PROGRESSIVE ARCHITECTURE

newsletter

DECEMBER 1950

- The two specific government regulatory orders which have been issued to control volume of construction have by now been pretty well digested by the industry and inevitable objections--some valid, some selfish--have appeared in recent weeks. Regulation X, issued by the Board of Governors of Federal Reserve System with the concurrence of HHFA, imposes credit restrictions on housing loans. NPA Order M-4, issued by the new National Production Authority in Dept. of Commerce, prohibits commencement of certain types of construction.

- Regulation X, briefly, calls for down-payments on non-government insured housing (similar restrictions on FHA loans had already gone into effect) ranging from 10% in the price range $5000 and under, to 50% at $25,000 and over. Preference for veterans will amount in most cases to 10 percentage points.

- Stated reason for Regulation X is to limit production of new housing to between 800,000 and 850,000 units next year. Home builders reply that restrictions are such a sharp change from former easy credit situation that demand will fall sharply--and far fewer than the target number of homes will result in 1951. Architects' business will probably suffer mainly in the work for spec. builders, who will be much shyer at starting projects. The custom-designed house will also undoubtedly fall off in volume, though not to such a great extent. For properties over $20,000 in value, the outstanding credit may now be only $11,700 plus 10% of the value over $20,000 but not less than 50% of value.

- Further, Regulation X limits construction loans on houses to a term of 20 years in most instances. This provision has been widely criticised as a move backward after a long, slow period of progress toward lengthier amortization periods, to the benefit of a family with a tight monthly budget.

- Order M-4, which had been anticipated in some form by the building fraternity, was much more drastic than expected. On the surface it prohibited start of construction after October 27, 1950, of any structure for recreation, amusement, or entertainment purposes. Most active building types stopped are theaters, clubs, gymnasia and stadia, community recreation buildings.

- However, the paragraph in Order M-4 that caused groans of agony was one on "policy" which said in part: "It will be the policy of NPA to further limit or prohibit construction of additional types of projects...If such action becomes necessary, any such construction commenced after the effective date of this part may be halted, even though its commencement at the present time is not forbidden..."

- Obviously this left owners, architects, and builders completely at sea on many projects that could later be considered as "not increasing the nation's productive capacity." Knowledge that other types of buildings may be stopped was bad enough, but the fact that they could be stopped after a permitted start seemed to many a bit rugged, and was actually more arbitrary than any of

(Continued on page 2)

the World War II regulations. As this is written, indications are that this paragraph will be radically revised.

- Manufacturers of building materials are as confused as anyone else by the current situation, a fact which complicates the architects' problem even further since it becomes more and more difficult to know whether specified materials will be available. Producers' Council says that, although it is obviously impossible to know exactly what the defense program will require, "it should be possible to announce certain limits within which the industry can act." PC points out that in the absence of such information, it is possible that "producers of some materials will overshoot the market, while others will adopt a too conservative policy. The result would be a costly surplus of some products and an equally costly shortage of others."

- Steel, avidly in demand by a number of claimant government agencies with priority rights, will, according to the American Iron and Steel Institute, reach an annual capacity of 109,963,000 net tons by the end of 1952. This will represent an increase of 9,400,000 net tons over mid-1950 capacity and 16 million tons over the peak war year of 1944. Sect. of Commerce Sawyer, complimenting the industry on this promise, still made no predictions of the capacity DO's (defense orders) may require. NPA'S Order M-1 seemed to promise that no producer need accept rated orders in excess of certain percentages of previous monthly shipments (generally 15% in structural shapes, plates and piling) but the picture is still too confused for accurate figuring.

- New Producers' Council president is A. Naughton Lane, vice-president of Monarch Metal Weatherstrip Corp.

- Boston Society of Architects is presenting a "Rotch in Retrospect" exhibit, based on recent work of former holders of the Rotch Travelling Scholarship. Impressive list of former scholars includes, from earlier period, such names as H. Van Buren Magonigle and Frederick Hirons; in later years such now-prominent people as Ralph Walker, Wallace Harrison, Louis Skidmore, Edward Stone.

- Harvard announces a scholarship for graduate study in landscape architecture. Scholarship, amounting to the tuition fee, is open to B.A.'s of the past four years. Inquiries must be received before January 1, 1951.

  Also from Oregon comes news of the founding of the Oregon Society of Architects, with headquarters at Eugene. One of its first acts will be co-operation with Lane County Citizens' Advisory Committee in planning and site selection of a contemplated city-county-state administrative center.

- Many architects mourned the passing of Peter C. Olsen, chairman of the board of Federal Seaboard Terra Cotta, who died recently at the age of 69. Originally a sculptor, a member of the Architectural League in N.Y., he had done much to integrate terra cotta with the problems of architectural design and construction. Another long-time leader in the terra cotta industry in the middle west, H. J. Lucas, head of Northwestern Terra Cotta, died recently. His loss will be strongly felt by architects and builders in the wide area where he was known and respected.

- M.I.T. announces the appointment of Pietro Belluschi as dean of the School of Architecture and Planning, succeeding William Wurster.

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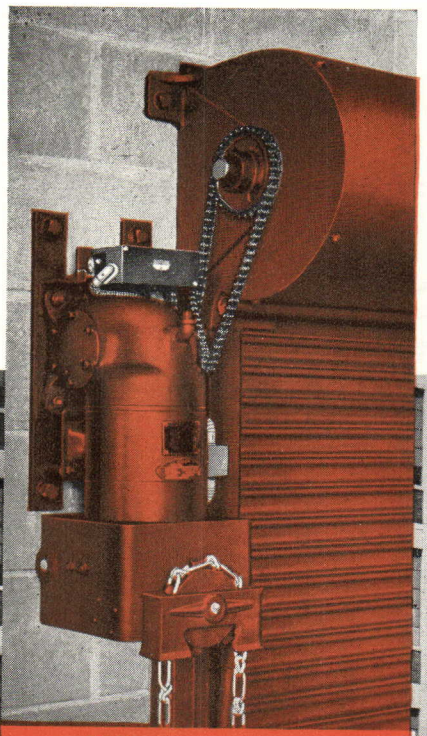
Rolling Steel DOORS



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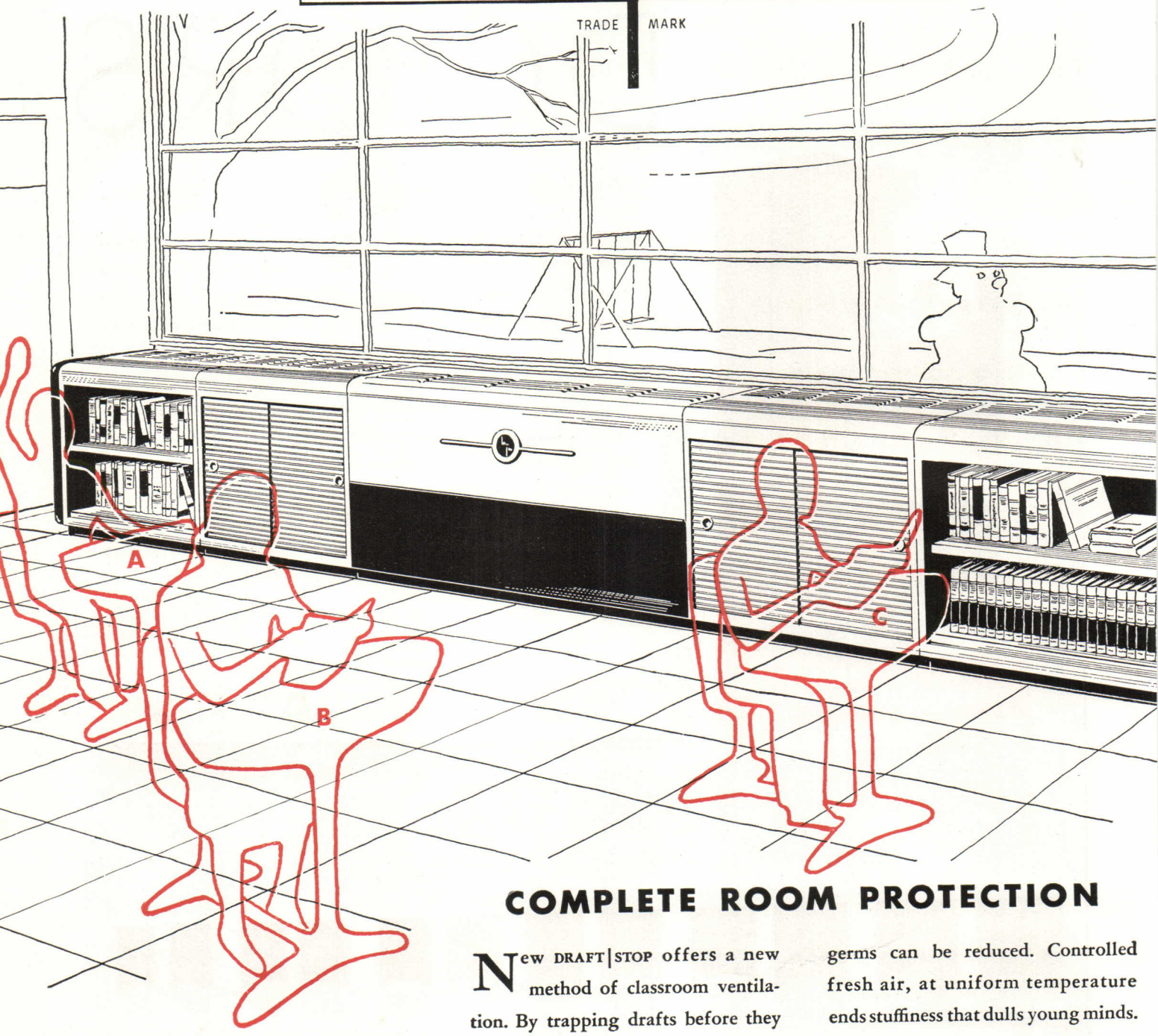

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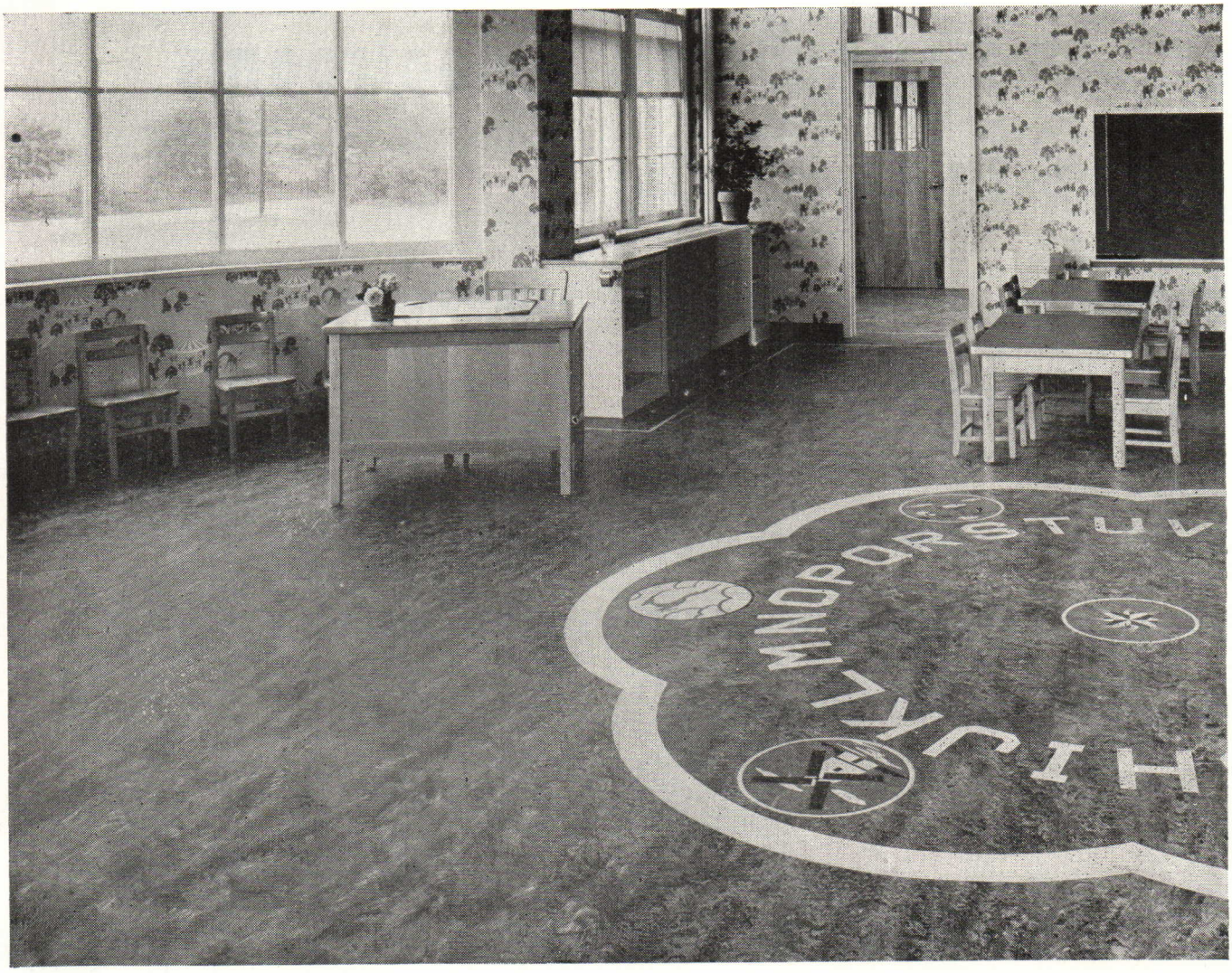

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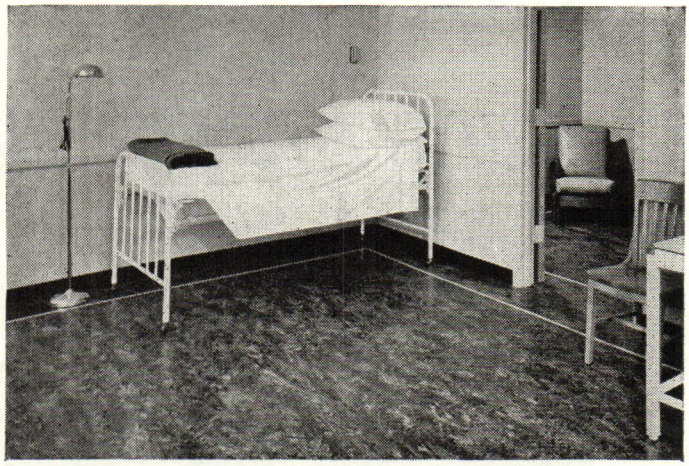

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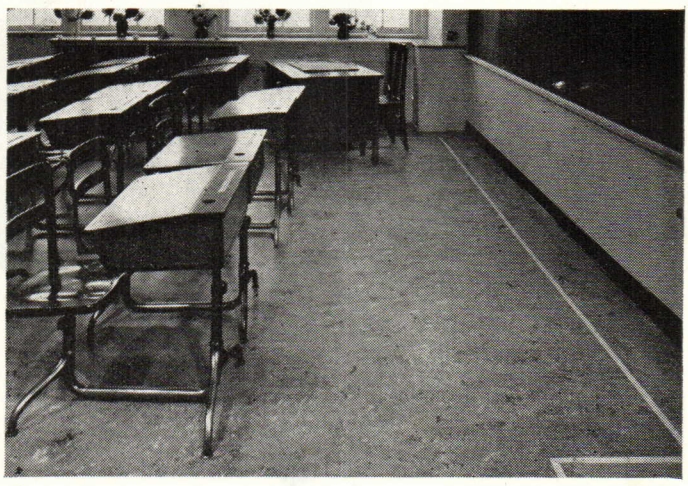
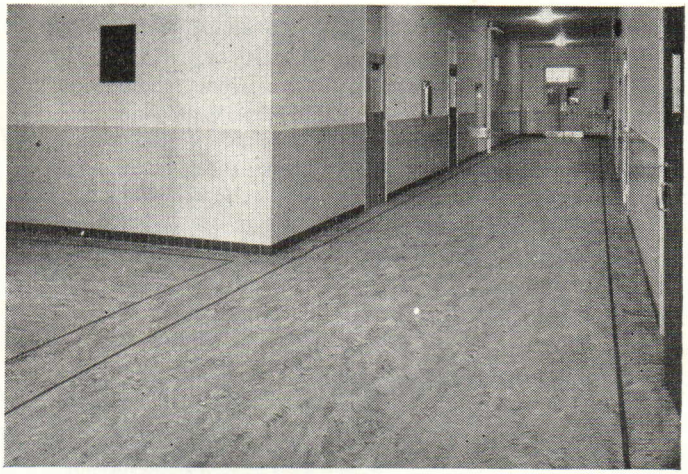


3. Classrooms in this school are naturally floored with Nairn! Its true resilience reduces the noise of busy feet . . . promotes quiet, foot-easy walking always!



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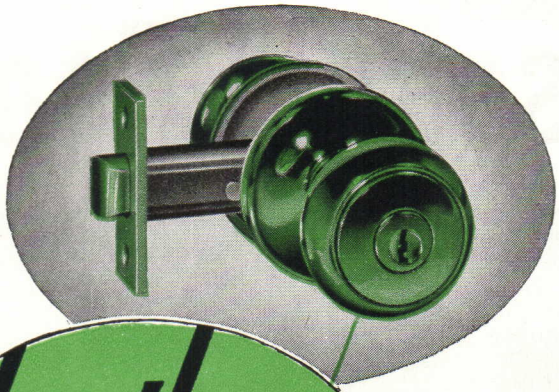

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p/a VIEWS

THE THOROUGH ANALYSIS

Dear Editor: On completion of a study of the Science and Pharmacy Buildings for Drake University by Saarinen, Swanson & Saarinen, and Brooks-Borg, Architects, I felt many deep satisfactions. The architects are to be congratulated once again for their very impressive work. (November 1950 **P/A.**)

I, also, felt like saying, "Look, ma, no imposed symbolism, no painting, and no sculpture." Nevertheless, well considered sculptures and paintings would undoubtedly help after all, the project is barely completed.

Once again this project proves the firmness of the ground of following inexorably the principle of letting function express itself in its simplest buildable terms.

P/A should be congratulated for devoting so much space to such a thorough analysis of one project. For my money, I would have one project so presented in each issue in preference to the "hint—pretty picture" kind.

ISADORE ROSENFIELD
New York, New York

MORE SERIOUS CONCERN

Dear Editor: I think **P/A** is excellent —certainly for architects' use the best of the architectural magazines to subscribe to.

1. More serious concern with design values.
2. Consistently good work intelligently presented.
3. Good technical articles.
4. Coupon re: MANUFACTURERS' LITERATURE an excellent idea.
5. Series on OFFICE PRACTICE and LAW are of importance and interest.

In short, I think you're doing an excellent job. Keep it up!

WILLIAM M. HUNT
Lambertville, N. J.

OOZES, JUTS, DRIPS

Re: October **P/A**—upper photograph page 76. Lounge and side-door entrance to office building, Houston, Texas. Mackie and Kamrath Architects.

Dear Editor: Why such a photograph in your magazine? It oozes, juts, is hacked to fit; it drips down, is caught up and tacked on, and all in the best or worst real estate construction manner. In other words this is a perfect example of specifying that all materials shall be "cut to suit, beat to fit, and painted to match."

G. MILTON SMALL
Raleigh, N. C.

P/A STANDARD

Dear Editor: Your high standard of presentation of interesting examples in contemporary architecture has made your magazine increasingly satisfying.

It is particularly gratifying to find the photographs and graphic material reproduced large enough to convey the character of the building as well as of the details of construction and textures.

ALBERT FREY
Palm Springs, Calif.

TO ARCHITECT'S WIFE

Dear Mrs. Architect: About getting paid for your work (October issue) listen:

"I never send a bill to a gentleman."

"Suppose he doesn't pay."

"Oh, then I decide he's no gentleman."

This is, of course, not original. Also not new. When and where I read it I don't know.

ROBERT MILLER
Honolulu, Hawaii

FIREPLACE THEORY

Dear Editor: For years I have been bothered by a minor point in fireplace construction but have never been energetic enough to seek an answer. Namely, why are raised hearths used?

Now that they have been dignified by inclusion in a page of selected details in **P/A**, my curiosity has come to a head. Perhaps others in the building design field are similarly bothered.

I assume that the fireplace is used as a source of heat during certain periods of the year when it does not seem necessary to turn on the central heat. The radiant heat from the open fire travels in straight lines. Warming the feet seems a most desirable part of the activity. Most of the heat radiated from a log fire issues at somewhat above a horizontal line.

Raising the hearth even the thickness of a single brick tends to defeat this purpose of heating the feet. Now I find the **P/A** drawings showing hearths up to two feet off the floor.

Is the raised hearth just a bit of smart looking design that ignores the practical heating effects or have I overlooked some factor?

The Scandinavian corner fireplaces take full advantage of the wide angle radiation effect. Twenty-five years ago, Ernest Flagg spread the horizontal radiating angle to almost 180 degrees with his bronze hooded fireplaces. I built several and they really did a fine job. Now I find the logs in the Edward D. Stone fireplace huddled in a deep cave where the angle of horizontal radition is not much over ninety degrees and the heat barely reaches below one's neck.

May I suggest that the basic heating philosophy involved be brought forward for discussion?

MILTON WEND
North Sandwich, N. H.

MORE ROUND-ROBINS

Dear Editor: The round robin critique analyses are fun to read, while stimulating the critical sense of the reader. That is exactly what a critique should be. You have found a very successful way of "bringing out the design problem and the value of the solution." I would enjoy seeing more of them.

MARGARET B. GEDDES
Chairman
Committee on Public Information
Rhode Island Chapter A.I.A.

LETTERS TO THE SCHOOLMASTER

Readers of "Out of School," the P/A column conducted by Carl Feiss, raise some questions provocative of further discussion.

Dear Mr. Feiss: Enclosed with this letter is a first copy of our recently published news sheet, *Aspect*, the architecture student news of Australia and New Zealand.*

I have been very impressed by your articles in **P/A**, mainly because every one of the problems you discuss is equally applicable to architectural education in Australia. I have long considered these problems to be vital and yet no one seems to be doing anything about it. For this reason, the first issue of *Aspect* was born. We were hard up for time, money, and previous experience and so the result has brought us only the desire to produce a second issue which will be bigger and better in both content and layout, for we now have more time, more money, and more experience.

Examinations and the summer vacation are approaching, and the second issue is due in the second week of March, 1951. After that it is hoped to make *Aspect* a monthly publication. Our circulation is at present about 1000 copies . . . there are about 1000 students in Australian and New Zealand Architectural Schools.

There is, as yet, no independent, specialized architectural publication in

(Continued on page 10)

*Aspect, *Architecture Faculty Bureau, University of Sidney, Australia.*

p/a VIEWS

(Continued from page 9)

Australia or New Zealand. However, English and American magazines circulate widely and have a large influence, especially on the students. It seems logical that a group of students or young architects should create a truly Australian magazine and this is my aim.

I am considering featuring a symposium on a different subject in each issue . . . a critical review of some aspect of architecture, which opinions by professors, professionals, students, and of course the Man in the Street. I have been inspired by P/A Round Robins.

Subjects under this consideration are:
(1) "The FILM and the architectural syntheses of sight, sound, time and space, that it necessitates."
(2) "The architectural consequences of TELEVISION."
(3) "The place of MODELING, i.e. tangible three-dimensional work, in architectural education."
(4) "The possibilities in the idea of schools in professional practice."
(5) "The doom of private practice and private property."

In the first, my line of approach is that the film is to our present age what the mosaic was to the Byzantine; and, after an assessment of cinema achievements, to discuss new forms and new possible directions of progress.

The second is a subject that will constitute a crisis in this country in a few years time, as television here, is as yet, only a side-show exhibit at fairs. We have heard of the disasters that uncontrolled Video has brought to America and I think that a published discussion of the problem might have some influence in Australia, especially if the warning and the progressive attitude were stated before the new wonder arrived. What is yet to be discovered is the future relationship of the film and television. Has the film a future? In what limits will it be active? Any first hand opinions that you could give from the U.S.A. would be much appreciated.

Speaking from personal experience, model making has given me a grasp of reality and an awareness of space that is never available completely from a two dimensional drawing. However, most teachers, trained under the B.A.I.D., are scornful, and most everybody lacks understanding of the proper place of three-dimensional work in a school of design in Australia.

In conclusion, sir, we would appreciate being put in touch with any architectural students organization in the U.S. and also would like to receive any student publications that you know of. An excellent magazine, *Plan*, by the Architectural Students' Association of Great Britain is on sale here, but I have seen nothing from America.

OUT OF SCHOOL has given leadership for which I, for one, am grateful; it is only to be hoped that this leadership will continue and will expand its influence.

GEORGE CLARKE
Acting Director, A.F.B.
U of S, Aus.

Dear Mr. Clark: *I was highly complimented to receive your fine letter of September 30 and the interesting enclosure of* The Architecture Student News.

It is with very real pleasure that I find that my articles in P/A *have such a far-flung and distinguished audience. I had hardly thought that the problems of architecture and planning education could be so universal.*

I must admit, however, that I was somewhat puzzled by the listing of sub-

(Continued on page 12)

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It's a very sound idea to get acquainted with your Sylvania representative. He will save your time in designing and detailing when some "toughie" of a problem raises its ugly head and slows up drawings. That goes for any type building—new or old. Sylvania engineers have worked out lamps, fixtures, and installation methods that go together to furnish exactly the right light for seeing, decorative, or general lighting. Their specialized knowledge is yours for the asking.

Doug Graf

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p/a VIEWS

(Continued from page 10)

jects which you are considering in terms of their emphasis or importance. However, you know your audience better than I. While in an early **P/A** *article I gave some stress to radio, I intend to mention from time to time the other visual education (?) material.*

However, I do believe that there may be other things of perhaps greater significance to architecture. I should not presume to judge. It may be that this is a way in which you can attract sufficient attention to enable you to delve into weightier subjects at a later date. I am not certain that I understand Item Five in your letter. CARL FEISS

NOTICES

NEW FELLOWSHIP

The Department of Architecture of Yale University has announced the creation and initial award of a fellowship designed to stimulate interest in hospital planning. The new award, the Magnus P. Hopper Memorial Fellowship in Hospital Architecture, was established by friends in recognition of Dr. Hopper's long and distinguished medical career.

The first recipient of the Fellowship is Chia-Yi Jen, of Tientsin, China. Mr. Jen, who received his B.S. degree from Kung Shang University in China, expects to receive his Master of Architecture degree from Yale in 1951.

Hopper Fellows will be selected on the basis of a hospital design problem assigned as a competition for advanced students in the Department of Architecture. During his Fellowship year the recipient will devote himself to the study of hospital design, the examination of existing examples and the preparation of a design thesis.

CONVENTION

The Seventh Annual Convention and Exposition of the National Association of Home Builders will open in Chicago, January 21.

Dates of the conclave were advanced from February to January this year. The fact that all available exhibit space in both the Congress and Stevens hotels was sold out in mid-October, plus a heavy advance registration, indicates almost unanimous approval of the earlier dates among exhibitors, builders, and allied interests.

INFORMATION WANTED

The A.I.A. Committee on Architecture and Nuclear Science requires information regarding architects who have designed or completed projects involving facilities for the use of radio-active materials, also the names of Architects who have worked on projects of the Atomic Energy Commission.

The Committee, in collaboration with the A.E.C. and other technical groups, is compiling useful information for the architectural profession on the design of laboratory and science-teaching buildings, laboratory facilities in hospitals, in industrial plants and other kinds of projects requiring facilities and precautions for the handling of the products of nuclear fission.

Information provided to the Committee should include a brief description of the projects, the special purposes of the buildings and related problems, such as housing for experimental animals, etc.

Communications should be addressed to Committee Chairman Thomas K. Fitz Patrick, Iowa State College, Ames, Iowa, with copy to the Dept. of Education and Research, The Octagon, 1741 New York Ave., N.W., Washington 6, D. C.

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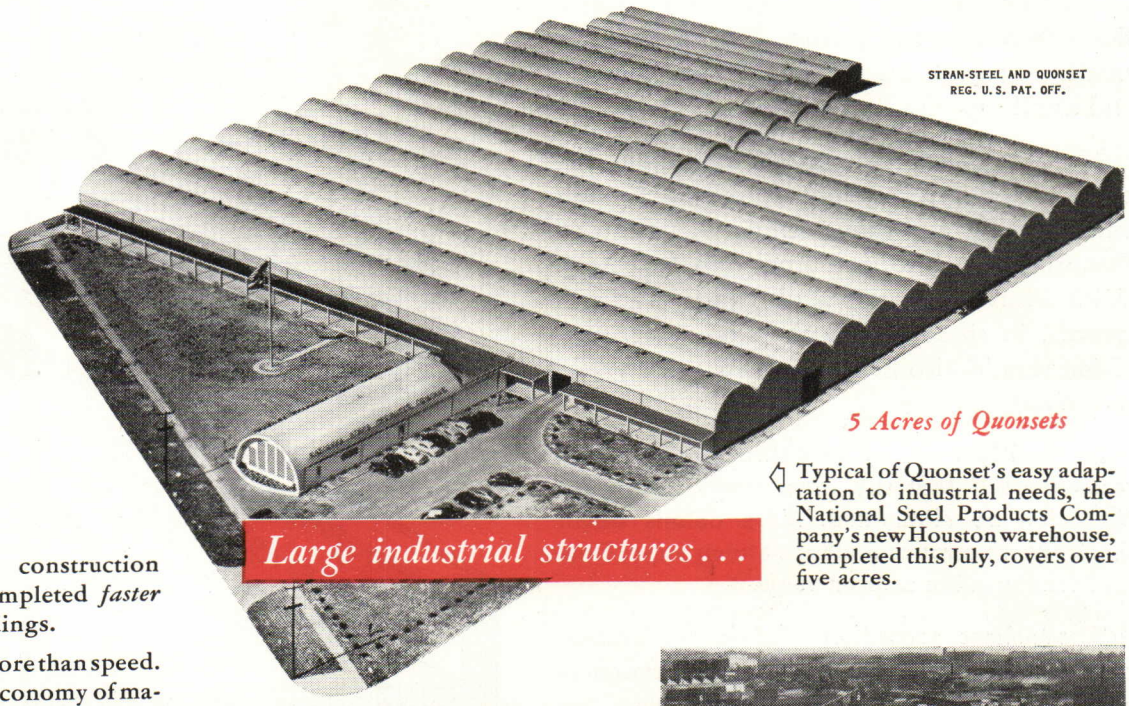

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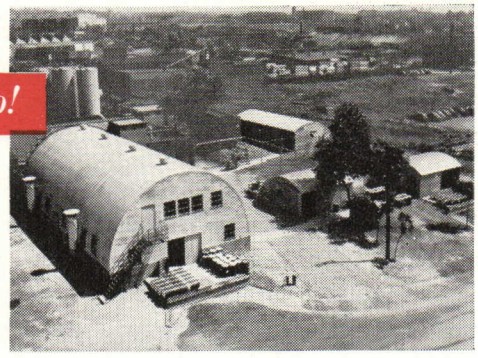
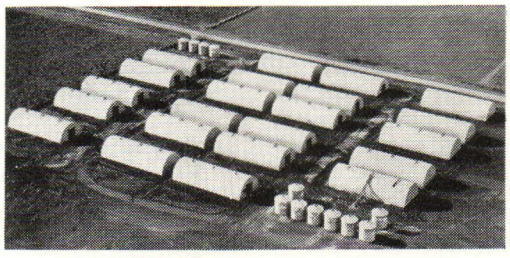
Stran-Steel Division • Ecorse, Detroit 29, Mich.

. . . and smaller ones, too!



The Arco Company, producer of industrial paint, needed maximum fire safety for its lacquer manufacturing division at Cleveland. It chose Quonset buildings, centering production in the Quonset 40x80 in foreground. Nitrocellulose and other combustibles are stored in nearby smaller Quonsets.



An example of Quonset speed

88,000 SQUARE FEET OF STORAGE SPACE COMPLETELY BUILT IN ONLY 45 DAYS —This grain storage depot at Beresford, S.D., was part of last fall's Department of Agriculture program. More than 2,500 Quonsets were erected at 803 different midwestern locations, providing storage space for over 80 million bushels.

NATIONAL STEEL CORPORATION

NEVER Ventilate a Ceiling or Wall Space to the Inside...

If you do, the better the insulation, the worse will be the condensation; for the colder the air in the space between insulation and roof, or walls, the less vapor can it support.

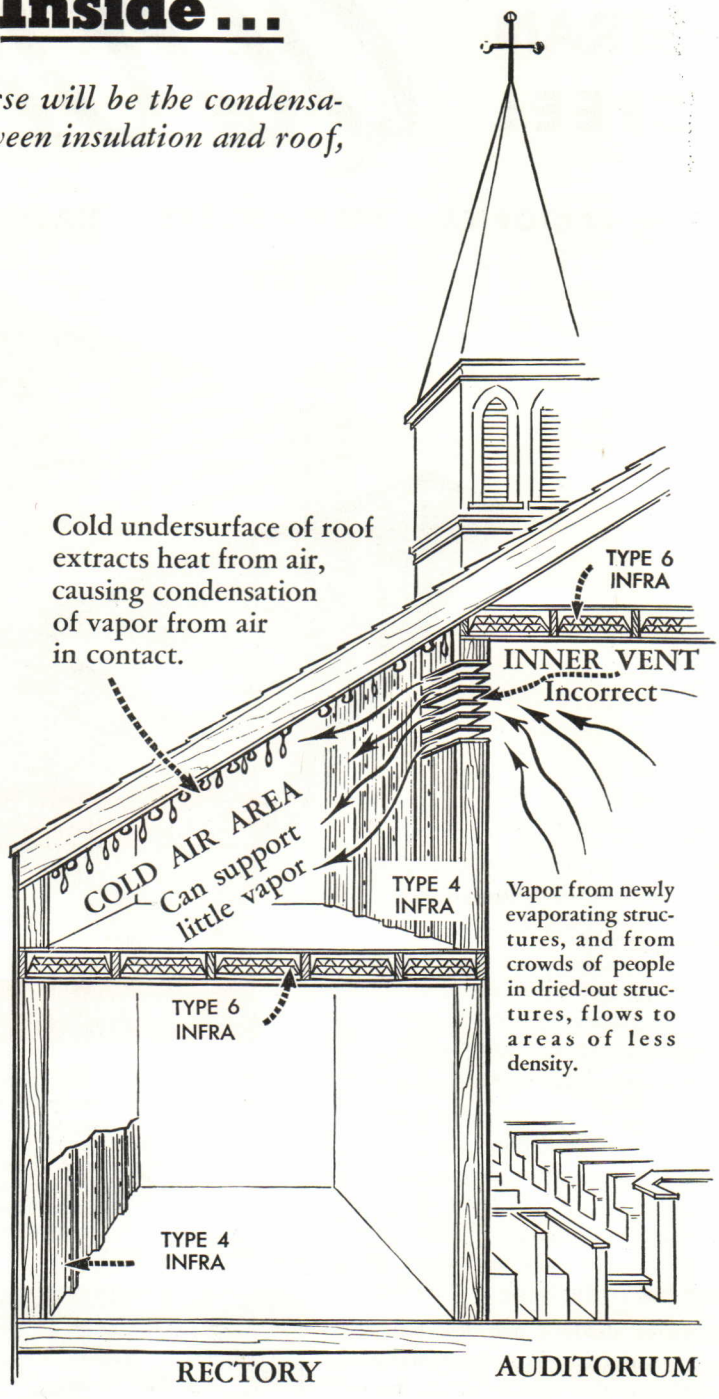
In new construction, thousands of tons of cement and plaster are evaporating. Vapor flows from areas of greater density into this small, cold space, an area of less vapor density and small capacity.

Multiple sheets of accordion aluminum, because impervious to vapor, force out through exterior walls and roofs, ordinary amounts of fortuitous vapor formed from rain leaks, etc. With unusual amounts of vapor, as from crowds, in theatres, schools, stores, etc. provision should also be made to vent this vapor to the *outside.*

In the illustration, an actual case, it was recommended that the inner vents above the insulation be eliminated. More details about this frequent error and other data on vapor flow and condensation sent on request.

Three-sheet accordion aluminum, permanently separated by fiber partitions, is commercially available as Type 6 Infra, and costs less than 9¢ sq. ft., material with labor, installed between wood joists in new construction.

Get valuable FREE copy of new, revised "Simplified Physics of Vapor and Thermal Insulation," authoritative, simply written 44-page manual. Covers heat and vapor flow, condensation, radiant heating, radiation, convection and conduction. Tells how to test insulations yourself and experiment with heat flow. Contains chart of *k*, C, R, and U factors of all insulations, of all thicknesses, weights, densities.



THERMAL FACTORS, TYPE 6 INFRA

Down-Heat C.044, R22.72 equals 7½" DRY Rockwool
Up-Heat C.080, R12.50 equals 4" DRY Rockwool
Wall-Heat C.073, R13.69 equals 4½" DRY Rockwool

VAPOR PERMEABILITY equals ZERO

INFRA INSULATION, INC.
10 Murray Street New York, N. Y.
Telephone: COrtlandt 7-3833

INFRA INSULATION, INC.
10 Murray Street, New York, N.Y. Dept. P 12
Please send "Simplified Physics of Vapor and Thermal Insulation."

Name_____

Firm_____

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☐ Send Prices of Infra Insulations ☐ Send Sample

MANUFACTURERS' LITERATURE

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

AIR AND TEMPERATURE CONTROL

★ **1-64. Standard Code for Testing and Rating Steam Unit Heaters,** AIA 30-D-11 (Bulletin 10), 20-p. booklet providing definitions, description of apparatus required, method for testing unit heaters, formulae required, instructions for computation of results and rating to standard basis of comparison by graphic methods; code is applicable to both propeller fan type and to blower fan type of unit heaters. Industrial Heater Assn.

Two 4-p. illus. bulletins, one on utility furnaces, the other on gravity furnaces, both either gas- or oil-fired. Specifications, general information, photos. Morrison Steel Products, Inc.:

1-65. Utility Series Pressed Steel Furnace (50-9-A)

1-66. Pressed Steel Gravity Furnaces (50-8-A)

1-67. Pacific Steel Boilers, AIA 30-C-1 (Cat. AP 237-B), 50-p. illus. catalog showing complete line of boilers for heating homes, commercial and industrial buildings. Detailed engineering data, diagrams, miscellany, index. U. S. Radiator Corp., Pacific Steel Boiler Div.

CONSTRUCTION

3-52. Atlas Corrosion-Proof Cements (5-1), 8-p. illus. bulletin on resin, sulfur, silicate, and asphaltic cements for jointing of ceramic materials, and providing corrosion-proof mortar for every application. Working and hardening time, resistance to chemicals and other corrosives, tensile strength, photos, charts. Atlas Mineral Products Co.

3-53. Timber for Military, Commercial and Industrial Buildings, 19-p. illus. booklet presenting wide range of timber structures employing wedge-fitted, split-ring connector system, as well as glued-laminated timber and lamella construction. Photos. Timber Engineering Co.

DOORS AND WINDOWS

4-72. Tubular Sets, 6-p. catalog illustrating exterior and interior door handle sets featuring key in outer knob and push button locking in inner knob. Styles, operation, specifications. Safe Padlock and Hardware Co.

4-73. Wascolite, 4-p. illus. folder on prefab, Plexiglas dome skylight units ready for roof installation in commercial and industrial structures. Advantages, specifications, standard sizes and dimensions, photos. Wasco Flashing Co.

ELECTRICAL EQUIPMENT, LIGHTING

5-49. Fluorescent Luminaire, AIA 31-F-2 (SEC. 2G), 12-p. illus. bulletin describing various types of semi-direct fluorescent fixtures for use with general and slimline lamps, in 4, 6, and 8 ft. lengths; units may be combined in almost unlimited ceiling patterns by means of "patternizer fitting," a standard 3″ channel section designed to connect standard channels at 90° for continuous row wiring. Construction, finish, installation data, auxiliaries, coefficients of utilization. Miller Co.

5-50. Powerstat Variable Transformers (P-550), 16-p. catalog on equipment for variable a-c voltage control. Types, operation, ratings, engineering data, diagrams. Superior Electric Co.

FINISHERS AND PROTECTORS

6-17. 3M Adhesives, Coatings and Sealers (Z-ADB), 32-p. booklet listing properties and uses of industrial adhesives, coatings, and sealers. Application photos, table of contents. Minnesota Mining & Mfg. Co.

6-18. X-Pyron, 4-p. illus. folder describing fire-protective coating for protection of walls, ceiling, floors, doors, and all interior surfaces against spread of fire. Advantages, method of application, general information. Nopyron Corp.

INTERIOR FURNISHINGS

9-35. Erickson Fold-A-Way Tables, AIA 35-C, 4-p. folder illustrating both portable and wall-attached folding table-and-bench units for quick conversion into cafeteria of any area, including gyms, classrooms, corridors, etc. Advantages, specifications. Haldeman-Langford.

SANITATION, WATER SUPPLY, DRAINAGE

19-92. The Salvajector, AIA 29-H-7, 4-p. folder on garbage disposal unit for use in hotels, restaurants, and institutional kitchens; machine, driven by especially built electric motor, scrapes and pre-washes dishes, disposes of waste food, all in one operation. Advantages, installation data, specifications. The Salvajor Co.

SPECIALIZED EQUIPMENT

19-93. Fire Protection Equipment, 12-p. illus. booklet describing several styles of fire hose units and cabinets, combination pressure reducing and angle valves, standpipe and hydrant units, fog and all-purpose nozzles. Construction and other data. Elkhart Brass Mfg. Co.

19-94. Metal Cabinetwork for Hospitals, AIA 35K (510-007), 4-p. illus. brochure. Display of stainless steel cabinets, cases, counters, sinks, lockers, and shelving in stock designs. Construction data, photos. Herring-Hall-Marvin Safe Co.

SURFACING MATERIALS

19-95. Masonite Hardboards, 24-p. illus. booklet on use and application of various types of hardboard made from processed wood fiber felted and pressed into panel form. Physical properties, specifications for interior and exterior finish, method of application, advantages and economies. Masonite Corp.

(To obtain literature coupon must be used by 2/1/51)

PROGRESSIVE ARCHITECTURE, 330 West 42nd Street, New York 18, N. Y.
I should like a copy of each piece of Manufacturers' Literature circled below.
We request students to send their inquiries directly to the manufacturers.

1-64 1-65 1-66 1-67 3-52 3-53 4-72 4-73

5-49 5-50 6-17 6-18 9-35 19-92 19-93 19-94

19-95

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Position

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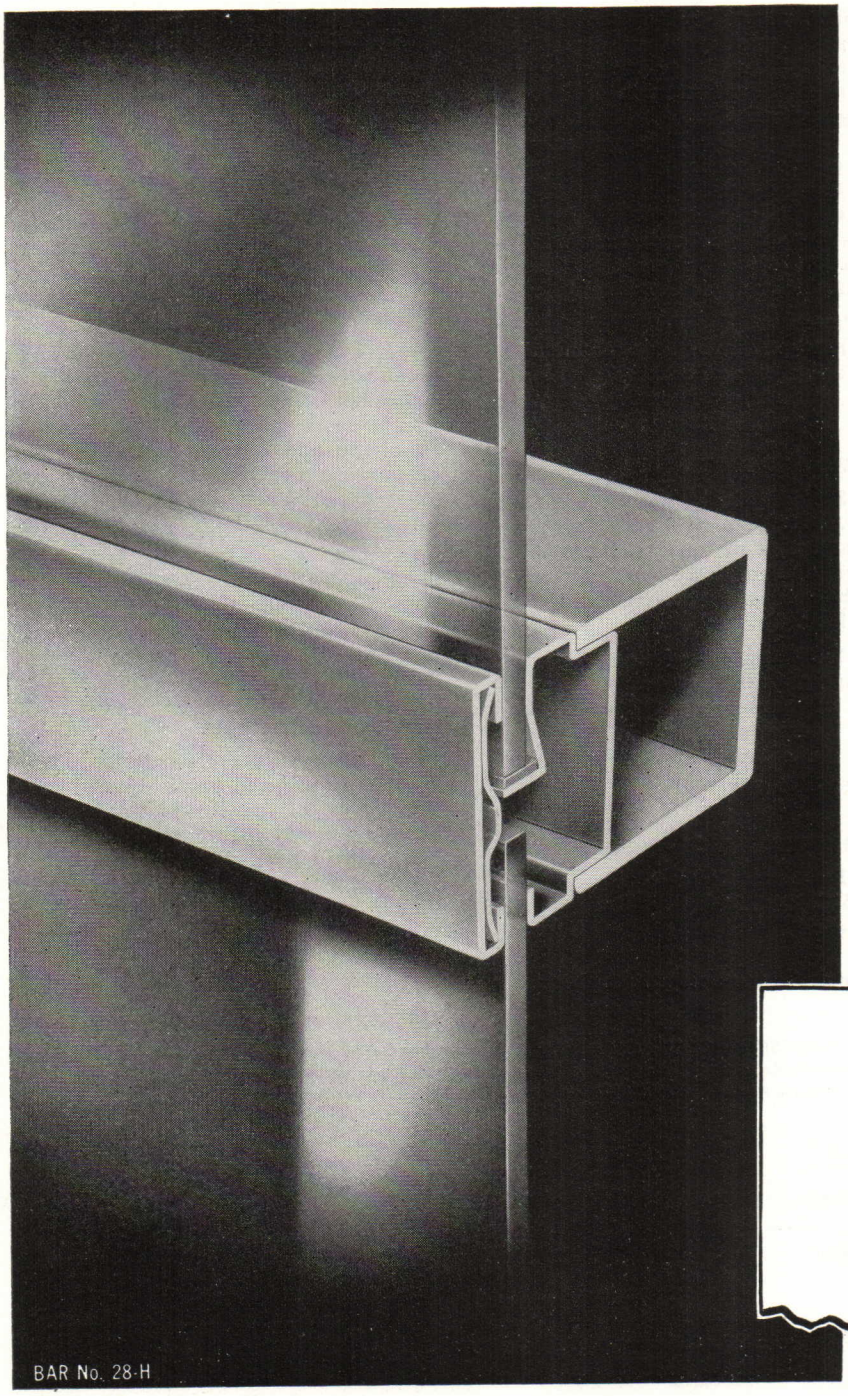
PLEASE PRINT 12/50

New Versatile Division Bar

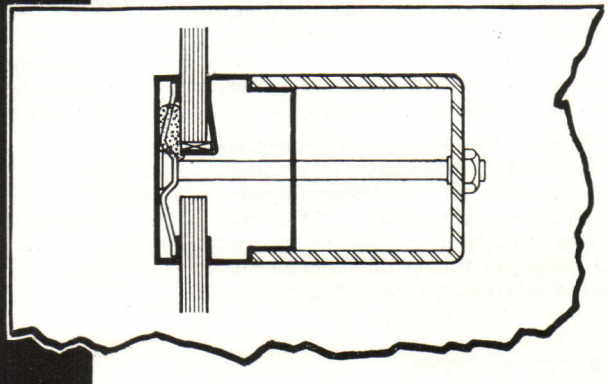
IN PITTCO PREMIER STORE FRONT METAL



● This new Pittco Premier Division Bar (No. 28 H or V) will simplify design and construction on jobs where large areas of Plate Glass must be subdivided. Two features make it extremely practical. An interchangeable spring member permits this new bar to be used both horizontally and vertically. And skillful design has achieved unrivalled simplicity of structure and of installation. At intersections, a concealed fastening locks cross members together securely. Because of the bar's construction, mitering is unnecessary.

Division Bar No. 28 has a shallow profile and plain face, making it suitable for use in a wide variety of store front designs. It is extruded to give it maximum strength, yet it is not large and heavy. The extruded method of production assures a finish rich in tone and gloss.

The production of this versatile division bar is a result of Pittsburgh research . . . aimed to help solve architectural and building problems encountered in the field.



PITTCO STORE FRONT METAL

PAINTS · GLASS · CHEMICALS · BRUSHES · PLASTICS

PITTSBURGH PLATE GLASS COMPANY

folks who get paid off," he said.

ourselves of greed and bias and harmful error."

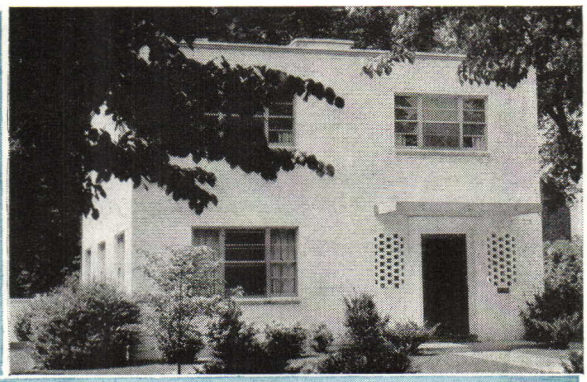
Owners Vie for Tenants With Latest in Building

MINNEAPOLIS, MINN.—Multiple housing rental operators are commencing to discover that special inducements are becoming increasingly necessary in attracting desirable tenants into their folds. Evidence of the keener competition which prevails in many areas today, is indicated by the offers from management, of such attractions as automatic dishwashers, automatic garbage disposal units, individual apartment heat control, community playgrounds, television outlets, etc. As a result, prospective tenants are selecting their new abodes wisely, shopping with purposeful determination until they find the apartment that offers them the most for their money in the way of comfort and convenience.

Of all the features available to the modern apartment building, today, PHC (Personalized Heating Control) probably offers the owner the greatest value for his money. Because Honeywell's Personalized Heating Control permits each tenant family to govern its own temperature requirements, individually, there's no need to fire the heating plant to capacity just to satisfy a few occupants. One apartment is never too cold, another too hot. As a result substantial fuel savings are assured . . . an important item to the person who pays the bills.

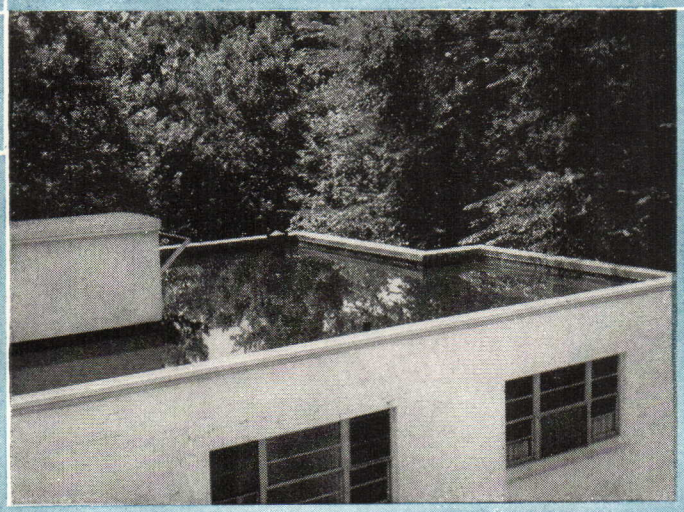
Two groups probably would fight against a free press guar-

Cooled by Water...



ROOF SPECIFICATIONS BY

Ruberoid



ARCHITECT: John Carroll Dunn, Baltimore, Md.
BUILDER: C. K. Wells, Jr. Associates, Inc., Baltimore, Md.
ROOFING CONTRACTOR: Lloyd E. Mitchell Co., Baltimore, Md.

