper-testers."

Good Washrooms begin at the Drawing Board



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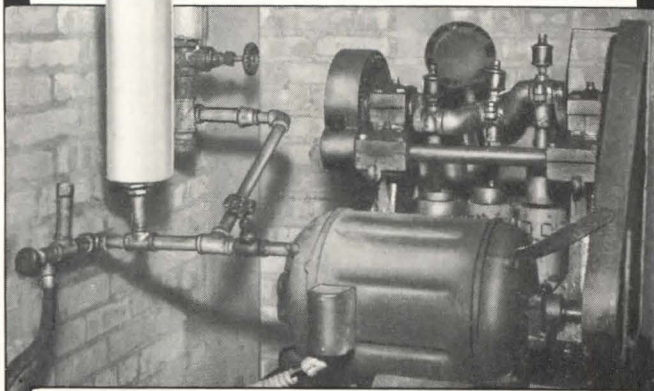
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Photo shows the Wade No. 134 Sealed Air Chamber, installed on a 3/4" pipe at the Midwest Transfer Company, Chicago. It "stopped all vibration."



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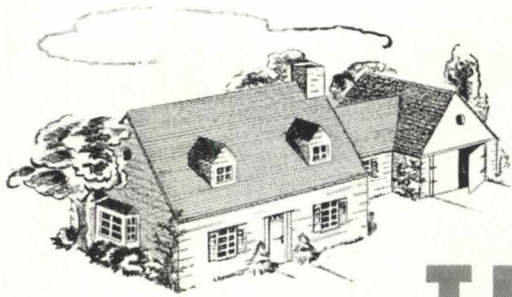
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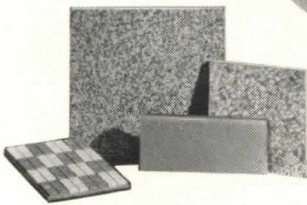
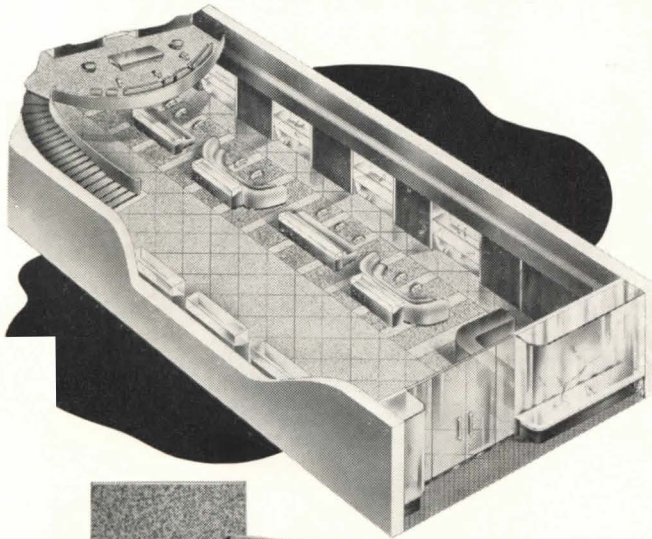
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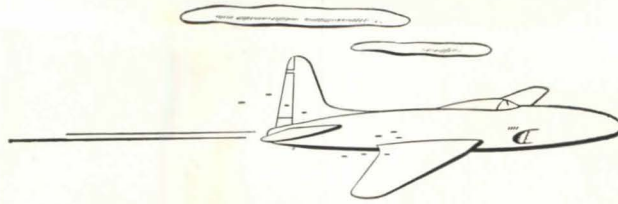
