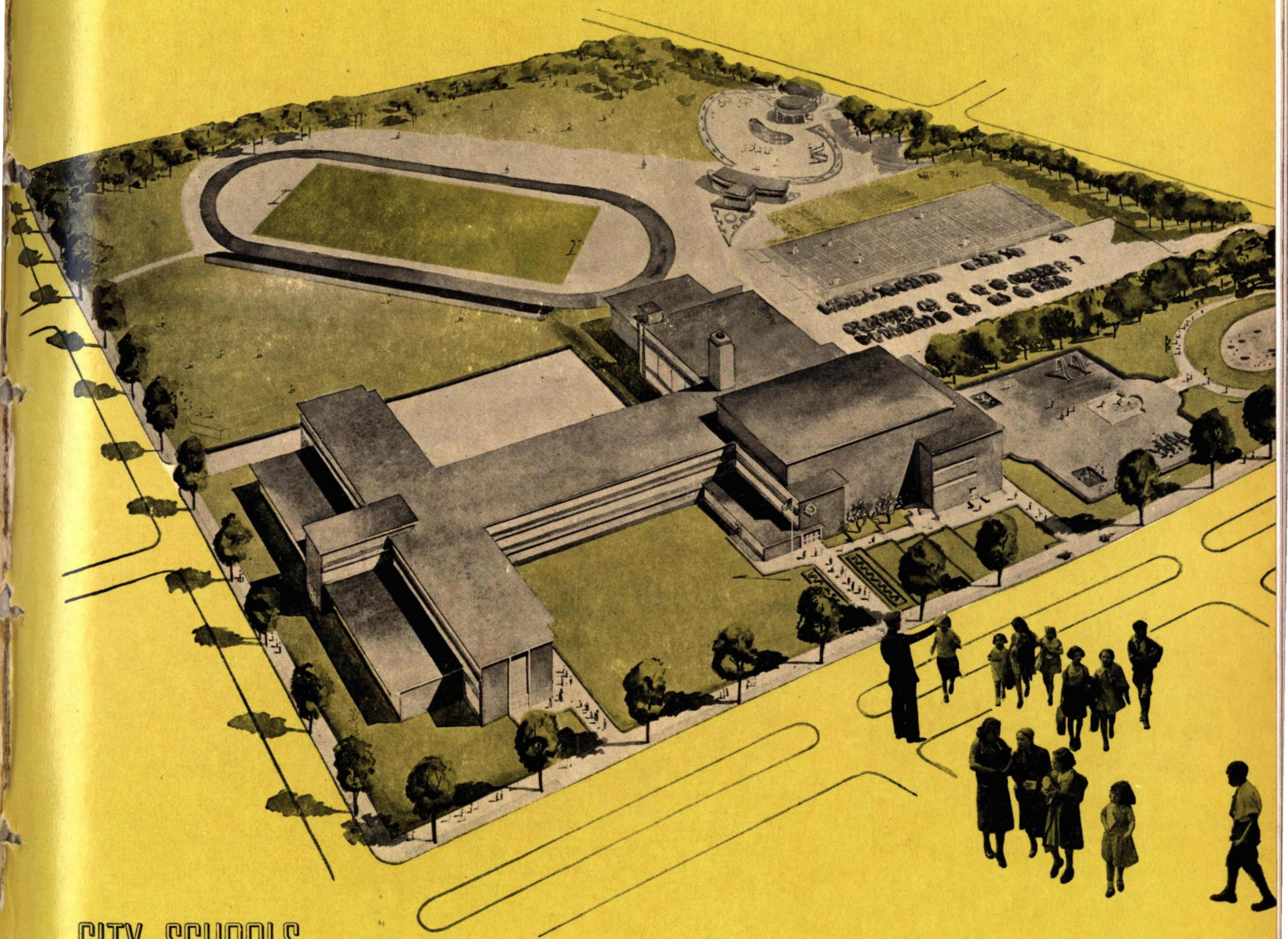
PROGRESSIVE ARCHITECTURE

PENCIL POINTS



CITY SCHOOLS

RURAL SCHOOL

PREFABRICATION POSTWAR

MAY 1946

PROGRESSIVE ARCHITECTURE
PENCIL POINTS

RP REINHOLD

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MAY 1946 **5**

COVER: Composition by Gene Hawley. Rendering by Charles W. Lorenz. Figures from Ewing Galloway.

DESIGN POSSIBILITIES FOR RESIDENCES

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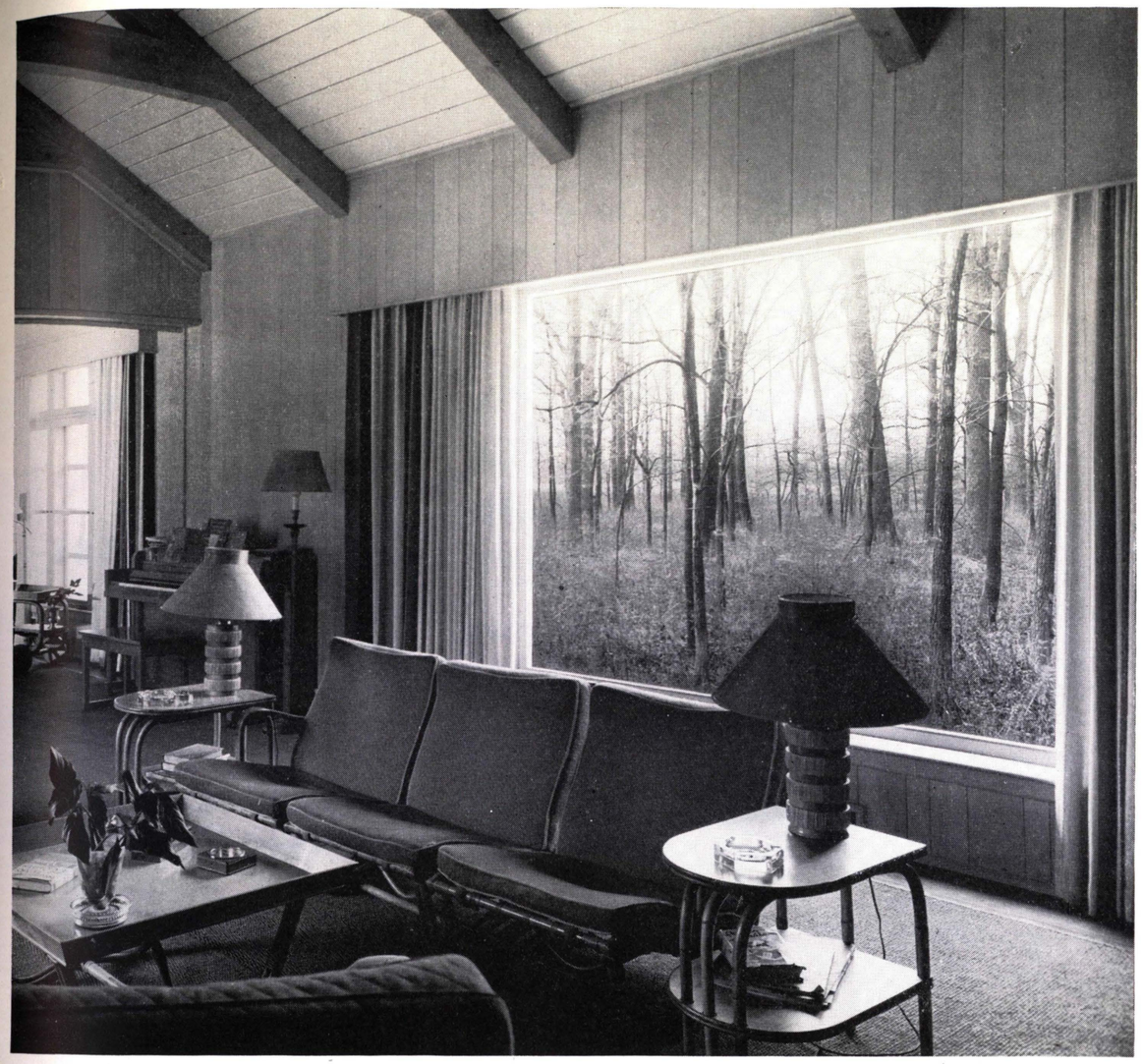

More and more, the outdoors is being brought into the home by the use of large picture windows and panels of glass. Such generously-proportioned glass areas, without cross-sash of any kind to interfere with vision, enable the architect to take full advantage of attractive surroundings in designing gracious homes. Pittsburgh Polished Plate Glass is the practical choice for applications like this. It is brilliantly reflective of surface, enhancing substantially the exterior appearance of the home. And it affords clear, undistorted vision through it from any angle. Architect—A. S. Alschuler.