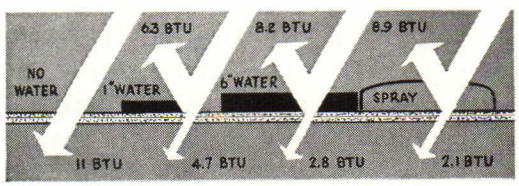
That's the story of this roof in a nutshell. C. K. Wells, Jr., of Baltimore, Md., wanted a roof that would more actively help in cooling his home on those long, hot summer days and nights. Being an experienced builder himself, he knew that he could put his confidence in a Ruberoid specification for a water-cooled roof.

While this is an interesting residential application, water-cooled roofs are even more desirable on industrial and commercial buildings to lessen the load on air cooling equipment.

Architects know that a dry roof on a hot summer day has a heat flow factor of 11 BTU's per hour per square foot. The heat flow factor is reduced to 4.7 BTU's when that same roof has 1 inch of water covering it. The possibility of making the roof a breeding ground for mosquitoes or fungi can be eliminated by placing a small bag of rock salt at or near the water intake.

Here is just one more example of how Ruberoid Built-Up Roof Specifications can be adapted to meet every roofing problem. And this water-cooled roof is a decided plus factor in offering better value to your clients. It is relatively inexpensive and is adaptable to many types of buildings.

The relative cooling effect of a roof pool is graphically demonstrated in this diagram. The pool depends primarily upon reflection for effectiveness. Based on controlled scientific tests, the chart shows that water in any form is an excellent barrier to solar radiation.



You're bound to find Ruberoid Roof Specifications helpful in planning more efficient roofs no matter what type of building is on the boards. If you're not acquainted with Ruberoid Roof Specifications, you can get copies from the nearest Ruberoid Sales Office or your local Ruberoid Approved Roofer.

The RUBEROID Co. **built-up roofings**

Building Materials for Industry, Home and Farm • Executive Offices: 500 Fifth Ave., New York 18, N. Y.

THE RIGHT ROOF FOR ANY JOB — FROM ONE SOURCE!
Ruberoid makes every type of built-up roof—Smooth Surfaced Asbestos, Coal Tar Pitch with gravel or slag surfacing, and smooth or gravel-and-slag surfaced Asphalt . . . in specifications to meet any need. Ruberoid Approved Roofers are not prejudiced in favor of any one type. You are assured of centralized responsibility, smoother operation, uniform quality with Ruberoid built-up roofings.

Sales Offices: Baltimore, Md., Bound Brook, N. J., Chicago, Ill., Dallas, Tex., Erie, Pa., Millis, Mass., Minneapolis, Minn., Mobile, Ala.

ANNOUNCING

Otis

free-flow

ESCALATORS

A MORE LUXURIOUS WAY OF MOVING MORE PEOPLE

at a surprisingly low price*

The new Otis *free-flow* Escalator extends the spaciousness of free-flow sales aisles to vertical transportation. Shoppers ride side-by-side as casually as they walk along a sales aisle. Without waiting, crowding, effort. It's a more luxurious way of attracting more street-level shoppers to upper floors and basements—*at a surprisingly low price.**

IN DEPARTMENT STORES. The new Otis *free-flow* Escalator is really an inclined sales aisle. Shoppers look around comfortably as they ride . . . locate sales items faster . . . see bargains they might otherwise have missed . . . make more impulse purchases—*because merchandise that can be seen can be sold!*

IN TRANSPORTATION TERMINALS. The new Otis *free-flow* Escalator is a good-will builder. It moves masses of people quickly from one level to another without crowding. Travelers are grateful. It eliminates delays and the physical effort of walking and carrying baggage upstairs.

IN COMMERCIAL BUILDINGS. The new Otis *free-flow* Escalator is an income-builder. It gives 2nd floor locations street-level accessibility. Either from the lobby or direct from the sidewalk. It opens up large-area 2nd floor rentals to banks and heavy-traffic retail stores.

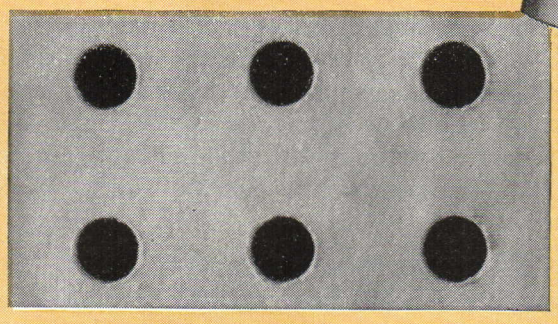
Details? The new Otis *free-flow* Escalator has a 48″ riding width and a traffic capacity of 8,000 riders an hour. In addition, it has all the proven design features of Otis' amazingly successful 32″ wide escalator which it complements—*as any of our 263 offices will gladly explain!* Otis will also be glad to make traffic studies and assist in developing complete vertical transportation systems—without obligation. Otis Elevator Company, 260 11th Avenue, New York 1, N. Y.

*Lower Than Prewar

One of 5 SOUND Reasons Why Simpson Acoustical Tile is SUPERIOR

The Hollokore Drill Makes the DIFFERENCE

Enlarged cross-section drawing of a HOLLOKORE drill which makes the clean round holes in Simpson Acoustical Tile.



Unretouched photo showing small portion of the surface of Simpson quality Acoustical Tile. Clean, round HOLLOKORE-drilled perforations show no fuzzy edges or loose fibers.

Simpson research developed the exclusive HOLLOKORE drilling process . . . a process which makes possible clean, round perforations with no loose fibers to encourage unsightly paint bridging when refinishing. HOLLOKORE drilling reduces maintenance costs . . . contributes to the appearance and efficiency of the material. Simpson Acoustical Tile can be painted repeatedly without impairing its acoustical efficiency and beauty.

ONLY SIMPSON HAS ALL 5

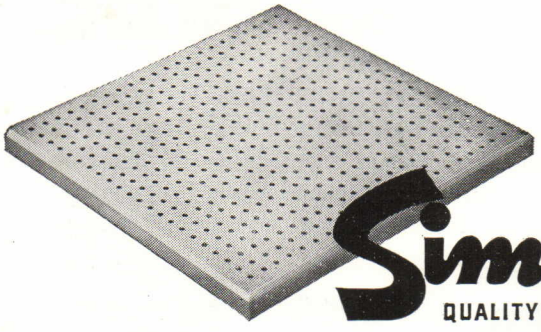
3 HOLLOKORE DRILLED PERFORATIONS

2 HIGHER SOUND ABSORPTION

4 FINISHED BEVELS

1 WASHABLE FINISH

5 MORE BEAUTIFUL & EFFICIENT



FOR BETTER SOUND CONDITIONING

Simpson QUALITY SINCE 1895

ACOUSTICAL TILE

Simpson Logging Company, Sales Division, 1065 Stuart Bldg., Seattle, Washington

THESE SIMPSON ACOUSTICAL CONTRACTORS OFFER YOU A COMPLETE ACOUSTICAL SERVICE

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ILLINOIS
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KANSAS
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MISSOURI
Kelley Asbestos Products Company, Kansas City
Hamilton Company, Inc., St. Louis

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EVERY ADLAKE ALUMINUM WINDOW GIVES YOU THESE "PLUS" FEATURES:

- Minimum Air Infiltration
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- Ease of Installation

Georgia Baptist Hospital, Atlanta, Ga. Architects: Stevens and Wilkinson, Inc. Contractor: Henry C. Beck Co.

For Georgia Baptist Hospital, It's ADLAKE . . .

The Weatherproof Windows That Pay for Themselves!

YES, the ADLAKE ALUMINUM WINDOWS in handsome Georgia Baptist Hospital form a perfect weather seal against air infiltration—and ultimately they will *pay for themselves* by eliminating all maintenance costs except routine washing! And what's more, they'll last as long as the hospital itself!

QUALITY APPROVED

A.W.M.A. Quality Specifications—Materials, Construction, Strength of sections and Air infiltration requirements—confirmed by Pittsburgh Testing Laboratory
MEMBER—ALUMINUM WINDOW MANUFACTURERS ASSOCIATION

In a test conducted by an independent research organization, an ADLAKE ALUMINUM WINDOW was opened and closed *one-million times* —and after the millionth opening still moved as easily, and fitted as snugly, as it did before its test! Only ADLAKE WINDOWS offer the combination of woven-pile weather stripping and patented serrated guides that assures minimum air infiltration and absolute finger-tip control. They keep their smart, modern good looks and easy operation for the life of the building.

Find out how ADLAKE WINDOWS can save you *money!* For full information, drop a card to The Adams & Westlake Company, 1103 N. Michigan, Elkhart, Indiana. No obligation, of course.

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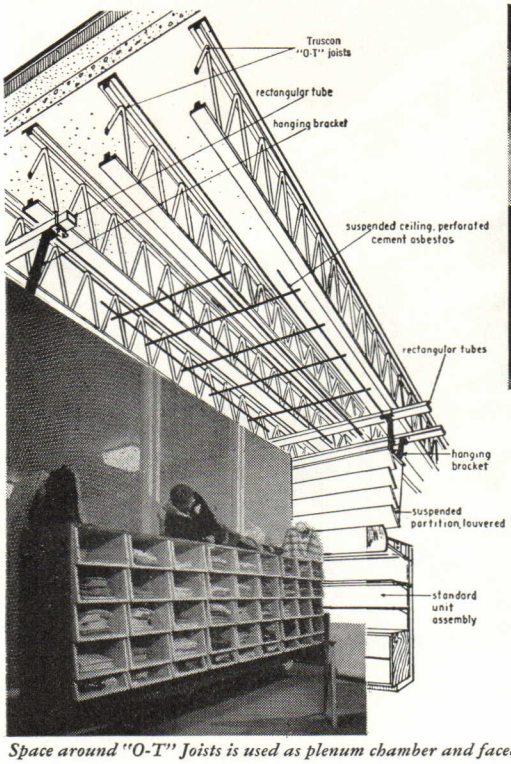
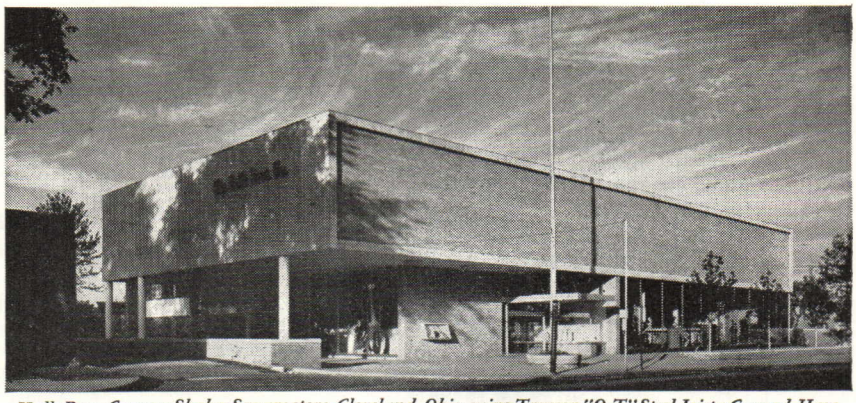
TRUSCON
MARK OF MERIT PRODUCTS

TRUSCON "O-T" Open Truss STEEL JOISTS

multiple purpose...

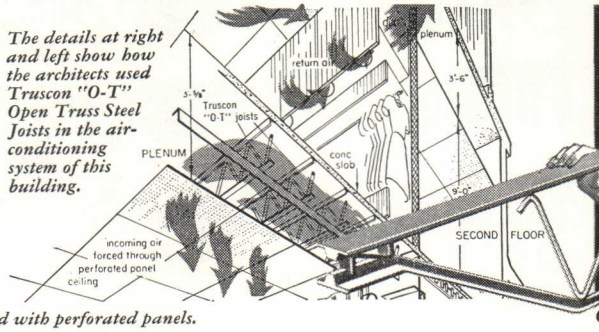


Space around "O-T" Joists is used as plenum chamber and faced with perforated panels.



Halle Bros. Co. new Shaker Square store, Cleveland, Ohio, using Truscon "O-T" Steel Joists. Conrad, Hays, Simpson & Ruth, and Robert A. Little, Architects. Cleveland Construction Company, General Contractor

The details at right and left show how the architects used Truscon "O-T" Open Truss Steel Joists in the air-conditioning system of this building.



One man handles "O-T" Joists.

for multiple economies

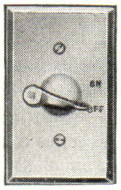
These strong, light joists are adaptable to all types of building construction . . . office buildings, industrial structures, schools, hospitals, apartments, residences, stores . . . bringing eight outstanding advantages to these structures. LIGHT WEIGHT permits quick, convenient handling and placement. ECONOMICAL through savings in supporting framework and foundations; speed of erection; insurance; maintenance. PIPE AND CONDUIT easily installed through open web. FIRE-RESISTANT because built of incombustible materials. VERMIN RESISTANT because steel is impregnable to insect and animal life. RADIANT HEATING possible through unobstructed flow of heat. SOUND-RESISTANT through dead air space and built-up materials. ALL-WEATHER CONSTRUCTION because these joists are not dependent on setting concrete. FACTORY-MARKED to fit construction plans. Write for free illustrated literature.

FREE Book on Truscon "O-T" Steel Joists. Write for it. The Truscon Steel Company Manufactures a Complete Line of Steel Windows and Mechanical Operators . . . Steel Joists . . . Metal Lath . . . Steel-deck Roofs . . . Reinforcing Steel . . . Industrial and Hangar Steel Doors . . . Bank Vault Reinforcing . . . Radio Towers . . . Bridge Floors.

TRUSCON STEEL COMPANY
Subsidiary of Republic Steel Corporation
YOUNGSTOWN 1, OHIO
Warehouses and sales offices in principal cities

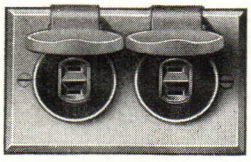
Practical Ideas

FOR ELECTRICAL CONVENIENCE OUTDOORS



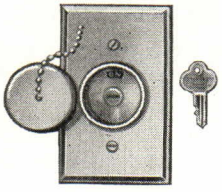
WEATHERPROOF SWITCHES

Flush, neat, inexpensive weatherproof devices. No part of mechanism is exposed to weather. Weatherproof mat fits under cover. Single and multiple types available in varied styles.



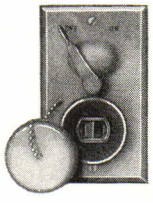
DUPLEX LID RECEPTACLES

Lids automatically close opening when plug is withdrawn, protecting contacts from weather at all times.



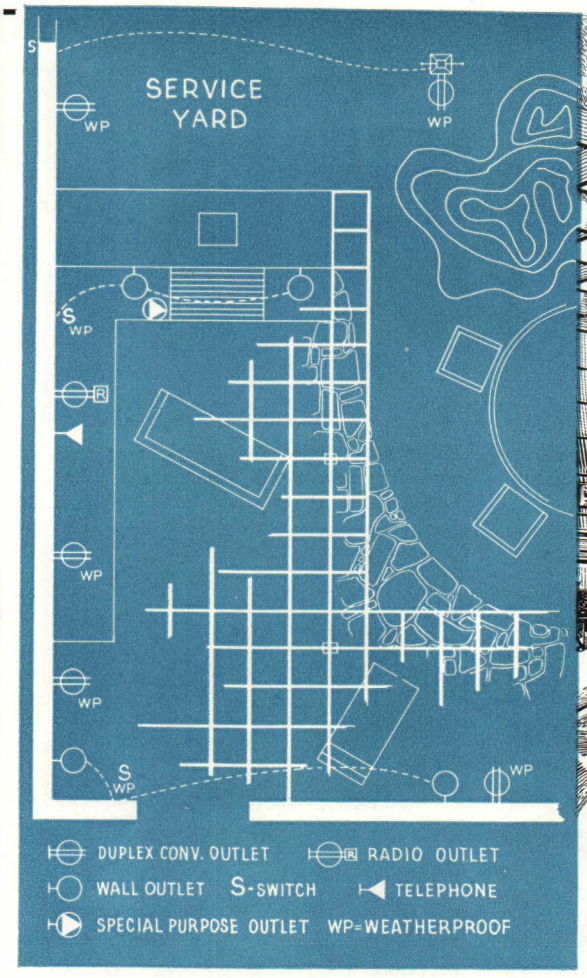
WEATHERPROOF LOCK SWITCHES

Prevent tampering with switch controls exposed to weather. Afford complete protection to mechanisms.



1-GANG COMBINATION SWITCH-RECEPTACLE

provides switch control for overhead lights and convenient electrical connection for lamps or appliances.



BE SURE OUTDOOR CONVENIENCE

is Specified, Installed, Enjoyed

CARRY OUT YOUR PLANS WITH H & H WIRING DEVICES

See to it that what you ***specify*** in the way of electrical convenience is ***installed*** and ***enjoyed!*** Follow through with the contractor and the homeowner to make sure they include plenty of wiring devices in **every** room, and outdoors, too. Wiring devices cost little at the outset, more to add later on. The H & H catalog includes everything in the standard wiring device line, plus many new and unique items. Plan to investigate the complete line today.

Branch Offices: Boston, Chicago, Dallas, Denver, Detroit, Los Angeles, New York, Philadelphia, San Francisco, Syracuse — In Canada: Arrow-Hart & Hegeman (Canada) Ltd., Mt. Dennis, Toronto

For more information, write today to: 2312 Laurel Street, Hartford 6, Connecticut. "Electrical Planning In The Home" booklet, chock full of ideas, sent on request.

QUALITY-MINDED ARCHITECTS SPECIFY

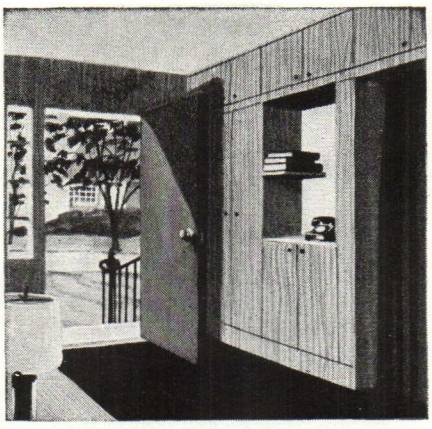
WIRING DEVICES

HART H & H HEGEMAN DIVISION

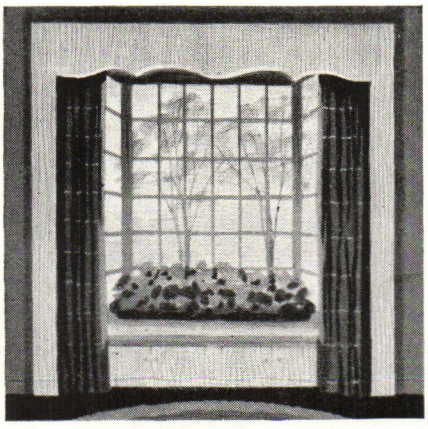
ENCLOSED SWITCHES

THE ARROW-HART & HEGEMAN ELECTRIC COMPANY
HARTFORD, CONNECTICUT

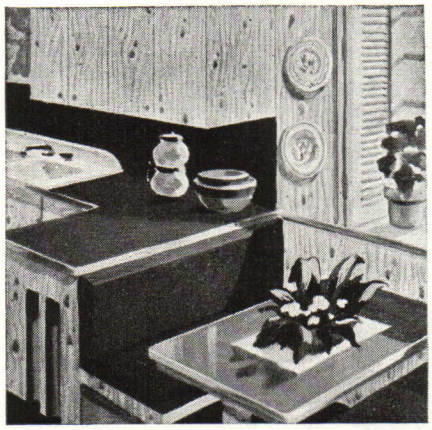
Half-High Storage Wall gives your clients the ideal division between living and dining sections in small homes.



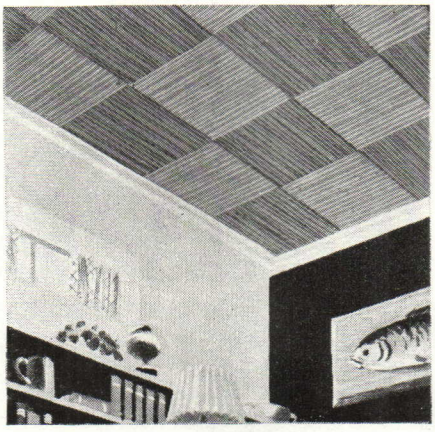
Dress up your client's Foyer to create a good first impression. Weldwood paneling here adds real luxury.



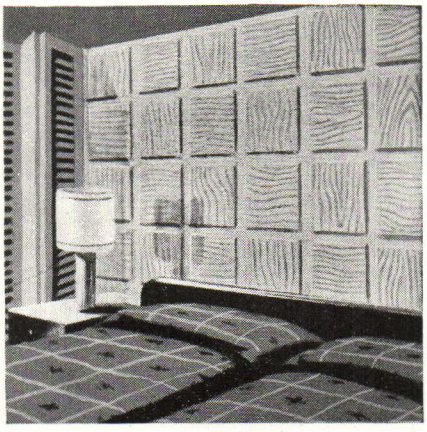
Set off a Bay Window with Weldwood and watch it become a commanding point of interest in your client's eyes.



Design a Bright Breakfast Nook into the kitchen. Weldwood makes it easy for you, an eye-catcher for your client.



Playroom Ceiling of Weldtex® Squares goes up quickly and easily. Squares fit 16" on center joists.



Panel the Wall behind your client's bed and bring real distinction to the bedroom. It's inexpensive.

6 MORE SUGGESTIONS

FOR BRINGING INEXPENSIVE BEAUTY INTO CLIENTS' HOMES

You can design so much *extra* appeal into clients' homes . . . in so many inexpensive ways . . . when you work with Weldwood®.

Buyers are always looking for the "extras" that make some of the new homes stand out over others. That's why your suggestions in this regard . . . if you're designing a Builder's project . . . will be most welcome.

When you panel a room with Weldwood . . . or finish a wall with Weldwood . . . or specify it even for just a corner cupboard . . . you're adding appeal, you're lifting that house above the ordinary.

The few ideas sketched above are only the beginning of endless possibilities . . . in the designing of a new home, or in remodeling.

Available in birch, oak, Korina®, walnut and many other fine decorative hardwoods, Weldwood is a stimulating and unusually versatile material with which to design.

Weldwood®

WELDWOOD Plywood

Manufactured and distributed by

UNITED STATES PLYWOOD CORPORATION

New York 18, N. Y.

and **U. S.-MENGEL PLYWOODS, INC., Louisville 1, Ky.**

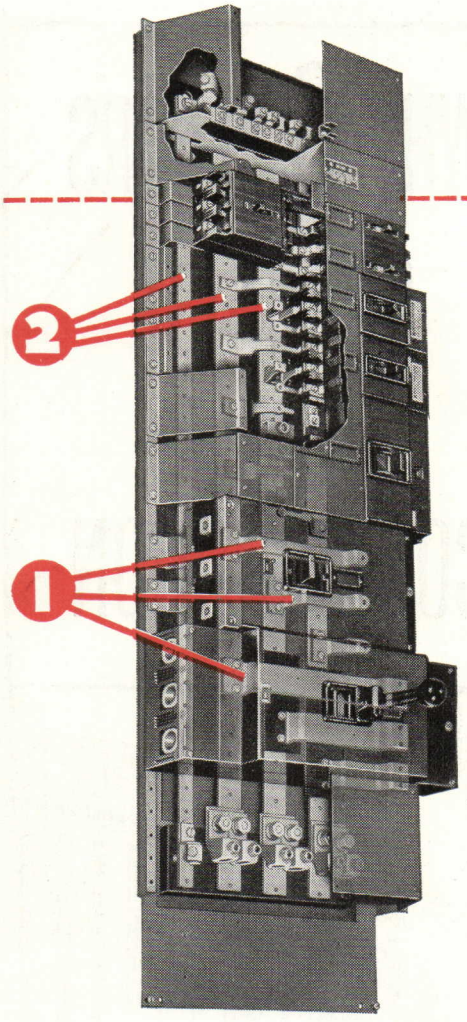
Branches in Principal Cities • Distributing Units in Chief Trading Areas • Dealers Everywhere

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

Westinghouse

You've got to

LOOK INSIDE



. . . to check SOUND DESIGN in panelboards

Look inside—behind the breakers—before you specify panelboards. Check structural parts for uniformity, proper alignment, safe electrical clearances. Then check the Westinghouse Panelboard for real evidence of sound design. You'll see . . .

1. "Die-dentical" parts . . . all critical parts are identical because they're die cut and die formed to assure fits . . . to permit interchangeability . . . to prevent undue stresses and strains . . . to *eliminate "haphazard construction".*

2. Busses drilled and tapped at regular intervals over their full length, plus "die-dentical" parts, assure cost-saving flexibility for circuit changes.

It's little things like these that make the big difference in panelboard performance . . . that contribute to the quality construction found in every Westinghouse Panelboard. And add this plus value: *Westinghouse Panelboards are Westinghouse throughout!* You get the well-known Nofuze "De-ion" circuit breakers in a panelboard designed specifically to assure their finest performance. So don't specify panelboards . . . specify *Westinghouse Panelboards* . . . and be *sure!*

Descriptive Bulletin 30-930 contains complete information plus typical specifications. For your copy write Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa. J-40384

Westinghouse

PANELBOARDS

WHY Q-FLOORS CUT COST *during* CONSTRUCTION

Count up the value of these factors:

materials saved in foundation and frame because of Q-Floor's lightweight construction;

forms, shoring, planking reduced to a minimum on a Q-Floor job;

subcontractors are favored by continuous work because of dry construction and the elimination of strict time schedule; they enjoy unlimited storage space on each floor near where material will be used;

construction time and financing cost saved because Q-Floor fast, dry installation cuts 15 to 20% off building time;

electrical layout changes during construction greatly reduced in cost because of the 100% availability of Q-Floor raceways;

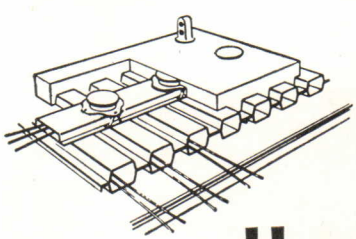
extra revenue realized on investment by the earlier completion date.

Iowa State Office Bldg., Des Moines, Iowa. Tinsley, Higgins & Lighter —architects; Kucharo Construction Co. & Associates—contractor.

United Benefit Life Insurance Co., Omaha, Neb. Tinsley, Higgins & Lighter—architects; Peter Kiewitt Sons, Inc.—contractor.

ALL THESE SAVINGS, and some of them are intangibles, should be subtracted from the cost of Q-Floors, before you can quote the true price. Q-Floor's contribution to the savings in time and other materials gets greater as the building progresses.

Even without consideration of their savings, Q-Floors cost less than the carpet to cover them. Any floor, even the more expensive type, is only a small fraction of the total cost, yet many owners forget that the floors are what the building is for. They ought to keep in mind that Q-Floors, besides saving money, also protect the building forever from electrical obsolescence . . . an electrican can install an outlet on any six-inch area in a matter of minutes. This is a feature which appeals strongly to tenants, too. It spares them the enormous bill for electrical alterations!

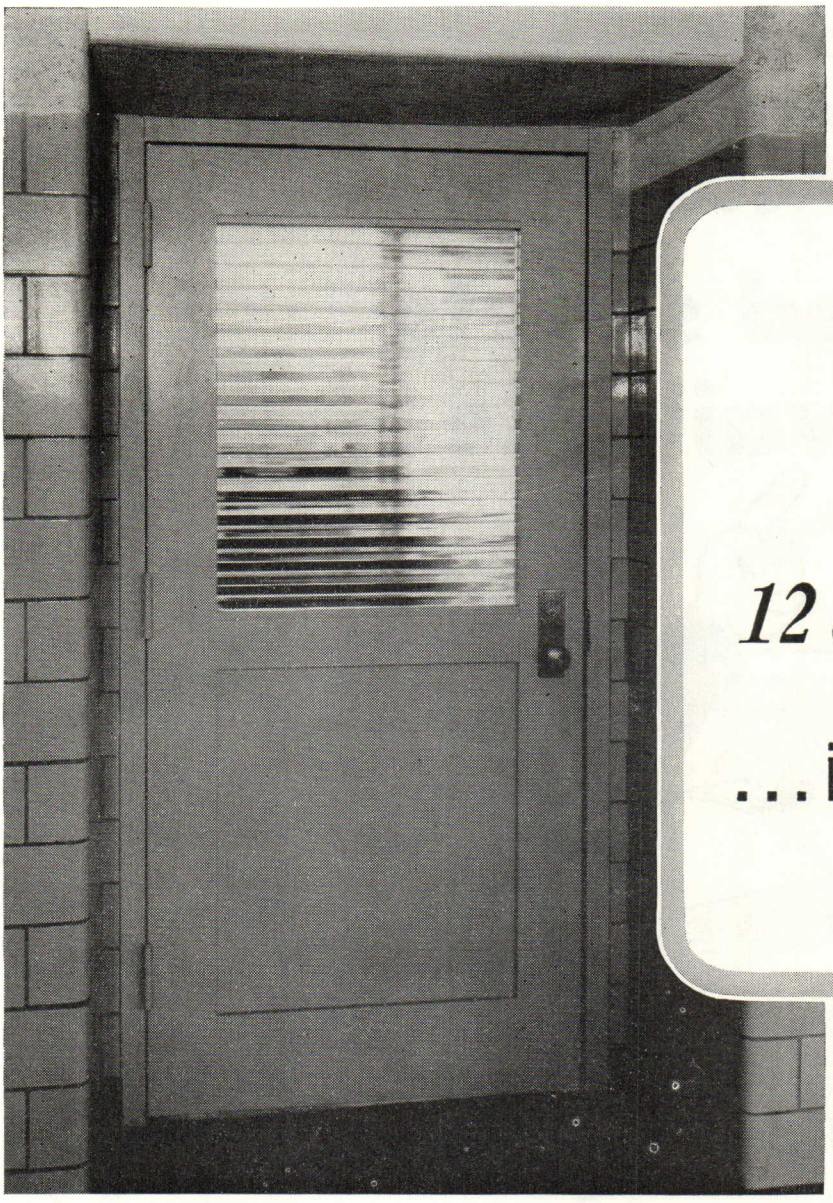


With competition opening up for modern rental space, can your clients afford to build *without* Q-Floors?

H. H. ROBERTSON CO.

2405 Farmers Bank Building
Pittsburgh 22, Pennsylvania

Offices in 50 Principal Cities
World-Wide Building Service



Because this can be 12 different doors

...it costs a lot less

One of 135 Fenestra Doors in Mandeville High School, Flint, Mich. Architect: Bennett & Straight of Dearborn. Contractor: Karl B. Foster, Flint.

The secret is a clever hinge arrangement—plus a muntin, a glass panel and a metal panel. This same beautiful Fenestra* Hollow Metal door can be used: Swing-in or swing-out . . . left or right hand—each with panels of metal or glass . . . with or without a muntin.

It costs a lot less because Fenestra craftsmen can give you the variety you need and still concentrate production facilities on a few basic high-quality types. Naturally, when production waste in time and money is eliminated, quality goes up and cost comes down.

This door is tough—it can be kicked and slammed and still look good. After years of use, a coat of paint will make it like new again.

This door is easy to handle—it swings open and shut smoothly, quietly. That operating balance never changes. Each door is packed with sound-smothering insulation.

This door is fire-safe—steel won't burn.

Door Comes Complete with Frame and Hardware. Each Fenestra door is carefully packaged to protect the gleaming finish. You can *count on* quality with Fenestra . . . over half a century a leader in metal fabrication. Take advantage of versatile Fenestra Stock Hollow Metal Doors. See Sweet's Architectural File, Section 16a/8. Call your Fenestra representative (listed in the yellow pages of your telephone directory) for further information, or . . .

*Trademark

Fenestra

Doors • Windows • Panels

MAIL THIS COUPON

DETROIT STEEL PRODUCTS COMPANY
Door Division
Dept. PA-12, 2253 E. Grand Boulevard
Detroit 11, Michigan

Please send me, without obligation, information on Fenestra Stock Hollow Metal Doors.

Name .....

Company .....

Address .....

MicroRold® 430 polished sheets now available

During the current critical nickel shortage, the same close tolerance and uniformity of gauge that have made MicroRold 18-8 so outstanding are now being incorporated in MicroRold 430.

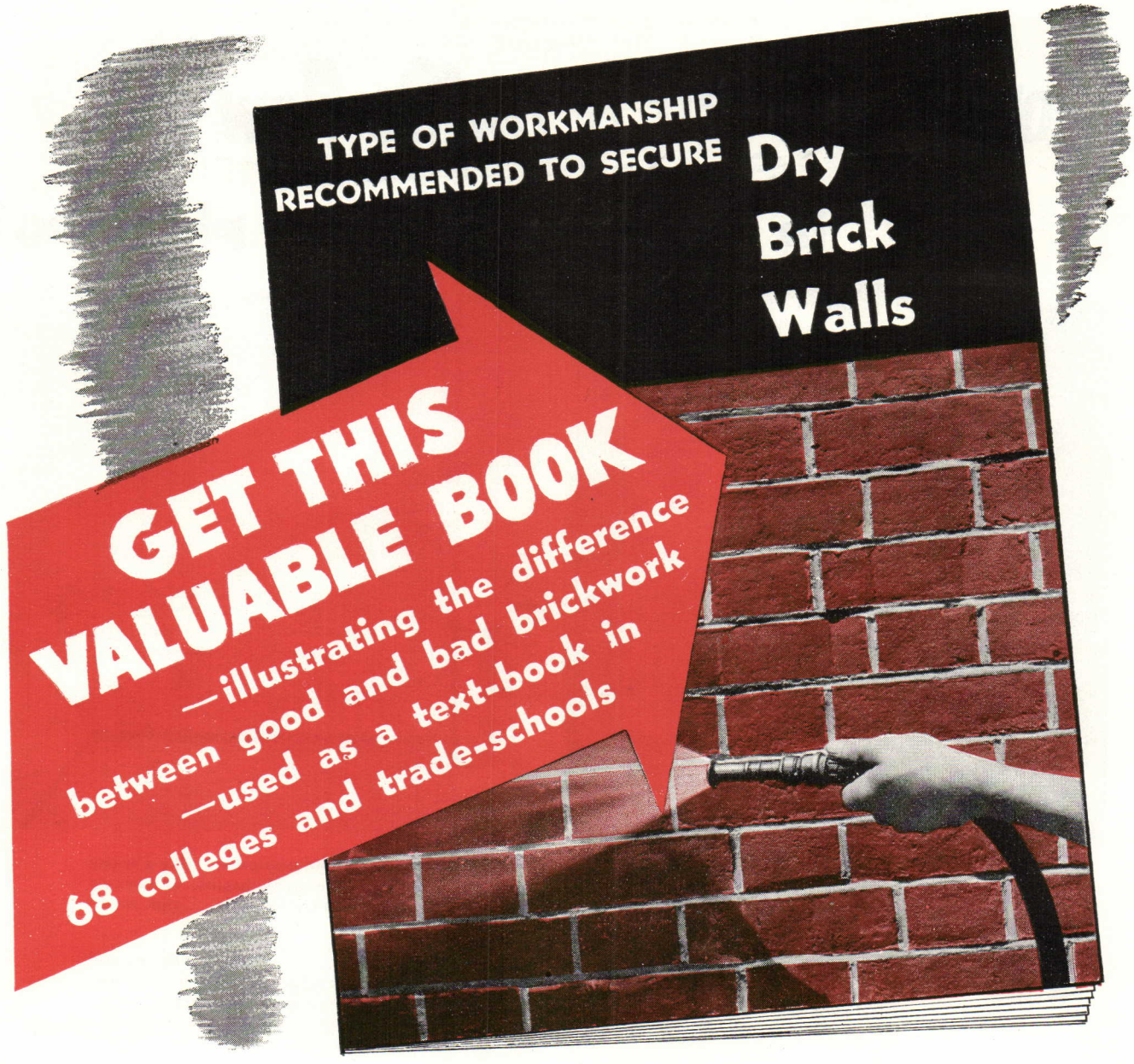
It is important that the individual end use be discussed with your distributor or with our metallurgical department.

MicroRold 430 has moderate ductility, good forming and bending characteristics, and can be drawn to a *moderate* degree. It can be brazed and soldered with the same facility as chrome-nickel grades and except where resistance to high stresses is a major factor, it welds satisfactorily by the usual methods.

MicroRold 430 is used extensively for interior architectural trim, bar, restaurant and soda fountain components, table tops, etc. Washington Steel Corp. is currently producing polished sheets in standard sizes, 20 gauge and lighter, to replace chrome-nickel material vitally needed for the national defense program.

WASHINGTON STEEL CORPORATION

Washington, Pennsylvania



FOR many years intensive research on the cause and prevention of leaky brick walls has been conducted by various organizations and individuals, and much vital information has been gathered.

Most authorities agree that *workmanship* is the most important thing involved, but until now, no one has attempted to explain and *illustrate* the difference between good and bad workmanship.

"*Type of Workmanship Recommended to Secure Dry Brick Walls*" does just that. In it, a recognized authority on brickwork has compiled 16 pages of proven information—explanations and recommendations—96 color illustrations. It is a major contribution to *good building*. It is *not* an advertisement for our product, Brixment. It is published as a *service* to the building trades. It will be sent free to any architect, contractor, bricklayer or dealer who is interested in water-tight masonry.

Use the coupon to secure your copy. No obligation of any sort.

Louisville Cement Co., *Incorporated*
313 Guthrie Street, Louisville 2, Kentucky
Gentlemen: Without obligation, please send me a copy of "Type of Workmanship Recommended to Secure Dry Brick Walls."

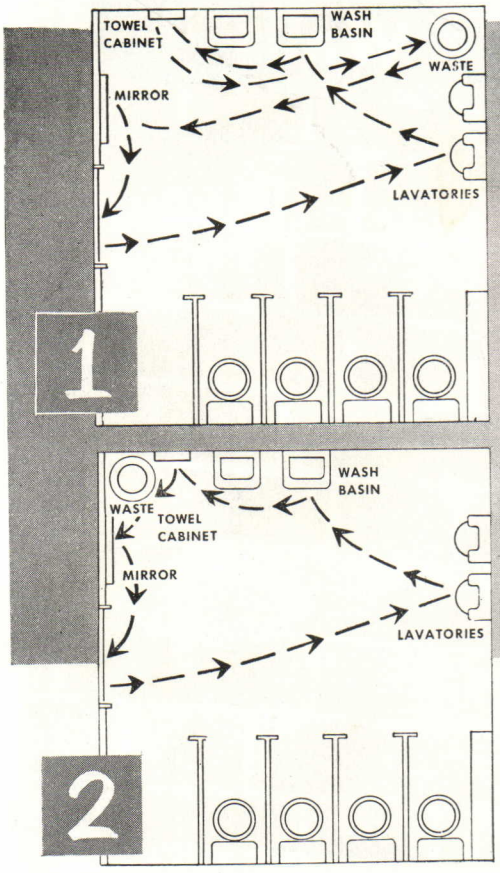
Name_____

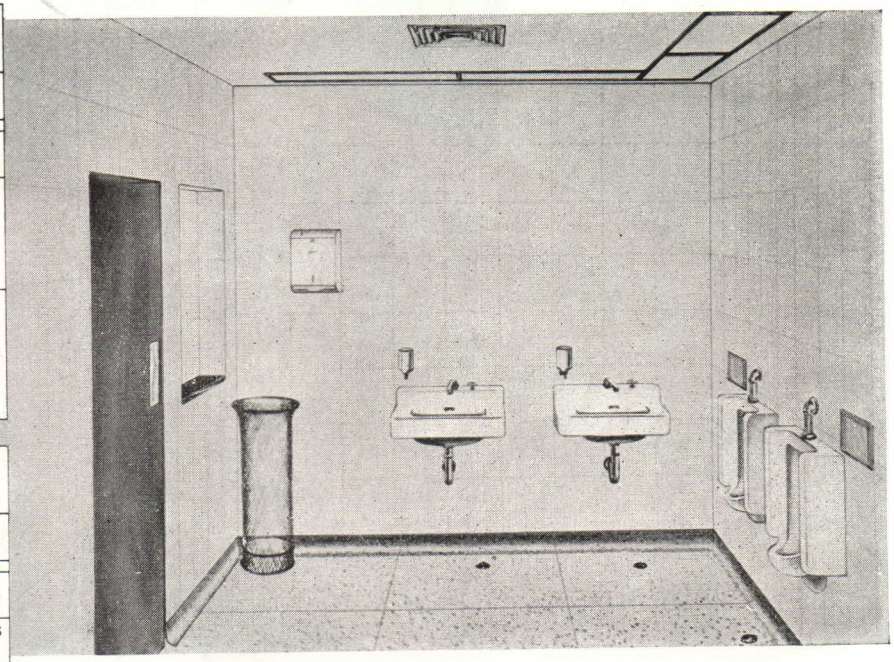
Firm_____

Street_____

City_____ State_____

How important is traffic flow in modern washroom planning?





(1) One misplaced piece of washroom equipment, like a waste receptacle on the wrong side of the wash basins, will waste many man-hours a year in washroom traffic jams . . . and use up excess paper towels.

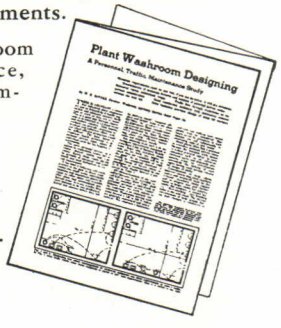
(2) A simple rearrangement lets washroom traffic flow in and out easily, quickly. Recessed vents and lighting, and off-the-floor fixtures, make this small washroom modern in every way.

Traffic flow is one of several factors that distinguish a truly modern washroom from one merely equipped with up-to-date fixtures.

This small washroom is modern in both design and function. Its users move progressively from urinals to wash basin, paper towel cabinet, waste receptacle and mirror, then out the door. The plan eliminates congestion —actually reduces man-hours spent in the washroom. It reduces your client's paper towel costs, too. The staggered towel cabinet and waste receptacle arrangement keeps users moving, gives them little chance to use more towels than actually needed.

At no cost or obligation, you can call in the Scott Washroom Advisory Service to make use of the know-how of trained consultants who have serviced well over 300,000 washrooms. Your Scott Washroom Advisory Service man is equipped to give you the latest answers on all-around modern washrooms as an integral part of new and old buildings. You'll save your clients countless employee man-hours, help them build good personnel relations by installing the newest sanitary improvements.

Contact Washroom Advisory Service, Scott Paper Company, Chester, Pa.



Send for FREE Leaflet . . .
"Plant Washroom Designing"

Washroom Advisory Service, Dept. U
Scott Paper Company
Chester, Pennsylvania

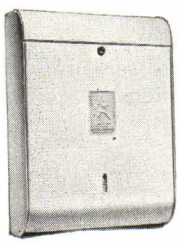
At no cost or obligation, please send me your study of personnel, traffic and maintenance problems, *"Plant Washroom Designing."*

Name_____

Company_____ Title_____

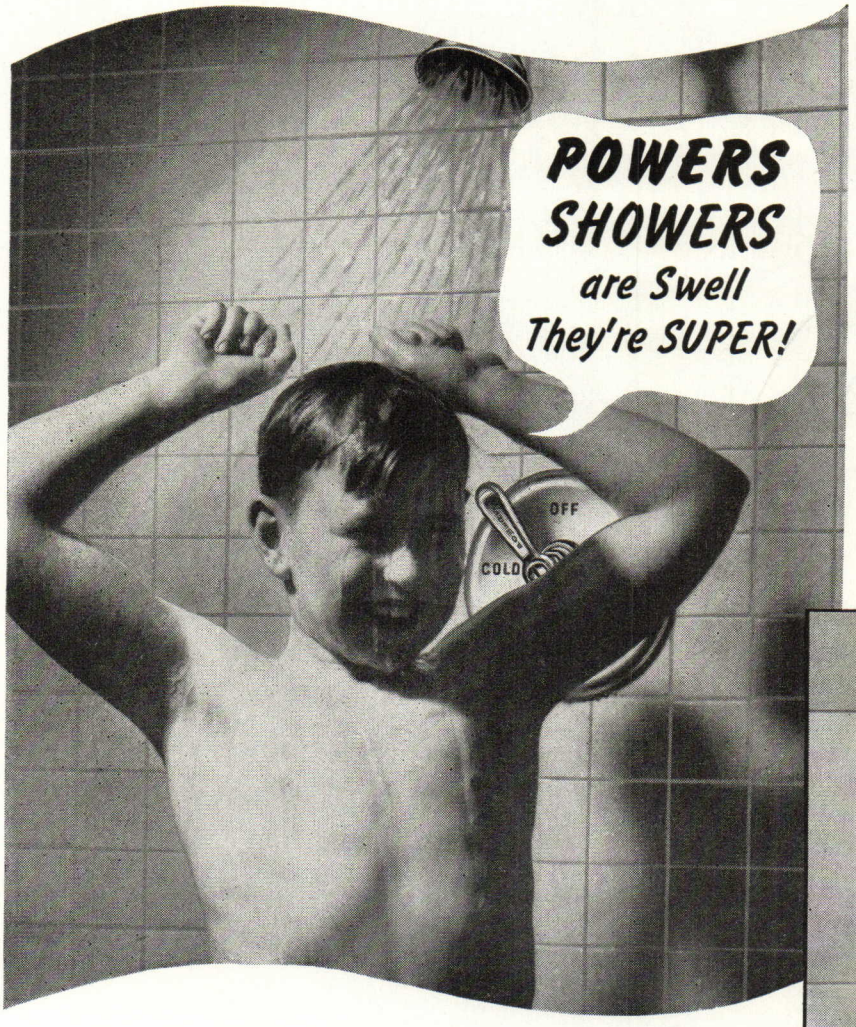
Address_____

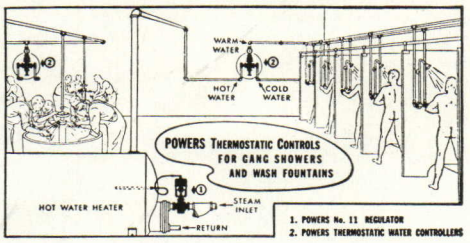
City_____ Zone____ State_____



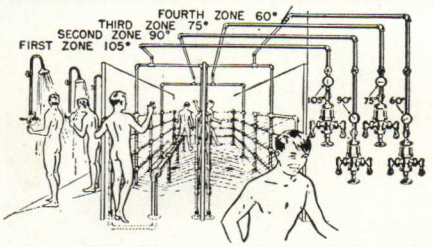
SCOTT
Symbol of Modern Washrooms

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

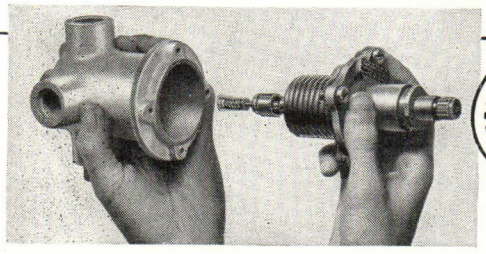




OTHER TYPES OF POWERS SHOWER CONTROLS



Zone Showers for Swimming Pool



ONLY ONE MOVING PART—Powerful thermostatic motor assembly is easily accessible from the front. *Simple* and *durable* construction insures long life and minimum of maintenance.

SAFETY TESTS PROVE

POWERS Type H THERMOSTATIC WATER MIXERS will out-perform all other thermostatic or pressure actuated mixers

Only ONE shower accident may cost many times the price of a Powers mixer. Why settle for any thing less than the SAFEST SHOWER MIXER MADE?

POWERS

Type H

Thermostatic SHOWER MIXERS

are SAFE against scalding caused by

1 PRESSURE *or* 2 TEMPERATURE

fluctuations in water supply lines

Safer—because of their quick acting response to any change in temperature setting, pressure or temperature variations in water supply lines. Users report control within ½°F. **Greater Comfort**—shower temperature remains constant wherever set. No jumpy temperatures. **More Economical**—POWERS thermostatic mixers promptly deliver showers at the right temperature...no waste of time, hot or cold water.

For new installations or when modernizing obsolete showers . . . play safe, use Powers type H thermostatic shower mixers.

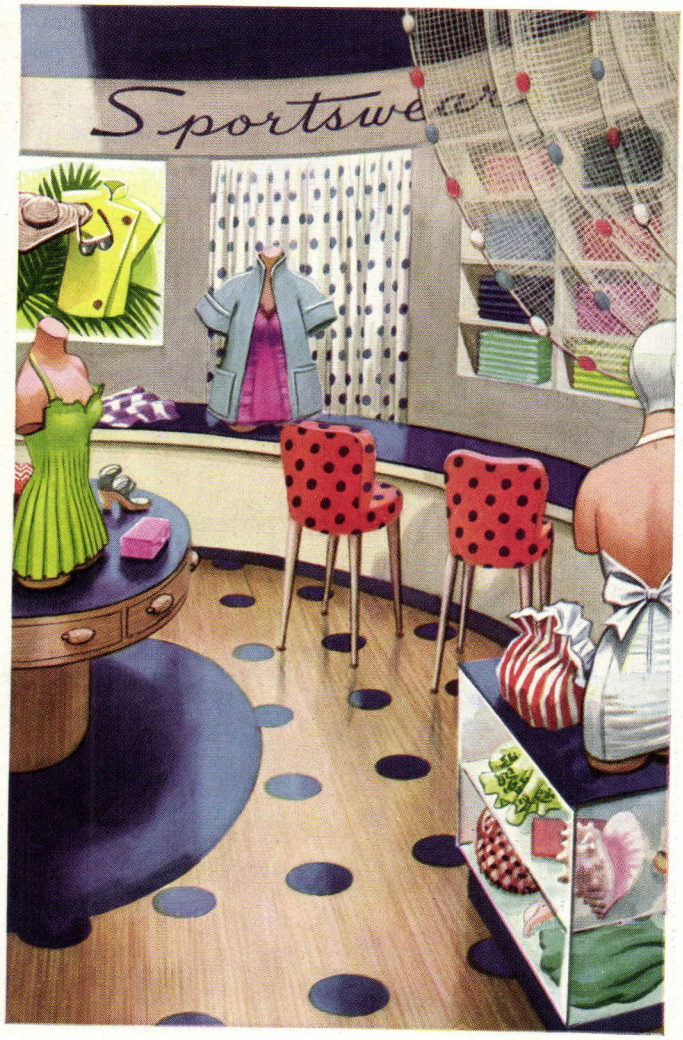
THE POWERS REGULATOR CO.

OFFICES IN OVER 50 CITIES • SEE YOUR PHONE BOOK

Over 55 Years of Water Temperature Control

CHICAGO 14, ILL., 2781 Greenview Ave. • NEW YORK 17, N. Y., 231 E. 46th St. • LOS ANGELES 5, CAL., 1808 W. Eighth St. • TORONTO, ONT., 195 Spadina Ave. • MEXICO, D. F., Edificio "La National" 601

HBY5



This is Armstrong's Asphalt Tile

It's hard to believe that the floor that contributes so much to the rich decoration of this restaurant is low in cost—but it is. Armstrong's Asphalt Tile was developed particularly to meet the need for an attractive floor at minimum cost. In addition, it has a special advantage for basements or for any concrete floor slab in direct contact with the ground. It is not affected by the alkaline moisture always found in floors of that type.

Countless color combinations and geometric designs can be created with Armstrong's Asphalt Tile. Any of the wide variety of smart colors can be combined because this floor is put down tile by tile.