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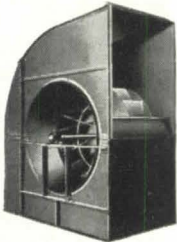
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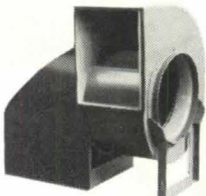
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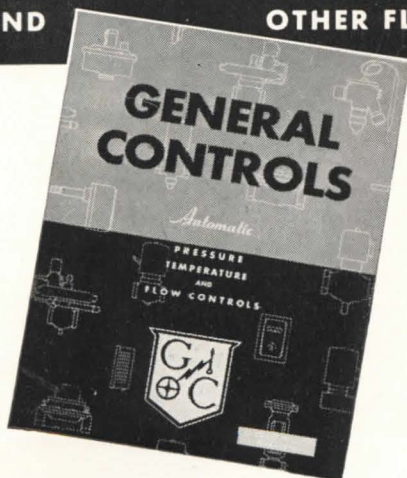
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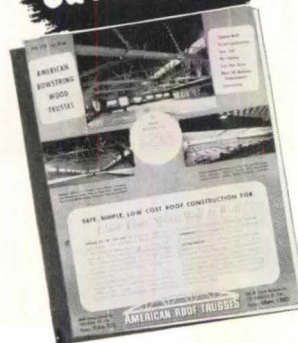
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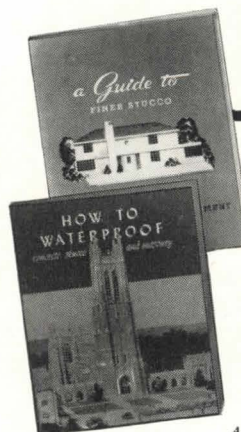
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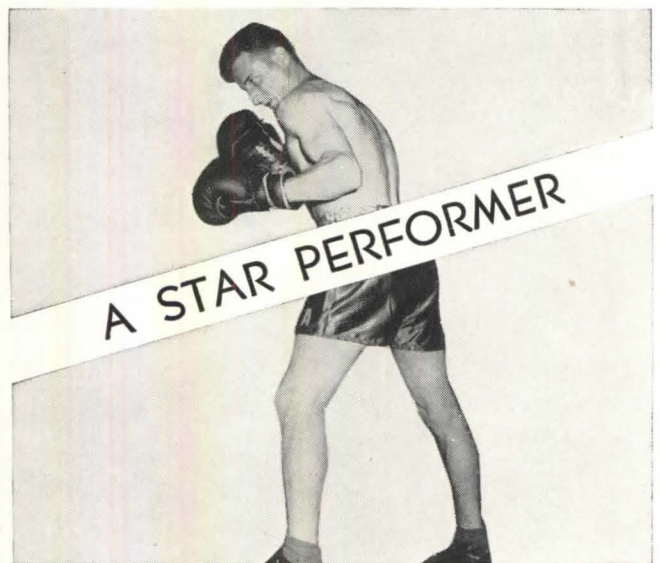
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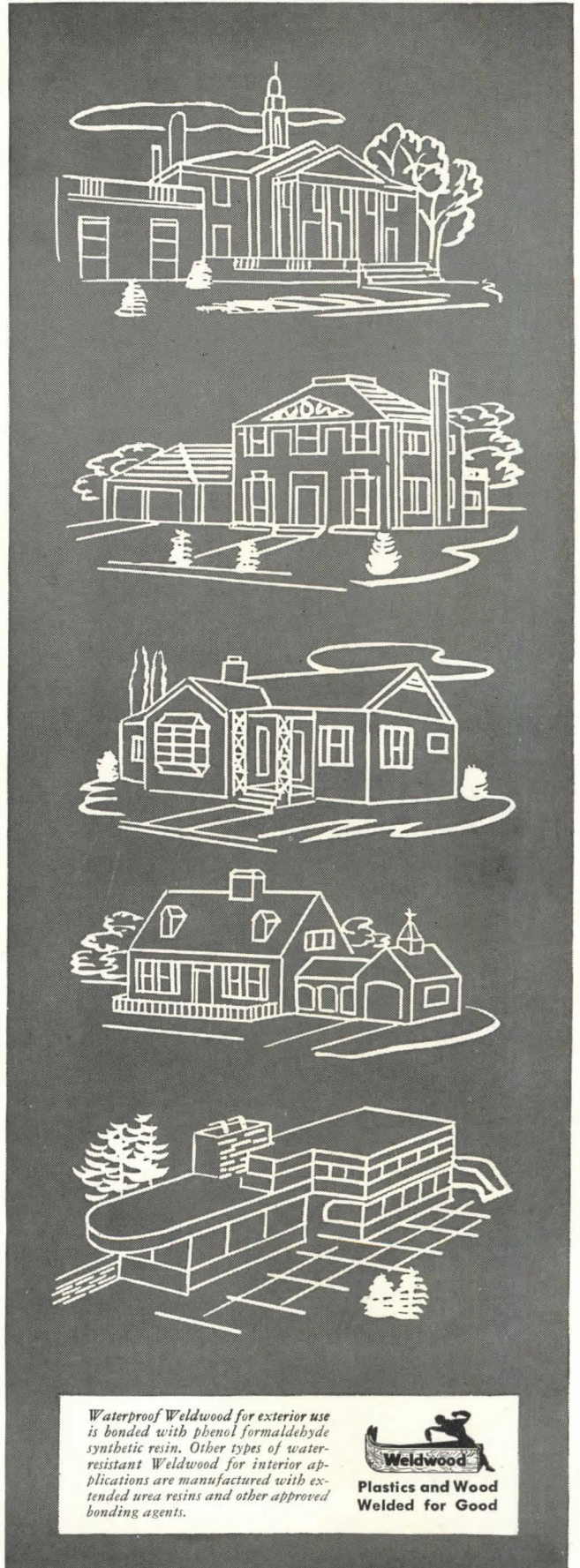
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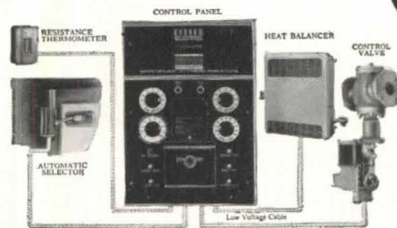