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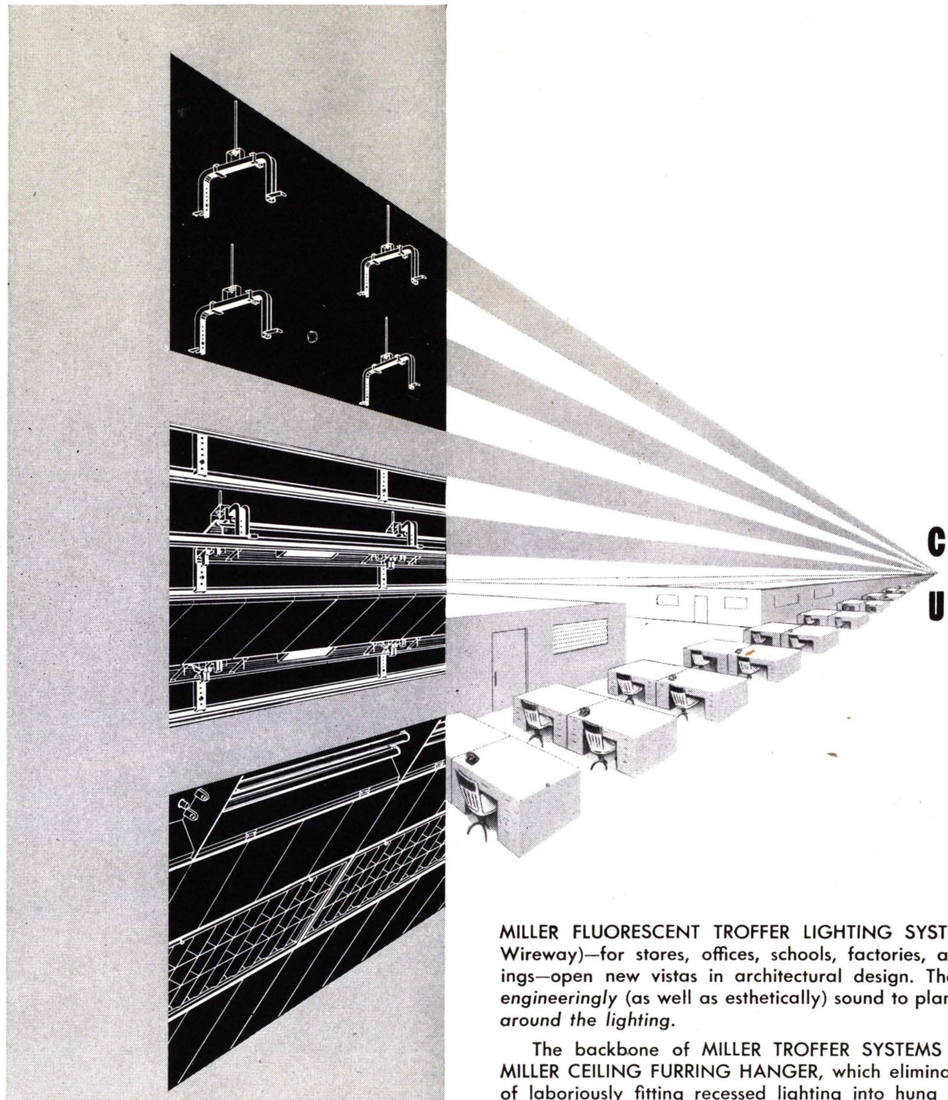

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MILLER FLUORESCENT TROFFER LIGHTING SYSTEMS (continuous Wireway)—for stores, offices, schools, factories, and public buildings—open new vistas in architectural design. Their use makes it *engineeringly* (as well as esthetically) sound to plan entire buildings *around the lighting*.

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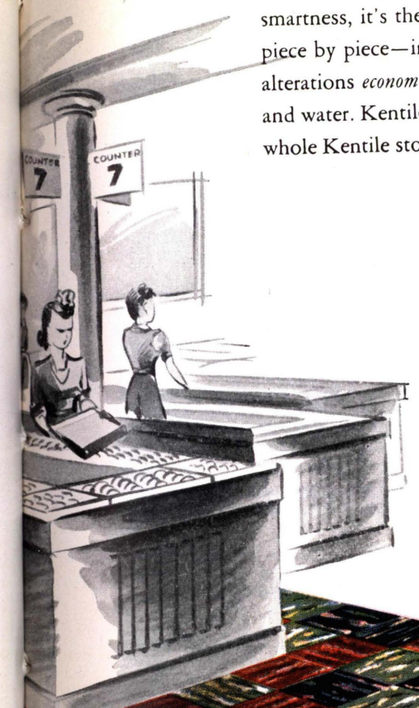

STAINPROOF — waxed at the factory, Kentile shrugs off stains, dirt, scum. (And a special grease-proof Kentile fits in wherever needed.)

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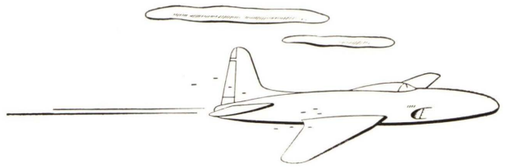

PLANES APPROACH SPEED OF SOUND --

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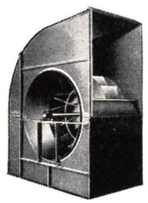
Proper Ventilation may be vastly more important to your clients



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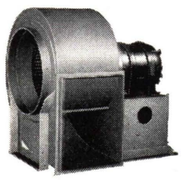

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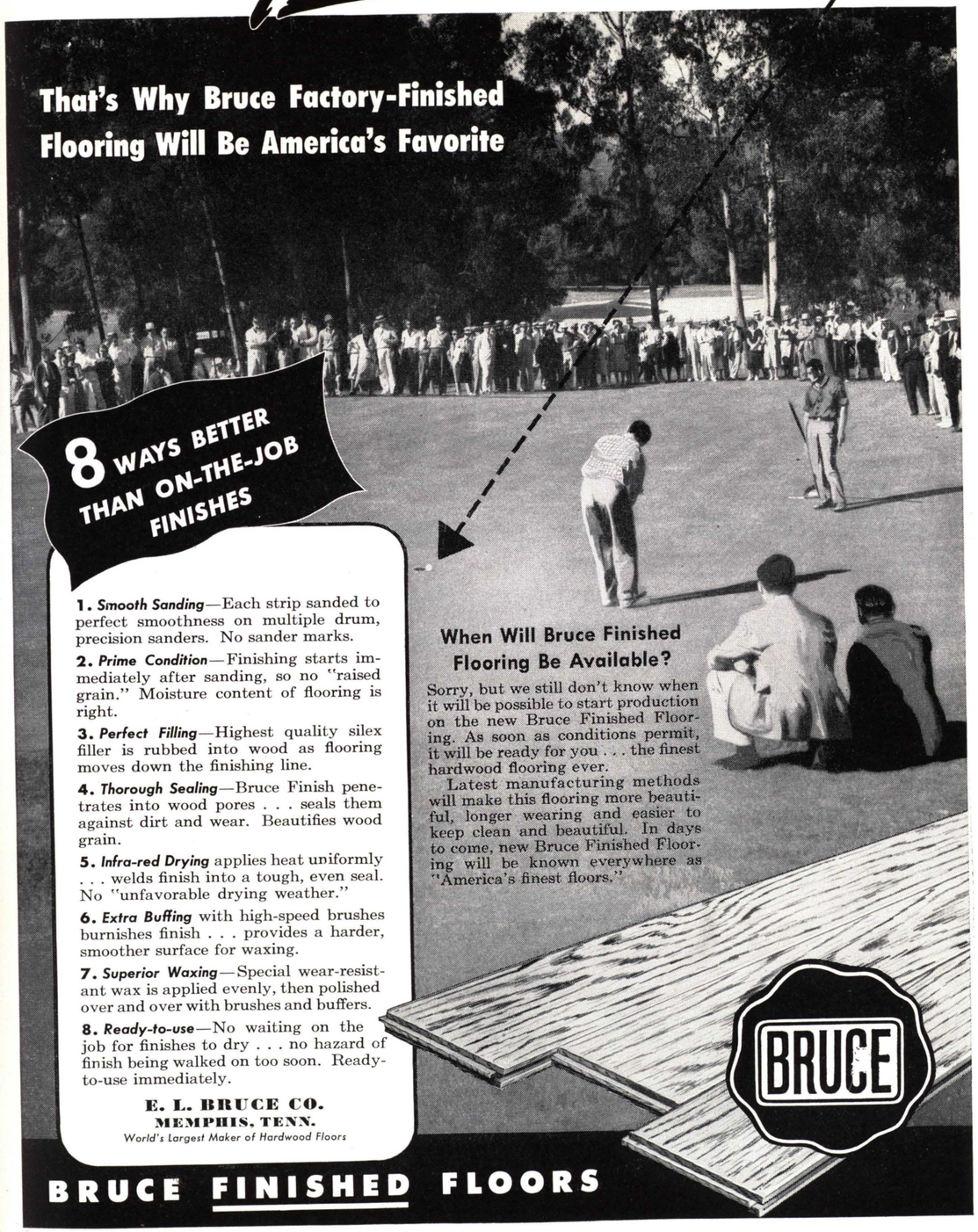