The tough composition of Armstrong's Asphalt Tile makes it a durable floor that will give long service even under heavy traffic. It is manufactured in two service thicknesses—1/8″ and 3/16″ and in two types—Standard and Greaseproof.

They're both Armstrong's Floors

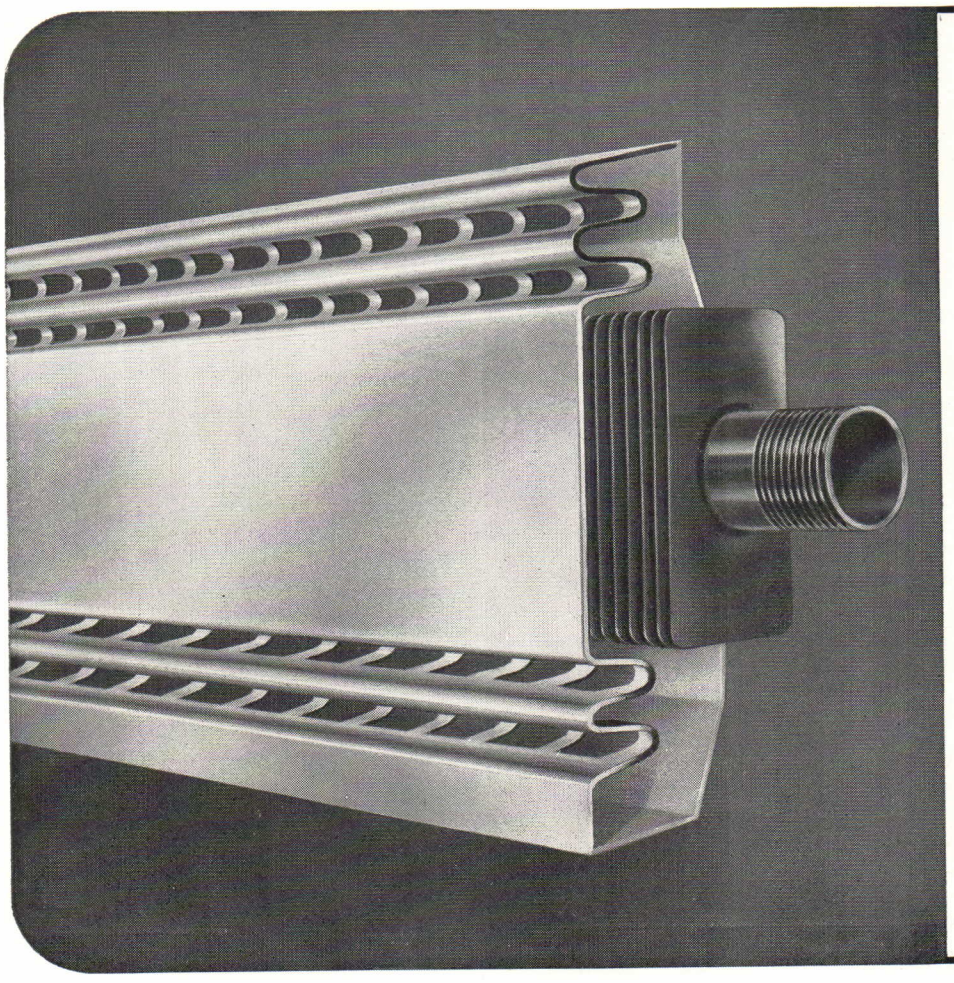
This is Armstrong's Linoleum

Where unusual beauty in floor color and design is desired, Armstrong's Linoleum offers almost unlimited opportunity. Custom designs are easy to create because of its wide range of colors and style effects. The moderate cost of Armstrong's Linoleum also makes it practical to have an individually styled floor. It is made in six different types and three service thicknesses. Through the years, Armstrong's Linoleum has gained a reputation for long, satisfactory service in busy stores, shops, and offices.

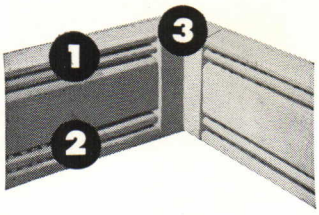
For additional information on these floors as well as for data on resilient floors of Armstrong's Linotile®, Arlon* Tile, Rubber Tile, or Cork Tile for commercial, industrial, or residential use, see the latest edition of Sweet's Architectural Files, section 13, catalog B or the latest edition of Armstrong's Pattern Book. For samples, literature, or unbiased help on any flooring problem, contact your nearest Armstrong District Office or write directly to the Armstrong Cork Company, Floor Division, 8912 State Street, Lancaster, Pa.

*T-M. REG. APPLIED FOR

dunham baseboard heating



other performance-proved points you'll want to know about



1. Unique Design of front section guides heated air away from walls, minimizes smudging.

2. Flush-with-Floor bumper permits wall-to-wall carpeting, presents finished appearance, speeds room cleaning.

3. No Pipe Fittings visible. Door and Finishing Caps conceal all piping, assure neater looking installation.

engineered up to performance not down to price!

Sure, price is important—but not more so than *performance*. After all, your clients live with—and judge you by—the *performance* record of the products you recommend and specify.

And there's where Dunham Baseboard Radiation plays right into your hands.

Your clients will like the fact that Dunham's method of mechanically attaching fins to pipe eliminates solder bond, provides greater heating surface, speeds heat transfer. And they'll find Dunham's individual room heat control damper both a convenience and an economy.

You'll like the fact that Dunham Baseboard is easy to install in any type of building . . . old as well as new. For example, in existing masonry construction, Dunham Baseboard can be installed without recessing into plaster.

Send For Free Booklet No. 639-D-6.

Contains complete information... including capacity tables, installation instructions for various types of applications, design details and typical specification sheets. Write for your free copy.

DUNHAM

C. A. DUNHAM COMPANY
400 W. Madison Street, Chicago 6, Illinois
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heating systems and equipment

Vari-Vac Differential Heating • Fin-Vector Radiation • Convector Radiation
Vacuum Pumps Condensation Pumps • Horizontal Heaters • Vertical Heaters • Cabinet Heaters Traps Valves

New Lift for LOFT with PLEXIGLAS

Daytime GLEAM . . . Nighttime GLOW

Interior lighting gives this translucent, 3-dimensional PLEXIGLAS display *complete luminosity* at night—so that shape, design and colors are the same as in daylight. The giant PLEXIGLAS candy box is 11½′ long, 6½′ high, 10½″ deep, built of white translucent material with red and blue decorations and letters solvent-welded to background panels. Interior lighting consists of 20 mm cold cathode hairpins. Signs float in stainless steel frames and can be opened or removed for easy maintenance. Design: Van Sciver Associates, Philadelphia. Fabrication: Amplex Manufacturing Co., Philadelphia. Lighting and Erection: Modern Sign Advertising Co., Philadelphia.

When you want more impact in storefront identification *without* changing basic design—use PLEXIGLAS. The traditional storefront sign of this Loft Candy Shop in Philadelphia, for example, became three-dimensional and completely luminous when reproduced in this acrylic plastic.

PLEXIGLAS answers other design problems, too. Because it's so easily fabricated, it can be adapted to a wide variety of structural plans. PLEXIGLAS is shatter-resistant and light in weight (only half as heavy as glass), two mighty important properties in assuring low installation and maintenance costs. And too, its good weathering characteristics are important for long outdoor service.

PLEXIGLAS *is a trade-mark, Reg. U. S. Pat. Off. and in principal foreign countries.*

Canadian Distributor: *Crystal Glass & Plastics, Ltd.*
54 Duke Street, Toronto, Ont., Canada

Send for Free Booklets Today

For completely luminous signs and storefronts that gleam without glare, get full details of the *outdoor plastic*, PLEXIGLAS. Our new booklets, "PLEXIGLAS for Signs" and "PLEXIGLAS for Modern Storefronts" discuss properties, suggest uses, show applications. Write for them.

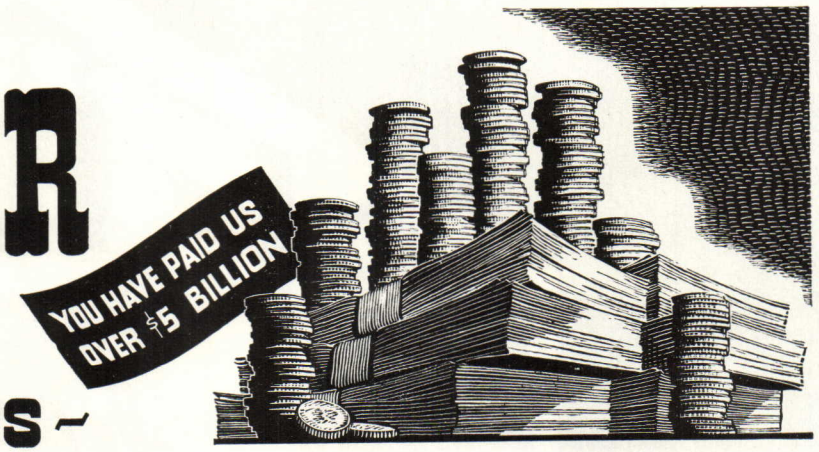
CHEMICALS FOR INDUSTRY

ROHM & HAAS COMPANY

WASHINGTON SQUARE, PHILADELPHIA 5, PA.

Representatives in principal foreign countries

50 YEAR report to our customers -



FROM DATE OF INCORPORATION ON NOVEMBER 23, 1900 TO DECEMBER 31, 1949

THE COMPANY RECEIVED:			
From customers for products purchased by them		$5,122,702,261	
Dividends received, interest earned, and other income		76,068,236	
Total revenues		$5,198,770,497	
THE COMPANY PAID OUT OR PROVIDED:			
For raw materials, supplies, and services bought	$2,766,354,971		
Provision for depreciation (wear and tear or obsolescence) of plants, buildings, machinery and equipment and for depletion of coal, iron ore and limestone, etc., by mining operations	270,852,769		
Federal, State, local and miscellaneous taxes	267,462,953		
Interest and other costs on long-term debt (including dividends of $27,265,805 paid to preferred shareholders)	117,724,128		
Total costs		3,422,394,821	
Leaving for wages and salaries of employees, dividends to shareholders, and amount required to be retained by company for needs of the business		*$1,776,375,676	100.00%
***OUT OF WHICH THERE WAS PAID:**			
Employment costs (pay rolls, vacations, social security taxes, insurance and pensions paid to or for account of employees)		$1,474,693,687	83.02%
To common shareholders as dividends		125,126,950	7.04
Amount retained in the business for present and future needs and to assure steady work for employees		176,555,039	9.94
Total		$1,776,375,676	100.00%

Your patronage and the American system of free enterprise have helped make this company an important factor in the steel industry. Our future depends on keeping America free, so that any group of citizens may organize a business, at any time--with the expectation that it, too, may grow strong--provide jobs, supply needed products and achieve success in the next 50 years. In the preservation of the American way of life lies our future hope.

THE YOUNGSTOWN SHEET & TUBE CO. 1900 YOUNGSTOWN 1950 50 YEARS OF SERVICE

The Youngstown Sheet and Tube Company

General Offices--Youngstown 1, Ohio
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SAFETY-SET
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The PERFECT SETTING for SPARKLING DISPLAY

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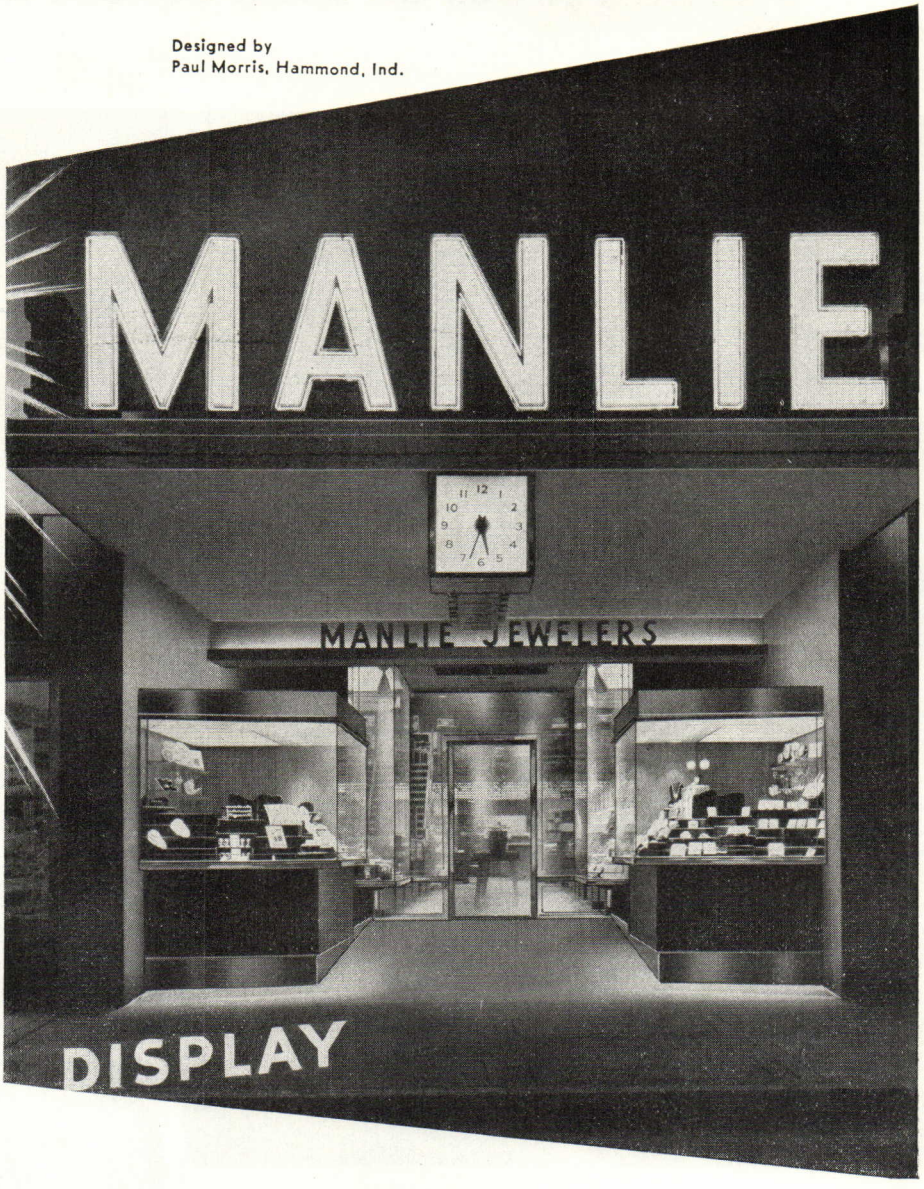

AS the full glory of a precious gem is revealed in its perfect setting, a handsome Brasco Front displays the store's attractions to best advantage. The Brasco setting provides the vital spark that not only commands attention but stirs active interest in the store and its merchandise.

In keeping with modern *Sellevision** design the lower height of Brasco store front sections exposes larger expanses of glass to provide maximum areas of visibility. At the same time the deeper, safer Brasco grip on the glass is fully maintained for positive protection.

Our wide variety of attractive and interchangeable units permits interesting, novel and individualized effects with standard stock members. In handsome stainless steel or anodized aluminum, Brasco Construction will serve admirably regardless of the type of store you are planning. There is a Brasco distributor to render intelligent cooperation wherever you are located. Write for his address. *©

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The Sun Hides on Most School Days...but...

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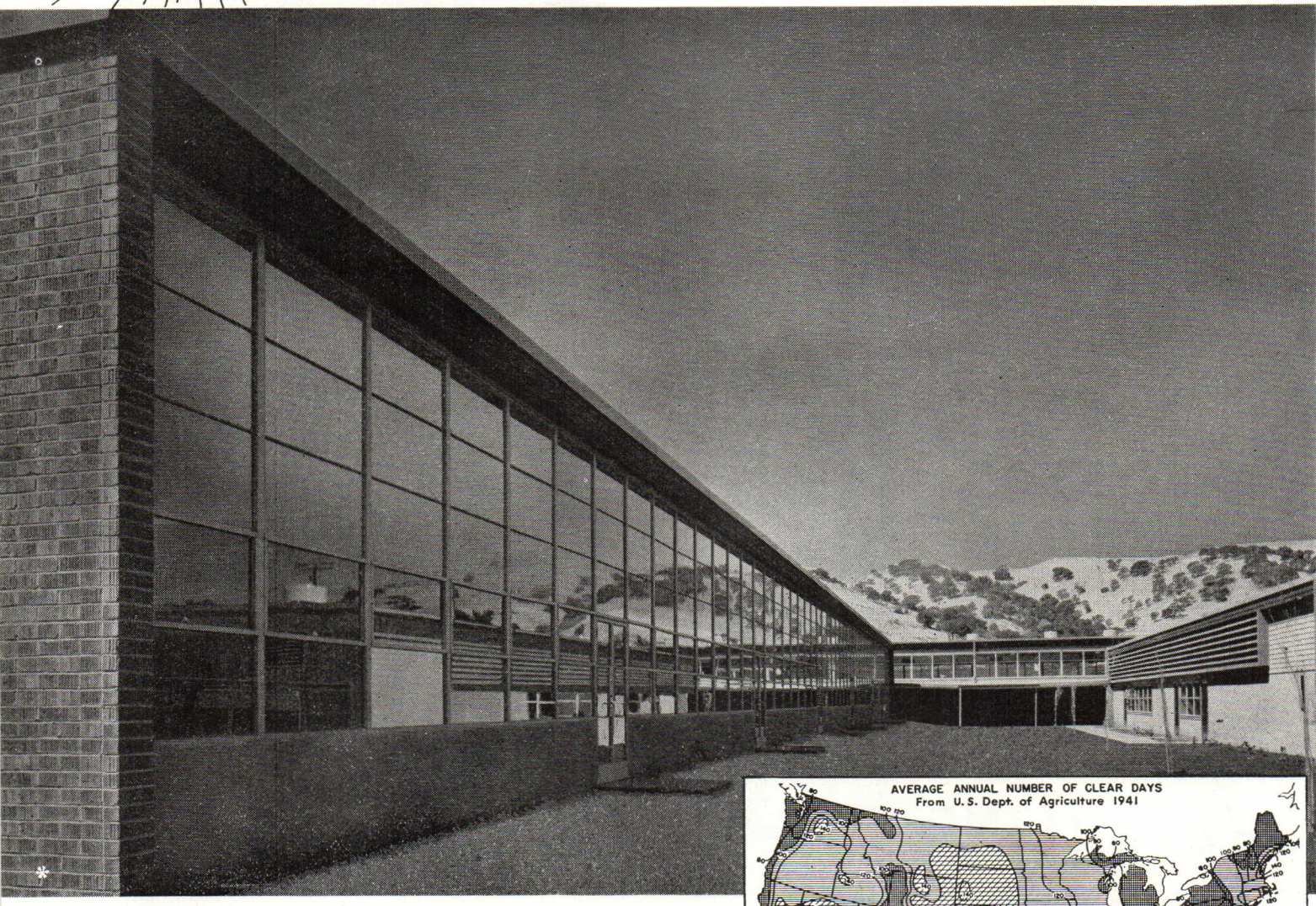

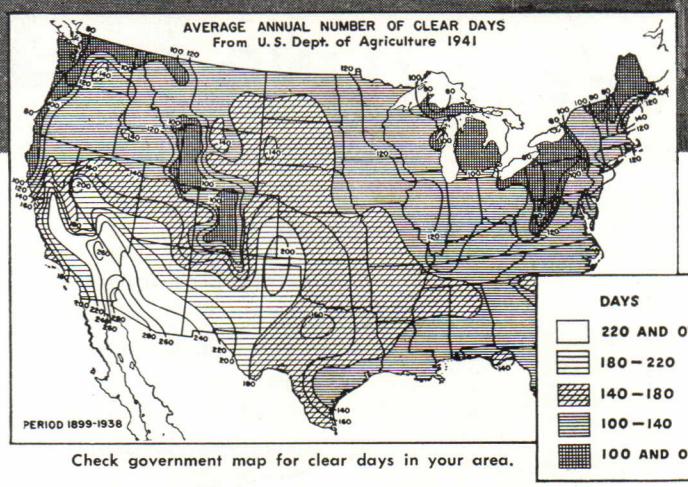

Check government map for clear days in your area.

Ceco Steel Windows provide *plenty* of daylight for Good Vision

Maybe you don't know how elusive old Sol can be during the school term. Actually, he hides most of the time. So say government figures. In 90% of the country, there are less than 130 clear days in a whole year when you deduct weekends. Then subtract 90 summer days and it's easy to see most school days are overcast. Therefore, it's most important in providing light for schools to use a window that admits the most daylight. Here, Ceco Steel Windows truly meet the test because only steel windows admit enough daylight on overcast days to provide good vision. Then, too, steel windows offer controlled ventilation up to 100%...assure distant vision. The cost? Lowest of all installed. Maintenance? Cost is lower here too. Any way you figure it—cost, maintenance or functional superiority, Ceco Steel Windows are the best buy.

*Bamberger & Reid, architects. Roger Sturtevant Photo.

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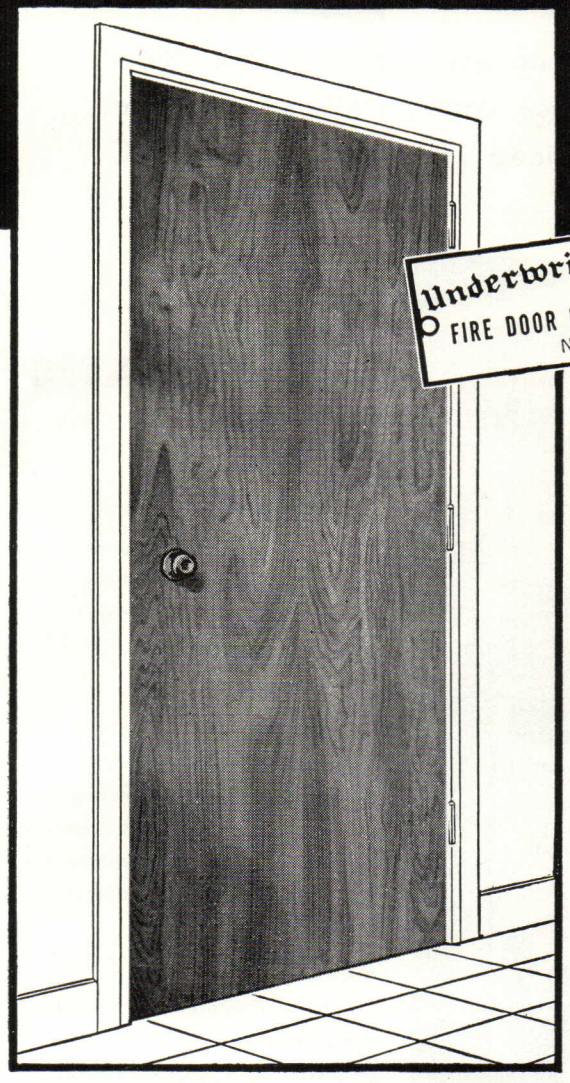
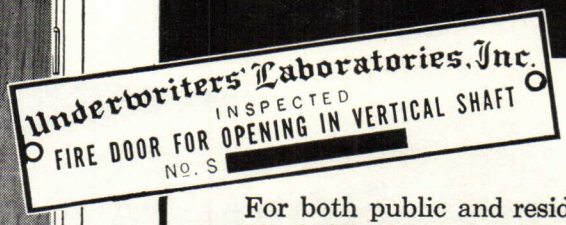
New KAYLO® FIREDOOR

Provides the Beauty of Natural Wood —Plus Rated Fire Protection





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FIRE PROTECTION—Built around an incombustible Kaylo core, using fire retardent treated wood edge bands, the Kaylo Firedoor carries an Underwriters' fire rating for Class B and C openings.

HANDSOME APPEARANCE—The wood veneer-faced Kaylo Firedoor equals the richness of the most striking conventional wood doors.

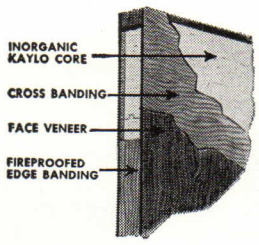
GREAT DIMENSIONAL STABILITY—A Kaylo Firedoor does not warp, swell or shrink—even when subjected to heat or cold, dampness or dryness.

HIGH INSULATING VALUE—Installed in an exterior opening with weather stripping, a Kaylo Firedoor insulates more effectively than a conventional door, *plus* a storm door.

LIGHT WEIGHT PLUS STRENGTH—A standard 3′4″ x 7′ Kaylo Firedoor weighs only 90 lbs., but can support an 8000-lb. distributed load with only ½-inch deflection while loaded. After unloading, there is no permanent deflection.

Get all the facts now about the new Kaylo Firedoor.

CROSS SECTION OF A KAYLO FIREDOOR



Waterproof glue is used to bond veneer cross banding to the Kaylo core and face veneer to cross banding. Edge bandings are strips of solid hardwood, which have been treated with Protexol Class A fireproofing agent.

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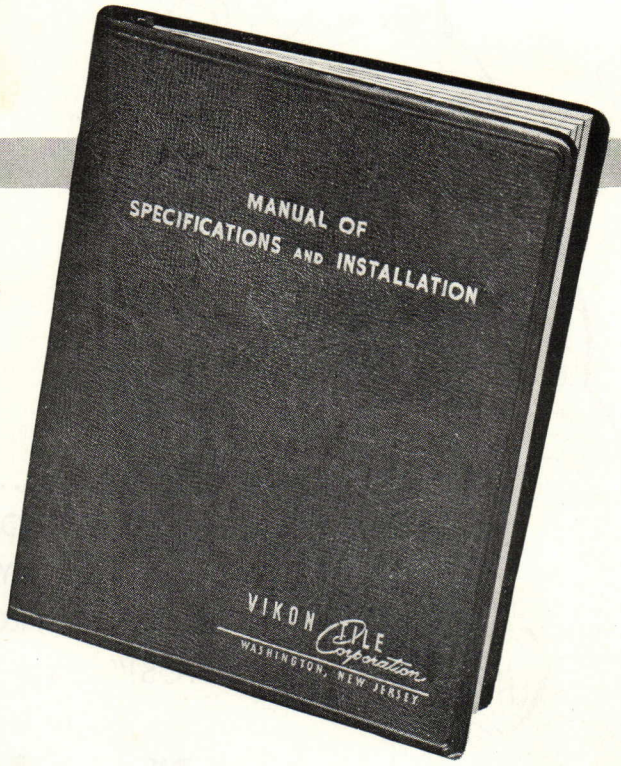
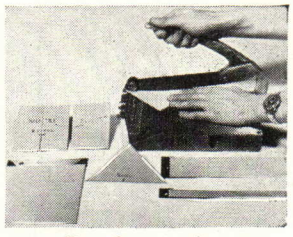
VIKON Presents the First Complete Manual on Metal Tile



A fully-illustrated book with 114 photographs and line drawings to serve as a refresher and permanent reference for the experienced installer . . . and to assist the inexperienced worker in developing the essential techniques for installing Vikon Metal Tile.

- ***74 highly informative, illustrated pages***
- ***Two years of preparation***
- ***Attractive loose leaf binding***

Installer's tool kit



Bevel-restoring tile cutter

This manual has been sent to every franchised Vikon dealer. A limited number of copies are available to architects, builders and contractors at $1.50 post paid.

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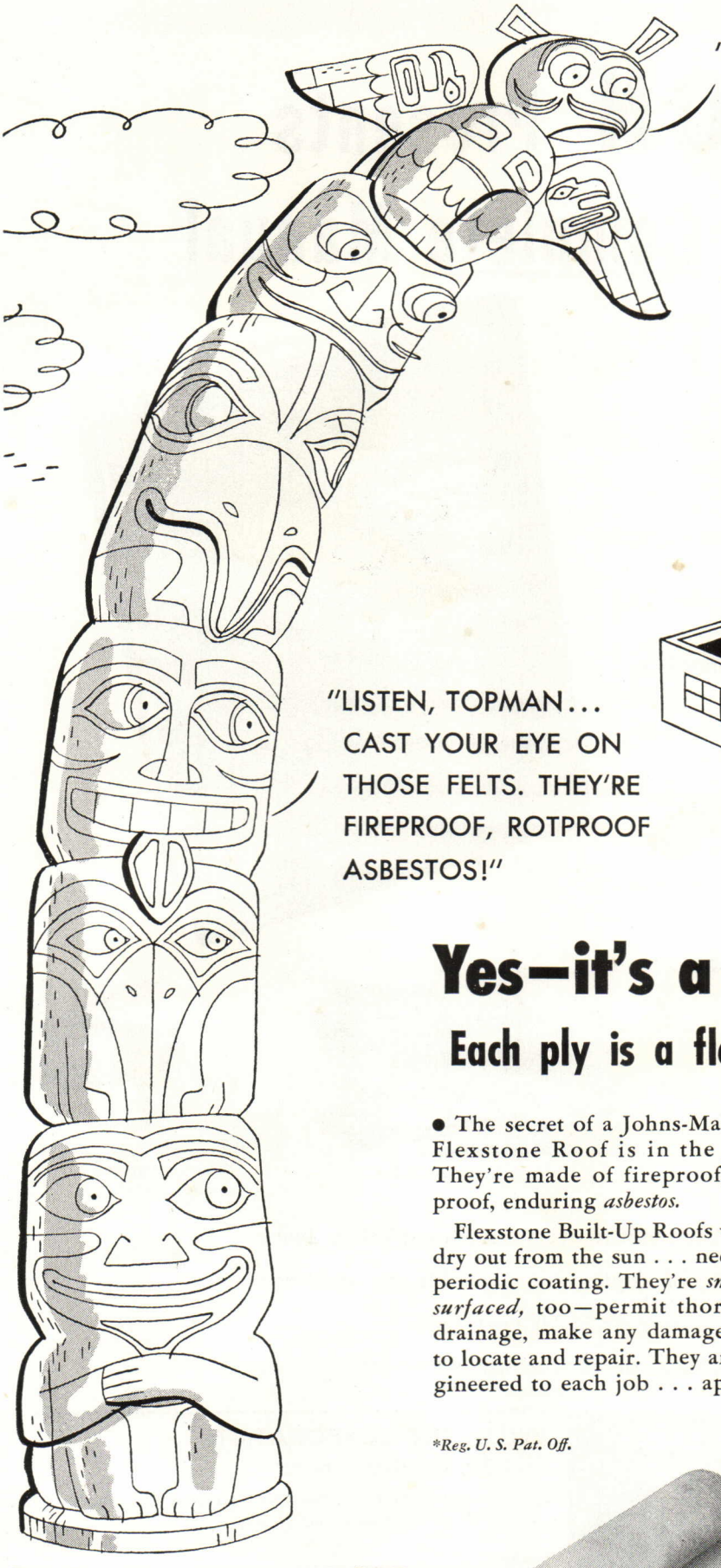
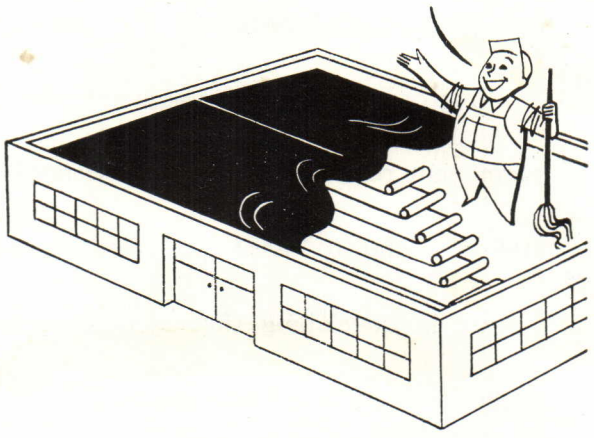


"LOOK AT THAT! A BUILT-UP ROOF THAT'S SMOOTH-SURFACED. NO SLAG! NO GRAVEL!"

"YEH, YOU SAID IT! AND IT'S GOT ASBESTILE* FLASHING FOR ADDED PROTECTION."



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Fixtures illustrated in SKY BLUE are: Cadillac recess tub with mixometer shower fitting; Emerson twin lavatories and Prince reverse trap closet combination.

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Whether you feature only one or all four of Briggs famous decorator colors—the result is always *plus profits* for you! The reason is as simple as ABC! A: Modern families *want* colored fixtures—even though most of them are afraid they can't afford the cost. B: Briggs Beautyware gives them colored fixtures at practically *no* extra cost! C: When they find this out, you—who either sell or have built a house with Briggs Beautyware in color—have a *sure sale!* No wonder the biggest builders and the most wide-awake plumbing dealers are so enthusiastic about Briggs. Follow their lead . . . let Briggs start building new profits for you—today! Briggs Manufacturing Company, 3001 Miller Avenue, Detroit 11, Michigan.

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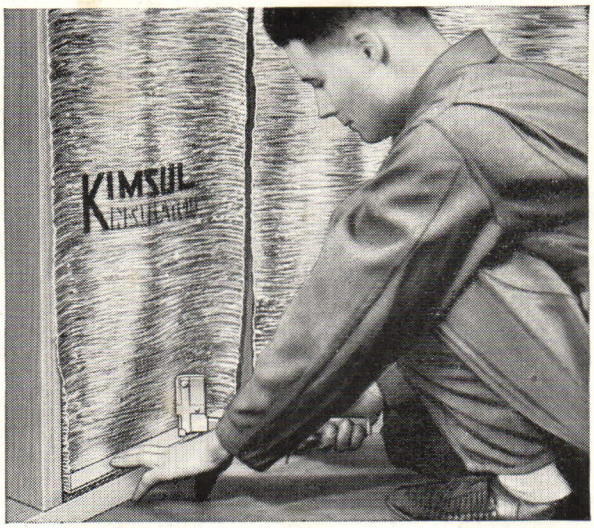
*10% additional charge for colored ware applies to complete sets including Briggs brass fittings.

Easy!

So easy to install new Reflective Kimsul*—you actually save time, save labor!

1 Required length of KIMSUL* blanket is cut from roll and stapled to top plate through fiber strip.

2 Snug fitting, many-layer KIMSUL blanket is then expanded to full length of stud space.



3 Staples through fiber strip attach end of KIMSUL blanket securely to floor plate. Stitched construction assures uniform coverage—prevents thick spots, heat-leaking thin spots.

4 Flanges stapled to sides of framing hold blanket permanently in position and also provide air space. Part of flange folds over face of framing to complete vapor seal.

For complete information about new Reflective KIMSUL, see Sweet's Architectural and Builders' Catalogs, or write to Kimberly-Clark Corporation, Neenah, Wisconsin.

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Now 2 types of Kimsul Insulation—Regular and Reflective
(Red Roll) (Gray Roll)

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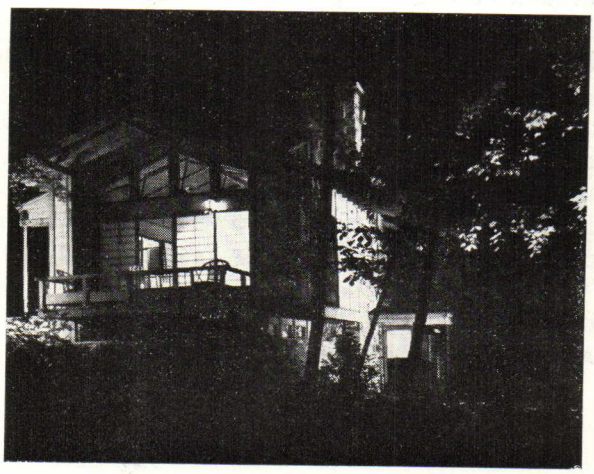
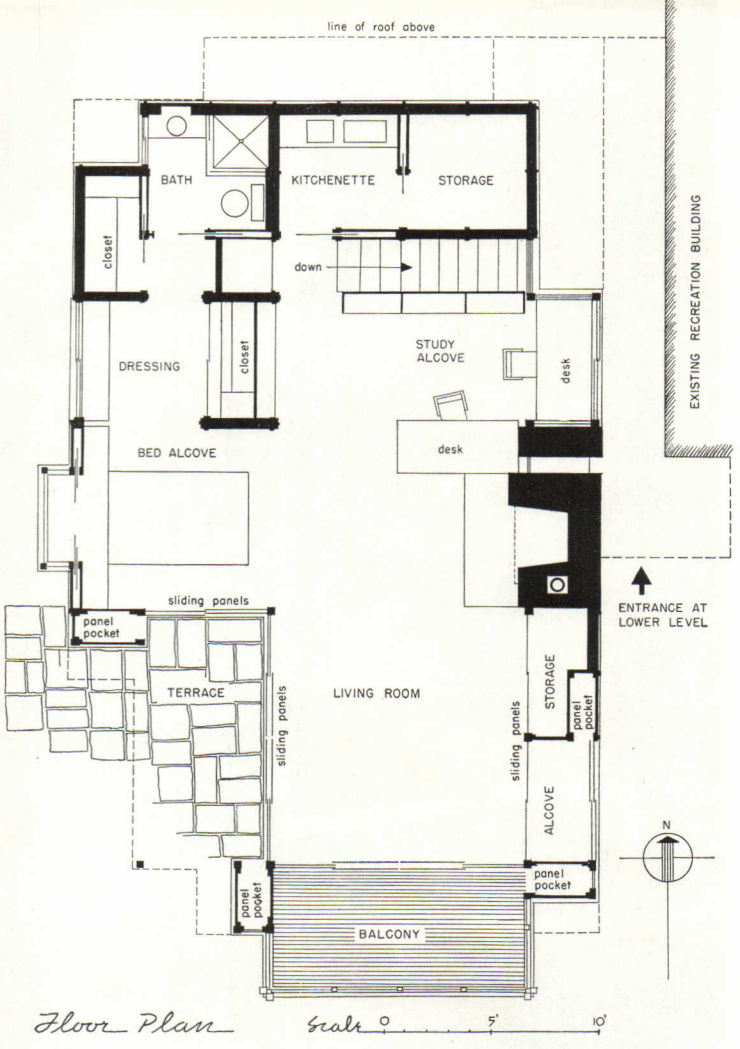


Private Retreat: Redding, Connecticut

HARWELL HAMILTON HARRIS, DESIGNER

Originally conceived as a simple pavilion where the owners could enjoy the beauty and quiet of the woods, this hillside retreat, equipped with movable panels so that it may be as open or enclosed as desired, has proved so appealing that it is now used as a dwelling for long periods at a time and for weekends the year around.

Photos: Andre Kertesz



program A country retreat for relaxation, restful contemplation of the woods, and a minimum of housekeeping impedimenta. The wish was expressed for an airy, simple building, somewhat in the Japanese manner, that would be readily adjustable to both summer and winter conditions.

site A wooded hillside. Immediately adjoining the site, on the downhill side, is an existing recreation building (including a bowling alley) previously developed from an old barn.

solution A small entrance hallway connects the new pavilion with the existing recreation building, at the level of the latter. Upstairs, the new building consists of an irregular-shaped, living-sleeping-dining-study-room, arranged as a large main area with alcoves off it. Exterior wall openings of various sizes (the one on the south or balcony end, extends from wall to wall) can be opened or shut as the occupant desires, by means of a series of sliding screens—one of glass panels; one of insect screening; one of waterproof, translucent plastic—each set designed to close one opening or to be lifted out from the tracks and stored in adjacent panel pockets. Thus in summer the room can be a screened pavilion, while in winter it becomes a shelter against the more severe elements, with glass or translucent panels in place.

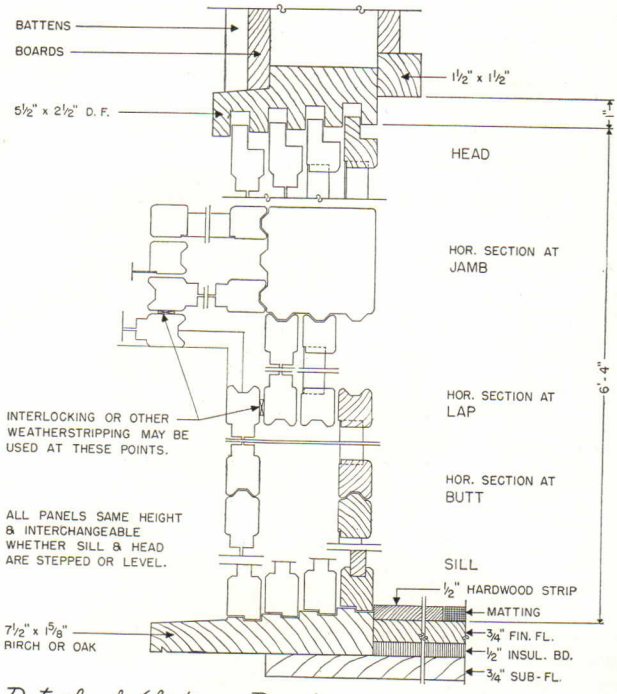
materials and methods CONSTRUCTION: *Foundation:* local stone. *Walls:* 1″ x 4″ T&G Douglas fir boards installed horizontally over wood frame; vertical battens cover all end joints and face nailing. *Floors:* wood frame; T&G fir; woven hemp squares. *Roof:* frame, surfaced with 16″ sawn cedar shingles. *Insulation:* cane fiber board under floors; wool type in roof; also reflective foil. *Sliding sash:* wood frames, filled with glass, plastic cloth screening; translucent glass-cloth laminate, or (for some side panels) woven cane.

EQUIPMENT: *Heating:* forced hot air system; automatic controls. *Water Heater:* electric. *Lighting:* eyeball ceiling units.

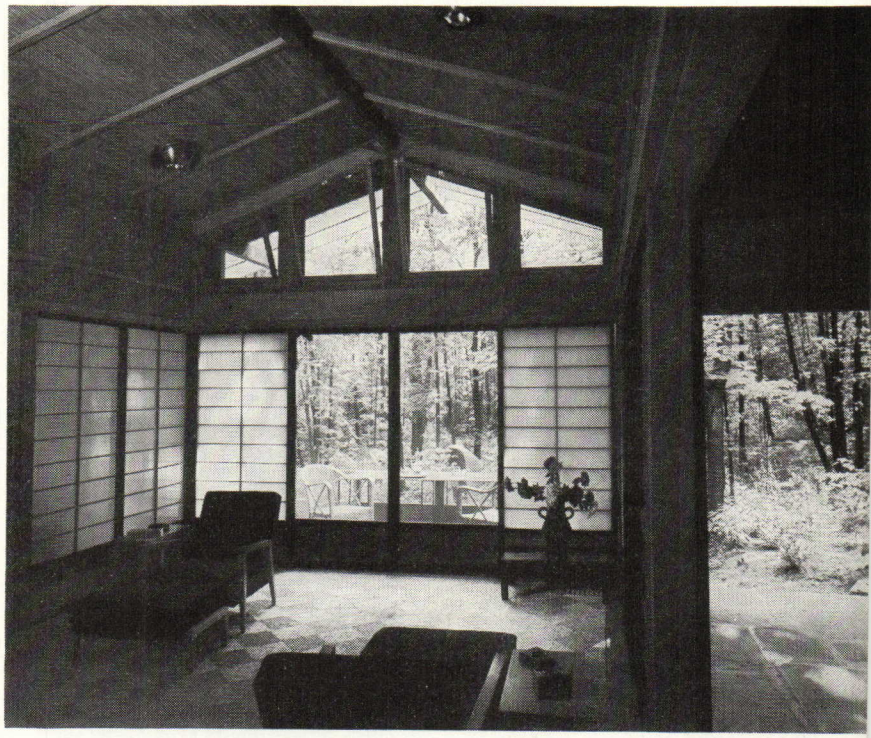
Harris

PRIVATE RETREAT: REDDING, CONNECTICUT

Detail and photos on this page show how the sliding panels provide flexible enclosure. Opening sash in gables remove hot air near the ceiling; an under-floor space (the house is raised on posts two-feet above foundation walls) drains off pools of dead air. In winter, the openings between the posts are closed with solid plywood panels.



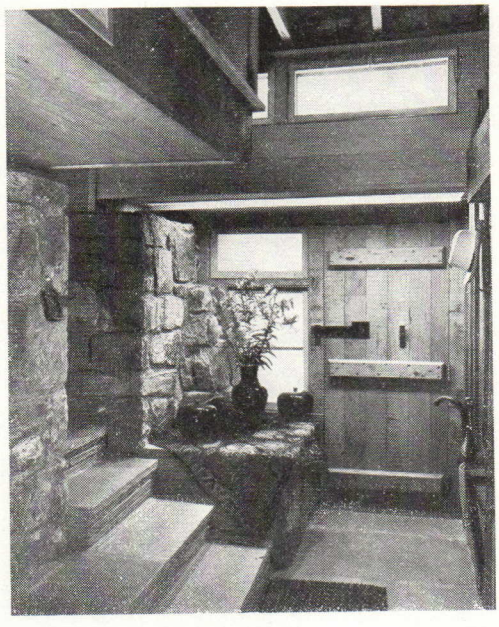
Detail of Sliding Panels



PRIVATE RETREAT: REDDING, CONNECTICUT

Left—view toward bed alcove on west wall.

Below—built-in desks occur just north of the fireplace. Plan and the small photo above it show the entrance hall that connects the retreat and the existing recreation at the lower level.



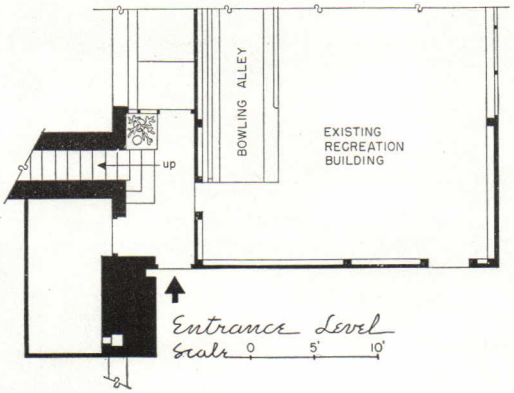


Figure 1. Functions and Titles of Personnel in 100 Architectural Firms

function	principals	staff architects	engineers	designers	draftsmen	job captains	specification writers	aver. functions, all employees
Client Contact	70%	32%	12%	18%	14%	27%	27%	31%
Preliminary Design	60%	47%	21%	80%	33%	27%	17%	42%
Working Drawings	42%	40%	20%	54%	98%	67%	10%	69%
Writing Specifications	45%	28%	13%	21%	16%	19%	60%	26%
Structural Engineering	22%	2%	31%	14%	16%	23%	3%	18%
Mechanical Engineering	18%	1%	43%	14%	8%	18%	—	14%
Product Recommendations	55%	21%	18%	57%	19%	15%	48%	54%
Interviewing Salesmen	47%	21%	13%	19%	17%	29%	30%	23%
Aver. number functions per title group	4.4	3.4	2.8	2.8	3.2	3.0	2.8	3.2

What is a Typical Architectural Organization?

PROGRESSIVE ARCHITECTURE has conducted two survey projects in the last few years, primarily for the purpose of determining precisely how, why, and when certain building products arrived finally as integral parts of new buildings. 231 buildings were studied in the two surveys—131 the first time, and 100 in a study recently completed—in cities scattered all over the United States. As a by-product of the main purpose of these analyses, certain facts were gathered about the 231 architectural offices which had designed the buildings. While the statistics are not capable of a scientific projection from which final conclusions can be drawn, they do give a reasonably accurate picture of the average active architectural organization which may be of interest to P/A's professional readers.

For instance, the number and classification by title of the office personnel varied almost not at all in the two surveys. Here are cumulative statistics, from 231 firms.

571 principals (partners and associates)	average	2.5
172 staff architects	"	.74
84 engineers	"	.36
482 designers, job captains, spec. writers	"	2.1
1755 draftsmen	"	7.6
3069 total principals and technical employes	"	13.3

Questions were asked about the functions these men performed in the office. After all, titles don't mean much—it's the work done that counts. Our investigators discovered that

31% of all employes (including partners) have contact with clients

42% work on preliminary drawings

69% work on final working drawings

26% work on specifications

54% participate in decisions having to do with product use.

The analytical breakdown of these "functions" of the various staff members is interesting. The chart (Figure 1) is from the 1950 report on 100 firms. (Results the year before were very similar.) Notice, for instance, that in these firms only 70% of the principals had contact with clients. Presumably the others are designers who do not stray from the board. And notice that at the time this study was made only 60% of the "specification writers" were writing specifications; 17% of them, in fact, were working on preliminary designs for new projects. In almost every case a man had more than one "function." (The average employe had 3.2 duties.) In other words, the day of the "draftsman" doing nothing but one job over and over is past; the day of the "designer" working only on vague preliminary studies with a soft pencil is also gone. These men also interview salesmen, have some contact with the client, occasionally write specifications, even poke into engineering problems from time to time.

Again considering only the last 100 case studies (the original 131 were very similar in this respect

Figure 2. Active Building Types, Indicated By % of Firms That Have Recently Designed Each Type

building types	% of firms
Stores and Shops	77%
Industrial Buildings	74%
Commercial Buildings	69%
Educational Buildings	64%
Single Family Dwellings	63%
Office Buildings	58%
Churches	56%
Hospitals	47%
Public Buildings	46%
Apartments	39%
Recreational Buildings	36%
Multiple Housing	35%
Entire Communities	25%
Theaters	23%
Hotels	22%

also) the building types on which architects are busy today are reasonably well indicated. (Figure 2) Stores and shops still rank first; houses occupy 63% of the firms; theaters and hotels drop below even community planning in the work of the average office studied.

Speaking of houses, one of the questions asked elicited the information that 70 of 100 firms actively solicited residential commissions; the other 30 would accept them at times. None, even among the larger organizations, completely turned thumbs down on this work.

When asked whether they specialized or had a general practice, 86% classified themselves as general practitioners; 14% as specialists.