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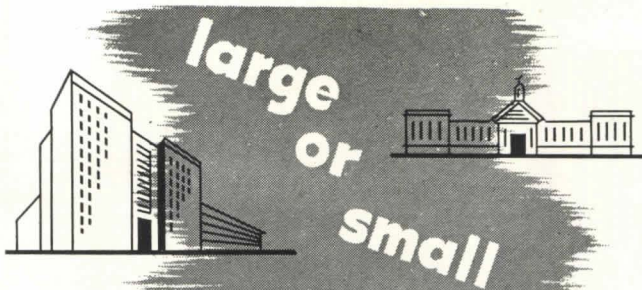
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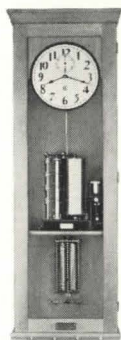
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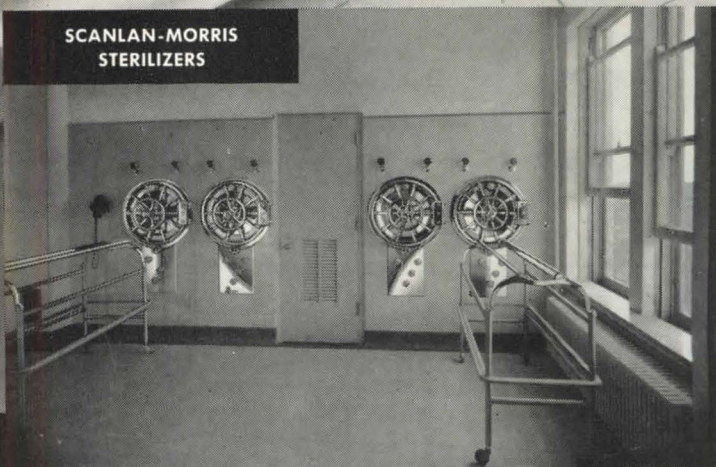
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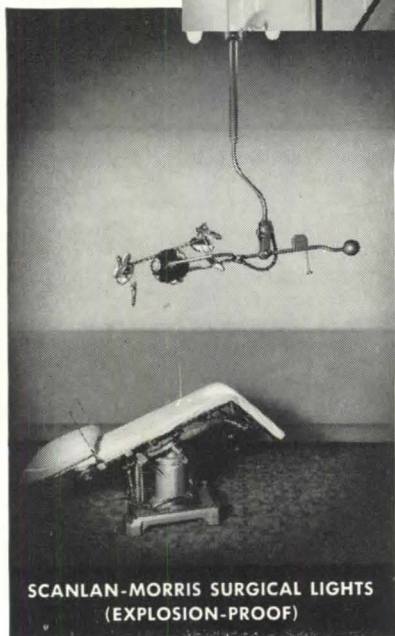
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HENRY KAMPHOFNER OF THE UNIVERSITY OF OKLAHOMA TOLD US OF A VISIT TO THE CAMPUS BY FRANK LLOYD WRIGHT. The editor of a student paper interviewing Wright asked him his favorite building. He said that question couldn't be answered, and he countered with, "What's your favorite tree?"