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BRUCE

BRUCE FINISHED FLOORS

ANNOUNCING

TO ALL ARCHITECTS IN THE UNITED STATES

The ANNUAL PROGRESSIVE ARCHITECTURE AWARDS

For each year beginning with 1946 the publishers of PROGRESSIVE ARCHITECTURE will make two national awards.

1 To the architect of the building or group of buildings (not a private residence), constructed during the year in the United States, which best exemplifies sound progress in design.

2 To the architect of the private residence, constructed during the year in the United States, which best exemplifies sound progress in design.

Every architect in the United States is invited to present his best work or make nominations for review by a distinguished professional jury. The awards are intended to foster sincere, reasoned progress in architectural design in the United States by citation and recognition of those architects whose efforts to improve contemporary standards are judged the most successful.

The awards will consist of suitable plaques to be given to the winners at a presentation dinner attended by nationally prominent speakers and leaders of the profession. It is proposed to give the dinner in or near the home town of one of the award winners.

JURY

The buildings to be cited as the best constructed during 1946 will be selected by a jury qualified to consider all aspects of the building. Those invited to serve are George Howe, until recently Deputy Commissioner for Design and Construction, PBA, noted architect of country residences and large commercial structures, author and critic; William Wilson Wurster, Dean of Department of Architecture, M.I.T., pioneer in design of houses meeting the most advanced standards of contemporary design; Eliel Saarinen, internationally famed architect and long associated with the Cranbrook Schools; Dr. C.-E. A. Winslow, distinguished sanitarian and Chairman of the New Haven Housing Authority, lecturer, author of books and pamphlets on public health problems, emeritus Professor of Public Health in Yale Medical School; Fred N. Severud, noted engineer and authority on construction methods and use of materials; Kenneth Reid, Editorial Adviser of PROGRESSIVE ARCHITECTURE; Thomas H. Creighton, Editor of PROGRESSIVE ARCHITECTURE.

PROGRAM

The only basis for selection of the buildings winning awards in the two classifications above described will be demonstrable progress in fitness, strength, beauty, and purpose. The jury will be asked to give consideration to the appearance, plans, structure, use of materials, site arrangement, and relation to community plan and community needs.

ENTRIES

Every architect in the United States is invited to present before February 1, 1947, the best of his own work constructed during 1946—also to nominate buildings by other architects that he believes worthy of consideration by the jury.

From a preliminary judgment the jury will select a limited group of finalists. Preliminary submissions should include at least three photographs, preferably 8" x 10", showing both the interior and the exterior of the building, as well as plot plan, floor plans, and a brief description of the function of the building and its outstanding features. When the finalists are chosen, more detailed information will be requested about these.

INQUIRIES

Entries or inquiries about the PROGRESSIVE ARCHITECTURE annual awards should be addressed to Thomas H. Creighton, Editor, PROGRESSIVE ARCHITECTURE, 330 West 42nd Street, New York 18, N. Y.

THE REINHOLD PUBLISHING CORPORATION

JOBS AND MEN

MEN WANTED

ARCHITECTURAL DRAFTSMAN, ALSO FIRST ASSISTANT ARCHITECT, OR POSSIBLY WILL ASSOCIATE. Can make right man excellent proposition. Small office established 25 years. Extensive practice several states. City 50,000 population, elevation 2,000 feet in mountains. Perfect climate. Theater and hospital experience preferred. Send complete personal and job history with recent photograph. Ronald Greene, Architect, 809 Jackson Bldg., Asheville, N. C.

EXPERIENCED ALL-ROUND ARCHITECTURAL MAN, age 35 to 50, for well-established office. Must be able to develop plans complete from sketches to final drawings. One who can assist on specifications preferred. Salary commensurate with ability. Answer at once. Finger & Rustay, 711 National Standard Bldg., Houston, Tex.

EXPERIENCED DRAFTSMEN and man to head up branch office. Warren S. Holmes Co., Architects, 2300 Olds Tower Bldg., Lansing 8, Mich.

ARCHITECTURAL DESIGNERS, DRAFTSMEN, AND MECHANICAL ENGINEERS — good positions available, Santa Fe, New Mexico. Fine climate and good working conditions. Write P. O. Box 308, Santa Fe, for further details, outlining education and experience.

DESIGNER OR EXPERIENCED DRAFTSMAN interested in creative modern design for stores and commercial buildings. Good salary based on ability and excellent future. Lester C. Tichy, 369 Lexington Ave., New York 17, N. Y.

ARCHITECTURAL DRAFTSMEN. Capable of developing working drawings and details for schools, hospitals, and public buildings. Permanent for men who qualify. Give all details of training, experience, and salary required in first letter. Jos. W. Radotinsky, Architect-Engineer, 312 Commercial National Bank Bldg., Kansas City, Kans.

SEVERAL ARCHITECTURAL DRAFTSMEN, thoroughly experienced, able to prepare preliminaries, working drawings, etc., familiar all phases architectural drafting. Must think, draw, along modern trend. Work on postwar theaters and diversified projects. Excellent opportunity for permanent position. Write education, experience, salary, to M. J. DeAngelis, R.A., 1404-1405 Temple Bldg., Rochester 4, N. Y.

ASSISTANT SPECIFICATION WRITER—Practical man with broad, general experience in building construction work (not mechanical). State qualifications and salary expected. Specification Dept., Albert Kahn Associated Architects and Engineers, Inc., 345 New Center Bldg., Detroit 2, Mich.

EXPERIENCED ARCHITECTURAL DESIGNER AND DRAFTSMEN for architect's office with large practice in South. Excellent salary; unlimited opportunity for qualified men. Dreyfous and Seiferth, Audubon Bldg., New Orleans 16, La.

ARCHITECTURAL DRAFTSMAN — location Syracuse or Watertown, N. Y. One year office experience minimum. Salary commensurate with ability and local prevailing rates. Opportunity for varied experience including supervision, and for overtime work if desired. Permanent position for qualified individual. Reply giving full particulars. Box 254, PROGRESSIVE ARCHITECTURE.

EXPERIENCED ARCHITECTURAL DRAFTSMAN desiring permanent connection. Box 255, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DESIGNER of exceptional ability will find in this established office in Southeast attractive opportunity for permanent association. Box 256, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMEN wanted immediately. Capable of producing complete working drawings on schools, churches, commercial, and industrial buildings. Excellent opportunity with progressive architect and engineer's of-

(Continued on page 12)

JOBS AND MEN

(Continued from page 10)

fice located in the Northwest. Give complete details of experience in letter of application. Box 258, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN for Charlotte, North Carolina, architect's office. Capable of producing complete working drawings and details from the sketch stage. State salary desired and complete information. Pleasant working conditions in an office that has a wide general practice. Box 259, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL or ARCHITECTURAL ENGINEERING GRADUATE by major airline for functional design work on airports, terminals, and hangars. Applicant should have initiative and ability to develop designs both preliminary and details from outline requirements. Industrial building experience desirable. Location Midwest. Reply giving age, education, general qualifications, and desired salary. Box 262, PROGRESSIVE ARCHITECTURE.

JOBS WANTED

ARCHITECTURAL ENGINEER, 26, single, B.S. and M.S. from Virginia Polytechnic Institute, discharged from Navy in April as Lieut., and taking Virginia State Board Junior Examination for registration in June, seeks employment in South America or Far East with American concern. Salary $3,200 plus maintenance. Write W. F. Holladay Gordonsville, Va.