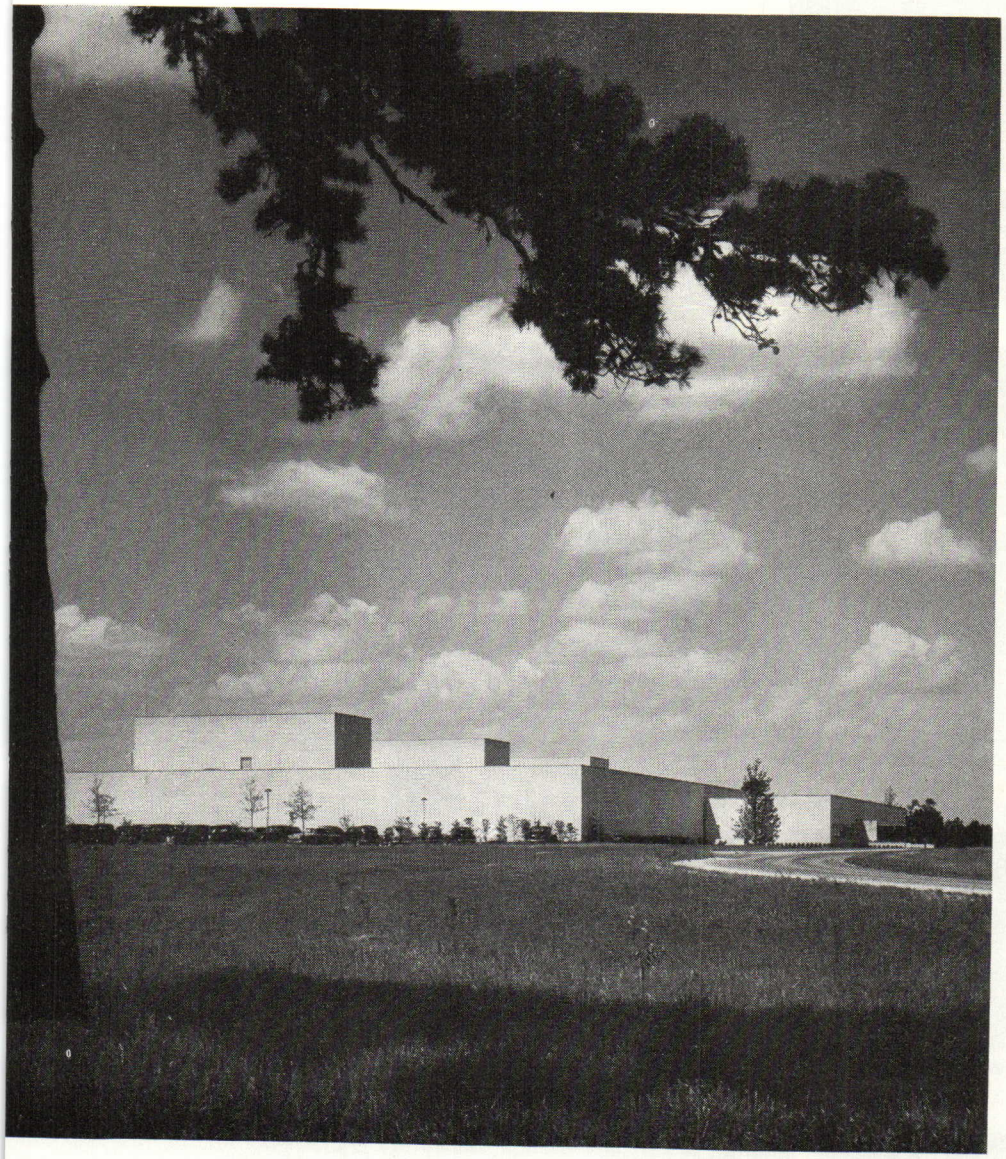
Finally, these 100 firms were questioned as to their practice as consultants, and surprisingly 61 of them replied that they were so engaged at times. 16 had acted as consultants for educational buildings, 15 as consultants for industrial construction. Other active consulting fields were commercial buildings, hospitals, government agencies, real estate management, financial institutions.

The questionnaire elicited much information on the manner in which certain manufacturers' products find their way into completed buildings, which is not pertinent to this report. However, if the architect doubts his own importance in the specifying process, the tabulation in Figure 3, based on replies from building owners, should be interesting. It may shock some that these clients feel in 19% of the cases that they themselves selected the type of product to be used, and in 31% of the cases chose the brand, but the question of the relative importance of the architect and the contractor, for instance, would seem to be settled.

Of course there is no typical architect's office and no typical organization. It is, though, sometimes instructive to compare the way you do business with the average set-up in a number of other active firms.

Figure 3. Source of Advice for Final Selection of Building Products

source	type	brand
Architect	66%	54%
Owner (self)	19%	31%
Couldn't recall	7%	4%
Engineer	3%	6%
General Contractor	3%	3%
Sub-Contractor	2%	2%
Total	100	100

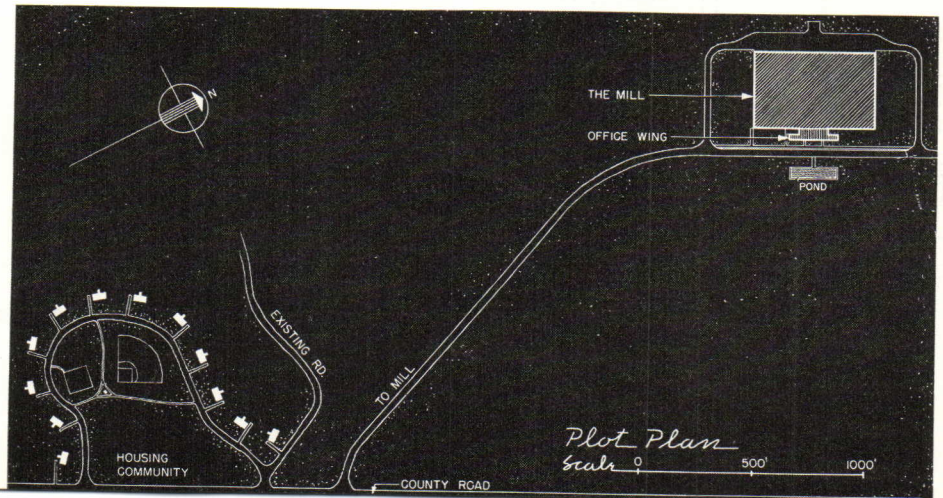


TWO INDUSTRIAL PLANTS

1. Gerrish Milliken Mill: Pendleton, South Carolina

CARSON & LUNDIN, ARCHITECTS

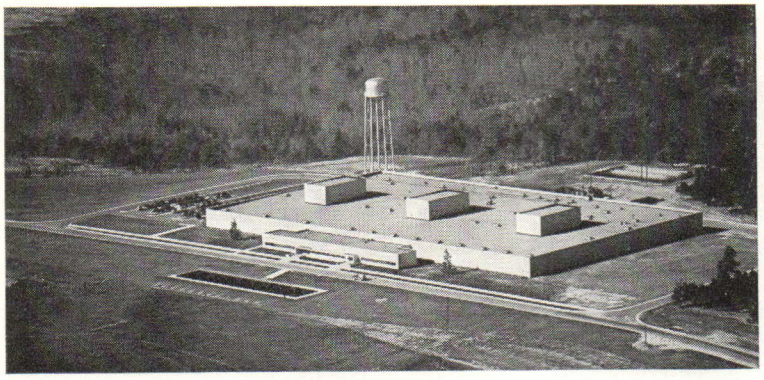
Engineering Department, Deering, Milliken Mills, General Plant Layout
Daniel Construction Company, General Contractors

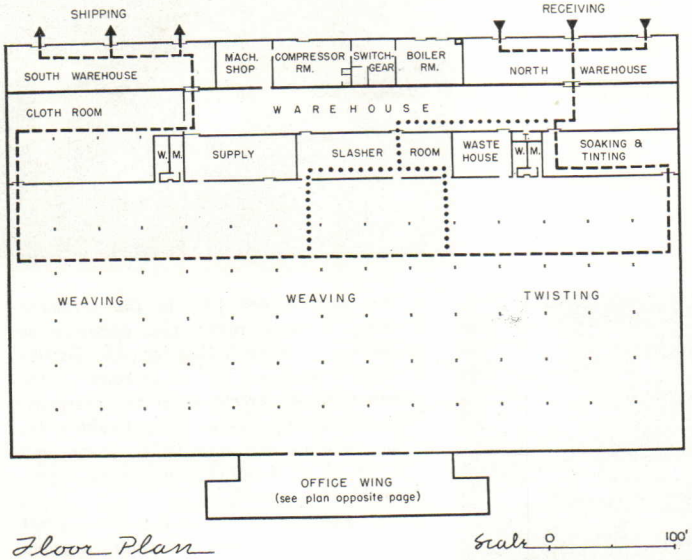


The most recent link in the extensive chain of mills owned and operated by Deering Milliken & Co., Inc., the Gerrish Milliken Mill, was named in honor of the father of the president of the company, Roger Milliken. Planned particularly for the twisting and weaving of rayon and nylon fabrics, it also manufactures certain combination-yarn fabrics.

In addition to the well-tailored plant (top photo), the project includes a group of houses built for the plant foremen and their families (photo immediately above).

Photos: Gottscho-Schleisner





Floor Plan

Scale 0 100'

Top—air view of the plant, showing its spacious rural site.

Immediately above—night view across one of the air-conditioning spray ponds that are designed and landscaped as decorative fountains.

Acrosspage—detail of central portion of the office building; plan of the latter, beyond.

The plant plan (left) includes a "flow diagram" that combines the routes followed in the manufacturing process of the different fabrics, from delivery of raw materials to shipping (by truck) of the finished fabrics.

GERRISH MILLIKEN MILL: PENDLETON, SOUTH CAROLINA

program A completely air-conditioned plant for the manufacture of rayon, nylon, and combination-yarn fabrics; a group of 12 houses, 11 for plant foremen, the 12th to be used as a guest house for visiting executives.

site An extensive rural acreage.

solution The plant itself arranged within a rectangle, with administrative offices and cafeteria in a lower building mass at the front. Spray ponds to serve the air-conditioning system are designed as decorative fountains at the front and rear of the plant. The group of houses is located around a loop road off County Road, just southwest of the plant approach road. Within the loop are a playground for children and space for a softball baseball field. To keep the grounds in good condition, 300 head of cattle graze the acreage.

materials and methods

Plant and Offices

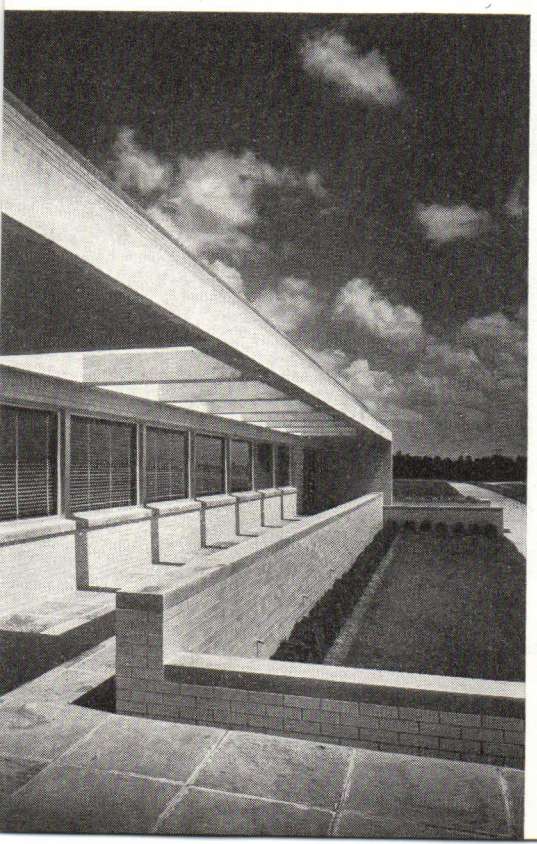
CONSTRUCTION: *Foundation:* reinforced concrete. *Frame:* steel. *Walls:* glazed white brick; common brick backup; interior walls—glazed tile in the mill; plaster and scored plywood in the office building. *Floors:* 5″ concrete on stone fill, surfaced with factory topping in the mill; asphalt tile or terrazzo in the office areas. *Roof:* 3″ treated wood deck finished with tar and slag. *Insulation:* acoustical—perforated steel panels in kitchen; cane-fiber ceiling tile in office areas; thermal—2″ cork board on roof. *Fenestration:* aluminum sash; double insulating glazing. *Doors:* flush, hollow metal, manual roll-up doors.

EQUIPMENT: *Heating and air conditioning:* Two water tube boilers using coal or oil as fuel; aluminum ductwork; air washers; freon refrigerant; centrifugal 1000-ton compressor; air diffusers; pneumatic controls. *Lighting:* fluorescent units. *Special equipment:* steam circulating water heater; stainless steel kitchen equipment; public address system.

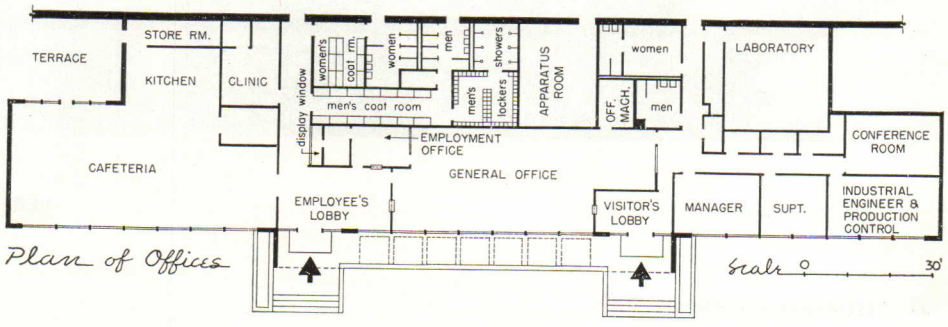
Houses

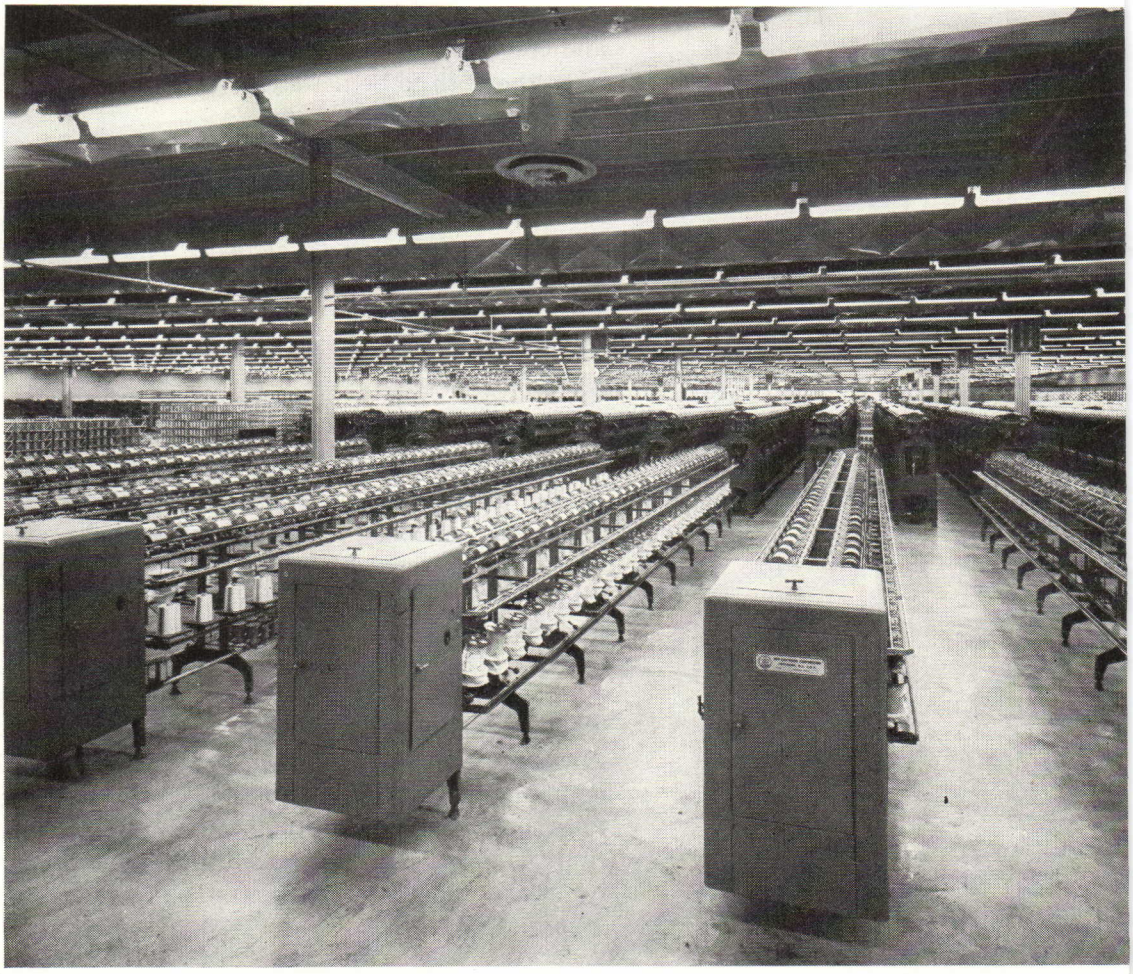
CONSTRUCTION: *Foundations:* concrete and common brick. *Frame:* wood. *Walls:* brick veneer; interior—plaster or striated plywood. *Insulation:* glass fiber type in both walls and attics. *Roofing:* rigid asbestos shingles over wood deck. *Fenestration:* steel casements; double-strength glass.

EQUIPMENT: *Heating:* floor-type warm air furnaces; oil fuel; electric water heater; attic fans. *Kitchen equipment:* electric range and refrigerator; 2-compartment enameled sink.



Carson Lundin





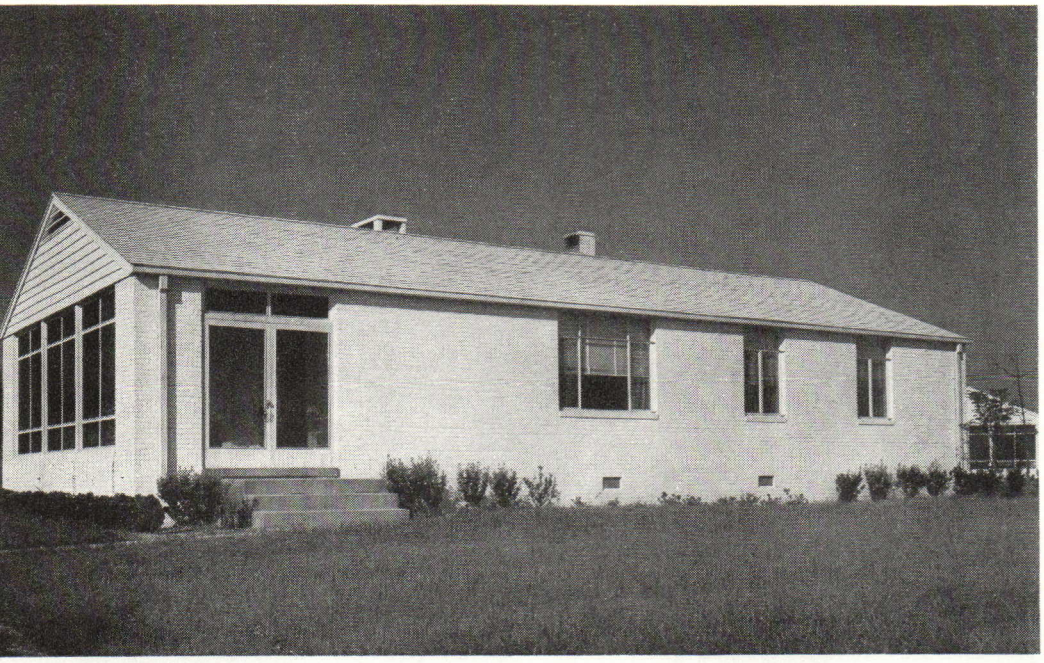
Above—inside the windowless mill area—a battery of twisting machines.

Left—filament rayon looms on which plain and fancy patterns are woven; continuous fluorescent fixtures provide continuous light levels.

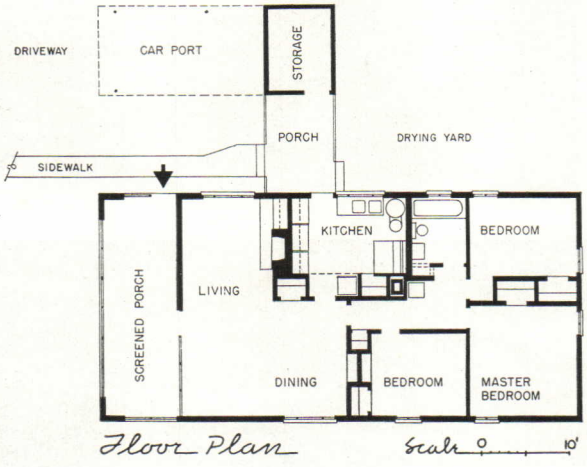
GERRISH MILLIKEN MILL: PENDLETON, SOUTH CAROLINA

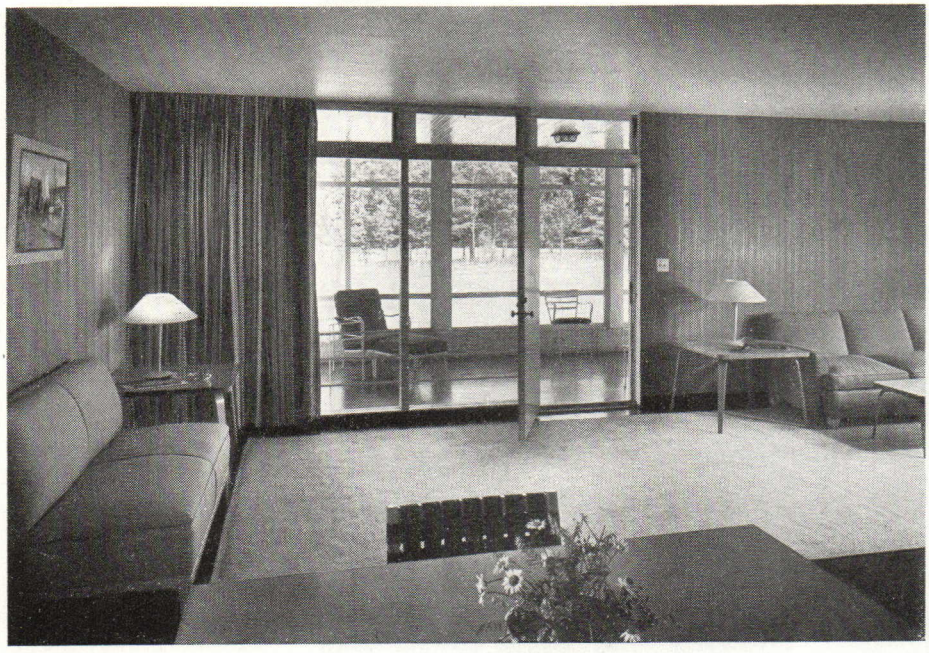
Right—general office space, in the center of the front of the office-building block; acoustical tile ceiling; asphalt tile floor.

Below—the cafeteria; flooring is terrazzo; walls are finished in striated plywood.



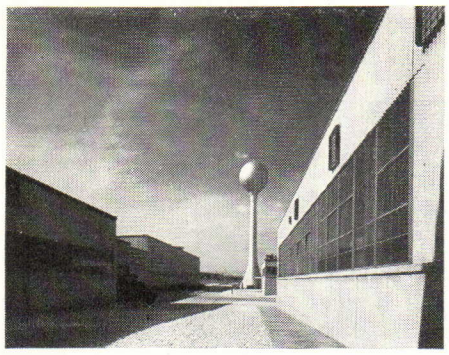
All 12 of the houses are built from the same floor plan and are identical in design, though the units are oriented differently around a loop road. Immediately below—dining alcove.





Left—window corner of the living room (finished in scored plywood) looking out to the full-length porch (photo above), a desirable facility in this climate.

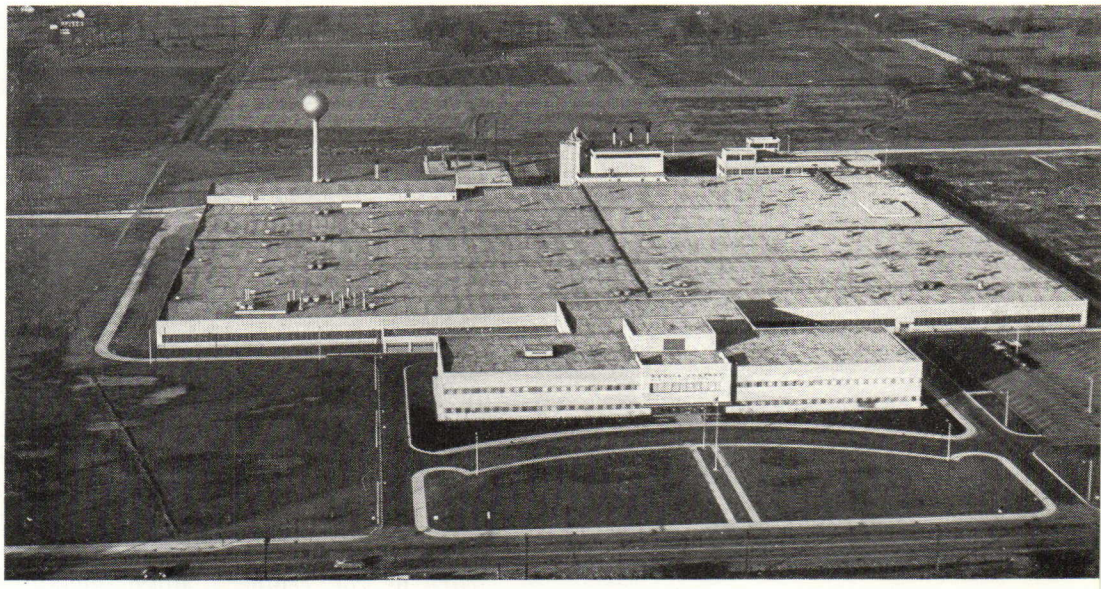
GERRISH MILLIKEN MILL: PENDLETON, SOUTH CAROLINA



2. A. B. Dick Company: Niles, Illinois

THE AUSTIN COMPANY, ENGINEERS AND BUILDERS

WALTER DORWIN TEAGUE, DESIGNER OF MAIN LOBBY AND EXECUTIVE OFFICES



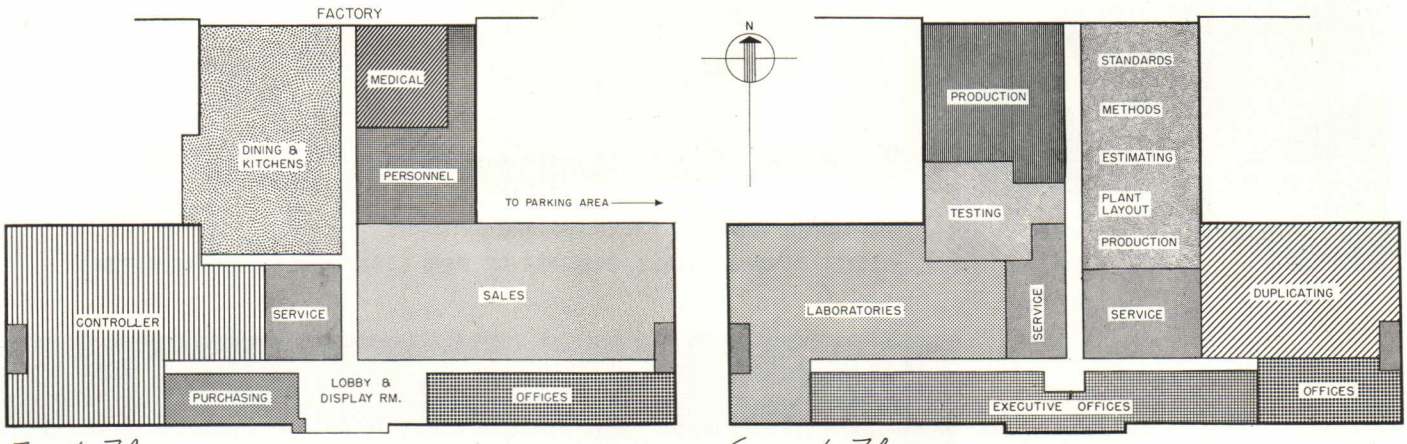
Thirteen acres of manufacturing and office space are under roof—approximately the size of 15 regulation football fields.

Top—view at rear; factory on left; boiler house, oil and chemical storage building, and 128-foot-high, 100,000-gallon spherical water tank to serve the fire sprinkler system, right.

Right—air view.

Below—closeup view of the two-story office building at the front of the giant plant; central motif is composed of marble, limestone, bronze and glass; wing wall surfaces are of buff brick.

Photos: *Hedrich-Blessing Studio*
Aerial view: The Austin Company.



program A modern plant to replace several old downtown Chicago buildings, where the company formerly conducted its operations. Administrative offices and facilities for the manufacture of duplicating machines and stencils, inks, and other supplies required for mimeograph operation.

site Sixteen miles northwest of the Loop, a 122-acre property, 53-acres of which are developed at present. Railroad sidings available.

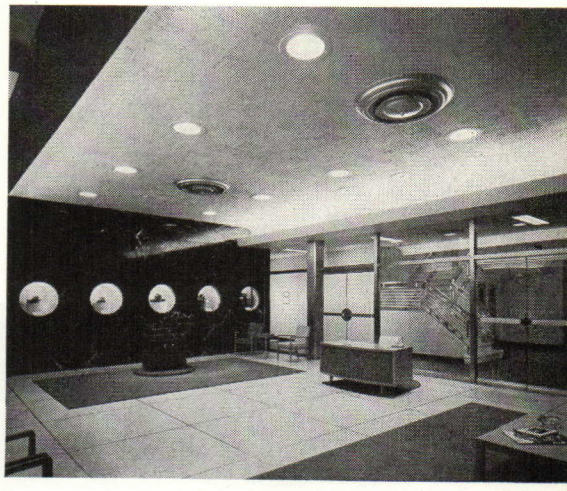
solution A giant complex—13 acres under roof—with a two-story office structure at the front; a huge one-story, flat-roofed monitorless factory building in back; water tank, oil storage building, boiler house, solvent building, and pump house, in separate structures at the far rear. Since the production process involves two main categories—the duplicating machines and also the stencils, inks, etc., that are used by them—the floor plan is divided into two main areas, each served by its own rail siding entering the building at the rear. Production in each category follows a general "flow line" along the exterior wall toward the front of the building, turning to enter a centrally located finished-products storage area. From here, via a central aisle, the finished products travel back to a truck-loading dock or to one of the rail sidings for shipment. The office building unit and portions of the stencil-manufacturing area are air conditioned. Remainder of the plant is served by a controlled ventilation system consisting of 43 integrated units located within the roof trusses that supply 6 changes of air each hour. The factory framework consists of 60-foot trusses, with columns spaced 40 feet apart and employs a standard H-section welded truss evolved by The Austin Company's research department especially to accommodate the variety of mechanical handling facilities that such a plant requires.

materials and methods CONSTRUCTION: *Frame:* steel. *Walls:* concrete sill walls, corrugated asbestos (above sash) : buff face brick and limestone (on front of office building). *Floors:* concrete, finished with a special hardener; asphalt tile and terrazzo in the office building. *Roof:* poured-in-place gypsum, over steel trusses. *Insulation:* acoustical—metal pan ceilings; acoustical plaster; thermal—glass-fiber in roof. *Partitions:* (in office building) : movable metal. *Fenestration:* aluminum sash; bronze sash; factory steel sash.

EQUIPMENT: *Heating:* boilers; convectors (in office building) ; unit heaters in factory. *Air conditioning:* year-round system in offices, laboratories and portions of the factory; controls. *Lighting:* fluorescent in office and most of manufacturing building; incandescent in storage areas.

In the center of the front of the second floor of the two-story office building are the Teague-designed offices of the company's two ranking executives.

Left—the paired secretarial offices, divided by a corrugated glass partition, the one on the left serving the president's office (photo below it); the one on the right, serving the office of the chairman of the board.



Above—main entrance lobby of the two-story office building, designed by Walter Dorwin Teague, who also designs the company's products. Marble end walls; terrazzo floor; bronze trim.

At left—tabulating machine room on the ground floor of the office building, separated from the control and purchasing departments by a permanent window wall that simplifies the problems of noise control and air conditioning. Wall-to-wall carpeting is used in this room. Fluorescent units recessed above eggcrate louvers provide 60-foot candles at work height.

key to plan

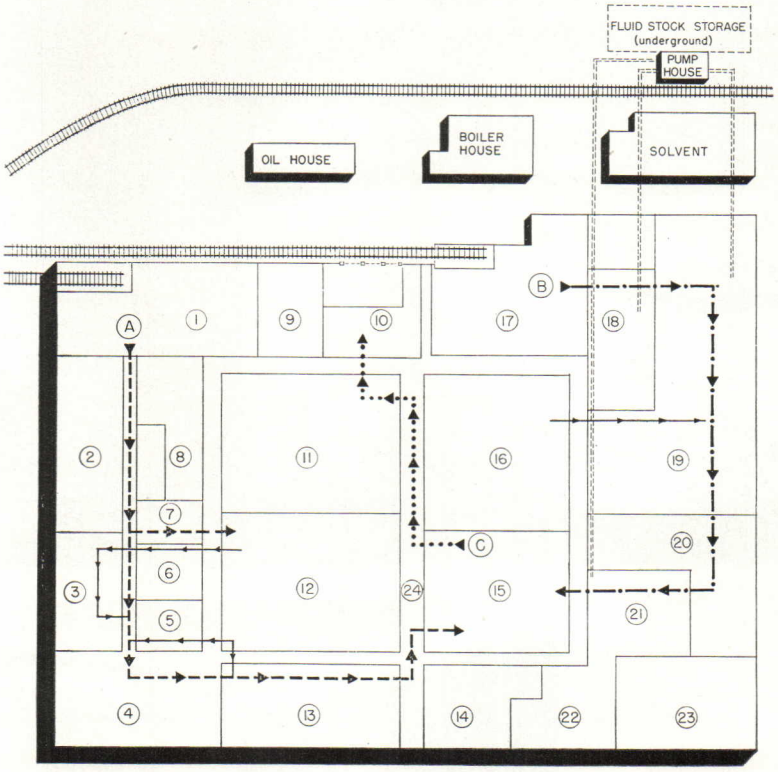
1. Metal Stores
2. General Machining
3. Sub-assembly
4. Polishing, Plating and Enameling
5. Cylinder Assembly
6. Welding and Brazing
7. Cleaning and Tumbling
8. Punch Press
9. Paper Salvage
10. Truck Loading Area
11. Order Filling
12. Parts Store Room
13. Final Assembly
14. Tool Room
15. Finished Products Storage
16. Bulk Storage
17. Bulk Storage
18. Paper Processing
19. Stencil Manufacturing
20. Miscellaneous Manufacturing
21. Ink Department
22. General Maintenance
23. Display and Woodworking
24. Shipping Aisle

Legend

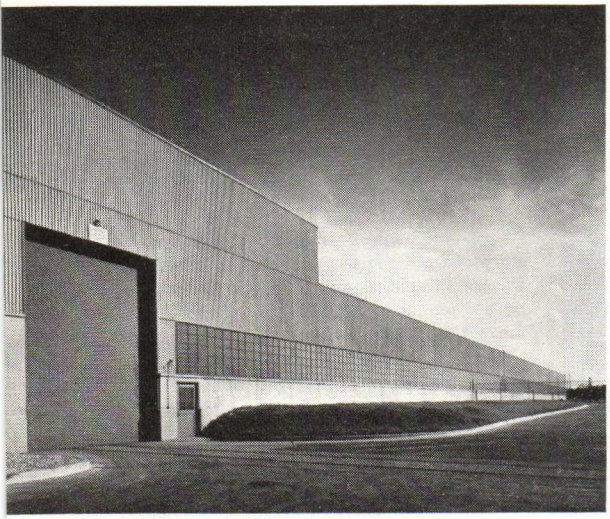
(A) DUPLICATING MACHINES

(B) STENCILS, INKS, ETC.

(C) SHIPPING



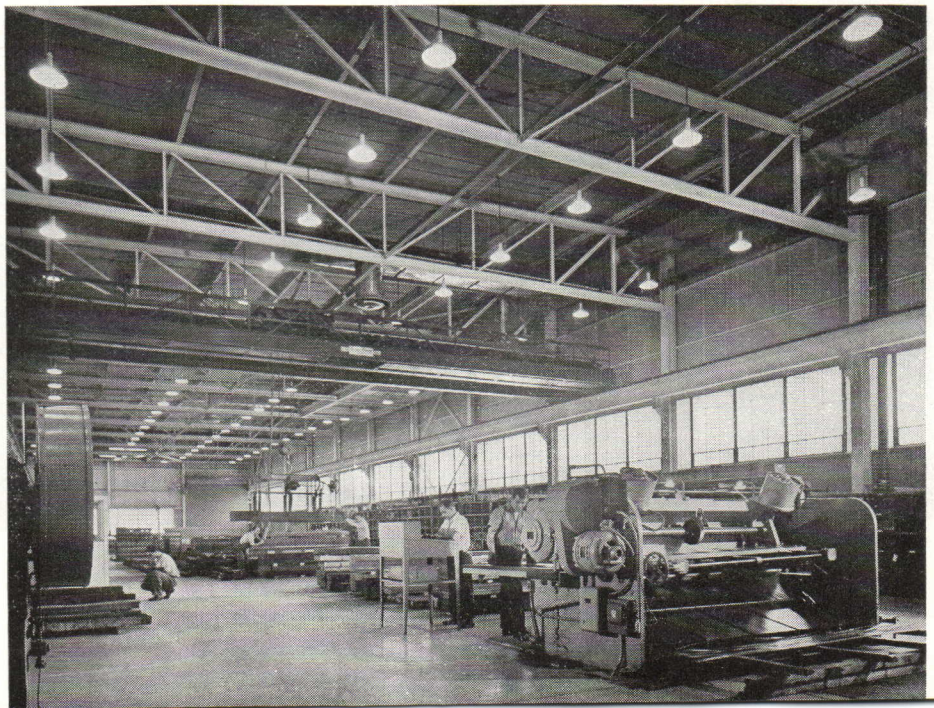
Factory Diagram

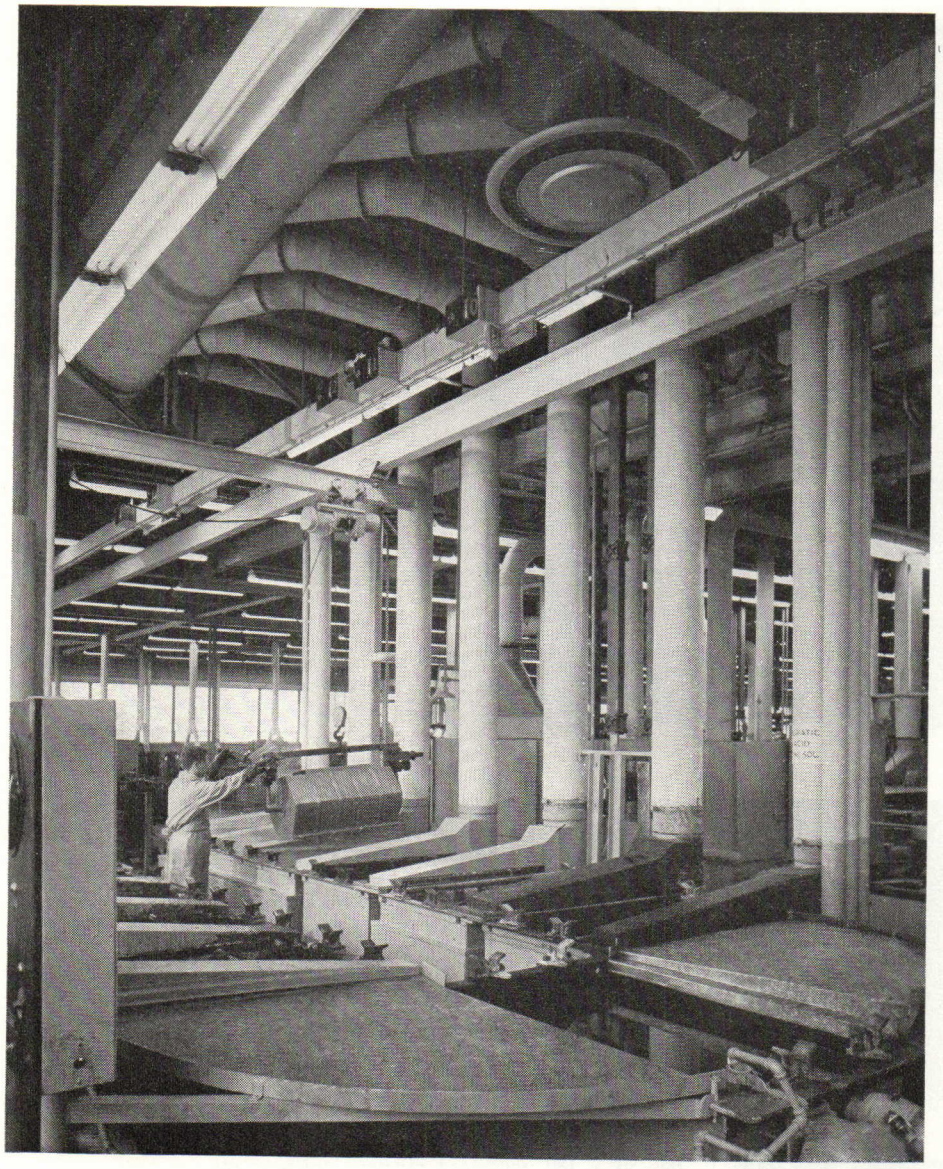


Diagrammatic plan above indicates the two main production flow lines—the one on the left, for duplicating machines; the one on the right for stencils, inks, etc., both of which join in the finished-products storage area.

Left—side of factory, showing one of the rail sidings that enter the building—poured-in-place concrete sill walls; continuous projected steel sash, and corrugated asbestos above. Glare-reducing glass is used in all window areas except on the north wall.

Below—high receiving bay, with bridge crane. In the factory, there are 29 separate craneways and monorail systems, with capacities ranging up to 10-tons, to assist in the mechanical handling of materials and units in the process of manufacture.

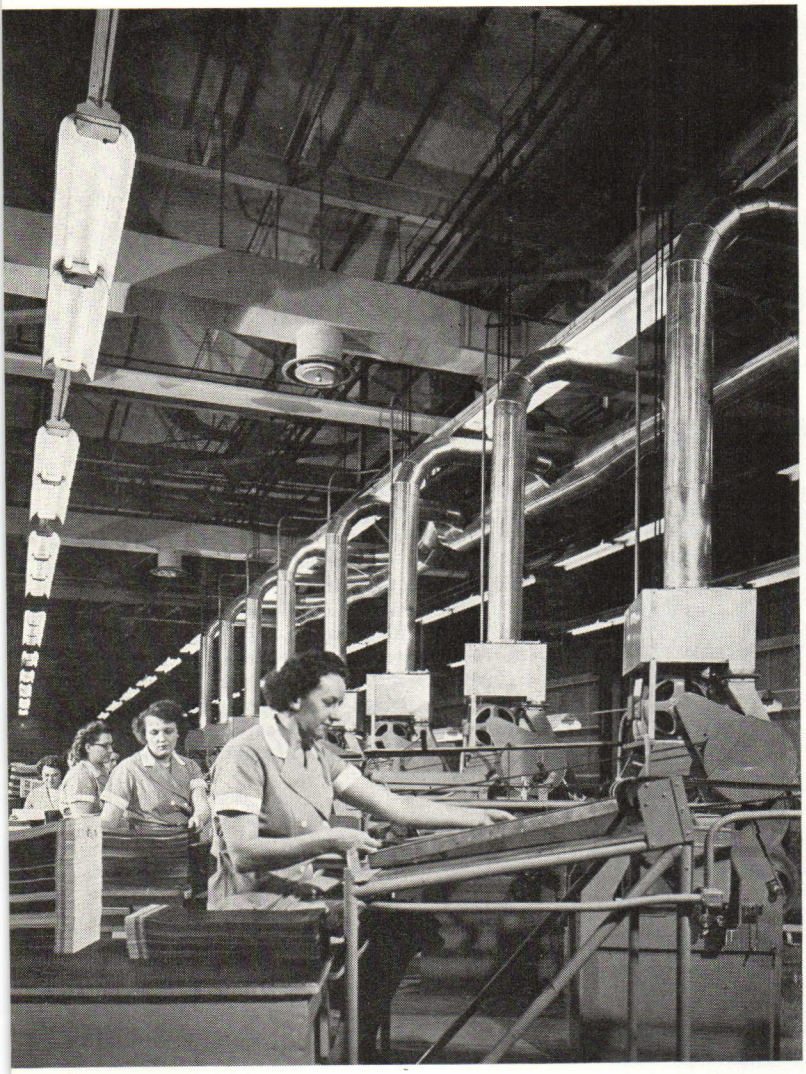




Top—a bank of black oxide finishing tanks in the plating department of the duplicating-machine manufacturing process. All exhaust pipes serving the tanks are vented through a single manifold with a power-driven exhaust fan on the roof, while fresh air is provided through a ventilating outlet directly above the bus duct.

Bottom—Final assembly of mimeograph machines; parts storage area, in background. The assembly area is lighted by three-lamp industrial fluorescent units providing 30-foot candles; incandescent units in the parts-storage area produce 15-foot candles.

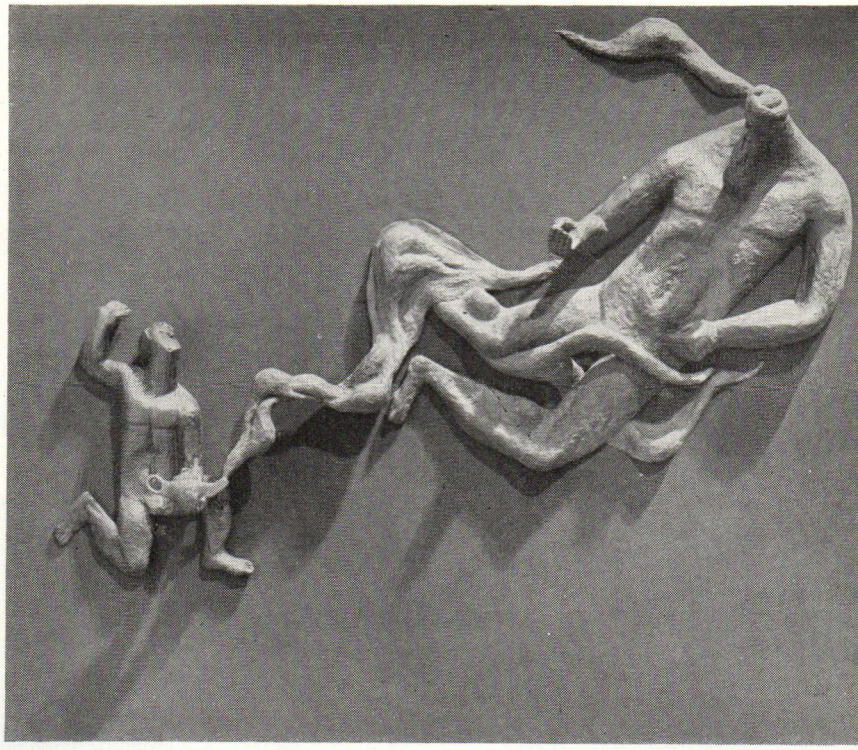
A. B. DICK COMPANY: NILES, ILLINOIS



Above—the broad aisle extending more than 500-feet through the center of the manufacturing and warehouse area. At left, metal bins that hold materials in process; at right, finished product storage. When orders are received, fork-lift trucks carry the finished products down the aisle to the truck dock or rail siding at the rear.

Left—one of the two large air-conditioned, windowless rooms where stencil manufacturing takes place. In this photo are stencil topping machines, which imprint guide lines and instructions during the final stage of stencil manufacture. Heat and vapors are exhausted directly to the outside from each machine.

Below—Solvent-recovery equipment is housed in this 50′ x 180′ reinforced concrete structure, connected to the stencil and ink manufacturing departments by the pipe and access bridge in the background.



Sculpture for Architecture

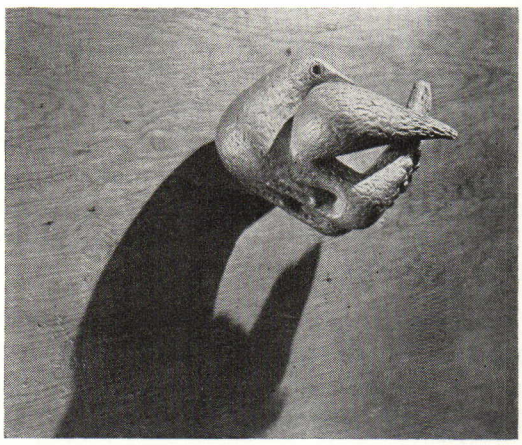
By MITZI SOLOMON CUNLIFFE

I would like to underline a few verboten and old-fashioned if not taboo words: decoration, baroque, and byzantine. These are qualities contemporary architecture needs and sculpture alone can give it.

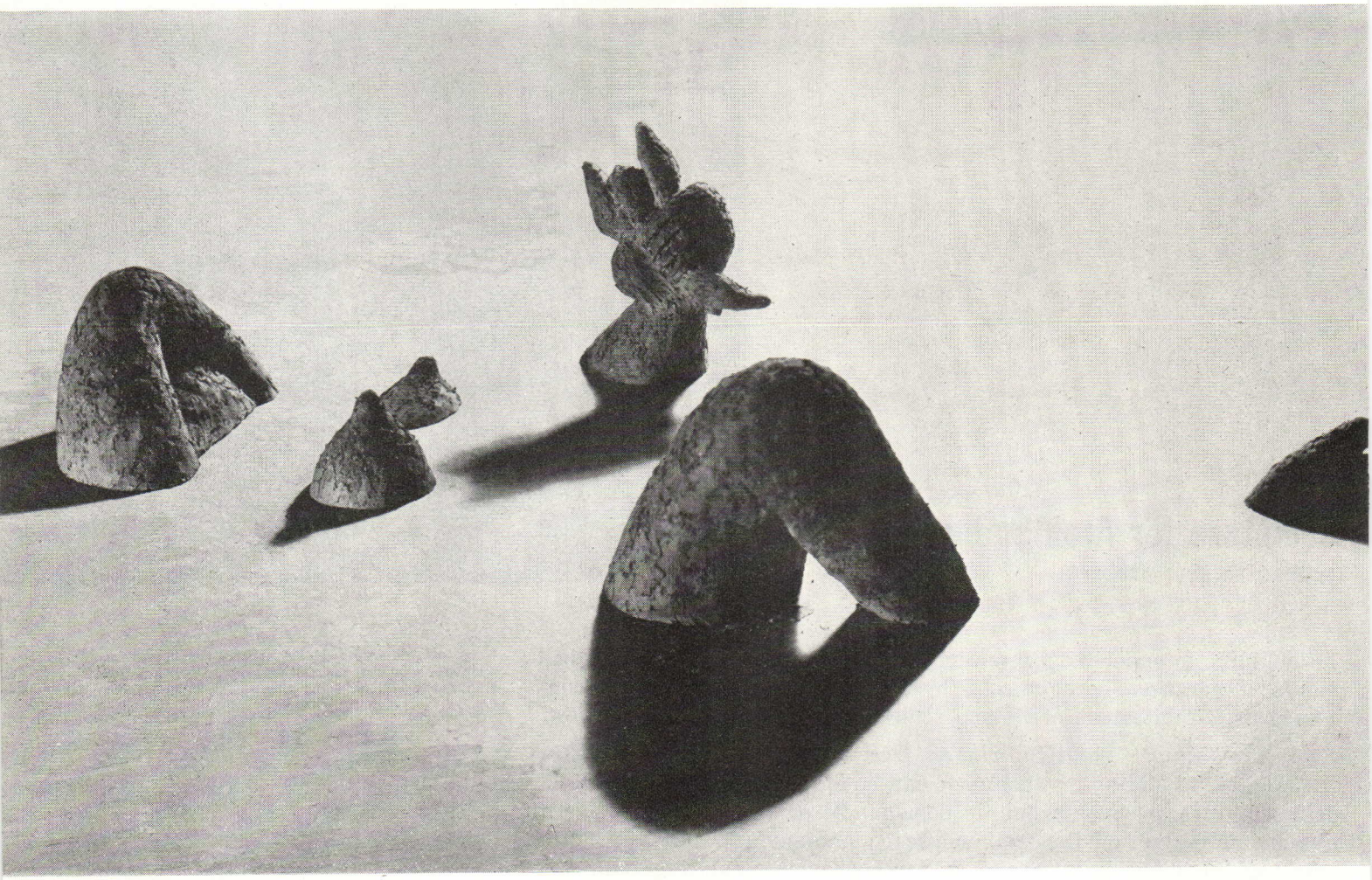
Sculpture Can Be Valid Simply As Decoration. The deliciously thin flat wall of a building or flush door can be emphasized by the scribble of a sculpture, perhaps a figured door-handle or sprawling relief as a human hieroglyph on the mathematical plane surface. Our antiseptic world of gleaming or machined surfaces (however exciting their abstractness intellectually) needs the baroque exuberance or byzantine splendor of a sensuous and organically moving sculptured detail. (I have intended my "Lamp of Knowledge" to function as the scribble on the wall, the "Eternal Israel" relief as human hieroglyph, the "Bird Ornament" as a romantic asterisk giving the prefabricated portal personality.)