The girl wasn't stumped. "I live in the southern part of the state," she said, "and my favorite tree is the local pine. I'm familiar with it and I like it."

"That answer's disallowed on the grounds of prejudice," Wright decided. Then he looked at her and said, "... and furthermore, young lady, you're going to grow up to be a very conservative woman."

SPEAKING OF PREJUDICE, WE LIKE A REMARK IN THE JURY REPORT FOR THE HONOR AWARDS PROGRAM OF THE SOUTHERN CALIFORNIA CHAPTER OF THE A.I.A. In, an admirably critical report the jury (Pietro Belluschi, Ernest Born, and John Root, chairman) says, "The jury had prejudices . . . Complete freedom from prejudice can only result in the inability to make a decision. . . . The popular fallacy that prejudice is an evil and its absence is desirable has to be re-evaluated. What is really meant is that we must be selective in our prejudices; prejudice must be in accord with current thinking or generally accepted ethical standards of culture for our time."

Thus prejudiced, the jury gave Distinguished Honor Awards to Richard Neutra for the Nesbitt house, and to Reginald D. Johnson, Wilson, Merrill and Alexander for Baldwin Hills Village.

A NEW ENGLAND ARCHITECT RUSHED INTO THE OFFICE AND ASKED IF WE KNEW OF ANY EXAMPLES OF A LARGE AUDITORIUM which can also be used with acoustical success for occasional small musical gatherings. As we sat studiously thinking, he rushed out again, saying, "That's fine. Now I can tell the client that intensive research on a national scale indicates that it has never been done successfully. They'll have to build two buildings." Prejudiced, that guy.

A NUMBER OF READERS HAVE EXPRESSED ANNOYANCE AT THE CLASSIFICATION CARDS SENT OUT BY OUR CIRCULATION DEPARTMENT, asking subscribers to identify themselves as to professional status. To many people this seems an unneces-

sary prying into their personal affairs, and some few flatly refuse to answer. If you will excuse me for talking business, I'd like to explain several aspects of this annoying practice of ours.

Not so many years ago, the magazine publishing business was very poorly self-organized. Claims as to circulation could be wild and woolly, and there was no way any reader or any advertiser could verify them. The situation was similar to that in the architectural profession before state examination and registration became established, when any individual could call himself an architect or an engineer and no one could check on his claims.

The solution to this was a cooperative, non-profit public accounting organization called the Audit Bureau of Circulation (known generally as A.B.C.) of which all reputable publications now are members. Twice each year tough, experienced A.B.C. auditors visit our offices and make an exhaustive investigation and audit of the circulation. The results are published, and you can find out, for instance, these certified facts for the period ending June 30, 1946 (the December audit is not yet available as we go to press):

Total Net Paid Circulation:	
PROGRESSIVE ARCHITECTURE	26,466
Architectural Record	24,294
Architectural Forum	49,669

You can find readers classified by business and industry, such as:

Architectural, Architectural-Engineering Firms & Architects and Architects-Engineers in Private Practice:

PROGRESSIVE ARCHITECTURE	9,685
Architectural Record	9,126
Architectural Forum	8,403

And you can find classification by title and occupation, such as:

Draftsmen:	
PROGRESSIVE ARCHITECTURE	2,929
Architectural Record	799
Architectural Forum	2,259

You can see trends in circulation, like this:

Contractors & Builders:	
PROGRESSIVE ARCHITECTURE	1,518
Architectural Record	2,427
Architectural Forum	7,710

And so on through the various categories. Obviously, to audit our circu-

lation in this complete manner, A.B.C. must have complete facts. I may know that John Jones is a practicing architect—he may be one of my good friends—but that doesn't help in the cold-blooded audit that takes place twice a year. John has to fill out the required card, unfortunately.

Julian Elfenbein, in his book on *Business Journalism* published by Harper, says, "The A.B.C. is an important example of industrial self-government and the will to conduct business honestly and aboveboard." I hope that makes as much sense to you as it does to me.

THE OTHER ASPECT OF OUR CIRCULATION POLICY WHICH HAS BEEN ANNOYING SOME PEOPLE IS OUR DESIRE TO RESTRICT CIRCULATION TO THOSE WORKING IN THE PROFESSIONS CONCERNED WITH BUILDING DESIGN. The June 1946 A.B.C. audit showed that we had a total of unclassified and miscellaneous subscriptions going to 4,128 people. We didn't like that for three reasons:

1. Paper is still scarce, and we can't afford to use it to print magazines for people who are interested, but not professionally interested, in architecture. We hate to keep repeating it, but we are a *professional* magazine.

2. Subscriptions, unfortunately, don't begin to pay for the editing and the publishing of the magazine. We must sell advertising to continue in business. We can't sell advertising on unidentified subscribers; that's one of the peculiar aspects of a professional magazine. Hence we lose about ten dollars a year on each one of those 4,128 unclassified subscriptions. It sounds fantastic, and maybe I'm being undiplomatic in bringing the subject up, but frankly, we can't afford that; it restricts our operating budget too greatly.

3. As editor, I have insisted that we address ourselves to a technically educated group on a professional level. Non-professional readers should not benefit from our treatment of material; if they do, we are not doing properly our self-appointed job. The very existence of a large block of readers who are presumably lay persons is a temptation to water down our editorial policy.

That's why some people have been told they can't have the magazine any more. If any of them can classify themselves in a professional category, we wish they would do so, quickly. We'll break our necks doing the best possible job we can for the professionals, but we aren't going to run into the red, financially or in an editorial sense, to service others. It's a pretty drastic policy, and it's subject to misinterpretation, but we think it's honest.

Thomas H. Wright