MATERIAL EXPEDITER—Veteran, age 28, 3½ years' experience examining, shipping, and expediting materials on large projects. Have supervisory ability and can handle large group of men. Best references. Driver's license. David J. Thorn. Gramercy 7-3039.

GRADUATE ARCHITECTURAL ENGINEER, University of Illinois, desires work in architecture or structural engineering. 2 years Illinois Institute of Technology in architectural design, 1 year's experience modern architect's office, 1 year's work as machine draftsman. Young, healthy, no location preference. Will travel abroad. Available in June. Box 257, PROGRESSIVE ARCHITECTURE.

HOSPITAL ENGINEER—44 months Post Engineer largest Army general hospital (multi-storied). Pre-service experience 10 years' management diversified income properties. Available after May 15th for consultation on hospital construction and remodeling; or operation of large hospital center. Box 260, PROGRESSIVE ARCHITECTURE.

REGISTERED ARCHITECT with 11 years' private practice covering schools, municipal buildings, commercial, light industrial, and residential, from cottages to country estates, wishes to associate with established firm doing contemporary architecture in section of country with moderate climate, such as Arizona or California. Box 261, PROGRESSIVE ARCHITECTURE.

REGISTERED ARCHITECT, 38, experienced in selling and executing designs and working drawings for exterior and interior commercial projects, desires permanent connection in San Francisco Bay area with manufacturer or distributor of commercial products. Detailed experience, samples, and references available. Box 263, PROGRESSIVE ARCHITECTURE.

REGISTERED ARCHITECT, New York, New Jersey. Twenty-five years' architectural building experience, New York City. Hospitals, commercial buildings, suburban homes. Lieutenant Commander, available July, four years' building construction in Navy. Wishes to arrange business connection, preferably Los Angeles. Interested in any allied building line. Must be responsible work. Box 264, PROGRESSIVE ARCHITECTURE.

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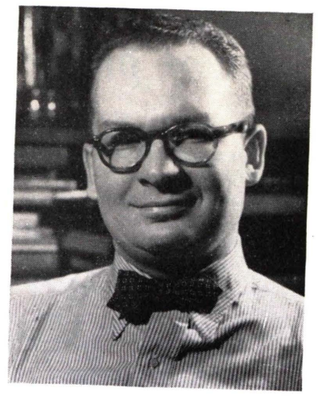
THIS MONTH

JOHN B. PARKIN

The Nichol Township School, first building in this issue, was designed by **John Burnet Parkin** with special knowledge of school requirements since he is a member of the Committee on Planning, Construction, and Equipment of Schools for the Province of Ontario. Honor graduate of the University of Toronto, he has engaged in private practice in Toronto since 1937. He had previously traveled and worked in England and on the Continent. Parkin is also consulting architect for the Toronto Transportation Commission Rapid Transit Project.



CHARLES W. LORENZ

The Designing Architect of the Board of Education, City of St. Louis, **Charles W. Lorenz**, worked out the broad progressive school building program presented in this issue, in collaboration with the Commissioner for School Buildings, Joseph P. Sullivan. Lorenz received his architectural education at Washington University, St. Louis, and then traveled in Europe as winner of the James Harrison Steedman Traveling Fellowship. In addition to his office work he has found time to enter professional competitions, and also to pursue his principal hobbies, photography and gardening. The last is being put to practical use just now as he is planting a rural tract to be his future home site.

RICHARD J. NEUTRA

MRS. NEUTRA

The informal travel notes on Latin America resulted from a recent trip made by **Mr. and Mrs. Richard J. Neutra** of Los Angeles, under auspices of the U. S. Department of State. During the trip they met a number of architects of the Latin American Republics, learned of the local problems, and studied the progressive architectural trends. Neutra's comments relate these observations to parallel conditions in this country. Sketches illustrating the travel notes are but a few of the many made en route by this alert and inquisitive architect. The picture of the Neutras was made at the airport of Rio de Janiero, where they were greeted by a large group of Brazilian architects and students.

(Continued on page 16)

ANNOUNCEMENT TO OUR READERS

Beginning with this issue, Thomas H. Creighton becomes Editor of PROGRESSIVE ARCHITECTURE-PENCIL POINTS. Kenneth Reid will be Editorial Adviser, and his long experience and enlightened point of view will continue to guide the policies of the magazine, and will be expressed in his monthly editorial.

In addition Ken Reid will direct an expanded Architectural Book Publishing program. Few architectural books have been published in recent years and there is a real need by the design profession for up-to-date reference books—a need we will attempt to satisfy. Ken Reid has been responsible for the architectural books we have published in the past and is well qualified to direct this program.

Tom Creighton has well established his editorial ability. I am sure his sane, progressive attitude toward today's architecture is well known to our readers.

PHILIP H. HUBBARD
Publisher

THIS MONTH

(Continued from page 14)

The houses shown in this issue were designed by **Robert F. Bishop** (see PROGRESSIVE ARCHITECTURE, March 1946, for biographical note) and by **Pietro Belluschi** of Portland, Oregon. A native of Ancona, Italy, and graduate of the University of Rome, Belluschi received in 1923 an exchange graduate scholarship to Cornell, where he received a C. E. Degree, and then worked in Idaho mines. He joined the firm of A. E. Doyle of Portland in 1925, becoming chief designer two years later and a designing partner in 1933. He has practiced under his own name since 1943, and is the architect of many distinguished buildings in the Pacific Northwest. He also has been a leader in professional activities there.

Extensive knowledge of his field has been acquired by **E. R. Daggy**, author of the lighting article in Materials and Methods this month, through varied experience as a lighting engineer. This has been supplemented with studies at Northwestern University and Institute of Design. A long-time employee of the Public Service Company of Northern Illinois, then a creative designer of lighting for store and office interiors for eight years, he now is a designer with Milton H. Callner & Co., owners and developers of commercial properties in the Chicago area. This position enables him to design complete interiors, notable for their successful lighting.

PIETRO BELLUSCHI

As Technical Secretary, Insulation Board Institute, **Paul D. Close** has been a productive author of articles on insulation and heating, and a textbook, *Building Insulation*, now in its third edition. He was formerly Technical Secretary of the American Society of Heating and Ventilating Engineers in New York, and taught heating, ventilating, and air conditioning at the Polytechnic Institute of Brooklyn. His experience has included work with manufacturing organizations as well as numerous professional offices. Close is a graduate of the University of Illinois. His article in this issue is an exposition of causes and cures for surface and internal condensation.

His extensive work in house prefabrication led to the selection of **Carroll A. Towne** as a member of the Building Material Sub-Committee of the Technical Industrial Intelligence Committee, FEA, for study during 1945 of German developments in that field. His observations during the course of that study form the basis for his article in this issue. Joining the staff of TVA in 1933, following a decade of landscape experience in Massachusetts and Florida, he has had varying responsibilities in community planning, recreational development, and the housing of TVA employees. His formal training was at Massachusetts Agricultural College, but his exceptionally broad experience in TVA is reflected in Towne's versatile abilities. He has done special work for the government outside of TVA, and his professional activities include membership in the American Institute of Planners.

(Continued on page 18)

NEXT MONTH

● Critical problems architects now must face are to be discussed in the June issue by authorities on planning, development, and building who will contribute to a symposium, "The Architect in Mid-1946." As the major presentation of the issue, this will include representative buildings that illustrate the varied statements of opinion and comment.

● The dilemma of the housing emergency will be stated by Wilson W. Wyatt, Housing Expediter, as a preface to our consideration of three categories of small houses—speculative, custom-built, and prefabricated. Examples will be drawn from the work of Thomas, Grainger & Thomas, Seattle, Wash.; Daniel Schwartzman, New York; William F. Hempel, Palo Alto, Calif.; and Holden, McLaughlin & Associates, New York.

● Believing that houses alone do not make a community, we will also show the elements in neighborhood planning that should be provided along with houses. Examples will include, first, a project by Van Evera Bailey, Portland, Ore., and studies of a rural community made by University of California architectural students under direction of Howard Moise. This broad approach will be supplemented by discussion of urgent community buildings—the school, the center, the small hospital. Examples will be drawn from the work of Samuel Wiener, Shreveport, La.; Saarinen, Swanson & Saarinen, Birmingham, Mich.; and the United States Public Health Service.