Lamp of Knowledge: plaster model for bronze sculpture proposed for Donnell Branch of New York Public Library. Edgar I. Williams, architect.

Eternal Israel: plaster model for 9-foot square limestone panel commissioned for Temple Beth El, South Bend, Ind., by Loebl, Schlossman & Bennett, architects.



Bird Ornament: commissioned for house by Daniel Schwartzman, architect.



Above—*Earth Mother:* terra cotta model of proposed concrete landscape figure at monumental scale.
At left—*Promise and Fruit:* plaster model for bronze figure, proposed for University of Miami Classroom Building, Miami, Fla. Robert Law Weed & Assoc., architects.

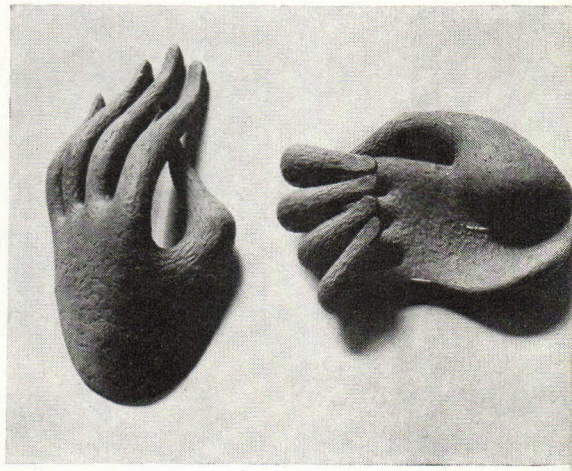
Man Rising: plaster model for monumental bronze sculpture on limestone wall, proposed for Memorial to Jewish Dead in Europe. Eric Mendelsohn, architect.

Sculpture Can Underline The Non-Weight-Bearing And Thin Sheathing Quality Of The Wall Surface. I challenge the prejudice of many modern architects against attached sculpture. By weaving through the building itself (in the mind of the observer) the sculpture cannot look tacked on because it is psychologically integral and indispensable. My first experiment in this direction was the "Earth Mother," a proposed landscape for a flat grassy place such as the sad green area of a housing project. Monumental in scale, it is designed to be climbed on and scrambled under by children and dogs, leaned upon by lovers and weary matrons. The design would be revealed and enhanced from any distant window at any level above it. I wonder how many "garden" sculptures would submit to a bird's-eye test!

I have uptilted the plane and used the plane-perforating form for the University of Miami's classrooms building, where the handsome blankness cried out for an explosive burst to dramatize the entrance beneath. For Eric Mendelsohn's Jewish Memorial for Riverside Drive I interwove the arbitrary wall-in-space he assigned to establish the entrance to the memorial grounds and to cut off the area from the casual view of the non-participating passer-by. In this case the "back" of the wall was as interesting as the "front," and the truncated sculptured limbs and branches tended to lure the spectator around to the other side where the image was made whole.

Sculpture Must Again Be Made Accessible. To fill the world with it (my wish) it must be die-stamped, mechanically reproduced and widely used. It must be made cheaper, and this can be done by utilizing 20th century techniques for manufacture and marketing. This does not mean that the exquisite isolated creative act of the artist in his studio is to be eliminated. This subtlest part of the process is more important and irreplaceable than ever. Sculpture withers now in a hot-house of galleries and museums for temporary exhibits catering to a faceless feeble audience of dilettantes and critics. If it were removed instead to the factory for reproduction and to the warehouse for sales, it would eventually be used and therefore wholesomely taken for granted by people as part of the natural environment and stuff of life, the beautiful texture of the world. The sculptor would again be a working member of society as in medieval France or in Greece when artist and craftsman were one word. I have designed a frieze to illustrate such mechanical possibilities. I have made sculptured door-handles to bring sculpture into daily physical contact. The Festival of Britain 1951 will use multiple-casts of a pair of hands I call "Push and Pull" for swinging glass doors, eliminating lettering and bringing whimsy and fantasy to even the automatic movements of arrival and departure. As one of the Festival's Design Group put it, "we're all so tired of Swedish half-circles!"

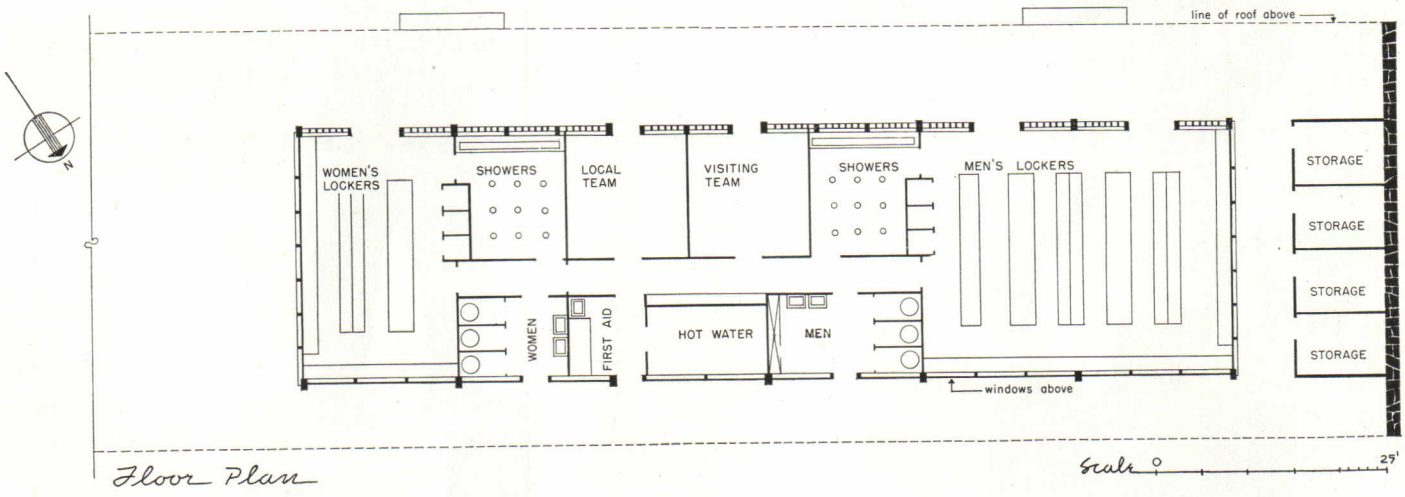
Push and Pull: **plaster model for 9-inch long door-handles, commissioned by Mish Black & Alexander Gibson, architects, for Festival of Britain, 1951.**

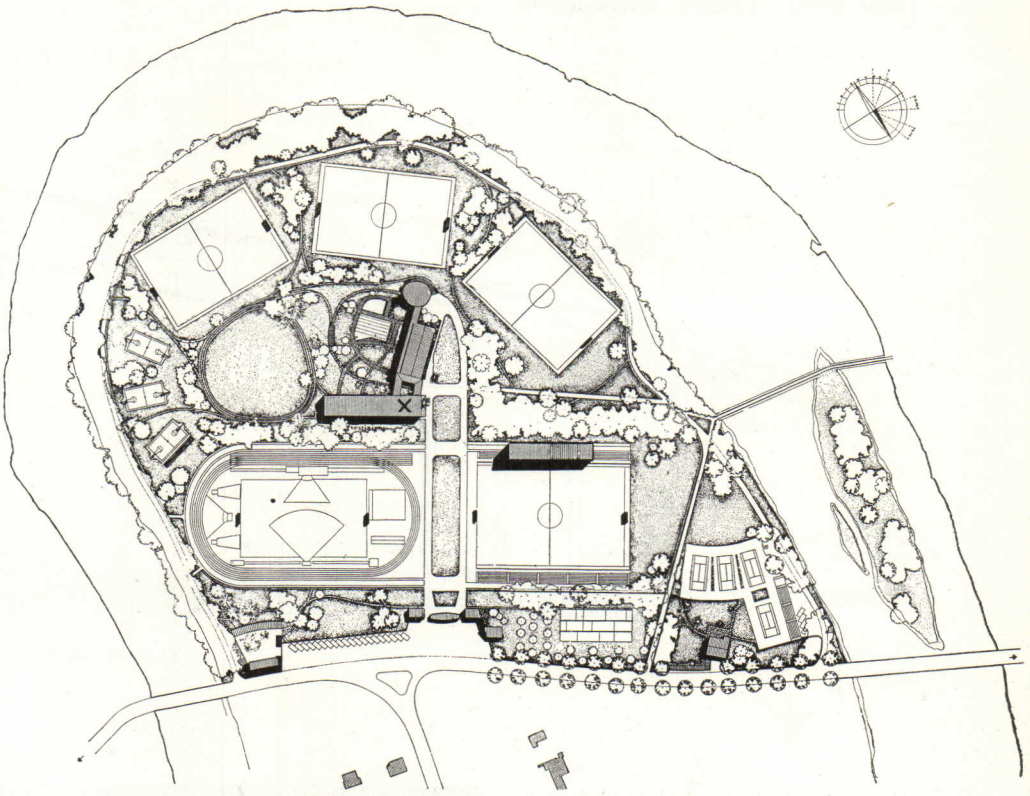


Root Bodied Forth 2: **plaster model for 8½-foot concrete figure proposed for Waterloo Station entrance, Festival of Britain, 1951. Gordon Tait, architect.**

Field House: Geneva, Switzerland

BRERA & WALTENSPUHL, ARCHITECTS





The large photograph acrosspage is a general view of the field house from the South: typical of the park's appointments are the cement-block seats and paving among the group of trees in the foreground. On the site plan, the location of the field house shown in this presentation is indicated by an X. Eventually, this unit will be extended toward the east to double its present size; the future gym-meeting hall and circular restaurant that will enjoy a view of the river across the playfields will extend toward the southwest. *Photos: Ed. Boech*

program A field house, with facilities for 113 men and 50 women, to serve two basketball fields and an outdoor track—first units of an ambitious eventual scheme for a public sports center. The final complex (see site plan above) will include three basketball fields, other playfields, a stadium, an indoor gym-meeting hall, a circular restaurant, and four tennis courts.

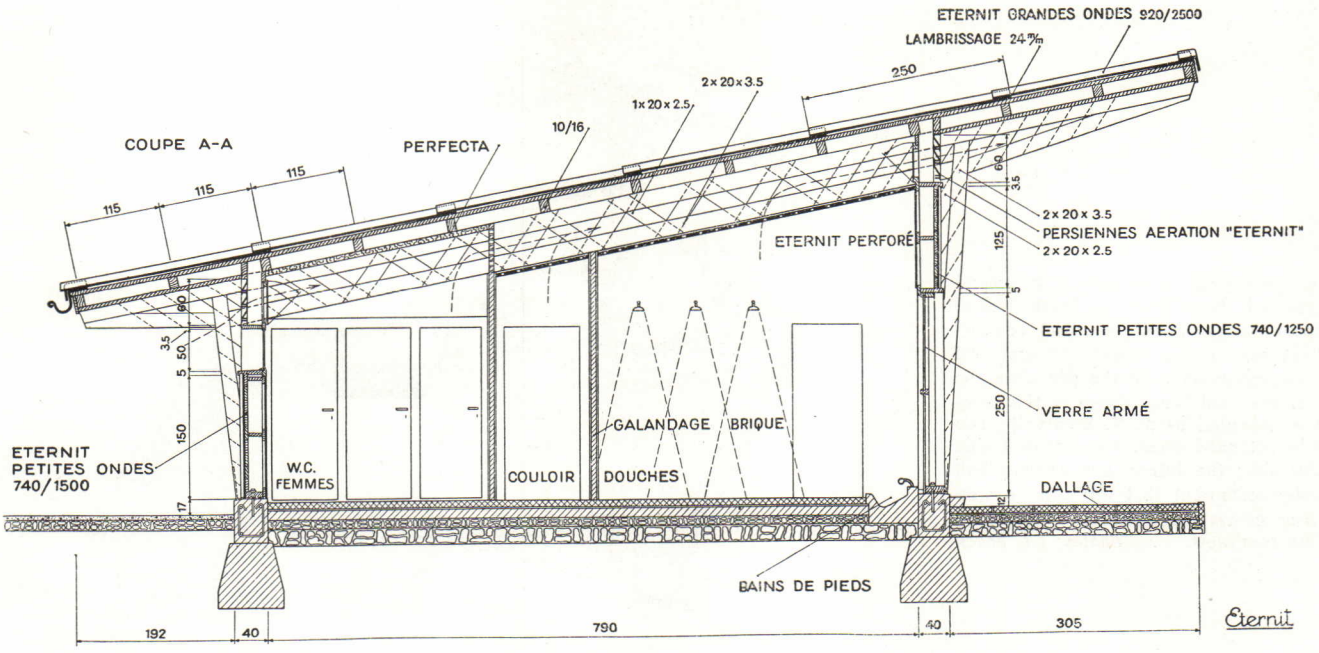
site A wooded point of land in an abrupt bend of the River Arve, in a residential section of Geneva.

solution The field house (about half its eventual size) is organized within a rectangle, with dressing rooms at either end; shower rooms, toilets, special dressing rooms, and space for the attendant are grouped in the center. The toilet rooms, located along the north wall, are for the use of the public as well as the athletes.

This building and its future extension will form a part of a group of structures in the final scheme that will include the big meeting hall-gym and restaurant. The buildings will occupy the approximate center of the area, to make access to all playfields and recreation areas as convenient as possible. Construction consists of a series of sloping, rigid wood frames that span the approximately 28-feet of interior space. These frames were prefabricated on the ground and raised in place. Enclosing walls are of asbestos-cement panels or wood frame backed with obscure glass. Heating is handled by a forced warm-air system.

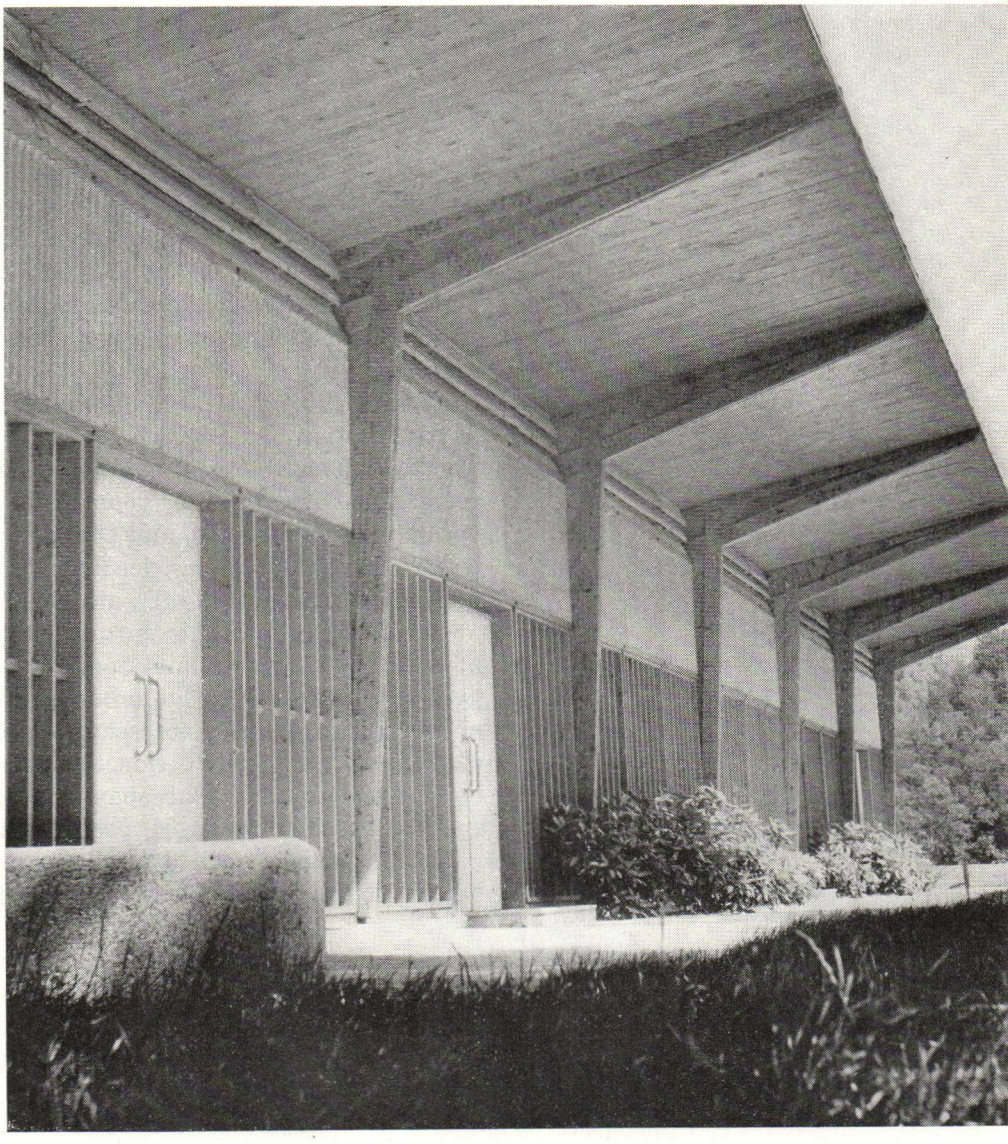
the architects *Georges Brera* (top photo) is a graduate architect of L'Ecole des Beaux-Arts of Geneva and served his apprenticeship in various architectural offices in Switzerland, establishing his own office in 1946. *Paul Waltenspuhl* like Mr. Brera, is a graduate of Geneva's Ecole des Beaux-Arts, and also a graduate engineer from the Polytechnic School of Zurich.

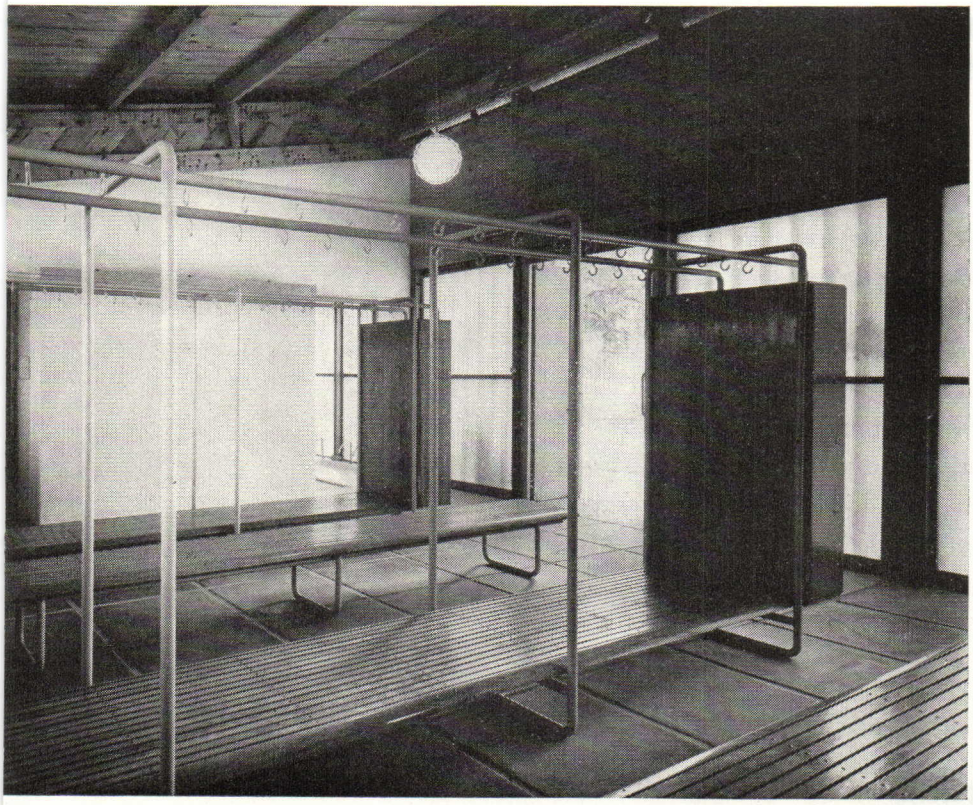
FIELD HOUSE: GENEVA, SWITZERLAND



Above: detail of the rigid wood frames that form the skeleton of the structure.

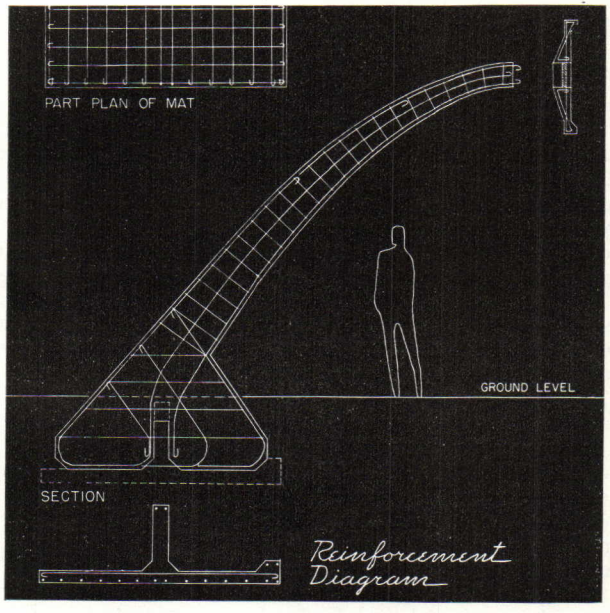
Right—the frames exposed, constitute an essential element of the finished design. Intermediate spaces are of asbestos-cement board or (along bottom portion) wood frames backed with obscure glass.

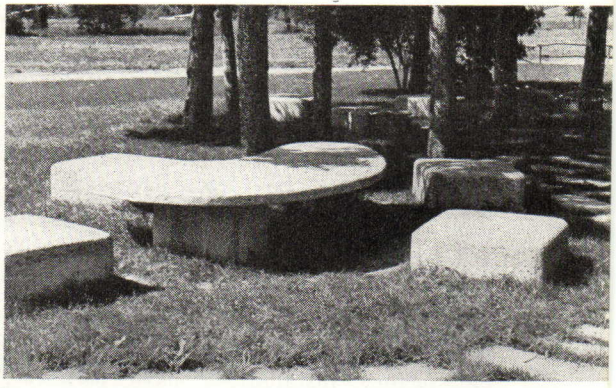




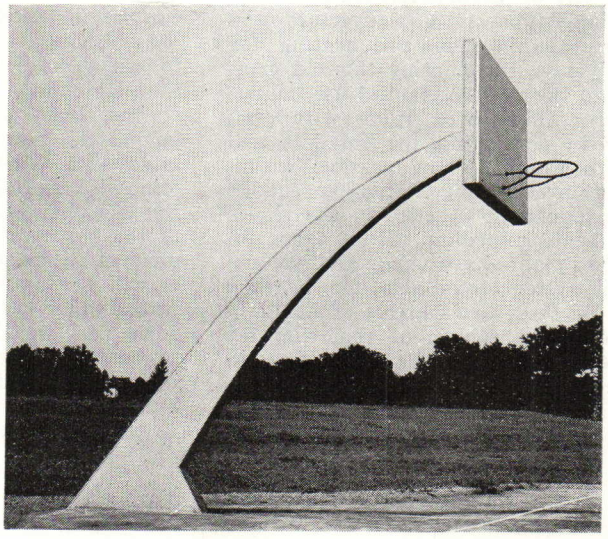
Left: detail of the women's dressing room—shower room, beyond at right; central corridor, left.

Below: a group of concrete benches and tables in one of the "green belts" of the park.





The basketball-field standard was poured in a form on the ground and raised in place as a unit; diagram shows the pattern of reinforcement.



Advantages of residential baseboard heating

- *Lower walls are warmer*
- *Output largely radiant*
- *Less bulky than radiators*
- *Convection well distributed*
- *Offsets edge heat loss in slab*
- *Uniform air temperatures in rooms*
- *Reverses down-draft at window walls*
- *Can be used and installed before plastering*

Residential Baseboard Heating

BY WILLIAM J. McGUINNESS*

a new kind of heating

Within the past few years baseboard heating has made its appearance, has been the subject of complete research and testing, and has taken its place as a proven and accepted form of heating. Numerous manufacturers have developed units of many different shapes and forms, mostly to standardized ratings. Satisfactory installations have been made and employed throughout the nation with good success. Baseboard heating elements are normally installed along the exterior walls of the rooms in a house and connected either by supply and return branches off a one-pipe main or in a series-loop where the water flows through each unit in series and through short intermediate pipes which connect the units. In the latter case the heating elements form part of the main and save on piping.

There are two types of baseboards. One is the cast iron radiant type and the other is the fin type, consisting of copper tubing with copper or aluminum fins or of steel tubing with steel fins. Examples are illustrated in Figure 1. The term *radiant* applied to the cast iron is well chosen because the hot water stands against the inside of the front face of the unit, making it a radiating surface. One manufacturer makes a pressed steel unit with similar characteristics, which can also be classified as *radiant.* These cast iron (or steel) radiant heating units are further classified into two divisions, R and RC. R stands for radiant and RC for radiant convector. The word *convector* in this case does not put it into the fin and tube category, but indicates that there are cast iron fins and convector space in the cast iron units. The RC units are therefore of higher rating. Both R and RC are subdivided into low height and high height. In the fin type, one or two tubes (surrounded by fins) can be used with corresponding variation in output. While the radiant type has very direct and effective radiation from its front surface, the fin type, usually with an outside metal casing, has only a secondary radiative effect from the warmed casing. This difference is not great and either type may be used with equal effectiveness. All of these have sprung from the single tube and fin convectors used along walls in industrial heating for some years. In adapting this old principle to the new residential use, manufacturers have been vying with each other in developing the smallest and most compact designs possible within the required ratings. Another change from industrial practice is the choice of a heating medium. Many large industrial plants have vapor and vacuum steam systems available for heating. Both of these are capable of handling the difficult problem of removing the condensed steam in the form of water from long horizontal units. Few houses and apartments are so equipped and their one-pipe steam systems could not handle the condensate and would be subject to loud knocking. Hot water circulated by means of a pump is therefore the favored medium. Another very important characteristic makes the use of hot water desirable. At the steam temperature of 212 F, baseboard units have been found to leave very bad streaks on the wall due to speedy convection currents in the air. It is necessary to maintain a temperature of 200 F or less in order to avoid this difficulty. Water systems can be successfully operated on temperatures as low as 170 F.

adaptability for use in old houses

Those who favor baseboard heating and wish to install it in existing houses will find that it is readily adaptable. It can be installed in front of existing base although a better arrangement is to remove the base and set it against the plaster or a ⅛-inch asbestos board on the studs. The stud space directly behind the new units should be insulated with 4-inch mineral wool batts, otherwise there is a great loss of heating efficiency because of the proximity of the baseboard and the outdoors. In general, when switching to baseboard it will be found wise to insulate and utilize other heat savers such as storm sash and weatherstripping. If these precautions are not taken, it may prove difficult to limit the heating units to exterior walls. It might be necessary to place them on inside walls as well,

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which is not the best practice. In a one- or two-story house with basement, a one-pipe main can be used in the basement and supply and return branches run directly to first floor radiators. The second story units are served by supply and return risers concealed in the walls. Perhaps an easier scheme would be to use one pair of risers (supply and return) for each of the two floors, minimizing the cutting of walls. Each of these would serve a series loop, one for each floor. The only problem of cutting would be for an expansion loop, if needed, or for a door loop where the pipe must be interrupted and run below the saddle of any door in an exterior wall (see Figure 5).

use in new construction

Modern design and the advent of solar houses have tended to concentrate the windows of rooms on one wall only, usually the south. Sometimes there is an auxiliary high strip window on the north. Radiant heating has been a good solution to the heating of such houses. Baseboard, however, is now quite suitable for such conditions and offers many advantages. As an example, one such room, having a heat loss of 27,000 Btu per hour is now heated by radiant coils in the entire ceiling on minimum spacing. The south wall affords 30 feet and the north wall 22 feet for baseboard. If baseboard had been used, the required output per linear foot would be 27,000 divided by 52 or 520 Btu per hour per linear foot. Figure 1 shows a few units, selected at random from various manufacturers, but representing the range of capacities obtainable. It is evident that with 200 F water (which is quite standard) an RC High cast iron radiant element could be used with an output of 601 Btu per hour per linear foot. Only 45 feet of the walls would be used in this case to equal the room heat loss. The size of this unit is 1⅞ inches by 9⅞ inches. A more compact fin-type convector type (also Figure 1) may be used with an output of 525 Btu per hour per linear foot. This one measures 1½ inches by 8 inches. Baseboard would reverse the down draft which now occurs in this room on the north wall when the sun is out and on both walls at night. Its response to a call for heat is faster than that of most radiant systems. Modern design has also tended to minimize the size and even the use of ordinary base in rooms. The use of baseboard heating elements matched in the rest of the room with wood base or by the manufacturers matching metal casing which is obtainable, probably would not achieve the esthetic effect sought after in modern planning. There is no reason, however, why the heating base cannot be stopped at the end walls and not continued. Often these end walls are of brick or stone and need no base anyway. A number of the types of baseboard offered for sale to date have not been of the simplest or most attractive design. The critical selection by architects and the public is likely to correct this fault. Some new planning carries the window down as close as possible to the floor and the use of baseboard heaters would be a compromise in this scheme. These are a few of the difficulties in adapting the new system; however, by the co-operation of architects and manufacturers they can be overcome.

suitability to basementless houses

Research by the National Bureau of Standards in 1945, and by others since then, has established the extent of heat loss at the edge of the concrete slab of houses built on slabs resting on the ground. The loss at this perimeter location is relatively large, resulting in low temperatures at the floor near the wall, while at the center of the room the floor temperatures are about average. These things are caused by fast heat conduction through the walls from the slab, and the slowing down of heat loss through the center of the room to a section of earth with a large thermal content whose temperature has built up and become stabilized. Construction planners have partly compensated for this unbalanced heat loss by insulating vertically between the slab and the wall. Conventional radiators and forced warm air systems do not help much to correct the balance of this bad situation. Three other systems do. They are radiant heating, perimeter warm air heating (warm air in ducts under the room perimeter) and baseboard heating. Extensive tests during trial heating periods in 1948 at the University of

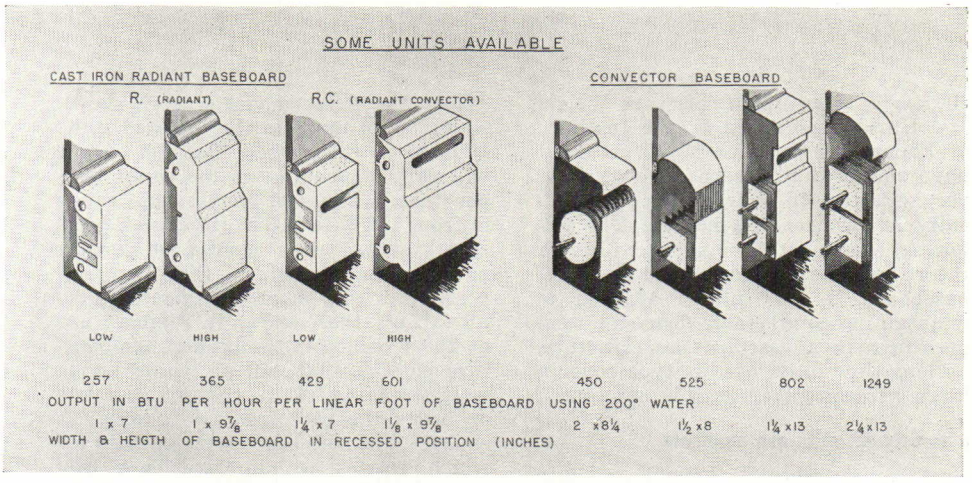
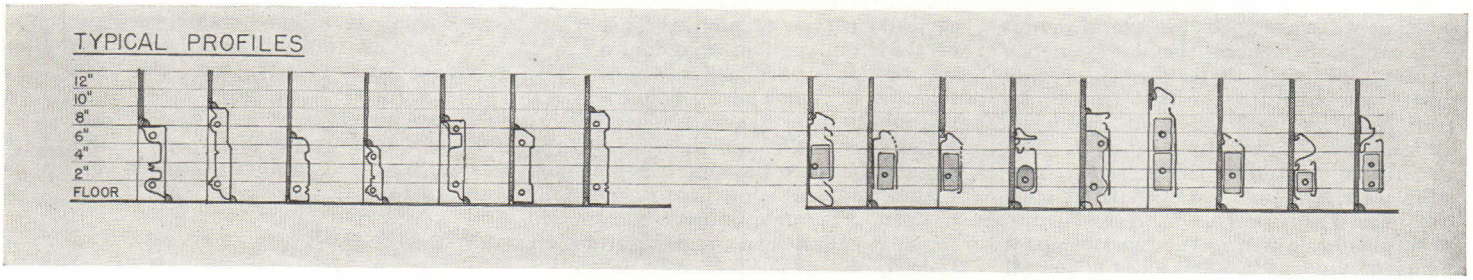


Figure 1.



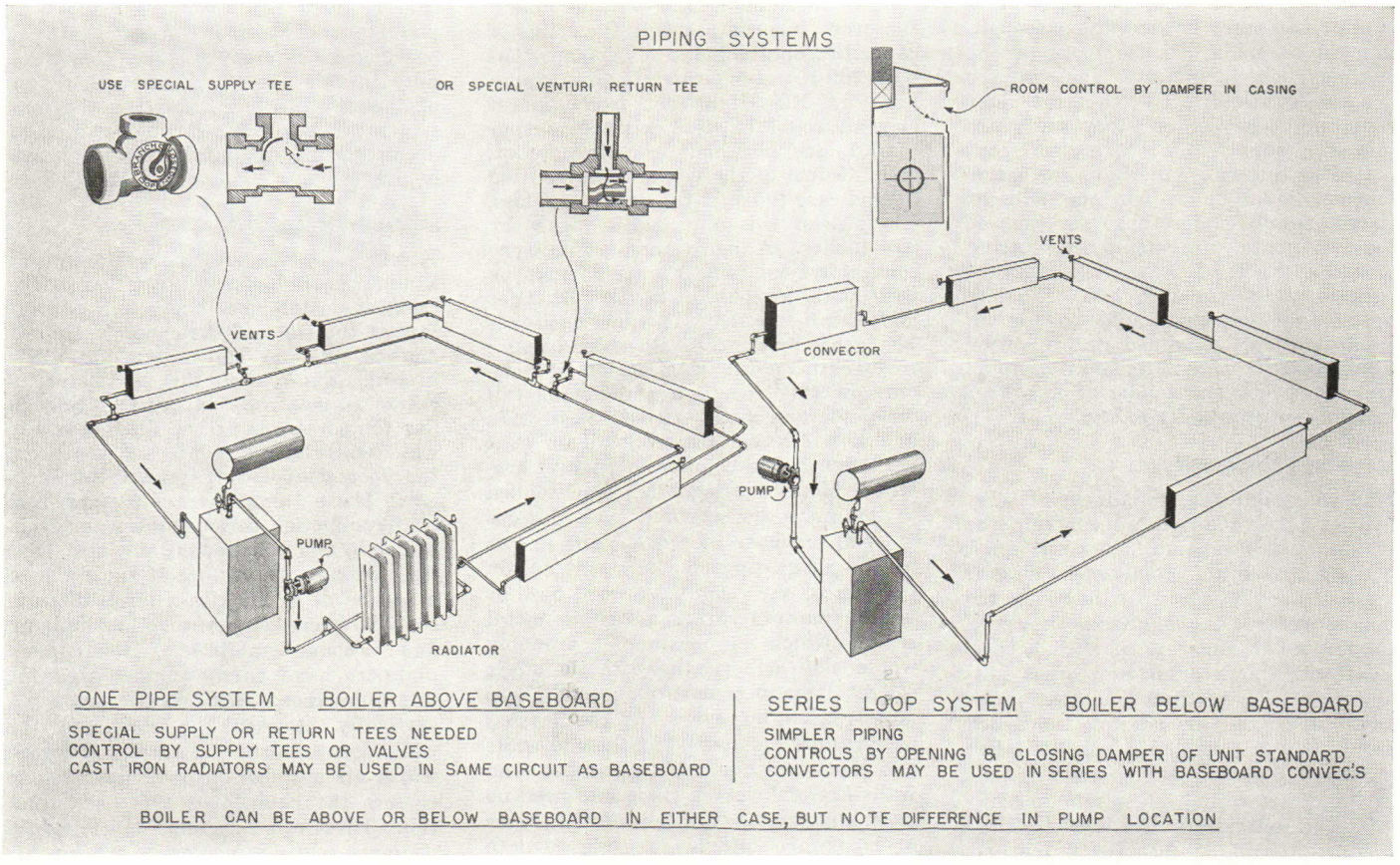


Figure 2.

Illinois by Research Professors Weigel and Harris, sponsored by the Institute of Boiler and Radiator Manufacturers, have shown that baseboard heating is very effective in overcoming this difficulty in basementless houses. The following statement is made as part of the report of these tests. "The radiant baseboard is particularly adapted to maintaining comfortable floor slab temperatures in a basementless structure, as long, low units of this type cover a large percentage of outside exposure."

a variety of units are available

Cast iron baseboards have been quite standardized in output ratings and classified as R Low and R High and also as RC Low and RC High. Their dimensions vary slightly but typical measurements are given in Figure 1. Convector (sheet metal) type baseboards are not quite so well standardized and their rating will vary with the several manufacturers. In general they carry higher ratings although there is some overlap with the range of the cast iron units. Styles of several different manufacturers are shown in Figure 1. The smaller dimension or thickness out from the wall is from plaster to front edge of base when the base is recessed into the plaster, which is the most compact way of placing it. This is true for all except the first convector type shown which is not made in the recessed style. It is to be understood that the output will vary, depending on the water temperature. The usual temperature range is from 170 F to 215 F (in closed, pressure systems) with about a 50 percent variation in the ratings. Since it is impossible in this short treatment to give all ratings, those shown in Figure 1 are at 200 F which is the highest temperature possible that will not cause undue wall streaking. It is possible to quote or order the cast iron by "equivalent square feet of cast iron radiation," which relates to standard cast iron radiation. These figures are not given here. There is a growing tendency to rate equipment in Btu per hour.

piping can be simpler

One of the most novel features of baseboard is the possibility of using the series-loop type of piping. This is one of the circuits illustrated in Figure 2. As the baseboard units are so close together at their ends, it is quite logical to connect them together and allow the water to run through them as a single circuit. Between the units the pipe runs within an open metal base of matching pattern. This pipe is given some credit for heat emission in the general design. Indeed, the general concept is that a pipe is run around the house and fins placed on it to increase its output for as many feet as are required. Obviously no valves are possible for control of individual units. All convector type baseboards have a sheet metal cover and control can be accomplished by a damper which closes the top opening on the cover where no heat is desired. This system is quite effective. The layout saves on pipe and valves. Because the water at the first unit is hotter, it is normal to increase the middle third of the units by 7½ percent and the last third by 15 percent. When cast iron is used, the one-pipe system is suggested. This is identical with any one-pipe system using conventional radiators. In this case, special return fittings must be used to assure the proper diversion of the water to each element. Control valves at each baseboard or in each room make control possible. If an adjustable supply tee is used instead of a return tee, the valve can be omitted and the adjustment for the radiator made in the basement. This is a balancing operation, but in such a case room control is not possible without someone going downstairs.

elimination of air

Referring back to a conventional hot

water system using cast iron radiators, it will be recalled that air is eliminated by a small petcock at the top of each radiator. This is opened by hand and water pressure expels the air. Air has collected there because it is a high point in the system; each radiator is a trap for air. The cost of automatic vent valves for each radiator is usually prohibitive. The case of cast iron radiant baseboards connected in a one-pipe circuit is identical with the example just given and each unit will have to have a petcock vent which is checked once or twice a year. If two units are connected together longitudinally, so that air can flow along the top of both, one vent is sufficient. To accomplish this, it is necessary to join the top connections as well as the bottom. Any air released in the boiler, whether it is above or below the radiators, collects in the compression tank, the water level of which can be adjusted periodically. Where the series loop is used and the system consists essentially of one long horizontal pipe, an automatic vent valve can be installed anywhere; however, it is preferable to install it at a high point if one exists. Where such a system loops under a door, a manually operated or automatic vent must be placed in the run of pipe just ahead of such a loop. If the speed of the water in fin and tube systems is carefully adjusted by the use of a special pump and special pipe sizes, the designer may depend upon entraining the air and carrying it back to a central automatic vent in the return circuit near the boiler. In this case all vents are eliminated except at the one point indicated. Venting is most important, because if the system becomes air-bound, circulation is seriously impeded.

boiler and controls

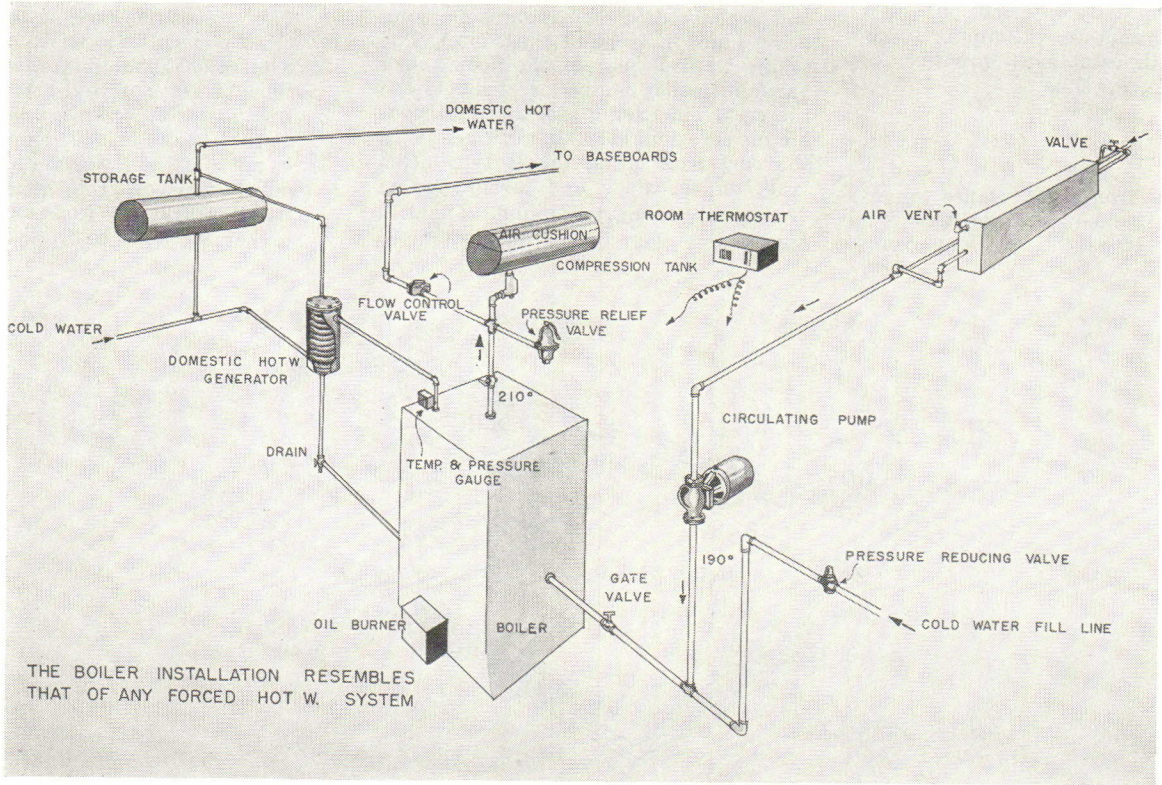
The closed system under pressure, with proper fill valves, relief valves, and an air cushion, is generally chosen for all forced hot water systems, whether for standard radiation or for baseboard heating. Figure 3 shows the piping and controls at a boiler and one baseboard unit in a typical system. If 200 F is chosen as a desirable average temperature in the baseboard, water is delivered at 210 F and received back at 190 F. This is a 20 degree drop which is quite usual in hot water systems. Whenever the boiler water drops below 210 F, the aquastat starts the oil burner. When the room thermostat calls for heat, the circulating pump and the oil burner are turned on simultaneously. When the room temperature rises to the degree called for, the thermostat turns off the circulating pump and the flow control valve closes against accidental circulation. If the system needs water, the pressure reducing valve opens and fills it. If the pressure within the piping and boiler accidentally becomes excessive, the pressure relief valve opens and relieves the situation. Small variations in the pressure are taken up in the air cushion of the compression tank.

design and layout

This might well be expressed in the sequence of operations.

1. Decide whether cast iron or convector units are most suitable as determined by the probable required output, the piping arrangements possible, and the architectural planning.
2. Choose between a one-pipe system and a series loop.
3. Compute hourly heat losses from each room or space in the usual way.
4. Measure and record the length available for baseboard on exterior walls in each room.

Figure 3.



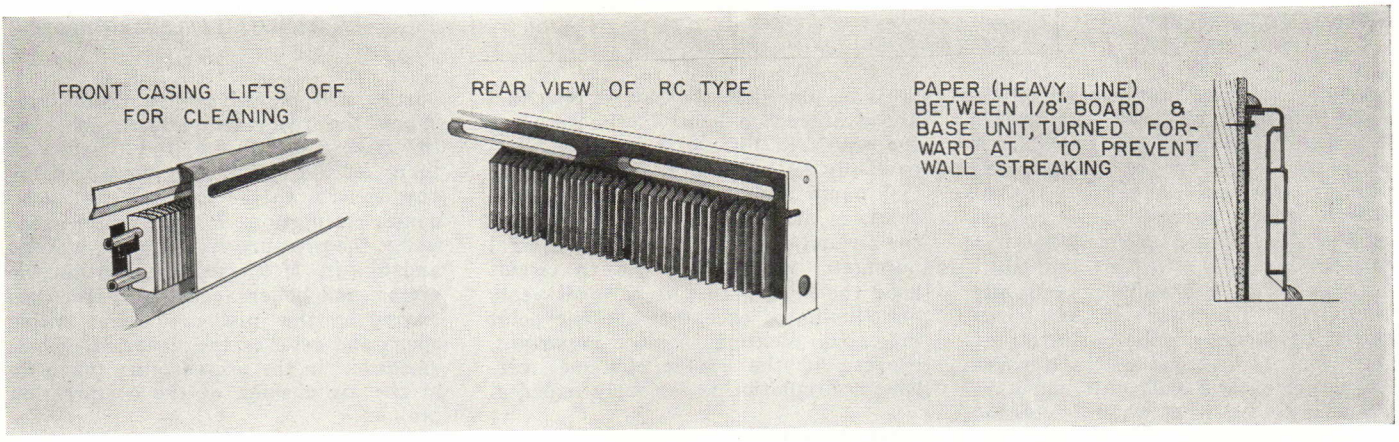


Figure 4: installation details

5. Compute the required output of the baseboard in each room in Btu per hour per linear foot if the entire available length of baseboard in each room is installed. (Heat loss per hour divided by the available length.)
6. Select the room with the maximum required output and choose the proper average water temperature and the length and type of baseboard required.
7. With the average water temperature established, select the length and type of baseboard needed in each room.
8. Make a scale diagram of the system, place all controls and measure the length of the piping and list the fittings in the longest circuit.
9. Establish the "equivalent total length" of the system and the gallons per minute that need to be circulated. The latter depends on total heat loss and temperature drop.
10. With the above information, select a pump, and size the piping in accord with established practice for hot water heating.

installation

In using cast iron an allowance for expansion of ⅛ inch must be made for each 10 feet of baseboard. Connections to the one-pipe main should preferably be by a swing joint, if threaded pipe is selected, or be long enough to permit some bending if sweat fittings are used. The expansion of copper or steel tubing is taken up in long pipe runs by using an expansion loop at one or two points in the length of any long run of the series loop. Door loops also serve to absorb expansion. Both of these are shown in Figure 5. In order to avoid wall streaking it is necessary, besides controlling the water temperature, to install sisal or other heavy paper behind all cast iron units and turn it forward ½ inch, covering it with a ½ inch quarter round molding. This diverts the air away from the wall and toward the room. Convector type units do not usually need this precaution. In their use, however, it is desirable to select a type in which the upper opening is on the front face of the casing and not on the top. The top opening makes for greater efficiency of flow, but also dirties the wall by direct upward currents. Convector types are mostly clear of the floor and are installed on hangers, a casing being hung in front of them later. The casing is also clear of the floor and a vacuum cleaner can be inserted below to the wall. The casing is usually removable for occasional cleaning of the fins. In the cast iron units, the R type often rests on the floor and is finished in front with a quarter round. The RC, however, is clear of the floor (like the fin-convector type), in order to induce air flow through the bottom.

appraisal of the method

Advantages:

1. Comfort is enhanced by the use of a heating medium lower in temperature than steam and most hot water systems.
2. Better uniformity of room air temperature both laterally and vertically.
3. Higher mean radiant of the lower half of the room (the portion of human occupancy).
4. Better for slab jobs than some other methods. Insures upward air flow at wide windows.
5. Does not interfere with drapes as radiators do.
6. Tests indicate good relative humidity.
7. Need not be removed for wall decoration like radiators.

Limitations:

1. The size of the base is larger than most modern wood base.
2. Alterations involving removal of sections of exterior wall are not easy.
3. Drains for water must be provided at the bottom of door loops.
4. In spite of the lower sections of wall being warmer, the general mean temperature of the room is no higher, because ceilings are colder.

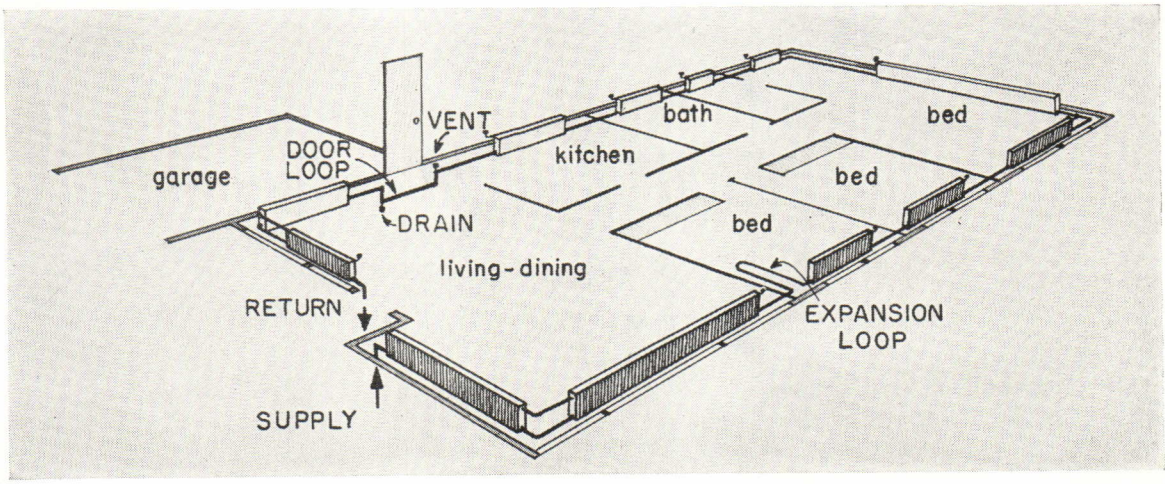
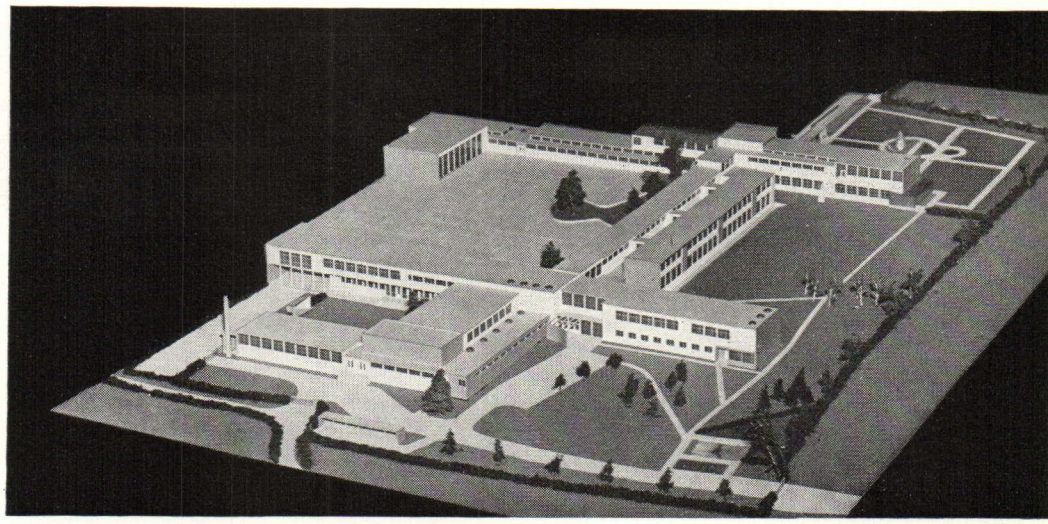


Figure 5.



School designed for Stevenage, a new satellite town 30 miles north of London built to absorb the growing population of the metropolis. Model indicates the magnitude of some Hertfordshire prefabricated schools.

British Prefab Schools

During the post-war years, England's Hertfordshire county was faced with the problem of building 175 new primary schools within a 15 year period. Many of this county's schools had been bombed and were in need of repair; the development of war industries in this region, the postwar policy of creating new towns in counties around London, and the general rise in the birth rate were all factors that had contributed greatly to the volume of children for whom schools had to be provided.

In the national picture, however, the primary postwar construction need was for homes. Thus it was inevitable that the majority of building laborers would be employed in erecting houses and not schools. Further, the British Ministry of Education had stressed that the normal supply of building materials would be greatly limited and that those available would be subject to irregular delivery.

At Hertfordshire, it was the educators' commendable desire to break away from the old type of draughty, gloomy schools with their dark corridors, brown colored walls, and dreary stretches of playground. They hoped that the students might have buildings that were well-lighted, well-ventilated, and equipped with furniture specifically designed to meet their needs. To accomplish these aims, a close co-operation between educator and architect was essential. To understand better the educational problems, the architects visited many of the existing schools and lived in the same buildings with many of the teachers.

Forced to build without wood or brick, the architects resorted to the use of steel and concrete as primary materials. With inadequate site labor available, it was necessary to prefabricate as much of the buildings as possible. Structural elements were needed which would meet three main considerations: ease of manufacture and handling, availability, and minimum cost.

Instead of using stock steel sections, the designers turned to light steel framing with a standardized number of columns and beams to provide sufficient variety and flexibility. The roofs and walls were covered with precast concrete masonry units, each unit of a weight and size easily handled by two men. All heavy lifting equipment was thereby eliminated. Because plasterers were few, fibrous plaster sheets, casings, and other forms of interior finish were factory precast and transported to the site for application.

A shortage of normal central heating pipe influenced the architects to select a warm air heating system. The thermostatically controlled heater cabinets are fed with hot water from pipes running at ceiling level in the corridors. Water and electricity services were designed so that the units could be assembled at the factory and fitted at the site.

The architects' obligations and responsibilities were greatly increased with this type of construction, as a great deal more data was required on their working drawings, and the manufacture and erection of all the prefabricated parts necessitated detailed supervision. As the erection of at least 10 schools per year was contemplated, the Hertfordshire authorities were able to order materials in quantities. With this advantage, they could depend upon delivery and order at least a year ahead and obtain some idea of the rate of supply. As the system became more highly developed, the speed of erection was greatly increased. In some of the recently built schools, the steel frame work has been erected in one day and the roof wall slabs completed 10 days later.

This report was prepared from data and photos furnished by the British Information Services, New York.

BASIC CONSTRUCTION ANALYSIS

All of the Hertfordshire school plans are based upon an 8′-3″ module. In general, this module has worked out satisfactorily, although the dimension has proved to be excessive for corridors, coat rooms, and closets.

1. frame

All framing members are prefabricated to a manufacturing tolerance of ⅛″ and galvanized at the factory. Integral components are shop welded and connections have been provided for field bolting.

a. Columns: assembled from 2″ x 2″ angles; have outside dimensions of 5½″ x 5½″; held together by angles welded to outside angles at regular intervals. Square plan permits connections on all four sides; as each side has identical hole positions, all columns of the same length are interchangeable. Base plates, 6″ x 6″, are welded to the bottom of each column and have four holes for anchor bolts.

b. Beams: open web joists have a channel for the top flange and flat plate for the bottom flange; flanges are separated by bent steel bars. Tee sections are fixed to the ends of joists for bolt connection to columns. Longest beams can be placed in position by three or four men operating block and tackle. Open webs provide through passage for mechanical services.

c. Girts: built up of angles and tees; support exterior wall slabs, window framing, and interior wall surfacing material. Some girts provide connections for diagonal bracing.

d. Eave outriggers: angles welded to fulcrum end of the cantilever provide connections which fit into inside of column tops before being bolted. Maximum projection is about two feet.

2. roofs and walls

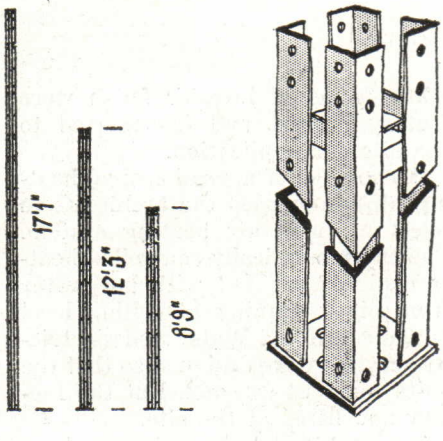
a. Roof deck: 4″ deep coffers with intermediate stiffeners, notched to allow electric conduit to be placed above ceiling level, span 8′-3″ between joists. These members support a live load of 30 psi; joints are cement grouted. Roof deck is covered with vermiculite fill and a bituminous covering, while the under side is surfaced with ½″ insulation board backed by aluminum foil. Established U-factor for the roof is 0.23 Btu.

b. Exterior wall slabs: applied vertically; have a colored cement finish. Units occurring at columns are 2″ thick, 5½″ wide, and have a trowel finish; those occurring between columns are 2½″ thick, 10″ wide, and have a textured finish. Most commonly used slab is 8′-4″ long. All other slabs are shorter.

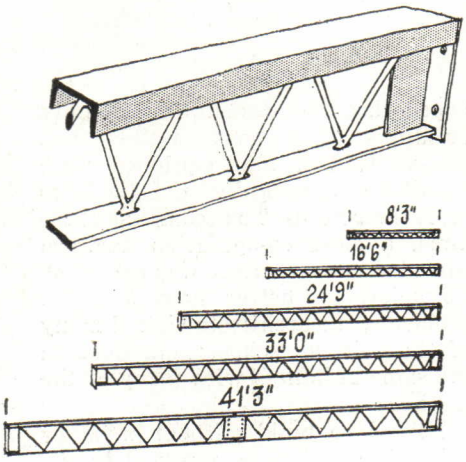
3. Interior Wall Surfacing: fibrous plaster ¾″ thick backed with aluminum foil. Interior partitions: 2″ thick fibrous plaster with wood wool core; finished with oil paint.

4. Column Casings: ¾″ thick fibrous plaster casings act as cover strips.

5. Foundations: standard reinforced concrete slab.

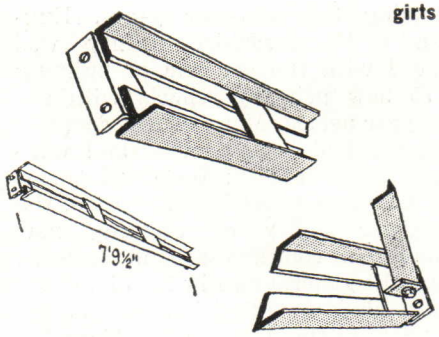


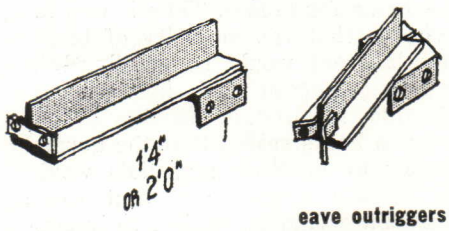
columns



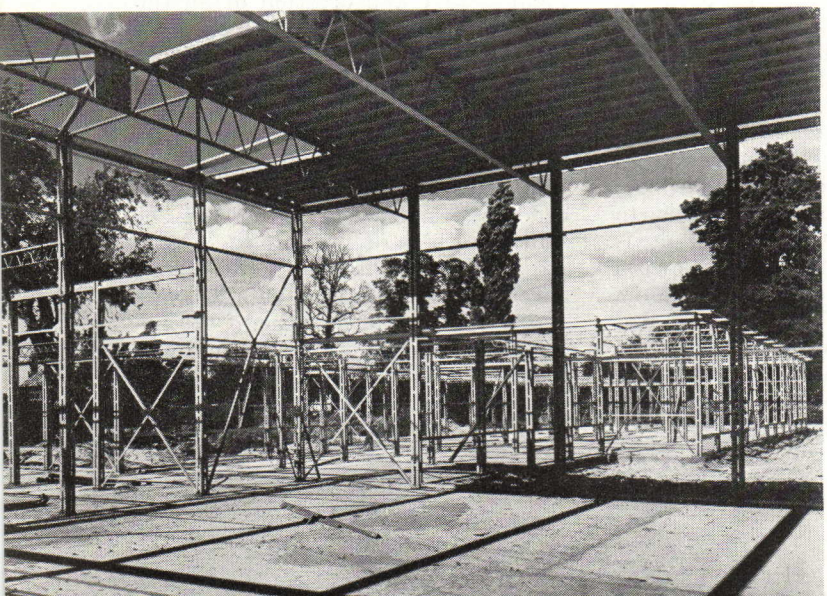
beams

girts





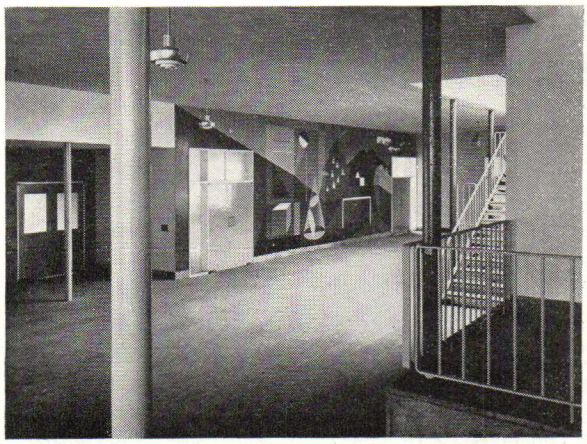
eave outriggers



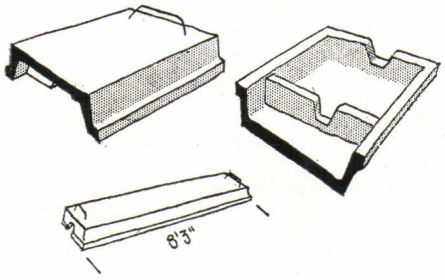
Above: principal elements of the prefabricated steel framing. All integral parts are shop welded.

Above, right: typical precast roof decking and wall slabs. *(All drawings, courtesy of* The Architects' Journal; *reproduced with permission.)*

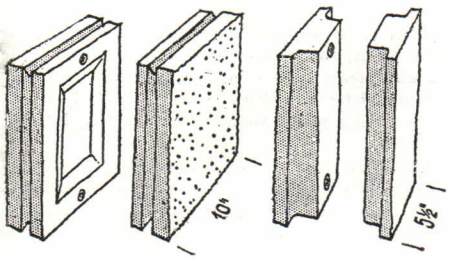
Left: school at Watford, 18 miles north of London, contains a typical steel frame.



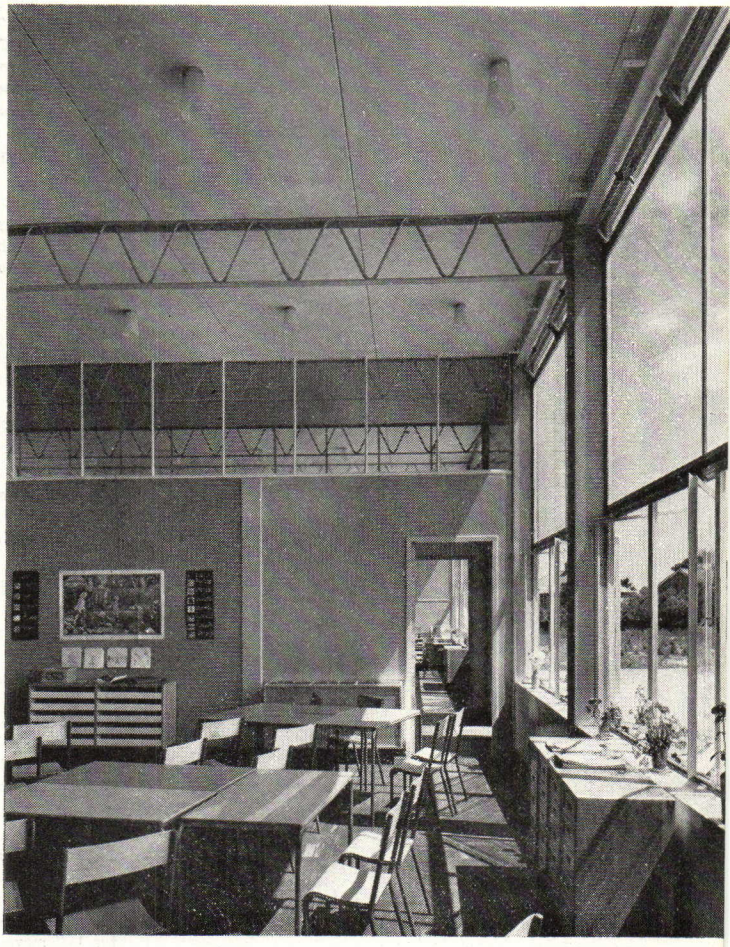
Above: ground floor foyer of school at Stevenage is well lighted both naturally and artificially. Long, flat area between portals is relieved by mural executed by Kenneth Rowntree.
Right: an entrance to the same school.

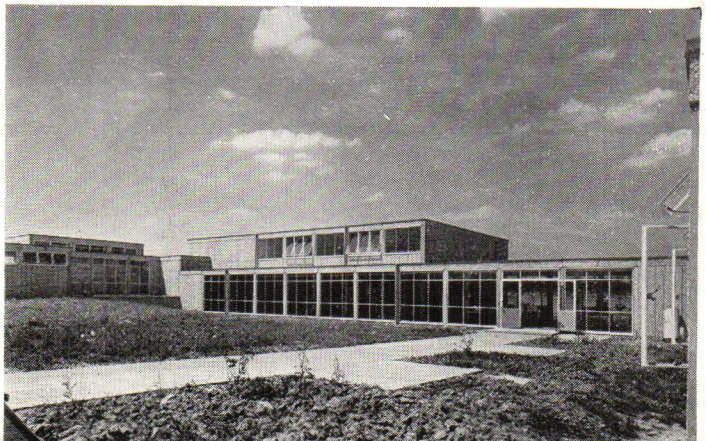


roof decking



wall slabs





Above: classroom walls of school at Hitchin have high reflectances. Painted, fibrous plaster sheeting backed with aluminum foil spans 8'-3" between exposed, prefabricated open web joists.
Left: assembly hall of school at Hitchin; medical rooms are on right and classroom block is on left. Typical wall slabs, vertically applied, cover the steel frame.

Streamlined Specifications: COPPER ROOFING AND SHEET METAL WORK: PART 2

BY BEN JOHN SMALL, A.I.A.*

Reference numbers appearing in this specification pertain to detail sheets found in Copper and Common Sense, *Chapter III, second edition, published by Revere Copper and Brass Incorporated, New York; copies may be obtained from the publisher without cost. The specification should include a note pointing out that these details are referred to in order to assist the contractor in understanding more readily and visualizing more accurately the legal requirements of the specification itself. Part I of this specification appeared in the June 1950* **P/A.**

8. gutters: Built-in box gutters.

(a) Paper. Cover supporting surfaces under copper gutter linings with roofing felt; over this install one ply of rosin-sized building paper.

(b) Gutter lining. Form gutter lining of ( ) CRC** sheets conforming closely to gutter profile. No longitudinal seams permitted. Make cross seams 36" apart if sectional contour of gutter is more than 36". If sectional contour is 36" or less, form gutter lining of copper sheets 8'-0" in length. Construct gutter linings of 16 oz. to 20 oz. CRC; join ends together by ¾" wide locked and soldered cross seams. For copper linings heavier than 20 oz., join ends together by 1½" lapped, riveted, soldered cross seams. Rivets: copper 3/16" in diameter with copper burrs under peened heads; space rivets not more than 3" on center in two staggered rows with ½" edge distance.[17 to 23]

(c) Hold down.[21] If sectional contour of semi-circular gutter is more than 24" hold down lining with brass screws covered with 16 oz. copper cups soldered to gutter lining. Space screws not more than 36" on centers longitudinally, not more than 12" on centers transversely. Screws: ⅞" long #12 round head brass screws where used in wood, and similar screws with expansion shields where used in stone. Provide brass or copper washer, 1/16" thick by 1¼" in diameter under each screw head. Make hole in gutter lining ¾" diameter; place screw at center of this hole; make holes opposite each outlet tube same size as screws to provide anchorage to gutter lining at these locations.

(d) Connection to slate, tile or shingle roofing.[17, 20, 21] Terminate back top edge of gutter lining at roof edge. Fold top rear edge of gutter lining to form ¾" wide loose lock seam; secure with copper cleats spaced 24" on centers. Hook separate apron strip, not less than 8" wide made from 8'-0" long pieces of 16 oz. CRC, over top rear folded gutter lining edge to form ¾" wide loose lock seam bent down at 45 degree angle. Extend this apron flashing up on roof boarding under slate, tile or shingle roofing. Fold upper edge ½"; secure with cleats spaced 24" on centers. Lap ends of each 8'-0" piece of apron flashing 4". Attach cant strips, as elsewhere specified, to apron flashing.

(e) Connection to copper roofing "A".[11] Where batten ends or standing seams terminate at roof edge, fold over top rear edge of gutter lining ¾"; terminate at roof edge. Secure top edge of gutter lining with copper cleats spaced 36" on centers. Under each standing or batten seam at roof edge place separate piece of copper 5" wide by 10" long; hook over folded top edge of gutter lining; secure to roof deck with nails. Hook lower ends of copper roofing sheets over top rear folded edge of gutter lining to form ¾" wide loose lock seam.

(f) Connection to copper roofing "B".[11, 23] Where batten ends or standing seams do not terminate at roof edge extend rear edge of gutter lining up on roof deck under copper roofing sheets at least 6" and terminate in ½" fold; attach to roof boarding with copper cleats spaced 24" on centers. Solder continuously separate 24 oz. CRC locking strip made from 8'-0" long pieces to gutter lining on roof slope. Fold lower ends of copper roofing sheets ¾"; hook into lock strip to form ¾" wide loose lock seam.

(g) Gutters at cornices.[17, 18, 19, 22, 23] Extend outer edge of gutter linings over cornice top; fold ¾" to hook over previously placed continuous edge strip. Make edge strip of 24 oz. CRC in 8'-0" lengths; butt ends of each length together. Attach edge strips to wood construction with bronze nails or screws spaced 4" on centers. On stone cornices, form edge strips of 32 oz. CRC to fit into reglet cut in stone. Calk edge strip into reglet with lead wool, melten lead or secure with brass screws and expansion shields spaced 10" on centers; fill reglet with calking compound.

(h) Expansion joints.[17 to 20] Provide expansion joints midway between outlet tubes unless otherwise indicated, also at exterior corners and where ends of gutters abut masonry walls. Close ends of each gutter section with 16 oz. CRC; flange, rivet, solder to gutter lining. Top edge of gutter ends shall have horizontal flange 1½" wide for connection to expansion joint cover strip. Expansion joint shall have open space 1" wide between adjacent gutter ends or ½" between gutter end and adjacent wall. Provide cover strip formed of 16 oz. CRC over expansion joint; loose lock into horizontal flanges at top of gutter ends. Loose lock joints shall provide for ½" movement of gutter lining in either direction. Where gutter ends abut masonry wall provide 1" open space between gutter end and masonry wall; extend cover strip under counter flashing built into masonry. Terminate ends of cover strips to provide watertight connections, to permit freedom of movement of gutter lining. Solder "L" type water diversion baffle across top of cover strip on line with gutter centerline.

(i) Molded gutters.[24] Molded gutters forming combination cornice and gutters that set on masonry corbel or shelves shall conform to indicated size and design; construct of 20 oz. CRC*** sheets 8'-0" long. Connect ends

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*Associate, Alfred Hopkins & Associates, Architects.

**Thickness of copper gutter lining depends upon size and shape of gutter, and distance between downspouts and expansion joints.

***Insert "lead coated" if wanted.

of each 8'-0" sheet by 1" wide lapped, riveted and soldered seam. Rivets: copper 3/16" diameter with copper burrs; space rivets 2" on centers. Fold top rear edge of gutter over ¾"; terminate at roof edge; secure with copper cleats spaced 24" on centers. Fold outer edge over continuous ⅞" by 3/16" brass or copper stiffening bar. Hold gutter in place with 1½" by 3/16" transverse brass straps spaced not more than 3'-6" on centers. Attach brass straps to continuous stiffening bar at outer edge of gutter with ¼" diameter brass bolts and washers. Slot bolt hole thru strap to allow for movement; do not make bolted connection so secure as to prevent slippage of gutter. Extend transverse brass straps up on roof deck under roof covering material at least 6"; fasten with two brass screws or thru bolts. Remove ¾" folded rear top edge of gutter where straps occur to allow for movement. Install expansion joints on long straight runs at regular intervals of 48'-0". At inside and outside corners place expansion joints 24'-0" from corner on each leg of gutter. Construct expansion joint as specified under "Built-in box gutters." Fold separate apron flashing 8" wide made from 8'-0" long pieces of 16 oz. CRC to hook over top rear folded edge of gutter to form ¾" wide loose lock seam; extend into and lap 1½" over vertical side of gutter. Fold top edge of flashing over ½" for cleating; secure by copper cleats 2'-0" on centers. Lap ends of each 8'-0" length minimum of 4".

(j) Double gutter.[24] Make outer molded gutter of 16 oz. CRC* sheets 8'-0" long; butt ends of each 8'-0" sheet together with copper strap sweated over joint on inner face. Reinforce outer top edge by continuous ⅞" by 3/16" thick brass bar riveted to vertical edge of gutter. Fold top rear edge over ½"; hold by copper cleats spaced 24" on centers secured to wood nailing blocks or screw anchors provided in masonry. Install expansion joints at regular intervals of 32'-0" in long straight runs. At inside and outside corners install expansion joints 16'-0" from corners. Make expansion joint of 1½" wide lap slip joint; hold together with copper clips; solder onto inner face of one length.

(k) Construct inner gutter lining of 20 oz. CRC sheets 8'-0" long; connect ends of each 8'-0" length together by 1" wide lapped, riveted, soldered seam. Rivets: 3/16" in diameter with copper burrs; space rivets 2" on centers. Install expansion joints as specified under "Built-in box gutters" in gutter lining at regular intervals of not more than 24'-0" in each direction from downspouts. Where gutters turn around corners and downspouts are placed at corners locate expansion joints not more than 24'-0" from corners. Fold over top rear edge of inner gutter ¾"; terminate at roof edge; secure with copper cleats spaced 24" on centers. Bend outer edge ¾" to hook over continuous stiffening bar attached to outer molded gutter. Hold gutter by transverse braces; form of 1½" by 3/16" brass straps spaced 42" on centers. Attach transverse straps to stiffening bar at outer edge of gutter with ¼" diameter brass bolts, washers. Slot bolt hole thru strap to allow for movement; do not make bolted connection so secure as to prevent slippage. Extend transverse braces up onto roof deck under roof covering material at least 6"; fasten with two brass screws or thru bolts. Remove ¾" folded rear top edge of inner lining where straps occur.[24]

(l) Extend separate apron flashing 8" wide made from 16 oz. CRC in 8'-0" long sheets up on roof deck under roof covering. Lap ends of each 8'-0" length of apron flashing minimum of 4". Secure upper edge of apron flashing with copper cleats spaced 24" on centers; hook over top folded edge. Fold flashing lower edge to hook over top rear bent edge of inner gutter lining; extend into and lap 1½" over vertical side of gutter.

(m) Hung molded gutters. Construct hung molded gutters of 20 oz. CRC* sheets 8'-0" long. Join ends of each 8'-0" length by 1" lapped, riveted and soldered seam. Rivets: copper, 3/16" in diameter with copper burrs; space rivets 2" on centers. At intervals of 48'-0", install 1½" wide tongue and grooved lap slip expansion joint. Fill slip joint grooves with thick white lead paste mixture. Where gutters turn corner provide expansion joints not more than 24'-0" from corner. Terminate back edge of gutter at roof edge; fold outer edge over 1" by ¼" brass or copper stiffening bar. Extend separate apron flashing 8" wide, made from 16 oz. CRC* sheets up on roof deck under slate or tile roofing. Fold upper edge of flashing ½"; secure by copper cleats 24" on centers. Bend lower edge of apron flashing to lap at least 3" over rear vertical side of gutter. Lap ends of each 8'-0" length of apron flashing minimum of 4". Form hangers 1" by 3/16" quarter hard 70-30 brass straps; extend up on roof deck 10" under slate or tile; attach with two countersunk brass screws. Install 32 oz. CRC hanger straps 1½" wide across gutter top; attach to top edges of gutter; bolt to brass hanger straps with ¼" brass stove bolt. Provide end pieces, miters and outlets where required, solder, make watertight.

(n) Hung gutters. Construct hung gutters or eave troughs of 16 oz. CRC* in sections about 10'-0" long; join with tongue and groove slip joints. Hangers: adjustable shank and circle type; secure with countersunk brass screws. Fill grooves of slip joints with thick white lead paste mixture. Provide end pieces, miters and outlets where required; make of 16 oz. copper,* solder; make watertight. Width of hung gutters: 5", unless otherwise indicated or specified.

(o) Outlet tubes. Form outlet tubes that connect to outside leaders or downspouts of 16 oz. CRC, lock and soldered longitudinal seam. Flange upper tube end ½"; rivet; solder to gutter lining. Extend tube into leader at least 3".

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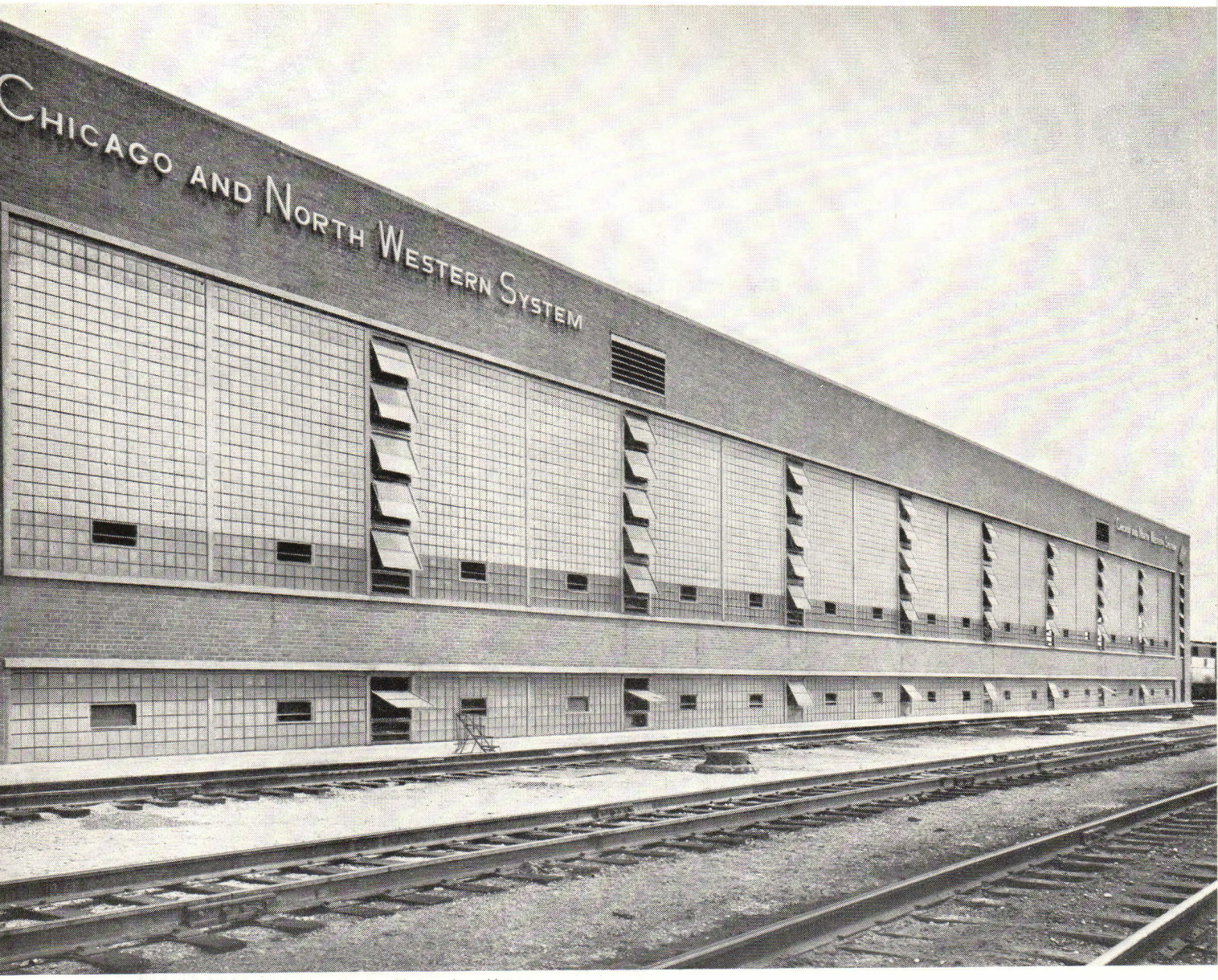
*Insert "lead coated" if wanted.

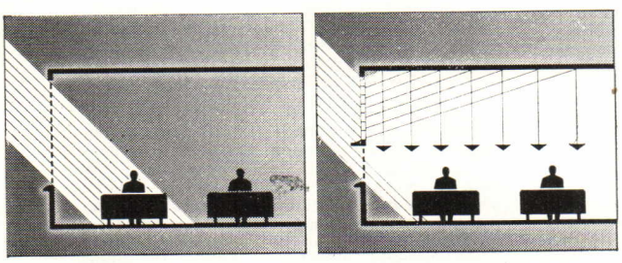
sion; lifting; deformation; loosening; splitting seams and the like.



For rugged railroad demands, Insulux resists smoke, rust, rot, seldom needs washing, insulates like an 8-inch brick wall. Service Depot designed by De-Leuw Cather & Co., Architect: Chief Engineer E. C. Vanderburgh, Consulting Architect: A. N. Rebori.

DAYLIGHT IS FREE—DON'T ABUSE IT—USE IT—THROUGH

Daylight Engineering



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

Why install windows to let daylight in, then cover most of the openings with blinds, shades or curtains to keep out the glare?

That is a wasteful, old-fashioned way of handling free light. Rapidly becoming outmoded, too.

Now Daylight Engineering with an Insulux Fenestration System shows you how to use daylight most effectively . . . morning, noon and afternoon as though your building turned with the sun.

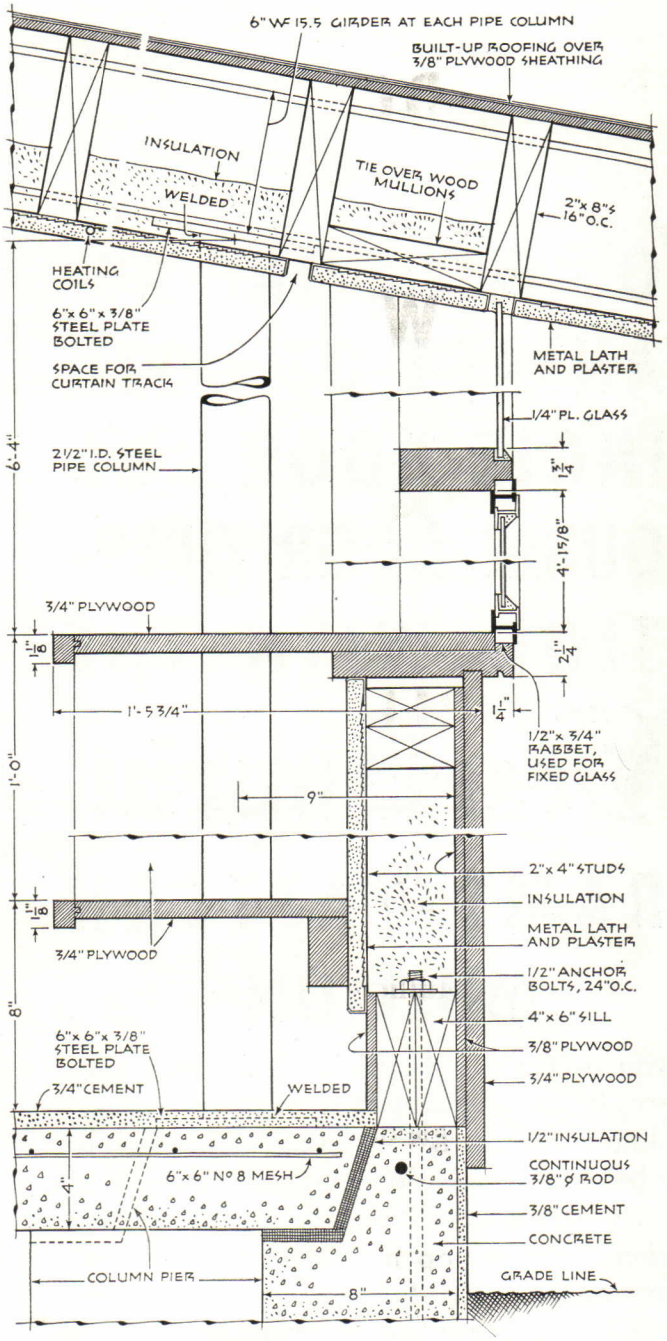
An Insulux Fenestration System lets you provide light with privacy—light with insulation—light through a tough, durable product that never rusts or rots, is highly fire-resistant.

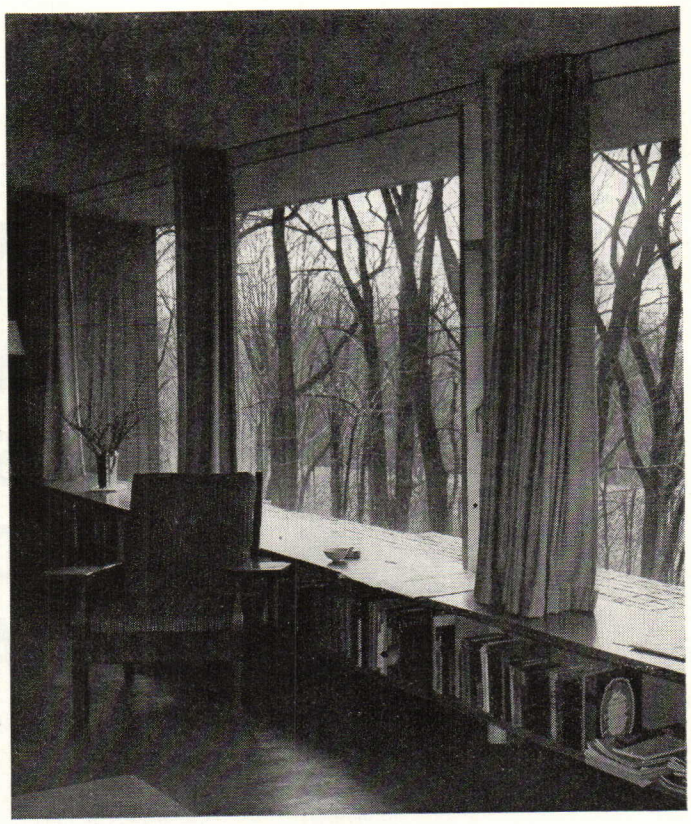
To let daylight into dark places under scientific control, ask for a Daylight Engineer's help. Write our Daylight Engineering Laboratory, **Dept. PA-12, Box 1035,** Toledo 1, Ohio, for professional service. *Insulux Div., American Structural Products Co., subsidiary of Owens-Illinois Glass Co.*

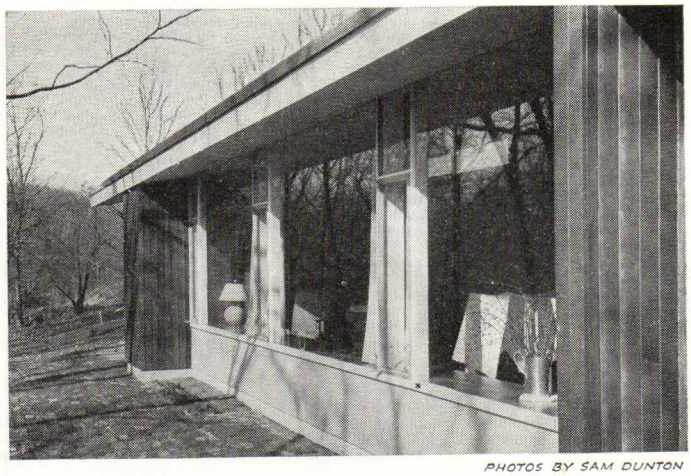
INSULUX GLASS BLOCK

INSULUX FENESTRATION SYSTEMS

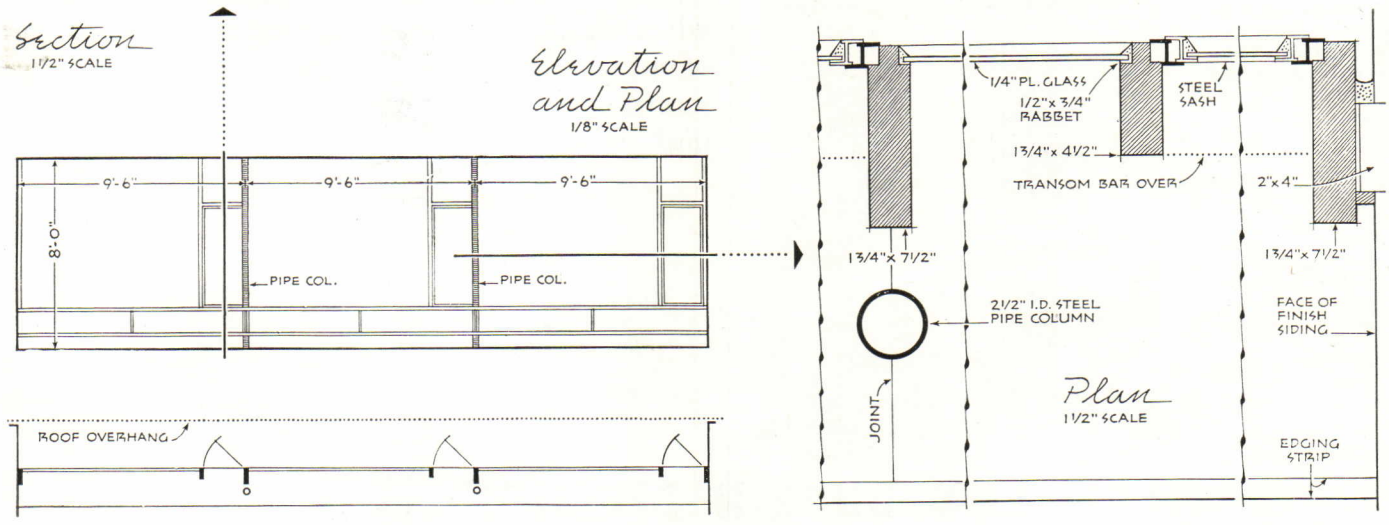
—by the pioneers of Daylight Engineering





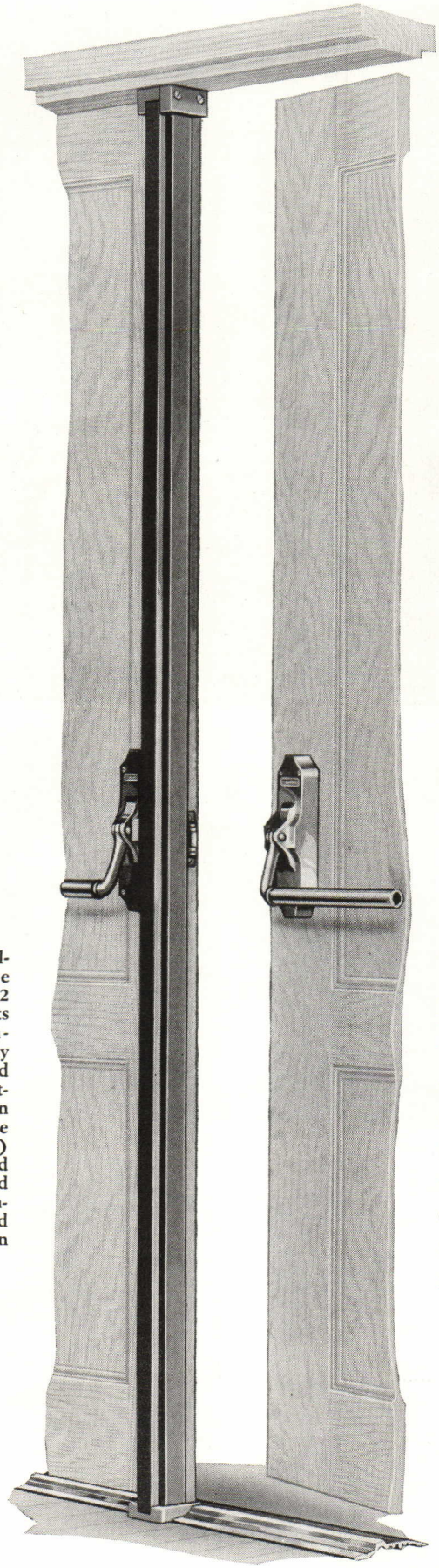


PHOTOS BY SAM DUNTON



BRIDGE RESIDENCE, Pleasantville, New York

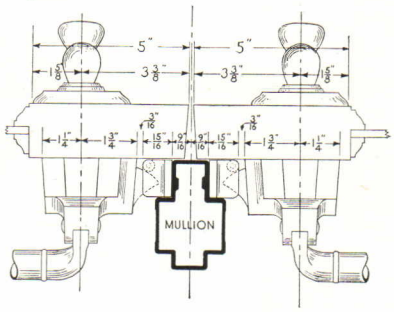
GIBBONS & HEIDTMANN, ARCHITECTS



The Von Duprin mullion (shown here with Von Duprin A2 rim devices) consists of a hollow aluminum extruded body with ⅛" walls and non-ferrous metal fittings. It comes in either maroon bronze lacquered (No. 1254) or natural brushed finish, clear lacquered (No. 1254CL). Complete details and specifications on request.

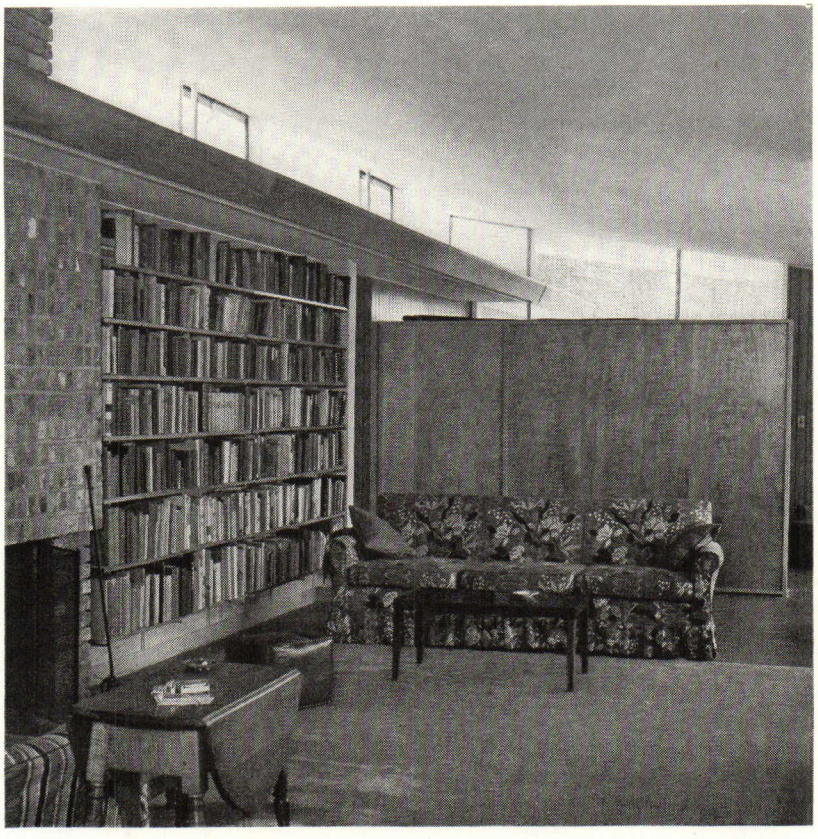
YOU GET EVERY ADVANTAGE OF BOTH SINGLE DOOR AND DOUBLE DOOR OPERATION WITH THE Von Duprin FRAME-PATTERN MULLION

If you prefer the simplicity and appearance of single doors equipped with panic devices, yet know that the full opening will occasionally be needed, the Von Duprin "Frame-Pattern" Removable Mullion provides the perfect answer. Two doors, with this sturdy, handsome mullion, harmonizing with the door frame, provide single door operation . . . and when the wide opening is wanted, it is a matter of only a minute or two to remove two machine screws from the top fitting and lift out the mullion. It's as simple as that.

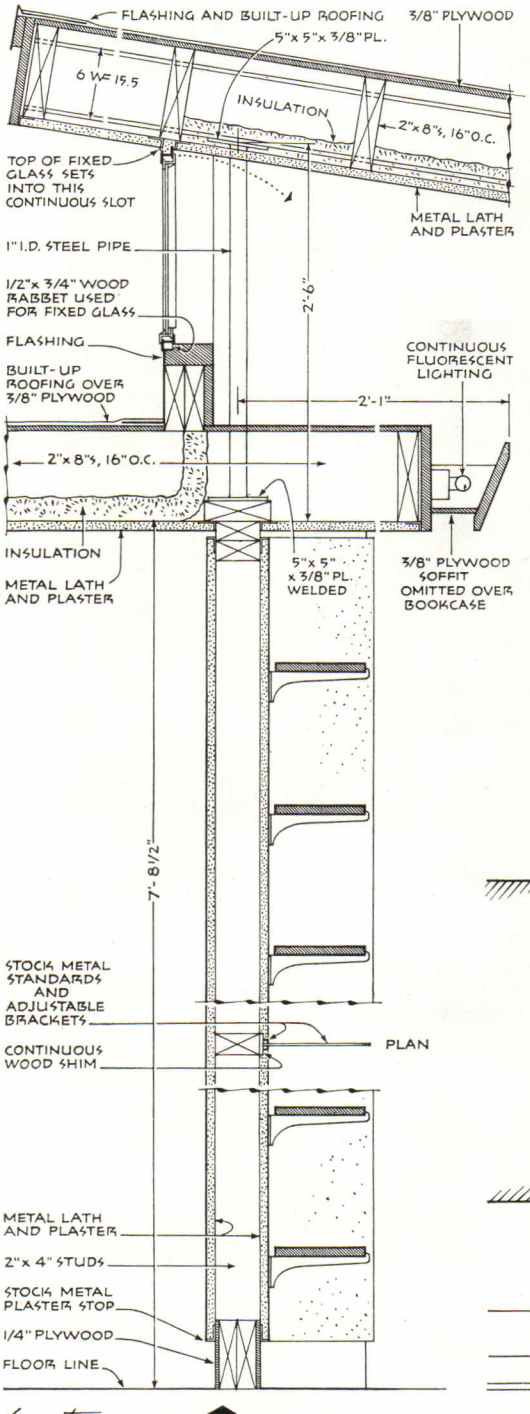


Mullion serves as stop for meeting stiles, covers gap between doors, and holds strikes for devices.