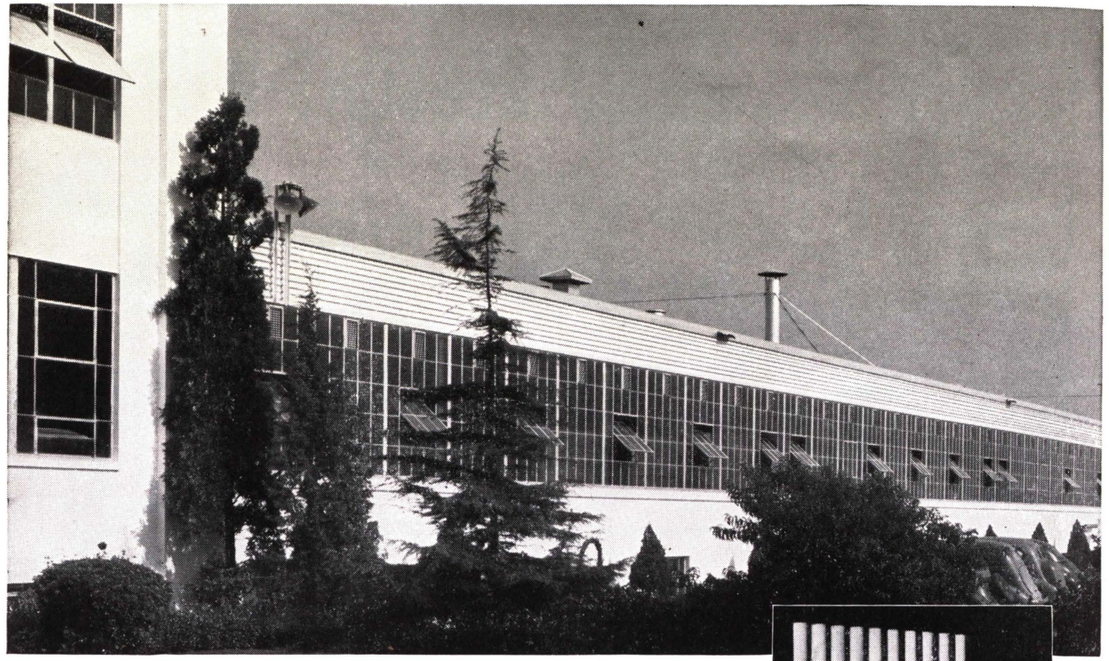
● In the Materials and Methods section next month, ways of stimulating "Cooperation Between Architect and Engineer" to effect simpler, more efficient, and more handsome structures will be discussed by Paul Weidlinger, New York, who has practiced as both and now is a consulting engineer. He recently had charge of engineering development of Mobilar construction for Konrad Wachsmann. (See March PROGRESSIVE ARCHITECTURE.)

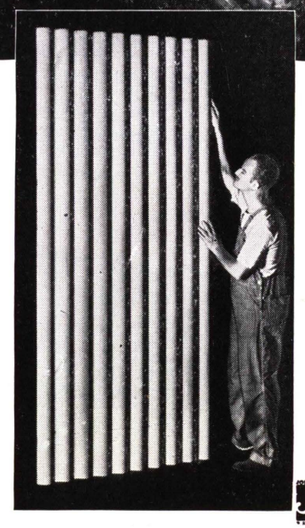
● Other technical articles will be by Henry L. Shuldener, consulting chemist in practice for 20 years, whose subject will be "Corrosion and Piping Selection" and by Hale J. Sabine and Allen Wilson, of the Celotex Corporation, who will discuss "Acoustic Treatment for Factory Buildings." This is based on a government-sponsored survey of war factories which sought to increase production through reduction of noise.

OMITTED LAST MONTH

Photographs illustrating Selected Details in our April issue were made by: Hedrich-Blessing; Ezra Stoller; Ben Schnall.

CORRUGATED TRANSITE . . . *in the Age of Streamlining*





Attractive, maintenance-free walls and roofs . . . low in cost . . . can't rot . . . can't rust . . . can't burn

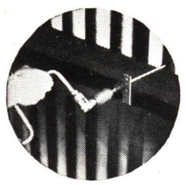
STURDY . . . utilitarian . . . Johns-Manville Corrugated Transite meets today's demand for simplified construction and streamlined design.

In the building above, the unusual architectural effect was achieved by applying the sheets horizontally instead of vertically.

Low in cost and adaptable to most types of modern building, Corrugated Transite offers a way to save money both on construction and maintenance. It's made of asbestos and cement, two practically indestructible materials. The large fireproof sheets—with their unusual strength increased by corrugations—permit a minimum of framing. Quickly installed, they require little or no upkeep.

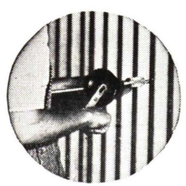
When need for alteration arises, the sheets are practically 100% salvageable.

For more facts, send for brochure. Johns-Manville, Dept. PA-5, P. O. Box 290, New York 16, N. Y.

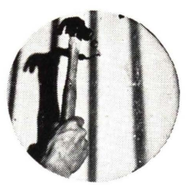


EASY TO BOLT TO STEEL

EASY TO SAW

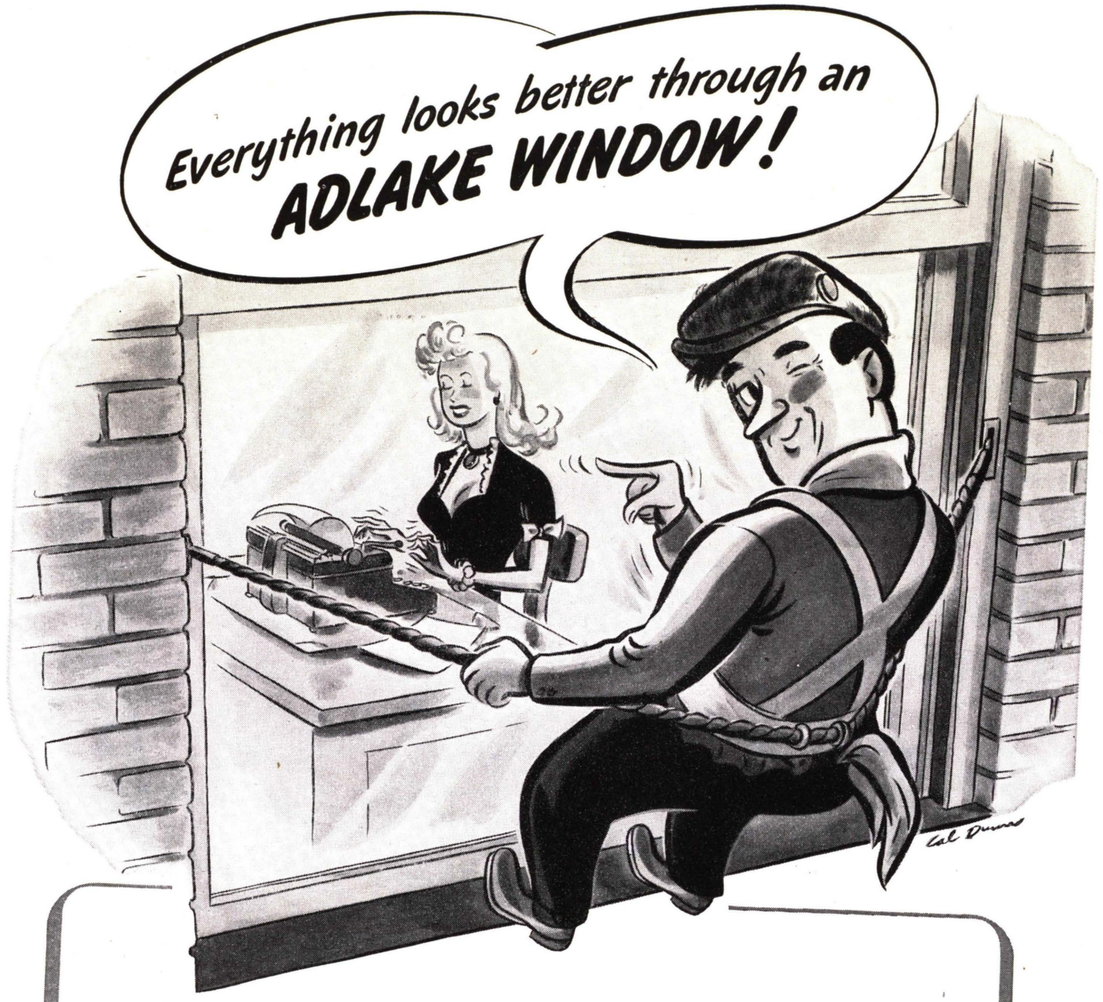


EASY TO DRILL



EASY TO NAIL TO WOOD

Johns-Manville *Asbestos* **CORRUGATED TRANSITE**



Adlake Aluminum Windows offer many advantages for so little more. Elimination of excessive air infiltration, finger-tip control, no warping or sticking—thanks to an exclusive combination of nonmetallic weatherstripping and serrated guides. What's more, they're beautifully designed for lasting architectural appeal and efficiency. We believe you'll find it well worth while to get full information about Adlake Windows before specifying or detailing *any* window.