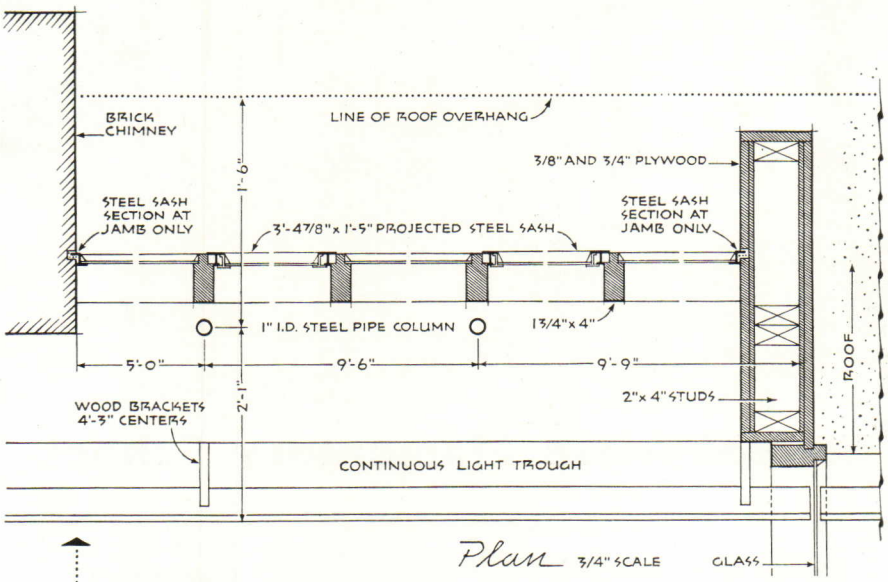
VON DUPRIN DIVISION
VONNEGUT HARDWARE CO., INDIANAPOLIS 9, INDIANA



SAM DUNTON

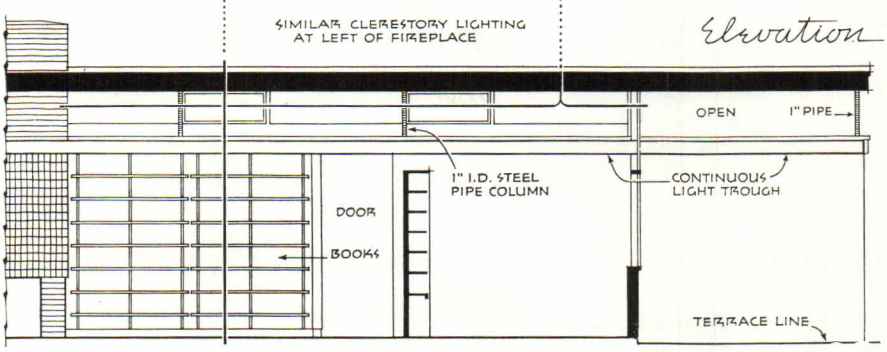


Section 3/4" SCALE



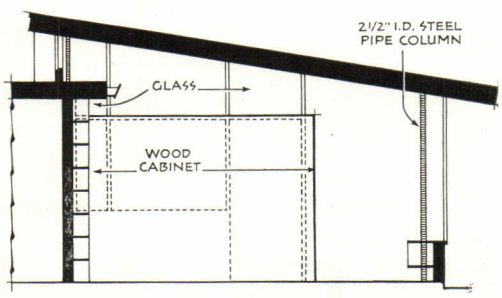
Plan 3/4" SCALE

GLASS



Elevation

Section 1/8" SCALE



BRIDGE RESIDENCE, Pleasantville, New York

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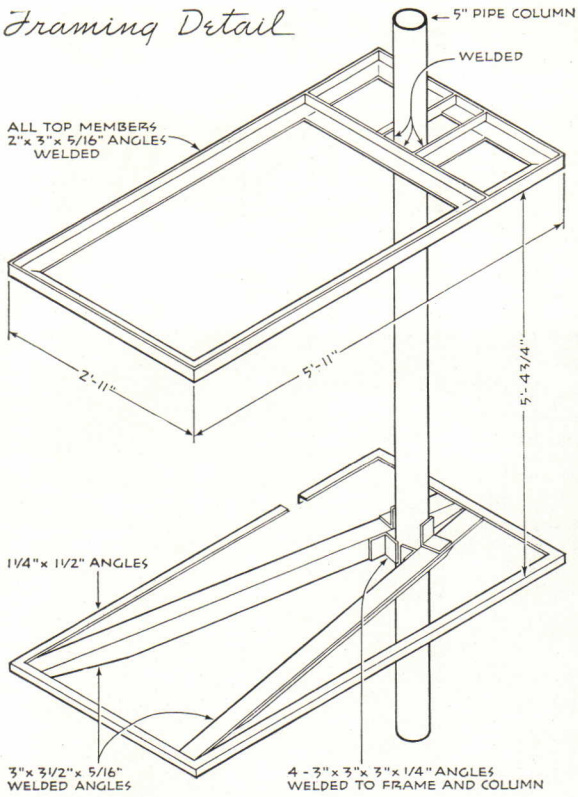
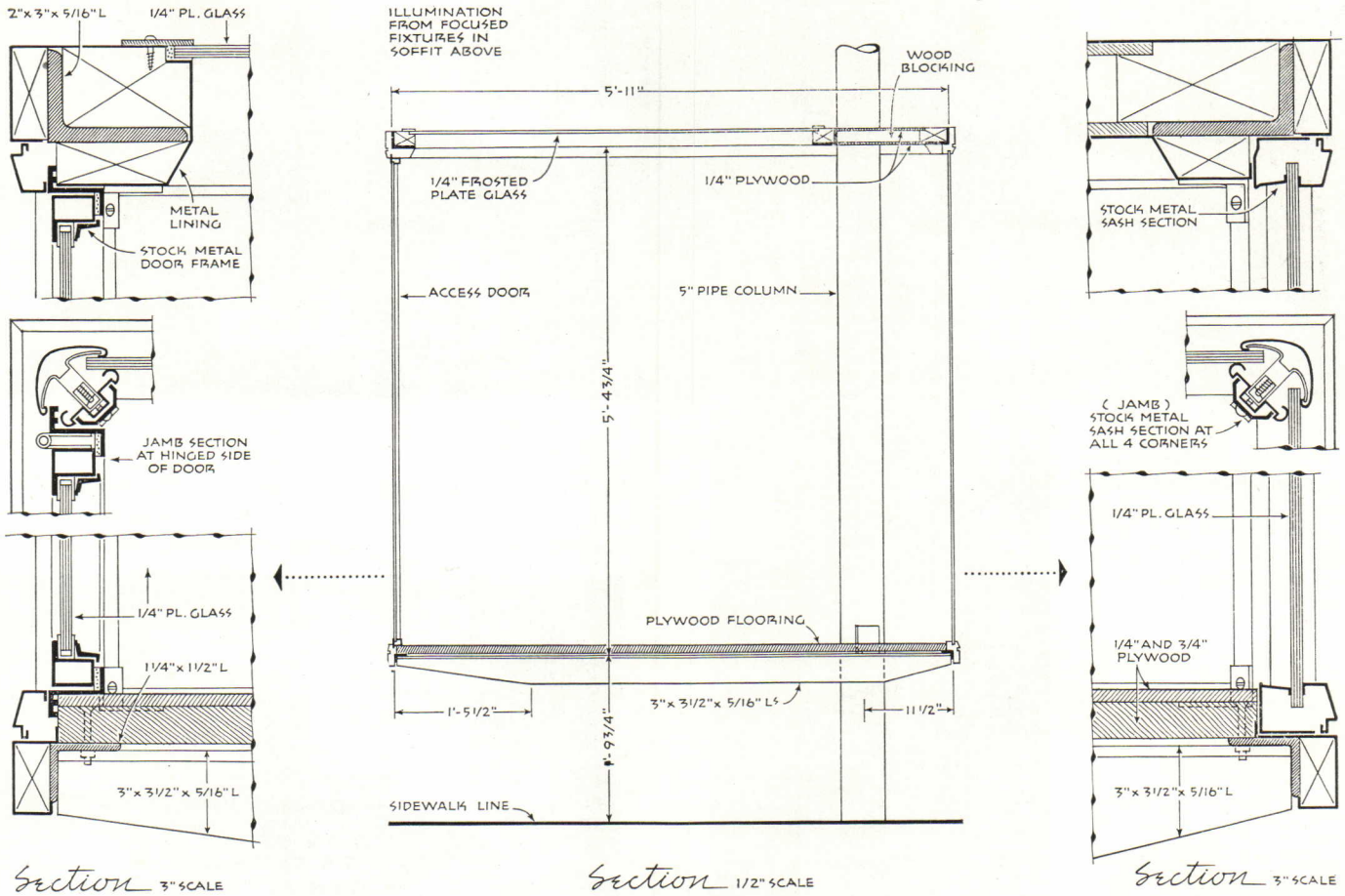


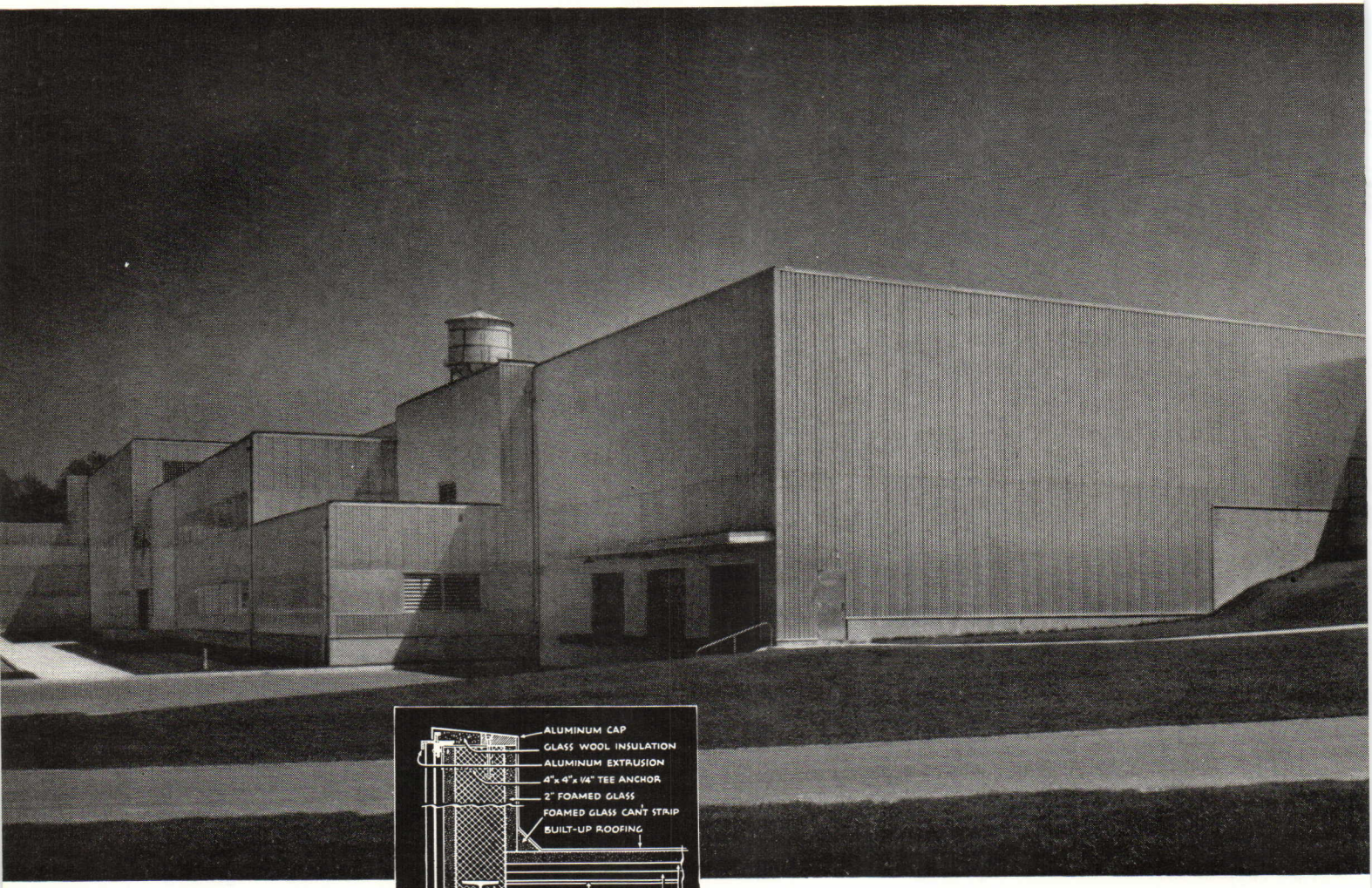
RODNEY McCAY MORGAN



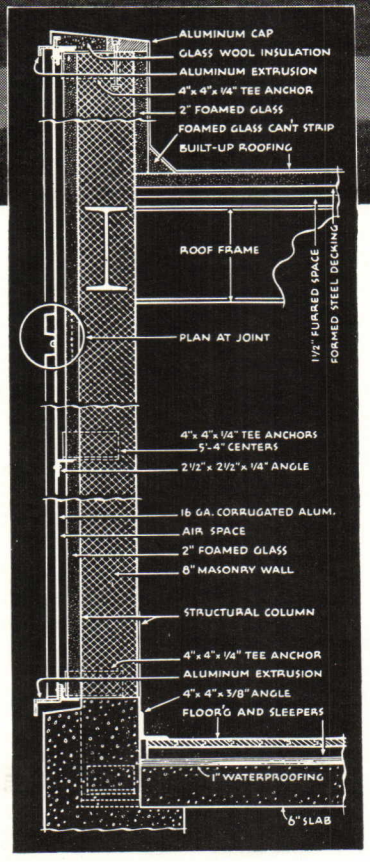
SHOPPING CENTER, Euclid, Ohio

ERNST PAYER, ARCHITECT

THESE WALL

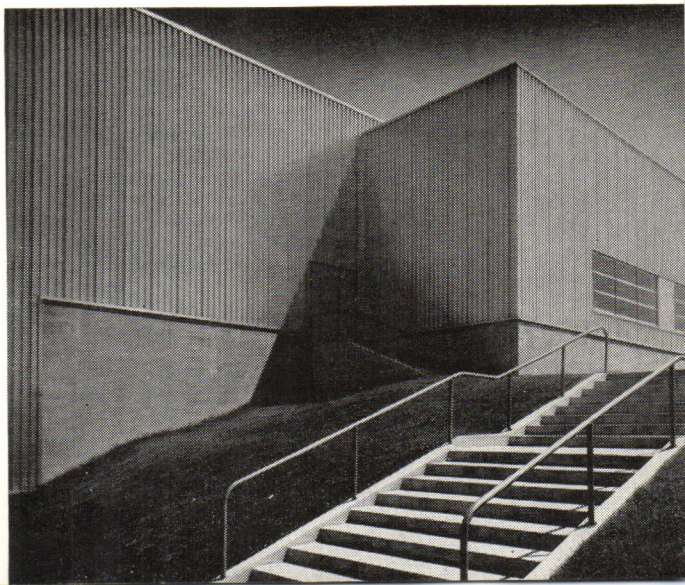


Nylon Throwing Mill, Duplan Corporation, Winston-Salem, North Carolina. Lacy, Atherton & Davis, Architects & Engineers. Alcoa Aluminum used for exterior walls, window sash, doors, copings and ventilation louvers.

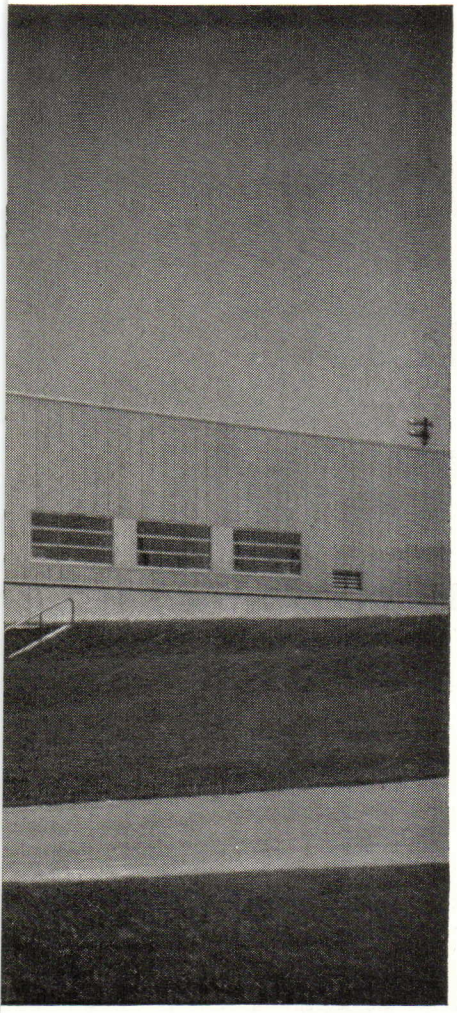


Typical wall section showing method of attaching wall panels in Duplan Corp. mill.

Insulated aluminum wall panels weigh approximately 7 lbs. per square foot, can be erected in fair or freezing weather. Insulation factor is equal to a foot of masonry wall.



REFLECT THE FUTURE...



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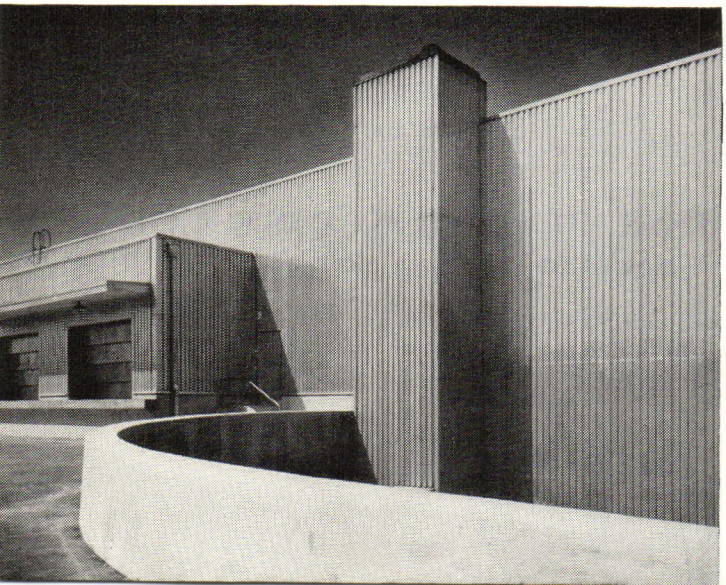
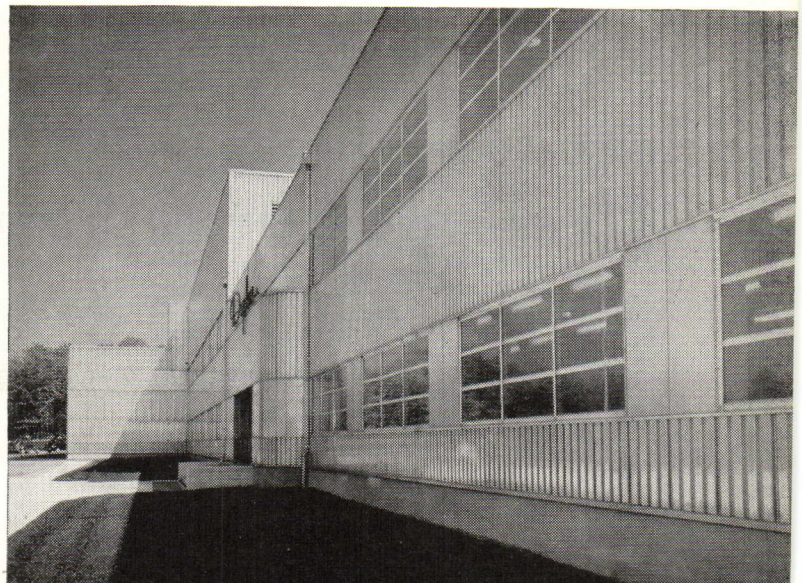


Aluminum-faced wall panels are supplied by several manufacturers. Standard widths. Lengths as specified. Lighter weight simplifies design, speeds construction.



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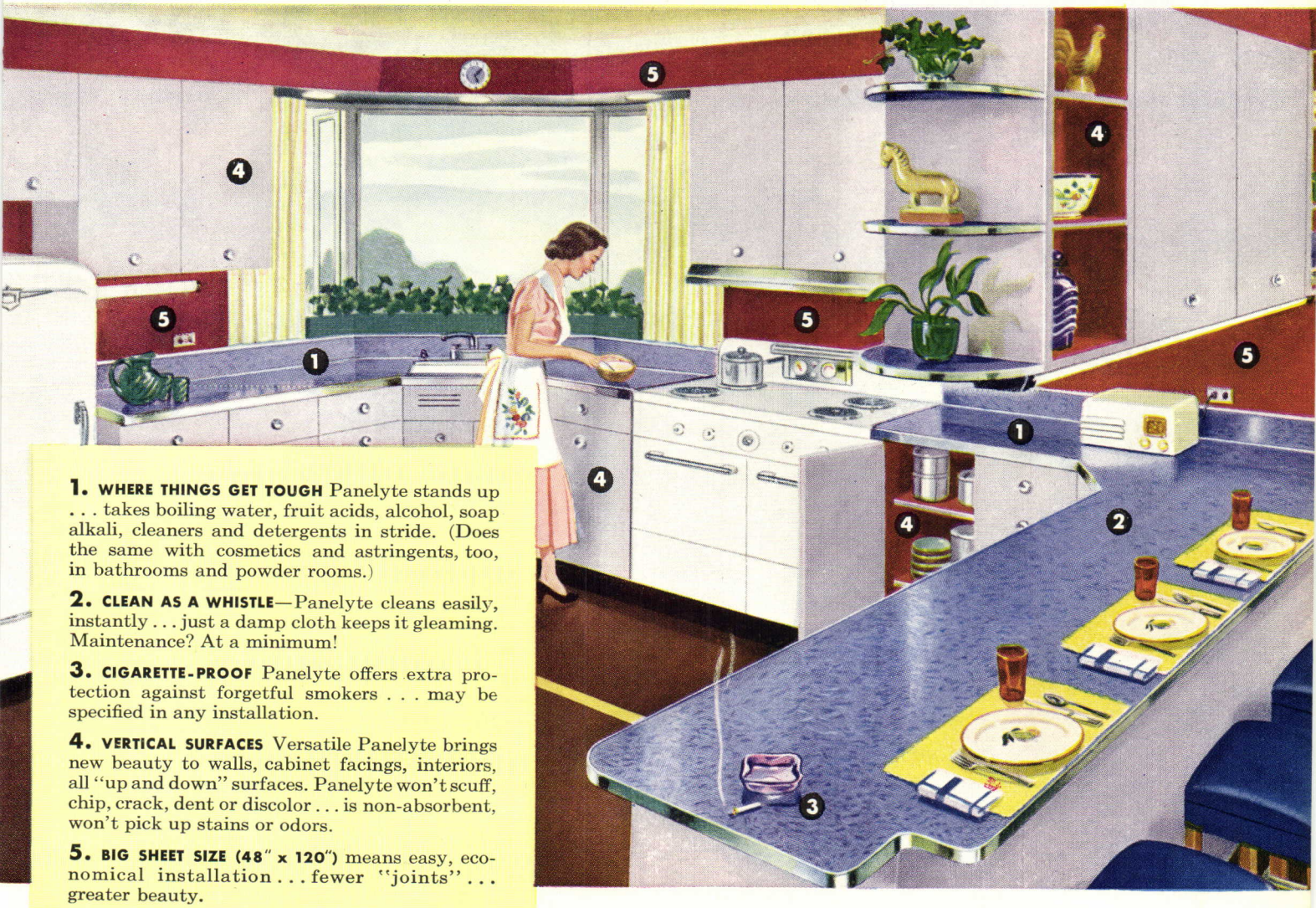

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See Sweet's Architectural File Number 14a/9

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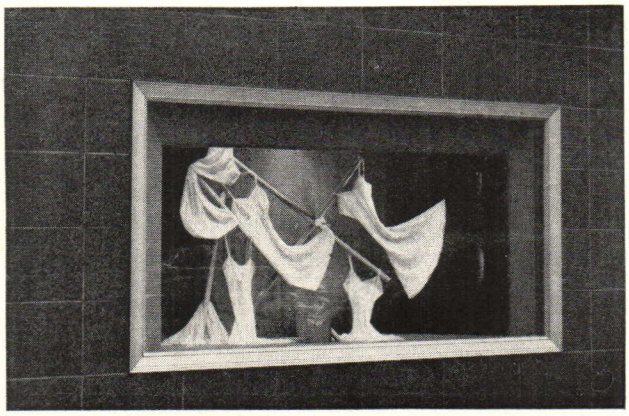
P. A.



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Enduro-Ashlar Architectural Terra Cotta in a mottled brown, in units approximately 24" x 36", was specified for the facade of this building. Five other J. C. Penney stores — in Clearwater, Fla., Montgomery, Ala., Cadillac, Mich., Columbus, Ohio and Springfield, Mass., also have modern facades of terra cotta tailor-made by Federal Seaboard to meet the individual needs of each location.

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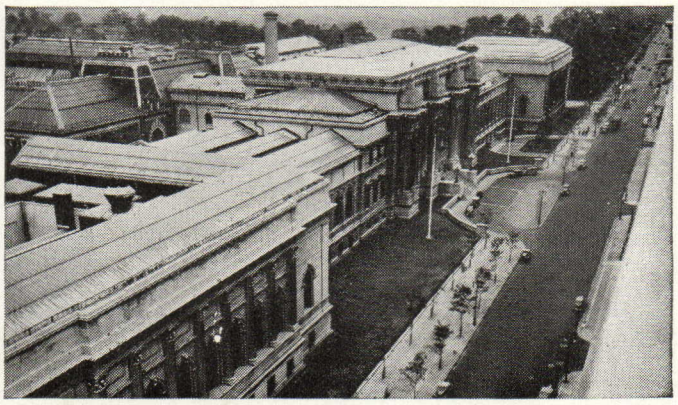
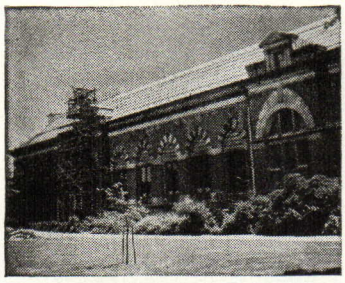
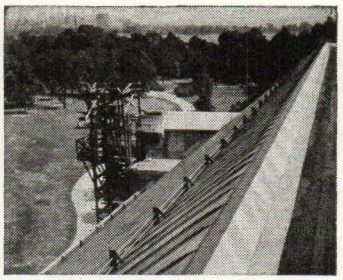
No wonder the Metropolitan wants the protection of Monel* Roofing Sheet! Their experience with this economical, corrosion-resistant Nickel Alloy goes back 13 years . . .



1 **IN 1936,** 120,000 square feet of Monel were used to replace faulty roofing parts at the Metropolitan. The old roof had pitted, eroded and fractured so badly that many priceless collections were endangered by leakage.

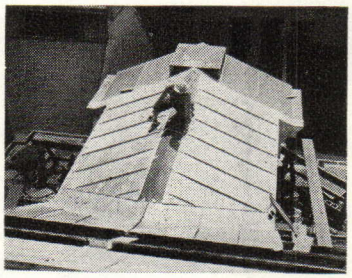


2 **THIS IS ONE** of the buildings which was partially repaired with MONEL. So satisfactory has been its performance during the last 13 years, that the entire roof is now being completed in Monel. Section of original roof still visible at left of scaffolding.

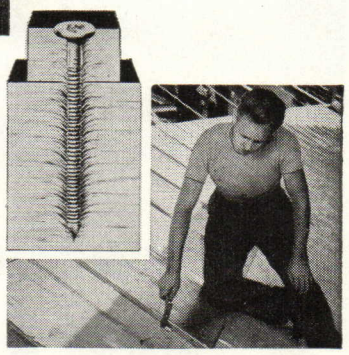


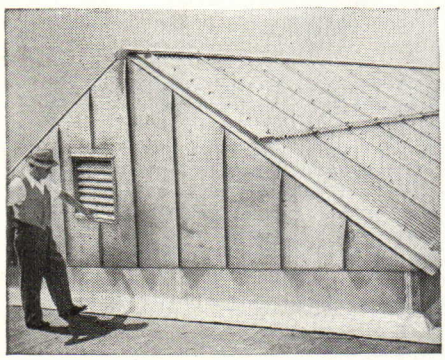
3 **LOOKING DOWN** at the new installation. Monel Roofing Sheet, which fabricates readily, has been used for siding, base and coping flashing, flat and standing seam roofing, skylight frames, fastenings, gutters and snow guards.

4 **CHECKING MEASUREMENTS.** With the exception of a patented type of skylight supplied by H. H. Robertson Co., Pittsburgh, Pa., all of the Monel sheet metal parts were prefabricated in the shop of Chrystie Cornice & Skylight Works, Inc., New York.

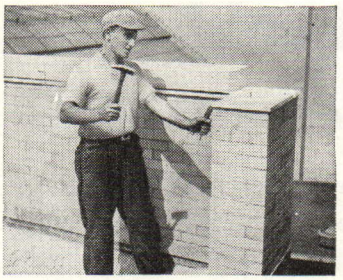


5 **WORKER USES MONEL** cleats and Monel "Anchorfast" nails to cleat down the prefabbed sections. *(Inset)* Note the annular grooves of the corrosion-resistant "Anchorfast" nail. These grooves give the hammer-driven "Anchorfast" the holding power of a screw.





6 **CONTRACTOR EXAMINES** adjustable Monel louver. Twice as rigid and strong as commonly-used materials, Monel permits thinner gauges to be used for standard roofing parts. Use of crimped Monel sheet for base flashings made possible elimination of expansion joints.



7 **FINAL ADJUSTMENT** of crimped, pre-formed Monel coping flashing. Strong, tough Monel resists stormy winds and heavy gusts that pry up flashings from masonry they are designed to protect. Through-wall and cap flashing at parapet base also Monel.

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Firm.....

Street.....

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

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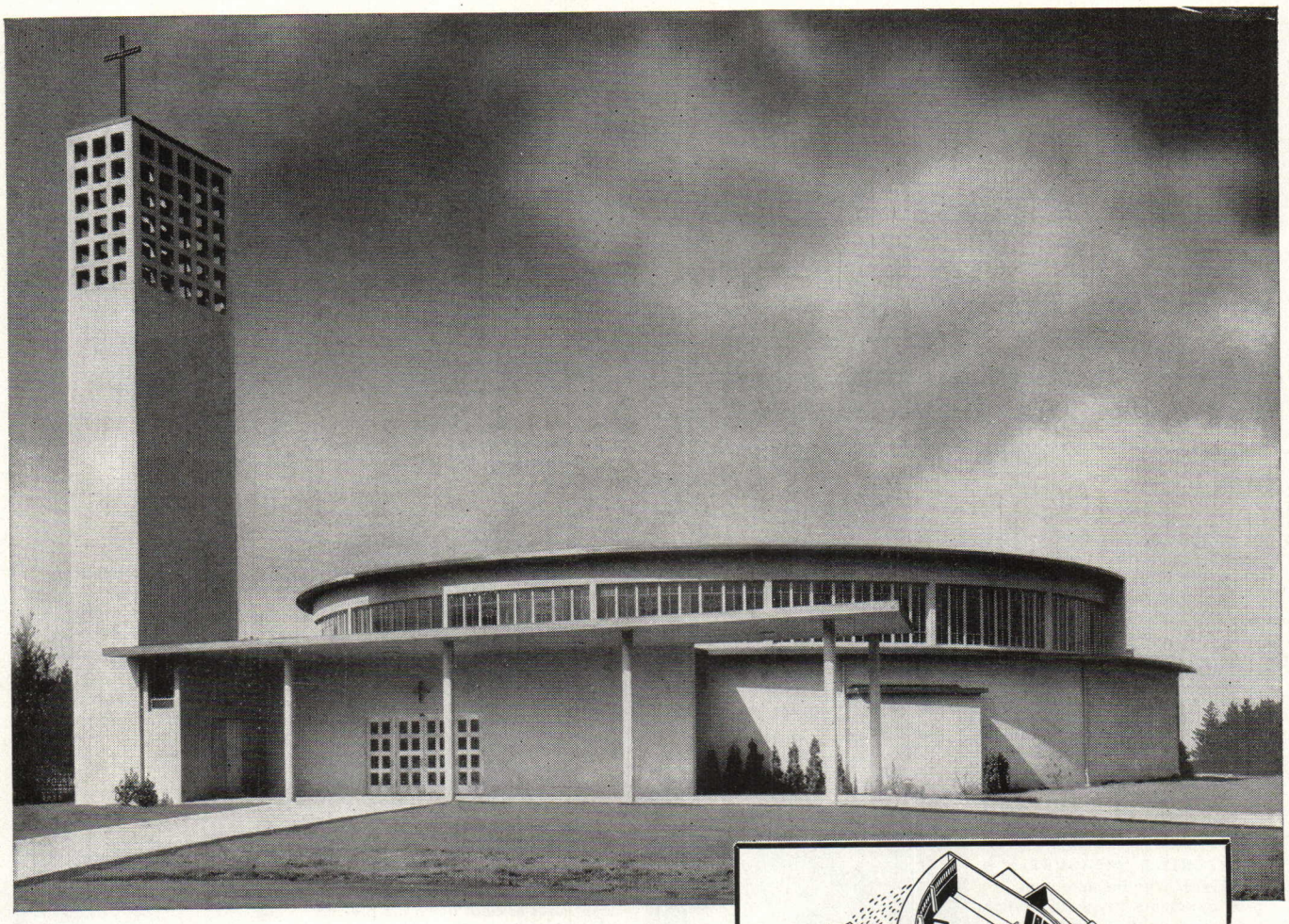
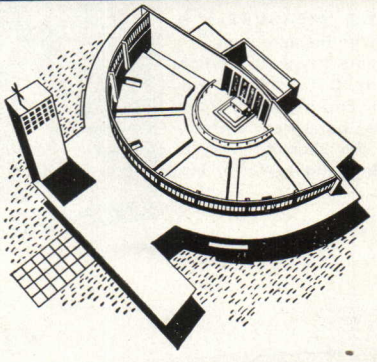




Church of Christ The King, Seattle—a striking departure from traditional treatment. Curved walls were formed with 4′x8′ ⅝″ plywood, nailed horizontally to 2″x12″ wales, band-sawed to desired radius. Wales were placed together, 24″ to 30″ o.c. In no place were they sawn to less than 3 inches. Double wales were backed with 2″x4″ studs, 12″ o.c. The Austin Company, Seattle, were the builders.

"Plywood Offered Best Solution to Form Problems,"

Says Seattle Architect Paul Thiry

CONCRETE surfaces for this Seattle, Washington, church had to be smoothly curved to carry out the simple dignity of the design. Architect Paul Thiry specified Douglas fir plywood forms.

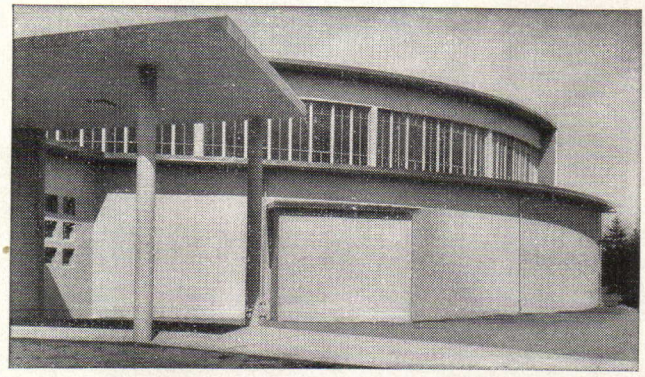
"The panel material," he says, "offered a simple and most economical solution to the twin problems of smooth concrete and curved structure. Plywood is easy to use. It produces smoother surfaces with a minimum of finishing and is readily bent to the desired radius."

On small jobs and large, Douglas fir plywood has proved its ability to do the unusual and the difficult in form work. Employ its advantages to the fullest!

Douglas Fir Plywood

AMERICA'S

Smooth, Curved Surfaces Easily Achieved with Plywood



Douglas fir plywood forms were easily bent to produce the smooth curve of the outer walls. Canopy over the main entrance and the bell tower were also formed against ⅝" plywood. Concrete bands above and below the clerestory windows were formed with ¼" plywood, backed by bandsawed 2"x12" wales and 2"x4" studs.

The half-circle shape of the structure affords a fan-shaped seating arrangement which brings the entire congregation close to the altar. Reinforced concrete construction eliminates the need for supporting columns which block vision.

Large, Light, Strong *Real Wood* Panels

For additional data on Douglas fir plywood for concrete form work, see Sweet's File, Architectural, or write (USA only) Douglas Fir Plywood Association, Tacoma 2, Washington. Of particular interest are two booklets: "Concrete Forms of Douglas Fir Plywood" and "Handling PlyForm."

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CONCRETE FORM PANEL
INTERIOR-TYPE GRADE B-B
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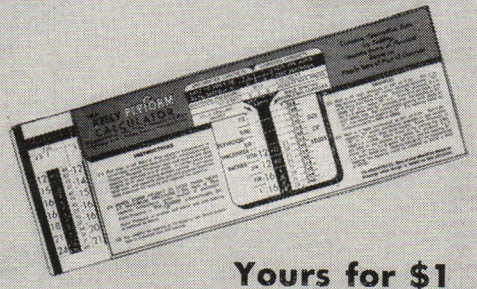

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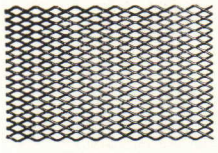
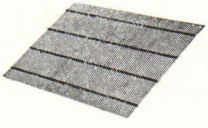
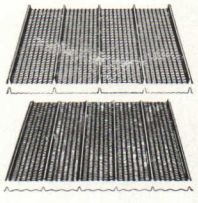


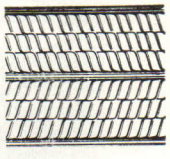
Wheeling Diamond Lath
Standard and Bantam Mesh



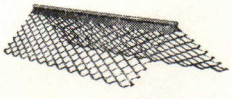
Wheeling Bar-X-Lath
with solid steel ribs



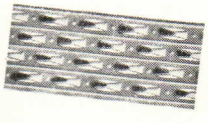
Wheeling ¾" and
⅜" Rib Lath



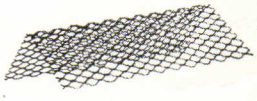
Wheeling Flat Rib
Metal Lath



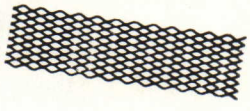
Wheeling Expansion
Corner Bead



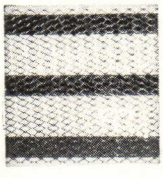
Wheeling Arch Lath
for extra fire resistance



Wheeling Corner Lath
an improved cornerite

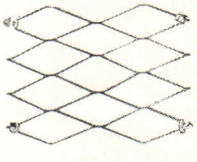


Wheeling Strip Lath
for strengthening joints

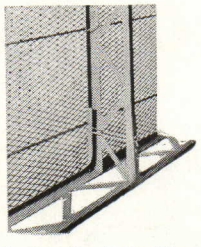


Wheeling Combination
Lath. Diamond or
Bar-X-Lath

Wheeling Cold
Rolled Channels



Wheeling Stucco
Binder Mesh



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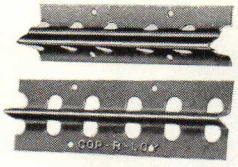
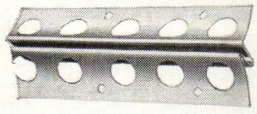


Wheeling Curved and Straight Point Base Screed

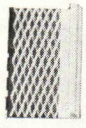


Wheeling Metal Picture Mould

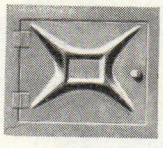
Wheeling Scallop Edge Corner Bead

Wheeling Flat Apron Corner Bead

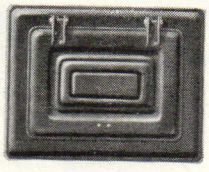
Wheeling Bull Nose Bead



Wheeling Casings and Corner Grounds

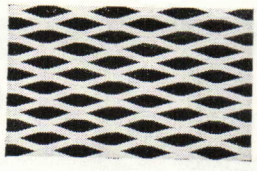


Wheeling Ashpit and Clean-out Doors

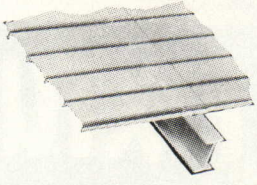


Wheeling Coal Doors

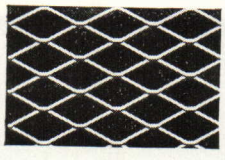
Wheeling Anti-Skid, Expanded Metal



Wheeling Flattened Expanded Metal



Wheeling Tri-Rib Roof Deck



Wheeling Expanded Metal

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PLANNED LIGHTING PAYS

technical press

By JOHN RANNELLS

Lighting—Its Role in Contemporary Decoration

Illuminating Engineering carries, in a series of articles with the above title (September, October, November 1950), the "essential substance of the I. E. S. Technical Committee Report 'Contemporary Lighting in Modern and Traditional Interiors.'" The November issue was not available at the time of writing these comments but the first part alone was sufficient to tag the report as something the architect can use in his business. It will be available as a pamphlet from the Illuminating Engineering Society headquarters, 51 Madison Avenue, New York 10, by December.

The "Modern and Traditional" label on the report is a puzzler. In dozens of illustrated examples the lighting is imaginative and flexible, whatever the period (if any) of the furnishings and fixtures. I got the impression that the committee was straining with a social obligation to tie in a good interior lighting with fashionable furnishings. Maybe it's a business obligation. As a matter of course, the lamp industry is more impressed by the influence of the interior decorators than it is with the good sense and taste of the ultimate consumer and the architect. And they're right. They reach more customers that way. However, they also set up a dilemma on which all but the most level-headed of the lighting designers get hooked—"Lighting developments of our time challenge the creative ingenuity of designers to integrate modern lighting with all current styles of home decoration. Particularly complex is the problem of blending contemporary lighting technique and equipment for greater living comfort in rooms of authentic early period design."

There's a situation for you! Fully absorbing to the earnest practitioner unless, like Bowld Michael O'Dowd, the ancient boxer, when confronted with some young whirlwind opponent, he just drops his guard and walks away, leaving his antagonist flailing the air.

We needn't be overly perturbed by the seeming anomalies the illuminating engineers get themselves into, trying to conform with all tastes, including bad. On the whole they know what they are doing, at least as well as the architects do. Both groups are dragging along much excess intellectual baggage. If you can somehow screen out the confusion of styles (forget "period") and look at this report as *lighting*, it has a lot to offer—"illustrations of a number of lighting methods applied to traditional and modern interiors." (Ouch.) "The purpose of each lighting installation is stated and pertinent lighting data and essential scaled drawings are included with a short description and appraisal of the end result."

It is quite a bag of tricks that they spread out before us, some of them pretty extravagant. Several examples are illustrated by that perfectly fabulous room at Nela Park which G-E uses to astonish the visitors with its elaborate repertoire (98 lamps "played" from a control board—see *Magazine of Light*, "Institute Edition" No. 1, 1947). Hardly "contemporary home decoration" but of course you don't have to buy *all* the gadgets. The counter-trick for the architect is to know what he wants to accomplish and resist the full treatment.

The main goal of lighting is by now fully established—healthy visual en-

(Continued on page 102)

technical press

(Continued from page 101)

vironment. Techniques for accomplishing this goal are quite fully developed —to the point, indeed, that the lighting designer can achieve visual comfort with almost any environmental scheme. He is dependent on the decorator or architect for the scheme itself. So far the decorator has given him more to work with although the goal of healthy environment is more clearly in the architect's province.

Each section of the report (Cove Lighting, Wall Lighting, Recessed Lighting, Lighting from Ceiling and Wall Brackets, etc.) starts with a clear statement of the technical problems and the most suitable equipment—what each kind of lighting can accomplish and what sort of supplementation is needed to achieve various desired results. The elements are here, then, for the house architect to gain enough understanding of lighting technique to use it as an instrument of design, or at least to understand it well enough to work effectively in collaboration with the illuminating engineer.

In the long run, collaboration between these professions will result in benefit to both and to everyone else. Illuminating engineering has become entirely competent to control its portion of the living environment; architecture has the total environment as its main concern, whether the architects know it or not. Light and vision are the specialty of the illuminating engineers; control of space (setting the stage for all our activities) is the architects' business.

There isn't yet, so far as I know, any clear statement as to how these things are to be integrated. The integration is happening, none the less. Perhaps the Committee on the Hygiene of Housing will come up with the statement in its third volume "Construction and Equipment of the Home," promised this fall.

BOOKS

SUBSTRUCTURE CONSTRUCTION

Foundations of Structures. *Clarence W. Dunham. McGraw-Hill Book Company, Inc., 330 W. 42nd St., New York 18, N. Y. 1950. 679 pp., illus., $7.50*

This latest book by Mr. Dunham is an eminently practical and very readable text on foundation work. He has covered pretty much the whole field of substructure construction in as thorough a fashion as one could hope to do in a single volume.

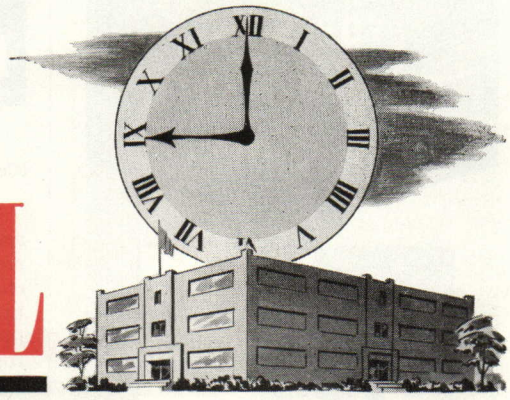
The author states that the purpose of the book is "to help the reader understand the character of some foundation problems, to enable him to improve his ability to determine the advantages and disadvantages of those solutions, and to help him develop his engineering judgment so that he can make his decisions wisely."

Like most books on engineering subjects, this one is designed for use as a college textbook. However, its wealth of practical construction material will appeal at least as much to the practicing engineer and designer as it will to the student. It is well illustrated with photographs and drawings, many of them based upon actual work within the author's experience. The book is based upon fundamental theory, field observation, and the author's wide practical experience; its emphasis is on competent engineering and sound construction.

This is not a text on soil mechanics. Mr. Dunham presumes the reader to have some slight knowledge of soil mechanics and he deals with it but briefly. The more usual methods of making subsurface explorations and determining soil profiles are described

(Continued on page 104)

AUTH SYSTEMS FOR THE SCHOOL



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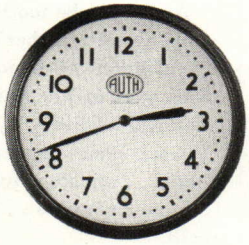

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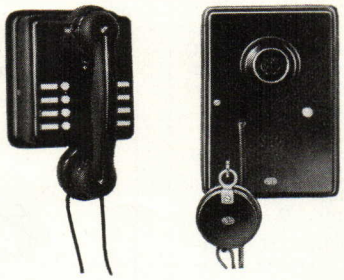
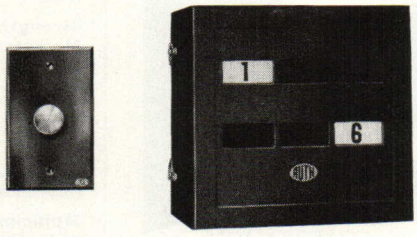


Intercommunicating Telephone Systems permitting one or a number of conversations simultaneously.



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p/a REVIEWS

(Continued from page 102)

and illustrated. For many readers the meat of the book will be found in nine chapters, covering 486 pages, in which the author deals with principles of foundation action, spread footings, foundation walls, mats, foundations subject to overturning forces, piles and pile foundations, cofferdams and caissons. Two chapters on bridge piers and abutments contain valuable information, particularly for civil engineering students and those engineers primarily interested in railroad and highway bridges and viaducts. A chapter on underpinning shows why underpinning is often necessary and describes a number of methods for its accomplishment. One cannot but wish, however, that the author could have enlarged this chapter somewhat. A final chapter describes the very specialized problem of planning the foundation for a large (540-foot high) stack.

Throughout the book the information is given clearly and pointed up with pertinent descriptions of actual work. Oftentimes "horrible examples" of what can go wrong in a given situation are cited. Hypothetical, and actual, situations are posed and the various possible solutions are enumerated in 1, 2, 3 order, together with their particular advantages and disadvantages. To enable the individual to study alone, there are worked problems for most of the common types of foundations.

DONALD G. RADWAY

BOOKS RECEIVED

Aluminum Structural Design. Reynolds Metals Co., Louisville 1, Ky., 1950. 129 pp., illus.

Strength of Stainless Steel Structural Members as Function of Design. Michael Watter and Rush A. Lincoln. Allegheny Ludlum Steel Corp., Pittsburgh, Pa., 1950. 153 pp., graphs and charts. $5

Transit Modernization and Street Traffic Control. John Bauer and Peter Costello. Public Administration Service, 1313 E. 60 St., Chicago, Ill., 1950. 271 pp., $5

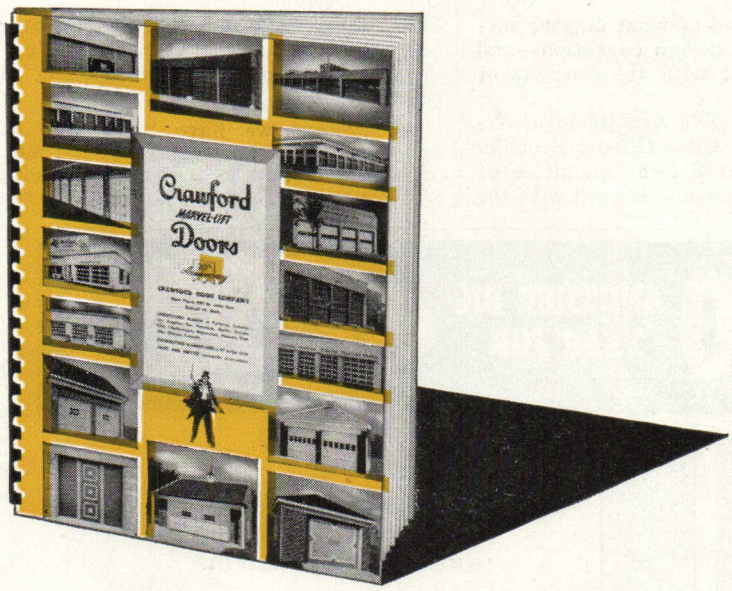
Municipal Auditoriums. Farrell G. H. Symons. Public Administration Service, Chicago, Ill., 1950. 78 pp., $2.50

Elementary Theory and Design of Flexural Members. Jamison Vawter and James G. Clark. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y., Sept. 1950. 215 pp., illus. $4

Structural Theory, Fourth Edition. Hale Sutherland and Harry Lake Bowman. John Wiley & Sons, Inc., 440 Fourth Ave., New York 16, N. Y., September 1950. 394 pp., graphs and charts. $5

CORRECTION

We have been advised that as of November 15, 1950, the price of **Contemporary Structure in Architecture** by Leonard Michaels, published by Reinhold Publishing Corp. (reviewed August 1950 P/A), has been increased to $10.



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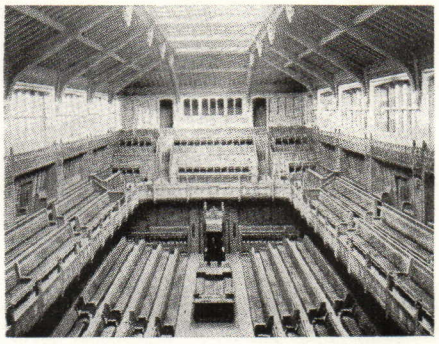
out of school

By CARL FEISS

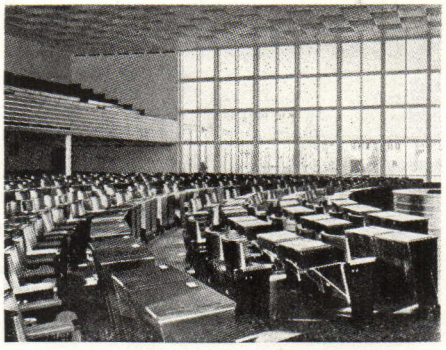
This is the second of what may be several columns on design education—and the first to treat with the concepts of Basic Design.

In September, *The Architectural Review* quoted Sir Giles Gilbert Scott in his report to the Select Committee of the House of Commons charged with the rebuilding of the chambers of the House of Commons in the Palace of Westminster, destroyed by the bombing of 1942:

"At present we have no traditional style that is characteristic of our times. Modernism looks as if it might develop into such a style but at present it has no tradition behind it, being the product of a revolution rather than of evolution; it throws over everything and starts again from nothing. It . . . lacks depth and quality . . . Its vocabulary is very limited . . . It is . . . too mechanistic, being frankly based on the beauties of the machine rather than nature, which has always been, and surely must always be, the basis of all art. Whether it will develop a quality in, say, fifty or a hundred years, time alone will show."