THE ADAMS & WESTLAKE COMPANY

ALSO WINDOW MAKERS TO THE TRANSPORTATION INDUSTRY

ESTABLISHED 1857 **ELKHART, INDIANA** *NEW YORK • CHICAGO*

. . . To this building we added **SAFETY!** *with Alundum Aggregate* **NON-SLIP FLOORS**

IN Rockefeller Center utility was combined with attractiveness when the terrazzo floors were made permanently non-slip, wet or dry, by the use of Alundum Aggregate. Architects of the finest structures are using Alundum Aggregate to add permanent safety to the other features which make terrazzo popular — attractive appearance, durability and economy. Incorporated in the surface of a terrazzo floor in the proper proportion Alundum Aggregate assures non-slip effectiveness that is not lessened by liquids nor by wear.

Also available: Alundum Aggregate for cement floors, Alundum floor and stair tile, Alundum Ceramic Mosaic Tile.

NORTON COMPANY WORCESTER 6, MASS.

ALUNDUM — Trade-mark Reg. U. S. Pat. Off.

Who would think that lettering with a PENCIL could be so expensive?

FINE drawing pencils sell for only $1.00 a dozen. But they can cost you plenty in the hands of skilled draftsmen assigned to the time consuming task of hand-lettering drawings. And lettering with a pen is even more expensive. Install Underwood's new Elliott Fisher Electric Lettering Machine and you'll save important time and money. A typist can get more work done . . . with electric machine speed and efficiency. For drawings, plans, charts, schedules and many other forms, this new machine brings to your work uniformity, speed and precision . . . improved appearance . . . perfect legibility.

And it is so flexible, that you can readily use it for any other typing job that may come up.

Write today for complete information regarding this important new Underwood equipment that makes lettering a drawing as simple as typing a letter. Full details are yours for the asking.

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Accounting Machine Division

UNDERWOOD CORPORATION

Makers of Underwood Typewriters, Accounting Machines, Adding Machines and Supplies.

ONE PARK AVENUE NEW YORK 16, N. Y.

CHECK THESE OUTSTANDING FEATURES OF UNDERWOOD'S NEW ELLIOTT FISHER ELECTRIC LETTERING MACHINE

ELECTRIC KEYBOARD . . . a full standard electric keyboard . . . fast, simple and easy to operate . . . many times faster than hand methods.

SHARP AND CLEAR IMPRESSIONS . . . a Special Blue Print Ribbon plus Dual Stroke Control of the electrically operated type bars assure proper density of every type impression to provide sharp and clear reproductions.

FLAT WRITING SURFACE PLATEN . . . flat as a drawing board . . . accommodates small or large drawings with equal facility . . . provides unlimited flexibility for making corrections or revisions without removing the drawing from the machine.

COMPLETE VISIBILITY . . . approximately 396 square inches of any large drawing or tracing may be clamped in lettering position on the platen quickly and easily. This entire area is completely visible to the operator for lettering at will.

PIN-POINT ACCURACY . . . lettering can be positioned with pin-point accuracy anywhere on a drawing quickly and easily . . . a notched rifle-sight line-indicator tells the operator exactly where a type will print.

UNDERWOOD CORPORATION PA-546
One Park Avenue
New York 16, N. Y.

Gentlemen:

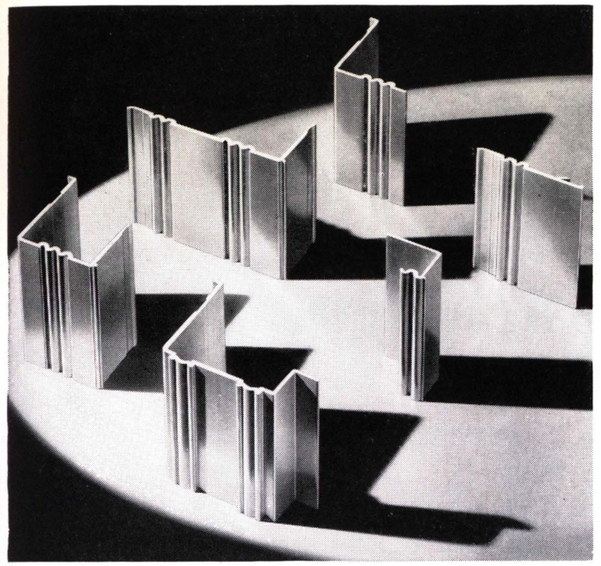
Please send me full details on the Underwood Elliott Fisher Electric Lettering Machine.

Name_____

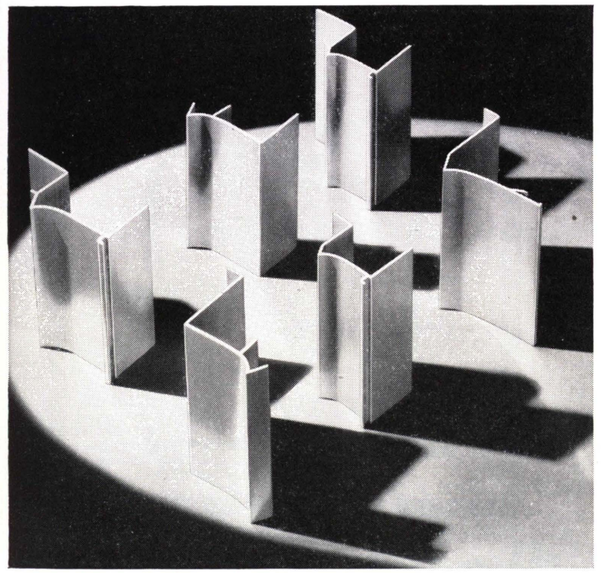
Street_____

City _____ Zone ____ State _____

There are *two* lines of Pittco Metal —each distinctively styled



PITTCO DE LUXE Since its introduction several years ago, the Pittco De Luxe line of store front metal has won a hearty endorsement from architects. Careful planning of the line as a whole, all at one time, resulted in unusual unity of design—a harmonious relationship between each Pittco De Luxe unit and all the other members in the line. And the extruded method of manufacture assures rugged strength, clean, sharp profiles, lasting color and perfect finish. This unrivalled combination of characteristics accounts for the continued popularity of Pittco De Luxe. It is first choice with architects whose clients demand sales-winning store fronts which reflect high quality.



PITTCO PREMIER Recently, Pittco Premier was introduced to satisfy the need for a lightweight, moderately priced line of store front metal. The same careful planning and harmonious styling which have made Pittco De Luxe so popular are evident in the Premier line. Pittco Premier also was designed as a unit . . . each piece styled to complement and heighten the beauty of the other members with which it is used. Pittco Premier can be set easily and quickly from the outside, effecting a substantial savings in setting time. And the self-adjusting clip always maintains a firm grip on the glass, no matter what its thickness. These practical advantages plus the high degree of architectural beauty in the Premier line promise success comparable to that already attained by Pittco De Luxe.

PITTCO STORE FRONT METAL

PITTSBURGH PLATE GLASS COMPANY

"PITTSBURGH" stands for Quality Glass and Paint

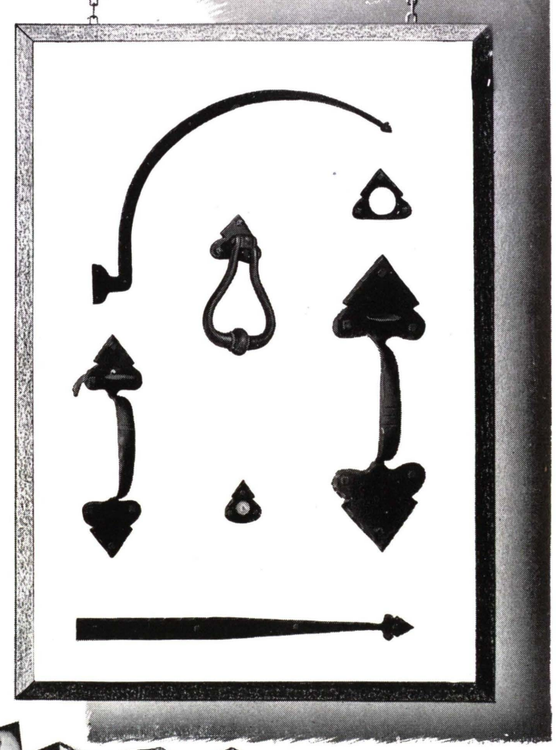
AVAILABLE
for prompt delivery!