". . . pure modernism would, no doubt, have looked uncouth." House of Commons, 1950
Photo: The Architectural Review



Bundestag Chamber, Federal Republic of Germany (formerly Bonn University, 1930).
Photo: The Architectural Review

In the same issue of *The Architectural Review*, just three pages further along, were the first published photographs of the beautiful new Parliament Building at Bonn, Germany, designed by Hans Schwippert in 1930, as part of Bonn University. The new large chamber of the Bundestag (lower house) and the other alterations and furnishings converting this building to the home of the first Federal Republic of Germany have an almost identical purpose to the recently completed rebuilding and renovation in London. The difference in the approach to the two jobs was obviously subjective.

(Continued on page 108)

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out of school

(Continued from page 106)

It is a great question whether anyone without inventive genius should be permitted to practice architecture. Ingenuity of a type which takes a variety of styles and traditions and pastes them together is not inventive genius. It has less sincerity about it than the cut-out work of my little daughter in kindergarten. You cannot teach inventive genius. It is either inherent or it isn't. In design teaching there are two objectives. First, to discover if such genius exists; and second, if it does exist, to bring it out to its fullest extent.

•

As evidence thereof, I am including here three statements* from teachers of Basic Design whom I have asked to reply to the following letter:

I am going to lead off in February with a general discussion on design teaching and then will follow up, after we have opened the subject, with further guest participation from time to time. I consider the four of you contacted here as experts in the field of basic design—not the only ones but four of the best. We should hear from others after your participation . . .

Here are the three questions on which I would like your briefest possible reply, recognizing that each question in itself could constitute an article (and may):
1—Do you believe that the teachings of basic design, which includes abstract design in the use of materials, space, light, form, texture, and natural and human elements, is a satisfactory substitute for the Beaux Arts Analytique approach to the introduction of beginning students to architectural design? If so, why?
2—Very briefly, what do you consider to be the major functional elements or instructional units to be contained in a curriculum of basic design with a brief explanation of their correlation and instruction methods?
3—What do you believe to be the best method of bridging the gap or forming a transition between instruction in basic design and instruction in first-year architectural design? . . .

I might mention here that I am rather anxious to begin to spell out during the coming year some of the very real progress that has been made in design education since the abandonment of some of the less realistic programs. My Beaux Arts friends are continually raising the question as to whether or not anything positive has grown out of the abandonment of the Beaux Arts. Several schools have hesitated to withdraw or abandon simply because they don't know what to substitute.

(Continued on page 110)

A fourth statement, which was to have been forthcoming from Prof. Matthew Nowicki of North Carolina State, was lost by his tragic death. I hope to include a statement from North Carolina State in a subsequent article.

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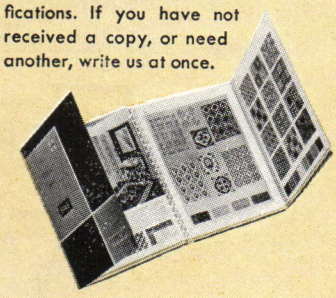


out of school

(Continued from page 108)

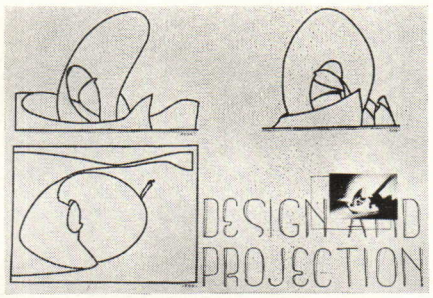
The statement from Prof. Eugene J. Mackey, School of Architecture, Washington University, St. Louis, Missouri, follows:

Dear Carl: Thank you for your invitation to join your symposium for P/A on the topic "Basic Design." I think that you have an excellent idea, one which will help the student as well as the teacher and the professional man. I say this because I believe the students in general have had very little opportunity, up to now, to know what is being done in other schools at the freshman level. They do know that experiments go on in their own school (if it is progressive), but the lack of comparison with thinking in other schools leaves them somewhat perplexed as to the merits of their own experiences . . .

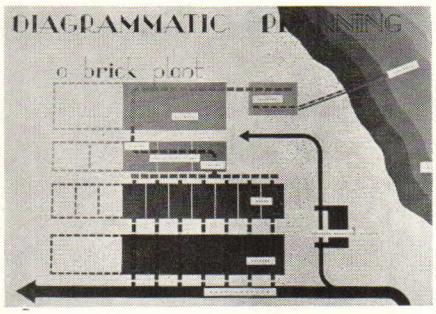
Question I

Any comparison between "Basic Design" and "Analytique" is now irrelevant.

The "Analytique," having served its purpose in time, is incongruous with a shifting emphasis (in the Arts and Sciences particularly) from learning to one of exploration: of re-examination of the old as well as the new. Whatever the end expression may be, a new ordering of space has already been launched,



Modeled space design to flat projection.
Photo: Washington University



Diagrammatic planning is sound discipline.
Photo: Washington University

and incomplete criteria should not obstruct a forward step in theory.

Let's go on from here!

Question II

Our experiments in basic design have extended over a period of 12 years. Our next year's "basic design" program will be for one semester only. We have, therefore, one semester of the school year, with its 16 weeks of (9) hour laboratory periods in which to work out the following objectives:

Part I: To experience and analyze the elements of design

METHOD: Many readers are familiar with line, space-form, and color exercises. We refer to flat, divided or enclosed space, in a sequence of two- and three-dimensional exercises—including the modeling of space with paper, clay, balsam wood, or metal, and its counterpart in carefully drawn projections and perspectives. Photography is used where desirable. Final designs are carefully developed from soft pencil sketches to disciplined drawings in ink or pencil to encourage orderly habits of work.

COMMENT: Our experience confirms the importance of a disciplined design program: (1) that the elements be few; (2) the intent clear; and (3) that the results be measurable, if only by eye.

Part II: to relate the experiences of Part I to design in building.

METHOD: Using two- or three-week periods each, the following relationships in contemporary or historical examples, are investigated, interpreted, and judged: (1)

(Continued on page 112)

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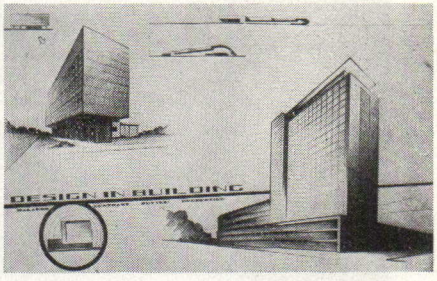
out of school

(Continued from page 110)

Design in Building; (2) Materials and Systems in Building; (3) Influence of Function, Site, and Orientation on Building, i.e., Residence, School, Factory or other type accessible to students, working in groups of four to six each.

COMMENT: These exercises stress analysis and interpretation of design in existing buildings rather than synthesis. Though somewhat lacking in the appeal of the design exercise, it is necessary that the vocabulary of Part I have significant meaning in terms of experience with buildings.



Design of buildings follows analysis.
Photo: Washington University

Question III

If the real skill of a designer depends on coordinated thought and feeling, I believe the "transition" in question should begin with the first exercise: through analogies drawn from design in the common place, and within our daily experiences.

To discuss the relationship between "basic design" and the conceptual process of *building up an idea* could hardly be simple. The solution is perhaps in the hands of the teacher, and not in a method or system. It is basic that in a meeting of two minds one way will succeed where another fails; where teaching is vital a better way will be found.

On the other hand, less difficulties with "transition" are observed where a majority of the design faculty are: (1) aware that basic design applies throughout the design curriculum; and (2) are themselves able to conduct the basic design course.

•

The statement from Prof. Harlan McClure, School of Architecture, University of Minnesota, Institute of Technology, Minneapolis, Minnesota, follows:

Question I

The persons involved in this discussion have a common objective I am sure, but there are probably as many opinions as to how it should be attained as there are individuals and schools represented. Frankly, I think the first question has quite a negative twist. The educational problem involved in beginning design is

(Continued on page 114)

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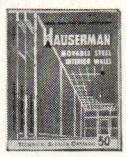

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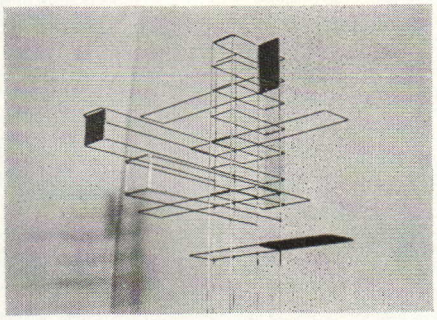
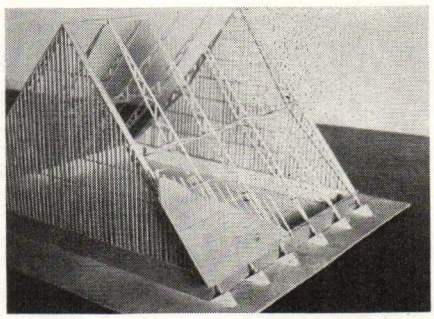
(Continued from page 112)

not the finding of a *substitute* for the long antiquated analytique approach or indeed a substitute for anything else. The real problem is simply one of devising the most satisfactory way of beginning design in a period characterized by complexity, uncertainty and fantastically rapid technological progress. The phrase "system of beginning design" has purposely been avoided, because it is felt that methods of instruction should be kept as flexible as possible to avoid the evils of academicism as it has existed in the past and may exist today.



Abstractions of structure are basic.
Photo: University of Minnesota

Many of the more progressive schools of architecture have experimented with various methods of introducing students to design, and most have attempted to facilitate instruction by breaking down the complex study of design into components which may be studied in abstract. Some of these have been listed in Carl's question. This abstract study of principles has come to be called "basic design," and the schools using such an approach have found it to be more satisfactory than other means heretofore employed.



Three-dimensional exercises are stressed.
Photo: University of Minnesota

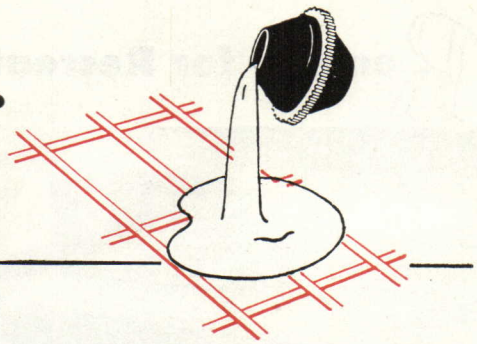
Question II

At Minnesota, we are presently teaching elementary design by a sequence of two- and three-dimensional exercises supplemented by adjunct lectures and studies. These exercises become increasingly difficult and progressively less abstract and more applied in nature. We hope that this has the effect of making a transition between basic design and beginning architectural design unnecessary. Therefore, I can save the patience of the readers and concentrate on:

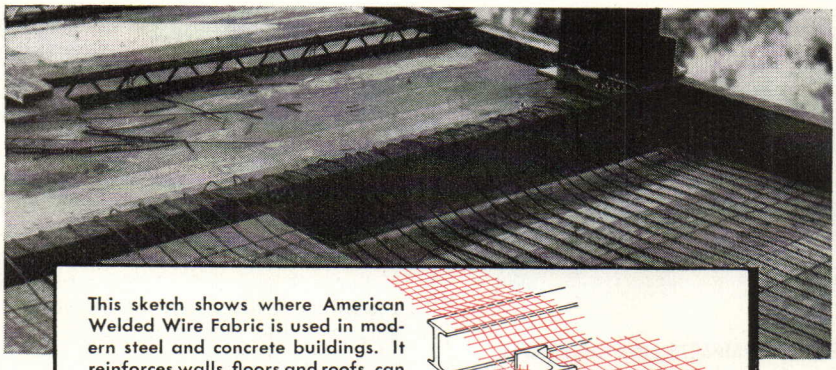
(Continued on page 116)

For steel and concrete buildings...

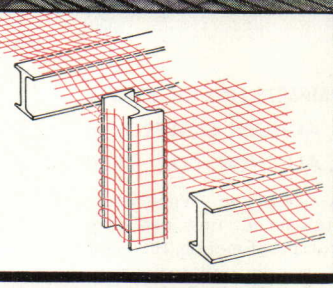
American Welded Wire Fabric



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



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



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out of school

(Continued from page 114)

Question III

Critics and philosophers in all ages have held that architecture has three basic elements; function, structure, and esthetics. If we regard function as the need for space, structure the means of achieving it, and esthetics the visual aspect of building, then in architecture today despite new needs and vastly greater technical means of achieving them, the same three key elements remain. Our curriculum in design at Minnesota is based on our philosophy, which holds that of these three, the most pivotal is function. Without the need for shelter, architecture would not exist. For convenience I suppose we could regard function, structure, and esthetics as points equally spaced on the circumference of a circle. The study of design could begin at any of these three points. We have tried beginning at each in the spirit of experimentation. At this time, we are beginning with exercises in esthetics first. This seems justified in order to give the students a means of expression before they become involved with other problems. However, from the very first day in class, the human aspects of architecture and the nature of shelter needs are discussed in parallel studies.

Our work in visual expression includes two-dimensional, then three-dimensional exercises involving the principles of unity, variety, balance and color, texture, etc. Structural studies follow in which the inherent characteristics of materials are explored in the abstract, and then applied to very simple architectural situations. Next come studies involving function, circulation, and space relationships—progressing from the abstract principle to the application of principle. This sequence may change; it probably will since we emphatically do not want to freeze in place. In the past we have had too much emphasis on drawing, then too much emphasis on models and three-dimensional studies. At present we are attempting to strike a balance.

•

The statement from Prof. C. Howard Miller, School of Architecture and Planning, University of Denver, Denver, Colorado, follows:

Question I

I believe that the word "substitute" in your question puts Basic Design in the wrong light. This new approach to the teaching of fundamentals of design fills a gap which the Analytique approach has never begun to fill. Actually, historical research problems of the Analytique type form only a small portion of the training a beginning student should acquire to have an adequate knowledge of the elements which affect or influence a design. The words "materials, space, light, form, texture, and natural and human elements" express elements which in the past, the Analytique approach has brushed over, or ignored altogether. I should know. I was trained under that system.

(Continued on page 118)

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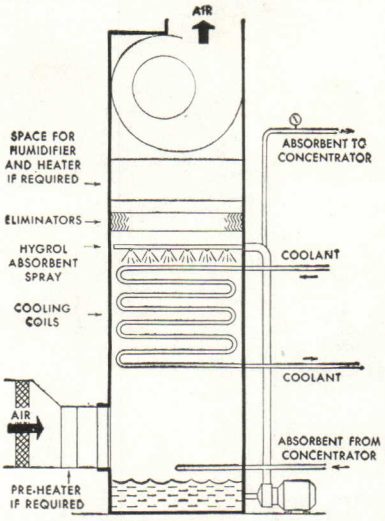
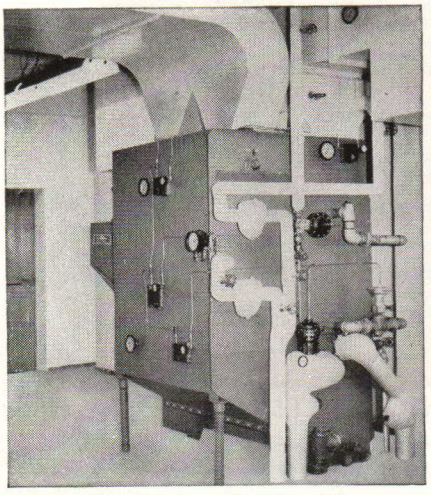


NIAGARA CONTROLLED HUMIDITY METHOD — FLOW DIAGRAM


Food Packaging under Controlled Humidity


Niagara Controlled Humidity Air Conditioner

The diagram shows how filtered air is dehumidified by passing thru a spray of "Hygrol"—a liquid absorbent which removes air-borne moisture. This liquid is hygienic and non-corrosive; it contains no salts or solids to precipitate and cause maintenance troubles. It is continuously re-concentrated at the same rate at which it absorbs moisture, providing always the full capacity of the air conditioner, automatically.

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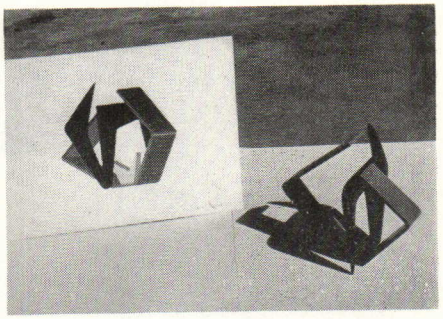
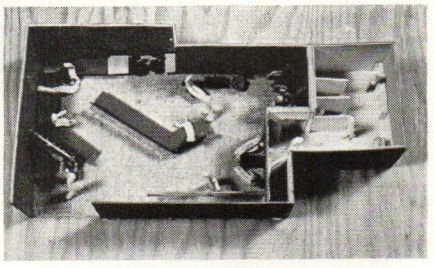
out of school

(Continued from page 116)


Three-dimensional designs are completed, painted in two-dimensions. *Photo: University of Denver*

Question II

The elements you have listed in the first question, plus color, obviously are some of the elements of function and beauty which should become the objects of study and experiment in a Basic Design curriculum. The study of space and plane relationships carries through all problems in major importance in the Basic Design course at the University of Denver, and all other elements are correlated with this study. The allied fields of Fine Art, Music, Sculpture, Drama, the Dance, and Literature are investigated in addition to Architecture to further the student's understanding of the impact of design upon Architecture. Problems take the form of models and drawings in a wide range of media, both in abstract and real form. The technical yardsticks of balance, repetition, opposition, transition, and subordination are used as well as personal opinion in judging problem results in open criticisms.


An early space-with-use problem, drawing on previous basic design training given. *Photo: University of Denver*

Question III

From the experience of a number of experiments, I feel that the student applies his Basic Design training to Architecture via the simple addition of the element of *use* to his abstract concepts of space and plane relationships. We have found that he easily understands that our buildings are in reality shells around spaces with specific uses, so that the step is an easy one which produces sanely designed architectural and planning solutions during the first year of architectural design—a rather uncommon occurrence in many schools.

•

There are many things to think about in the three above replies to my letter.

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it's the law

By BERNARD TOMSON

This column referred in November to the search for legal means to enforce the adoption of esthetic considerations in community planning. This has been reflected in recent court decisions. Some courts are coming to recognize and respect the esthetic features of municipal zoning, and they have been groping toward more appropriately phrased legal acceptance of these objectives. A few courts have recognized the inadequacy of the old formulas and have already treated the problem more candidly. Two recent cases decided in New York courts have specifically approved community endeavor to preserve esthetic values, and have determined that they promote the general welfare.

•

In *Gignoux* v. *Village of Kings Point*, an action was instituted by certain property owners to have declared void a zoning ordinance providing that in two designated resident districts no building should be erected to accommodate more than one family for each 20,000 square feet or 40,000 square feet of land, respectively.

The Village of Kings Point is located in a distinctive setting and is the most northerly of a group of nine villages, most of which are small in area and population. In various sections of the village may be found developments containing many beautiful and expensive homes. The court stressed the fact that the Village of Kings Point is unique in the sense that its governing authorities have endeavored to make it available for residential purposes only, and the village depends entirely upon adjacent villages for its business, school, and church needs. In view of this objective, which the court approved, the sole question before it was whether the zoning regulations under attack were unreasonable or arbitrary in their character and operation. According to the court, zoning serves a two-fold purpose:

"It should protect districts already established. It should control developments in a manner that is reasonable and for the best interests of the municipality in a comprehensive manner, which would aid in the development of new areas."

In deciding that the zoning regulations were neither arbitrary nor unreasonable, the court stated that the plaintiffs had not proved that if the ordinance were enforced the resulting restrictions would preclude the use of their property for any purposes to which it is reasonably adapted. In approving the ordinance, as promoting the general welfare, the court reasoned as follows:

"The beauty of a residential neighborhood tends to the comfort and happiness of the people of the community. It tends to promote the general welfare, adds to the attractiveness of the community and living conditions therein and to the value of residential property therein located.

"Real property located in a village does not have to conform in zoning restrictions with other villages. If the inhabitants of a village desire to make the real property therein available for residential purposes only, so that its

(Continued on page 122)

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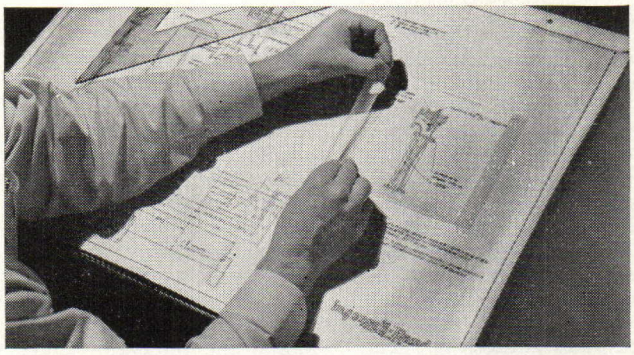

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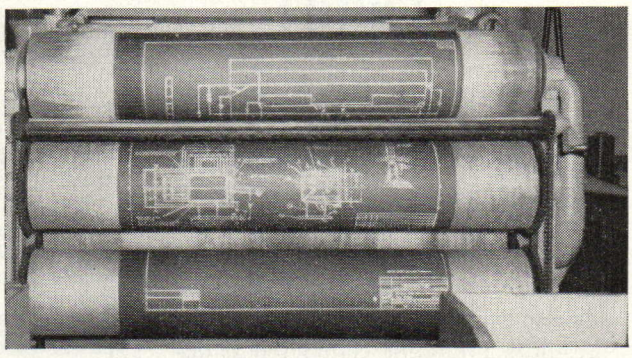

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it's the law

(Continued from page 120)

beauty and rustic character may be preserved and increased and such zoning may be accomplished without arbitrary and confiscatory action, such a village should be sustained in its attempt to secure the village from noise and traffic, the danger from fire, a better opportunity for rest and relaxation and safety for children.

"The Court is not convinced that the action of the zoning authority was arbitrary or unreasonable. In fact, it finds just the opposite. The Court is convinced that the zoning had a definite bearing upon the general welfare."

The tenor of the court's opinion may be interpreted as an approval of this "attempt by the zoning authorities not only to preserve the exclusive, high-class, and rural aspects of the community, but also to insure a further development of the land within the village along the lines of the present development."

•

Another case illustrates zoning regulations involving the validity of an ordinance regulating space to be devoted to livable areas in dwellings (*Matter of Flower Hill Bldg. Corp.*). A builder had been denied a permit for a proposed building because the plans contemplated a livable floor area considerably smaller than the "1800 square feet" required by the zoning ordinance.

The builder sought an order directing issuance of the permit and maintained that "the livable floor area" restriction lacked a reasonable relationship to the promotion of public health, safety, and welfare. The court decided that the power conferred upon villages to regulate and restrict the size of buildings determined the right of the municipality to make such a regulation. It emphasized however that there should be a less narrow approach to the problem. The court explained that the growing population trend to the suburbs was influenced by the desire of urban dwellers for improved living conditions in rural areas. These conditions they were now seeking to maintain by legislation. It examined the real purpose of the State law enabling villages to regulate community developments and said:

" . . . the intendment of the state was to exert its police power by setting up local legislative means for the adoption of ordinances which would encourage better living for its inhabitants and protect them when established in their abodes against invasion of their neighborhood by other activities, and buildings by their nature out of harmony with the established order."

It referred specifically to that portion of the Enabling Act which required that consideration be given to

"the most desirable use for which the land of each district may be adapted, the peculiar suitability for a particular use of a district, the conservation of property values and the direction of building development, in accordance with a well considered plan."

Concerning the above expression of purpose the court said:

"The broad objectives of the state zoning legislation should receive the fullest endorsement and co-operation of the court to the end that the objectives hoped for be achieved. Those objectives are a sustained effort by the state to serve the vital interests of humanity. . . . I find that regulating livable floor areas in dwellings is only giving effect to the intent and spirit of the Enabling Act."

Whether in this particular instance the village authorities exceeded their statutory discretion by providing an 1800-square-feet restriction, the court held to be a question of fact to be determined only upon a trial of that issue.

•

The fact that these courts have appraised zoning objectives more realistically does not insure that future restrictions will be uniformly upheld. Each locality must be considered individually when effect is sought to be given to zoning legislation. It is on this basis that the Flower Village case is distinguished from the decision of the Michigan courts discussed in November P/A, which had held invalid a similar provision regulating livable floor area. While the Michigan court was preoccupied with health and safety concepts, on the facts it might have reached the same conclusion had its own approach altered. The court was strongly influenced by the fact that a substantial number of dwellings already located in the area had not complied with the ordinance and that there were a large number of vacant lots, the use of which would have been materially restricted by the ordinance.

The validity of building restrictions will continue to be judged by considering them in connection with the character and circumstances of each individual locality. However, the value of these New York cases lies in their forthright consideration of the problem and in the abandonment of inappropriate phraseology. The new approach bridges the gap between non-legal conclusions and strained legal rationalizations for such conclusions. It encourages a direct handling of the problem and does not confuse the real issue or controversy. It furnishes a more appropriate basis for consideration of zoning ordinances designed to promote attractive housing development.

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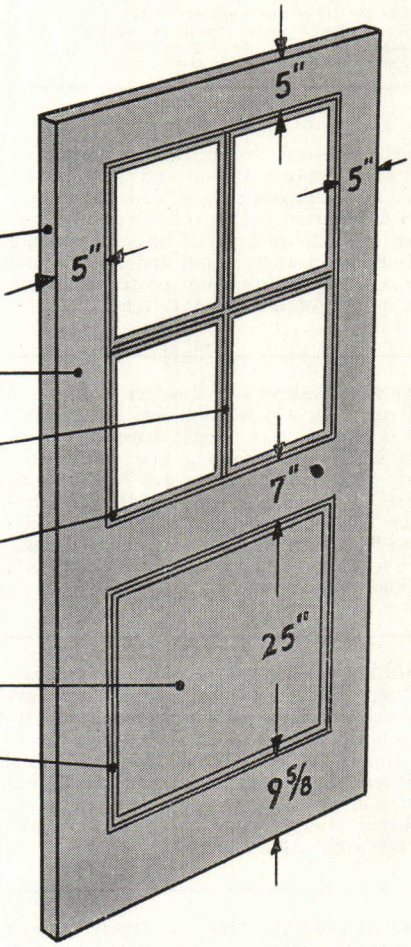
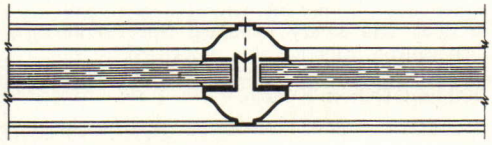


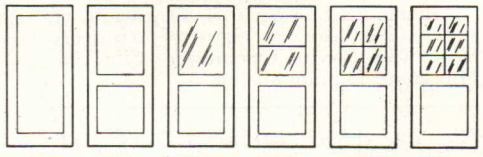
CONSTRUCTION DETAILS
of Richmond "MD" Tubular Steel Door

Section thru glass moulding


Section thru mullion

Section thru panel moulding

STANDARD DESIGNS


1M 2M 2UG1 2UG2H 2UG4 2UG6

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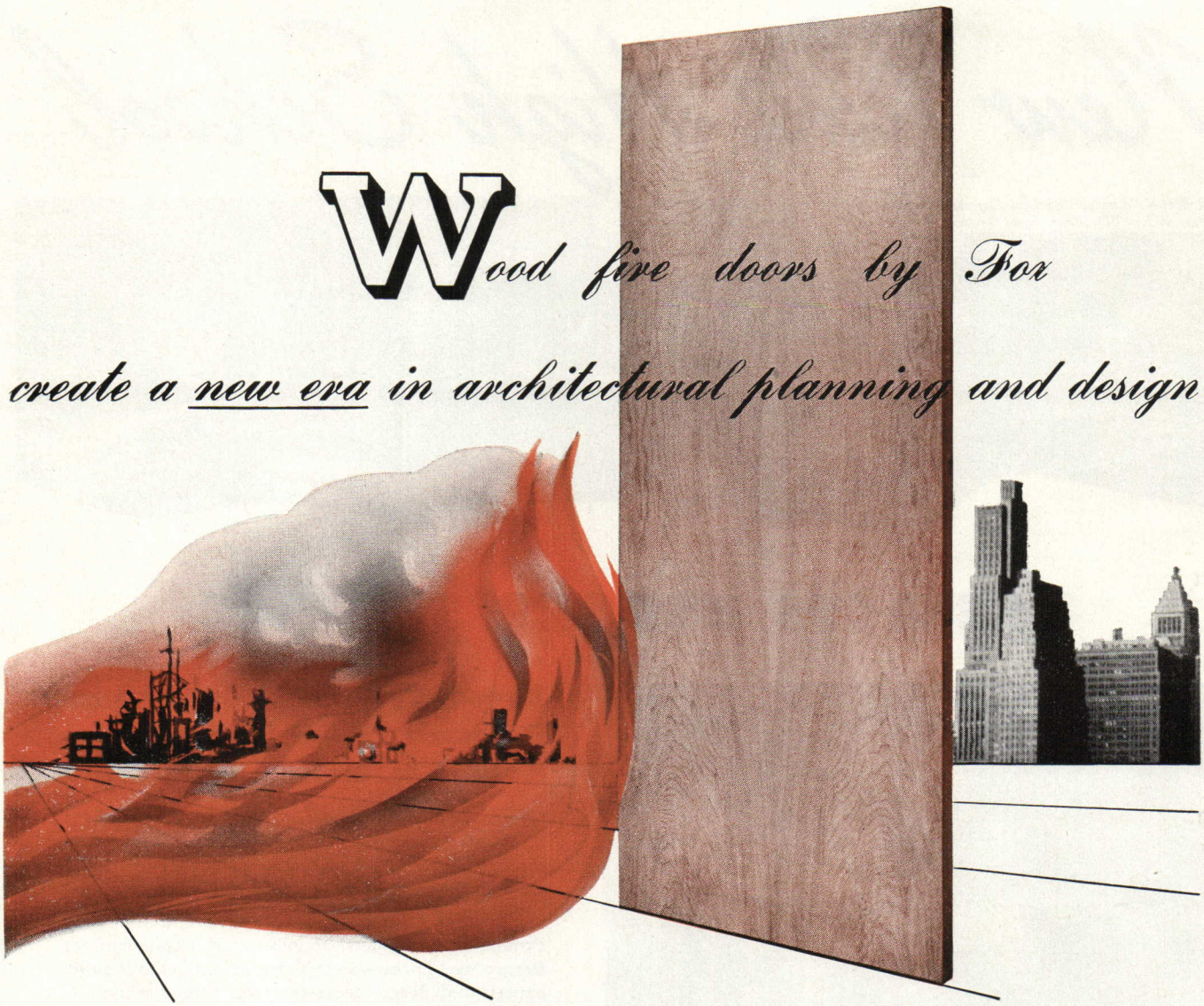

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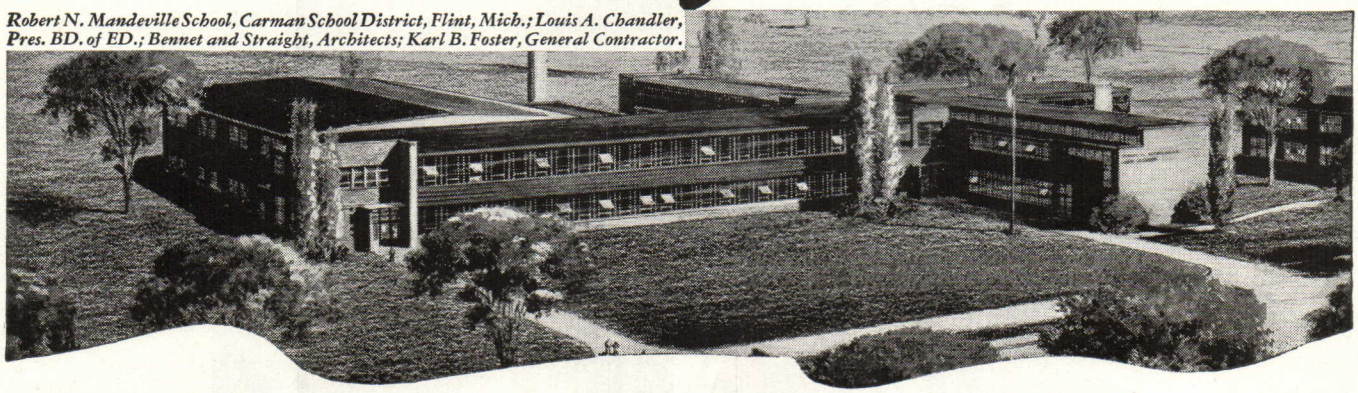

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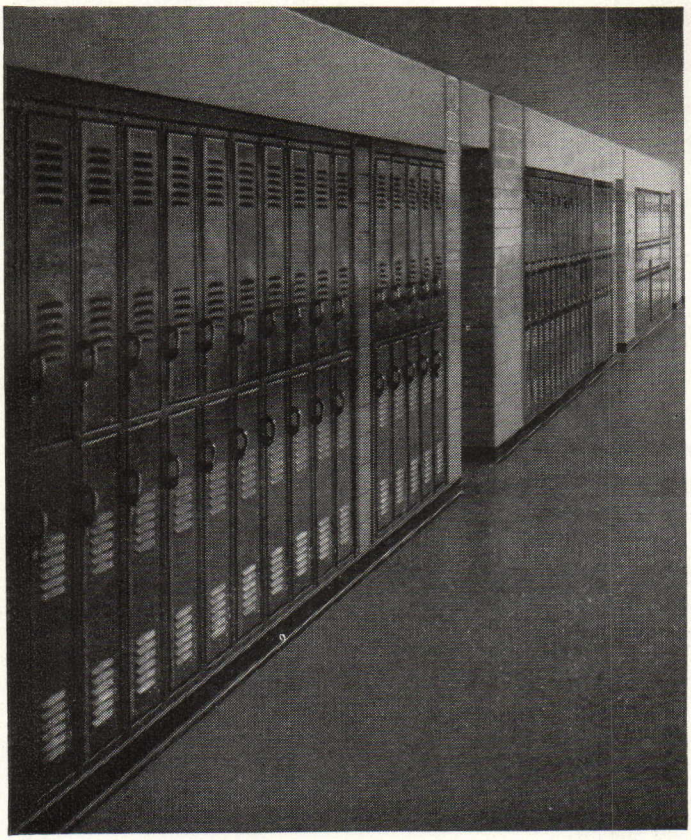

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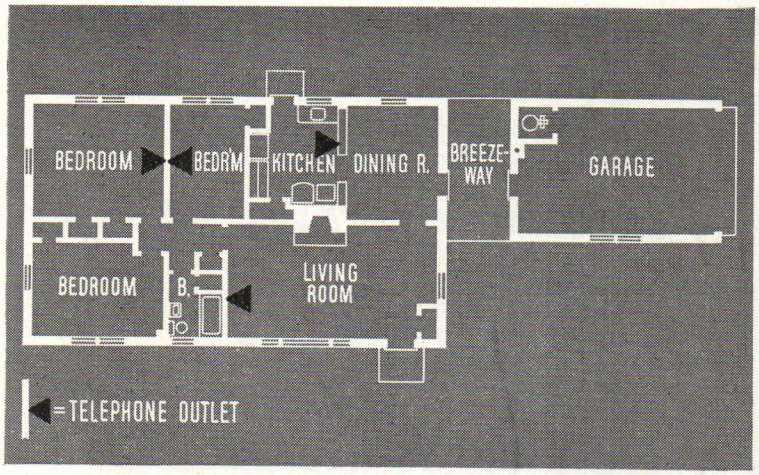

It's both practical and profitable to plan for telephones while a house is still in the blueprint stage. Practical because it protects the beauty of walls and woodwork by keeping telephone wires concealed. Profitable because it impresses prospects and makes houses more salable.

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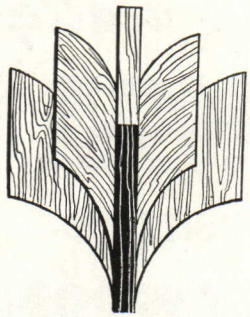

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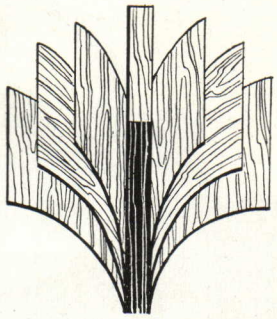

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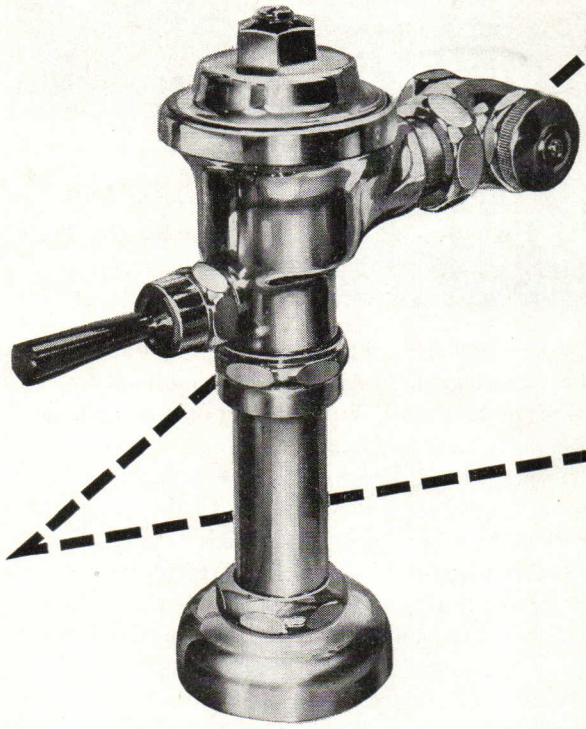

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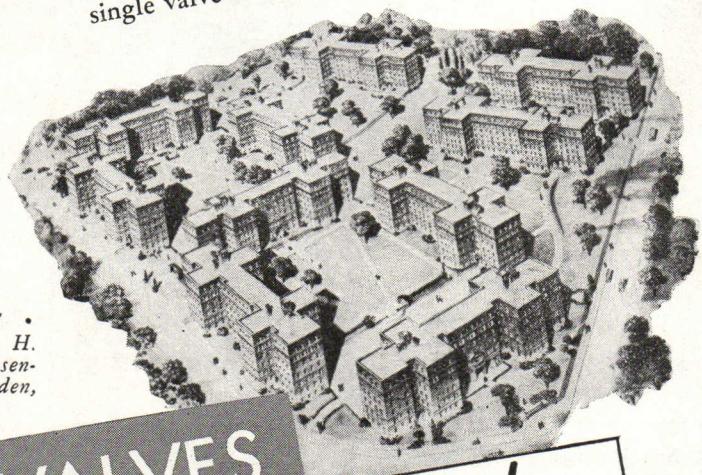

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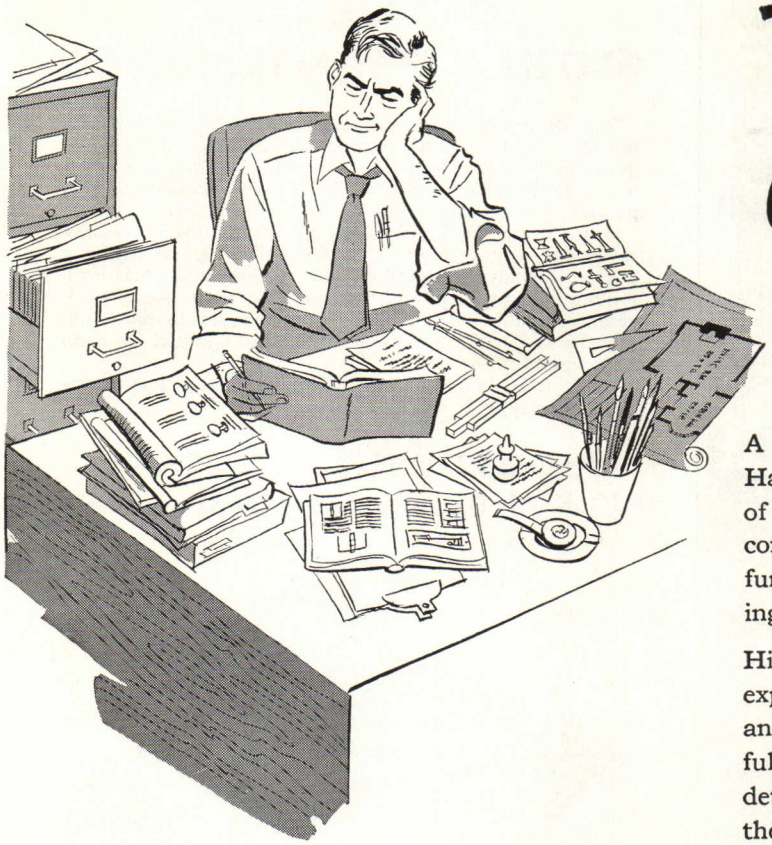

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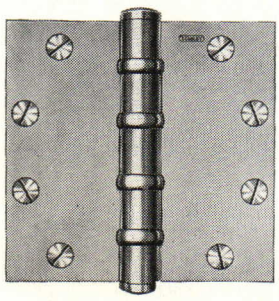

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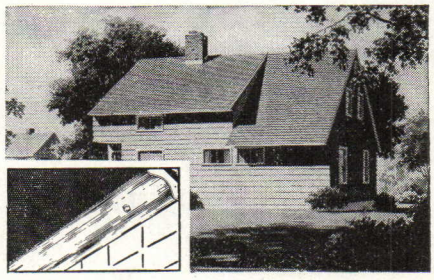
Levittown's trim design for the bathroom!



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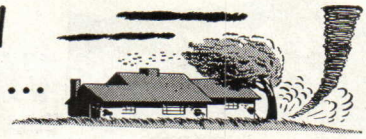

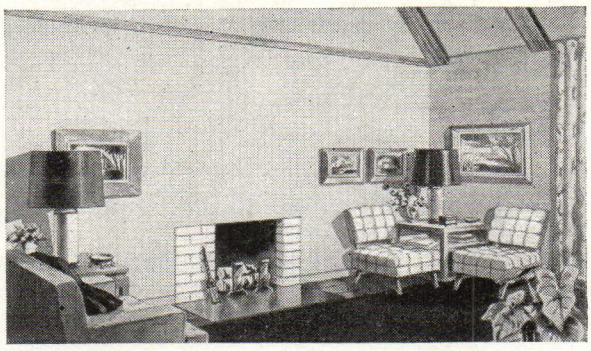

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SELECTED PRODUCERS' BULLETINS

• What is claimed to be the largest exhibition of heating, ventilating, and air conditioning equipment ever shown in this country, will be displayed at the Tenth International Heating and Ventilating Exposition during the week of January 22, in the Commercial Museum, Philadelphia. There will be many "firsts" among the exhibits—devices never shown before—as well as highly specialized developments of products already well known. In the field of radiant heating, there will be heated floors, ceilings, baseboards, entire walls, and other applications of this heating method, including a demonstration of snow melting equipment. A famous manufacturer of heating and ventilating equipment will offer a line of supplementary heaters designed for application around skylights and at points where unpreventable air leaks occur. The same exhibitor will also show new centrifugal and reciprocating compressors, centrifugal fans, gas unit heaters, and a projection unit heater that is capable of throwing warm air at a distance of 110 feet.

The nation's 153,000 miles of oil pipe lines and the extension of gas pipe lines into eastern territory have not been lost on the equipment manufacturers and the result will be a great number of booths displaying new oil and gas burners, conversion equipment, and dual-fuel appliances, such as the "twin-fuel" burner, which burns gas on moderate winter days and oil during cold snaps.

Complete air conditioning systems for both winter and summer service, in addition to a variety of units and systems for industrial needs, will be thoroughly represented at the exposition. As many of the displays are technical, the general public is not invited. Only qualified visitors are permitted to register to gain admission.

• New net I.B.R. ratings for automatically-fired hot water boilers are now recorded in the latest revised edition of "I.B.R. Ratings for Cast Iron Boilers." These changes are based on research work, sponsored by the Institute of Boiler and Radiator Manufacturers at the University of Illinois, which definitely indicated that the previous piping and pickup factors used in the previous I.B.R. Boiler Rating Code were extremely conservative. The research provided the factual basis for a reduction from 1.53 to 1.33 as the maximum piping and pickup factors for automatically-fired hot water boilers. One effect of the new rating will be, in many cases, the use of a smaller boiler, so lower installation costs may be anticipated. No changes were made in the rating of hand-fired boilers or automatically-fired steam boilers. The price of the new edition is 50 cents a copy; orders should be addressed to the Institute of Boiler and Radiator Manufacturers, 60 E. 42 St., New York, N. Y.

• An entirely new color-lighting system for display purposes in theaters, restaurants, stores, and other public buildings, has been brought out by the Color Light Corp., of New York City, under the name of Rollocolor. The uniqueness of its light-mixing operation lies in the use of controls similar to those of a radio, except that colors, rather than stations, are "tuned in." Merely by turning the knob of a Rollocolor control, the whole tone of a room can be changed and altered. "You can add a little more of this or that color" and arrive at any color harmony desired. The manufacturer reports that over 500 combinations of color are possible under any installation.

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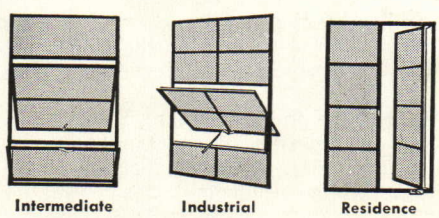

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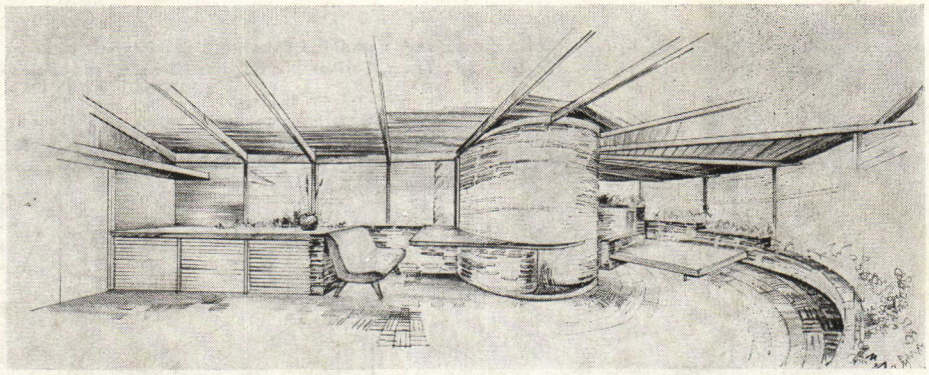

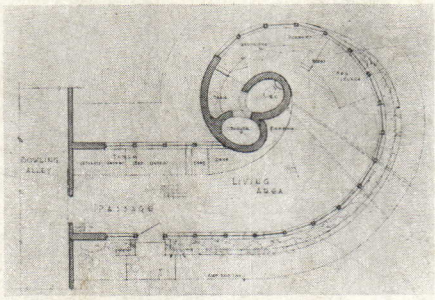

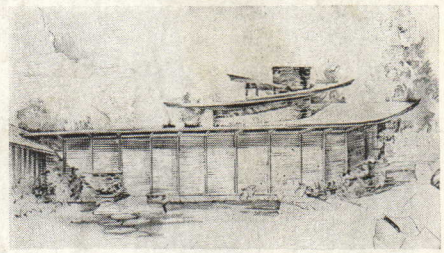

MR. GERALD LOEB, owner of the house designed by Harwell Harris, shown in this issue, is a man who has a discriminating taste in architects. He is, as many of you must know, the client for whom Frank Lloyd Wright designed a "stone pergola" for a hilltop site (on another part of the same property that the present pavilion occupies) which was widely published a few years ago. Wright's beautiful drawings for this commission are displayed in the "Alley" of the present house and Mr. Loeb, who has the greatest admiration for Wright and his work, still hopes to build the house on the hilltop.

Undismayed by having worked with two architects, Mr. Loeb is now thinking of a further addition to the older recreation building, in a different direction, for which drawings are being prepared by Bruce Heiser, the San Francisco architect who is Mr. Loeb's nephew. Curling away from the old barn and up a rise in grade, the scheme turns in completely on itself with increasing privacy as the volute closes. But: see for yourself (drawings at right).

●

I DON'T LIKE to use this space to advertise forthcoming issues (except in the instances when I get ahead of myself by mistake, as I did a few months back) but I can't resist telling you of the joys and headaches, the gratitude and embarrassment, the thrills and the disappointments, that are going along with our preparation of the special issue which will be January 1951 P/A.

Our theme, as many of you know through the correspondence we have had with you, will be a survey of work ahead for 1951—in project form. You architects around the country have been more than helpful in answering the questionnaire we sent out asking about your plans for the year, and then beyond that in submitting drawings of projected work for possible illustration in the issue. It breaks our hearts that we can't use all of it—but, obviously, we can't. We have been very strict with ourselves in winnowing down the number of good designs we will show so that they can be reproduced at a size where the quality of the rendering or the model presentation—as well as the quality of the design—can be appreciated.

As we reached the final selection, I felt that I saw one beautiful friendship after another disappear. It wasn't fun to discard a handsome rendering of a good building by an architect one admires, just because we already had enough of that building type or enough material from that region. Please forgive us. Editing is never easy, but this has been one of the toughest jobs of selection I have ever gone through.

We hope that the compensations will be sufficient to make up for the disappointments in this necessary weeding out. I shall be interested to hear some of your comments about the material we are using. To me (without attempting any critical appraisal at this time) there are three areas of interest in the issue: it is fun to see, in a gossipy sense, what Johnny Jones has on the boards for next year; it is fascinating (a completely noncommital word if there ever was one) to see design trends, countrywide and region by region; and finally, here is the opportunity many of you have been asking for to see presentation techniques of many varieties, from delicate pen drawings to posterish swash, from finely constructed models to montages. We hope you like it.

●

ABOUT THIS TIME LAST YEAR I think I commented on the fact that New York in the fall—during the pleasant Indian summer period—is a mecca for out-of-town visitors. It hasn't been necessary to travel recently in order to keep up with what's going on around the country. Gabriela and Nicolas Arroyo have been in town from Cuba; the Bob Littles from Miami have been North on a vacation trip; Paul Rudolph from Sarasota has been here on an extended visit; Henry Hill was on from San Francisco to open bids on his Connecticut house; the Alex Cochrans from Baltimore paid us a flying visit; Paul Thiry came East from Seattle to finish up a book he and several others are doing for Reinhold; Eero Saarinen passed through; Pietro and Helen Belluschi stopped for a few days on their way back to Portland from New England.

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IN ADDITION TO THESE VISITORS on their own business or on no business but pleasure, a number of out-of-towners have come to town to take part in a series of forum discussions that the Architectural League is sponsoring. More of that later, I hope, because the series is beginning to shape up into something interesting. As architects, painters, sculptors, industrial designers and others have their evenings it becomes more and more apparent to me that we are approaching an integration of the arts—have arrived at it, in many instances—without being aware that it is here. While the individual artists talk of their own contributions still in terms of buildings, or paintings, or "pieces" of sculpture, these conceptions are actually becoming obsolete. The wall properly molded, properly textured, properly colored, may in itself be architecture, painting, and sculpture. This point of view has already been expressed, and vehemently denied. As I said, more on this subject later. I think the League series may well be worth reporting in more full detail when it gets further along.

Thomas H. Creighton