CORBIN

Early American Style Wrought Iron Hardware

The designs offered in Corbin's line of Early American Wrought Iron Hardware are truly representative patterns of the hardware of early America. However, it is entirely within the limits of good taste and judgment to use some of them on buildings which are not strictly early American in their predominant motifs, but combine as well, architectural features of foreign lands. This is true because many of the colonial designers were influenced by English or oriental designers.

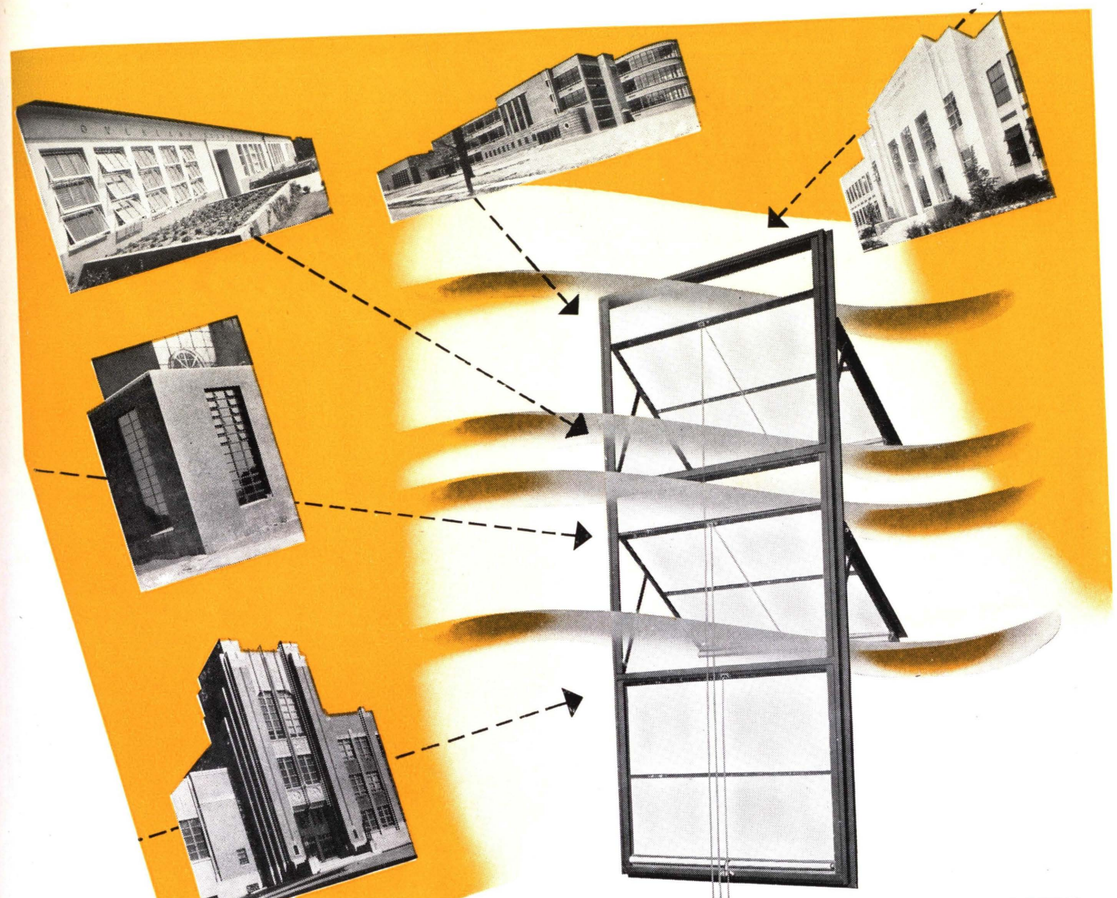
The Lexington "Notched Arrow" pattern, illustrated, was made in the colonies as early as 1698 and specimens of this design are still in existence. This design is one of several illustrated in the folder "Early American Wrought Iron Hardware". Write for your free copy and acquaint yourself with this Corbin line of authentic hardware . . . *available in reasonable quantities for prompt shipment.*



Write for your copy of "Early American Wrought Iron Hardware."

P. & F. Corbin
DIVISION OF AMERICAN HARDWARE CORPORATION
NEW BRITAIN, CONNECTICUT

Good Buildings Deserve Good Hardware



THE TRUSCON DONOVAN AWNING TYPE STEEL WINDOWS

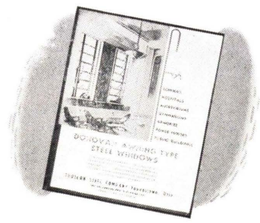
for ample light and draft-free ventilation in a wide range of structures . . .

The Donovan Awning Type Window offers the architect a wide range of opportunities for design distinction in window areas in schools, hospitals, auditoriums, and similar structures.

—and assures for these buildings unique advantages in lighting and conveniently controlled ventilation.

The Donovan design completely eliminates all unsightly exposed connecting arms, shafts, racks, etc. The awning principle of the open ventilators permits a free flow of air in inclement weather. Fully opened, the windows afford approximately 100% ventilation. Ventilators operate in unison, either by manual control or completely concealed mechanical operators, as desired. In manual operation the opening of the sill ventilator automatically and simultaneously opens all other vents, however by means of a special automatic disengaging mechanism, the upper ventilators may be left open and the lower ventilator closed.

Write for illustrated manual giving complete mechanical details of the Truscon Donovan Awning Type Steel Window.



TRUSCON STEEL COMPANY
YOUNGSTOWN 1, OHIO • Subsidiary of Republic Steel Corporation

Manufacturers of a Complete Line of Steel Windows and Mechanical Operators . . . Steel Joists . . . Metal Lath . . . Steeldeck Roofs . . . Reinforcing Steel . . . Industrial and Hangar Steel Doors . . . Bank Vault Reinforcing . . . Floodlight Towers . . . Bridge Floors.

LOCATED AT CORNELIA, GA. ROBERT & COMPANY, INC., ARCHITECTS

Look what happens when the public cries "MORE!"

NEW HOME OF

Lumite

THE MODERN PLASTIC SCREEN CLOTH

• No doubt about it! In the lives of America's homeowners, *Lumite* Window Screen is here to stay!*

This amazing plastic screen that can't rust, corrode or stain... that can't dent or bulge... is enjoying a "boom" that will last our lifetime and yours.

So... to meet this insistent, increasing demand for LUMITE, we have built a plant that is not only modern in every respect *today*... but is also planned to cope with the inevitable production-expansion which many years of *tomorrows* will bring.

All plant equipment is up-to-the-minute... our looms the most modern to be had. Our craftsmen know their jobs from A to Z... and our Research and Testing Laboratory staff experiments endlessly to produce new uses for better merchandise.

This is the *only* plant in America built for the sole purpose of manufacturing plastic screen and fabric. On 300 acres of rolling Georgia countryside, this new plant will fill the ever-growing demand for LUMITE, giving you speedy and efficient service.

Write *today* for full information and samples of LUMITE Plastic Screen.

WOVEN OF SARAN
A DOW CHEMICAL CO. PRODUCT

*REG. U. S. PAT. OFF.

WHY LUMITE IS A BEST-SELLER:

- RUSTPROOF
- WON'T BULGE
- CAN'T STAIN
- NO PAINTING
- CLEANS EASILY
- EASY TO HANDLE
- EASY TO FRAME
- NON-INFLAMMABLE
- TESTED COLOR
- LASTS LONGER
- AND STRONGER—Lumite is woven of heavy plastic filament (0.015" diameter)

CHICOPEE PRODUCTS

CHICOPEE MANUFACTURING CORPORATION
47 Worth Street, New York 13, N. Y.
World's largest maker of Plastic Screen Cloth

- The modern, 100-bed hospital at Sylacauga, Ala., was designed in architectural concrete by Charles H. McCauley, A.I.A. of Birmingham. General contractor was Algernon Blair of Montgomery.
- The main entrance of the Sylacauga Hospital is in an angle of the T-shaped building.
- Solariums in the Sylacauga Hospital insure sunshine practically all day. Cantilevered canopies provide shade for southern exposure rooms.

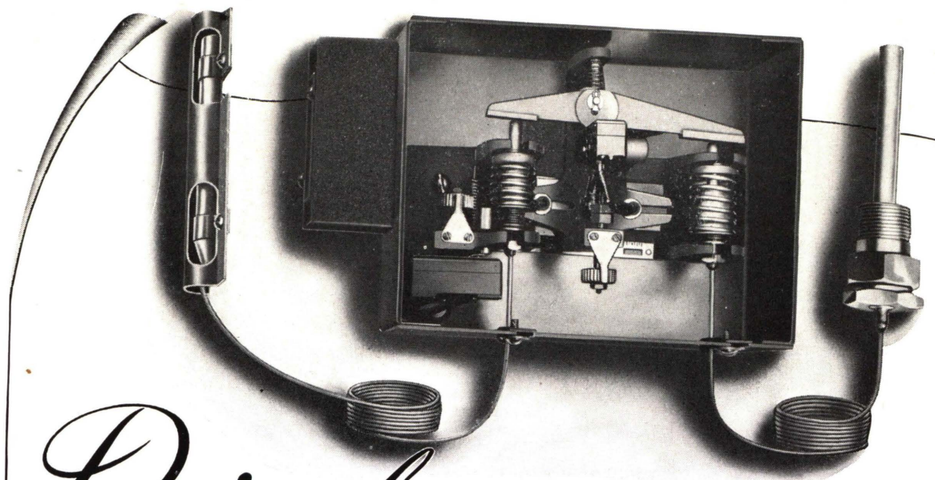
ARCHITECTURAL CONCRETE

FOR HOSPITAL BUILDINGS OFFERS FINE APPEARANCE... ECONOMY... FIRESAFETY

ARCHITECTURAL concrete fulfills every important construction requirement for modern hospitals, including sanitary cleanliness, fire-safety, attractive appearance and economy. The rugged strength and durability of concrete structures keep maintenance cost at a minimum, giving many years of service at consistently *low annual cost.*

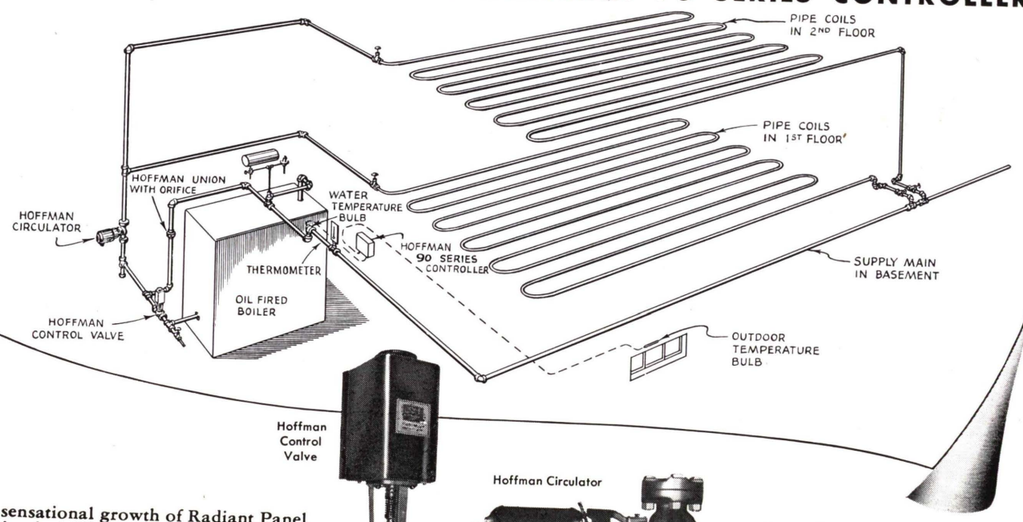
PORTLAND CEMENT ASSOCIATION
Dept. 5-25, 33 W. Grand Ave., Chicago 10, Ill.

A national organization to improve and extend the uses of concrete ... through scientific research and engineering field work

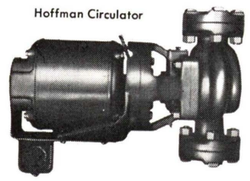


Designed ESPECIALLY FOR PANEL HEATING

...THE HOFFMAN 90 SERIES CONTROLLER



Hoffman Control Valve



Hoffman Circulator

The sensational growth of Radiant Panel Heating has made necessary the development of special equipment to best serve its unusual characteristics. Designed with these requirements in mind, the Hoffman 90 Series System precisely controls and maintains the relatively low temperature required by radiant panels. *It has proved its merit in thousands of forced hot water heating systems now in operation.*

In this system, water is *continuously circulated* through the panels by the Hoffman Circulator. As long as the heat requirement of the panels is satisfied, the Hoffman Control Valve remains closed, and the circulating stream by-passes the boiler. When the circulating water begins to lose heat, the Control Valve is slowly opened by the Hoffman 90 Series Controller, permitting hot water from the boiler to enter the system. *Just enough* is admitted to maintain the proper temperature in the panels.

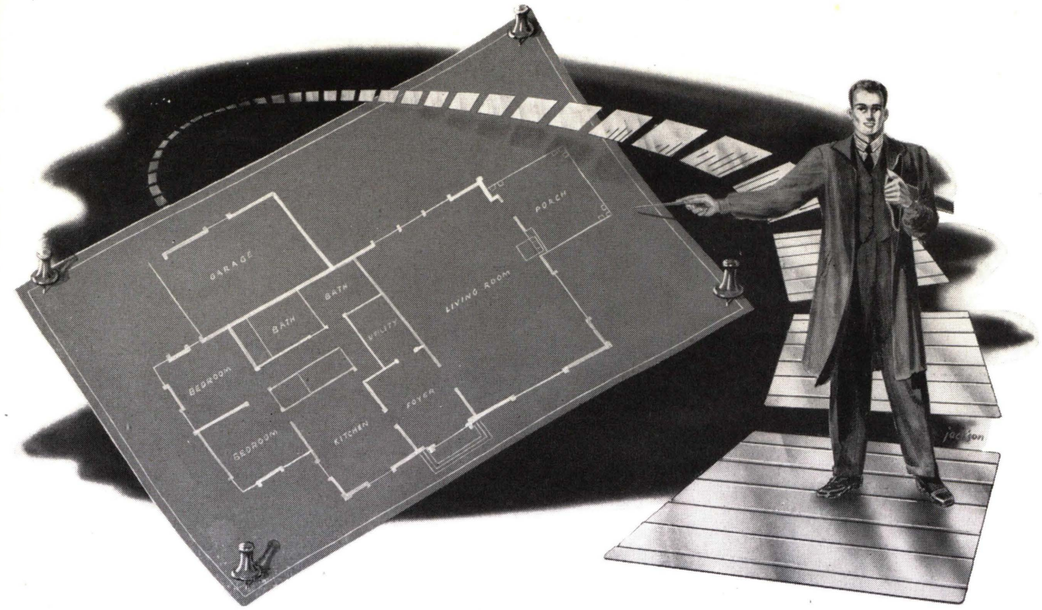
Obviously, the mechanical brain of the system is the Hoffman 90 Series Controller. The coordinated action of its Outdoor and Water Temperature Bulbs *automatically* selects the water temperature necessary to keep the building at the desired degree of warmth. With delicate precision, this Control smoothly varies the temperature of the continuously circulating water, so that the heat supply is always exactly equalized with the heat loss.

The complete story is too long to tell here—write today for descriptive booklet.

HOFFMAN

Hoffman Specialty Co., Dept. PP-5, 1001 York St., Indianapolis. Famous for Hoffman Valves, Traps, Vacuum and Condensation Pumps, Forced Hot Water Heating Systems.

Hot Water
CONTROLLED HEAT



EVERY ROOM IN THE HOUSE

a world of modern comfort, built with STEEL insulation

Wherever new homes are being built . . . wherever old homes are being remodelled . . . more and more architects and builders are specifying Ferro-Therm, the modern reflective all-steel insulation . . . that keeps 90 to 95% of all radiant heat just where it belongs . . . Reduces fuel costs by 20-30% . . . Remains 100% efficient for the life of the building.

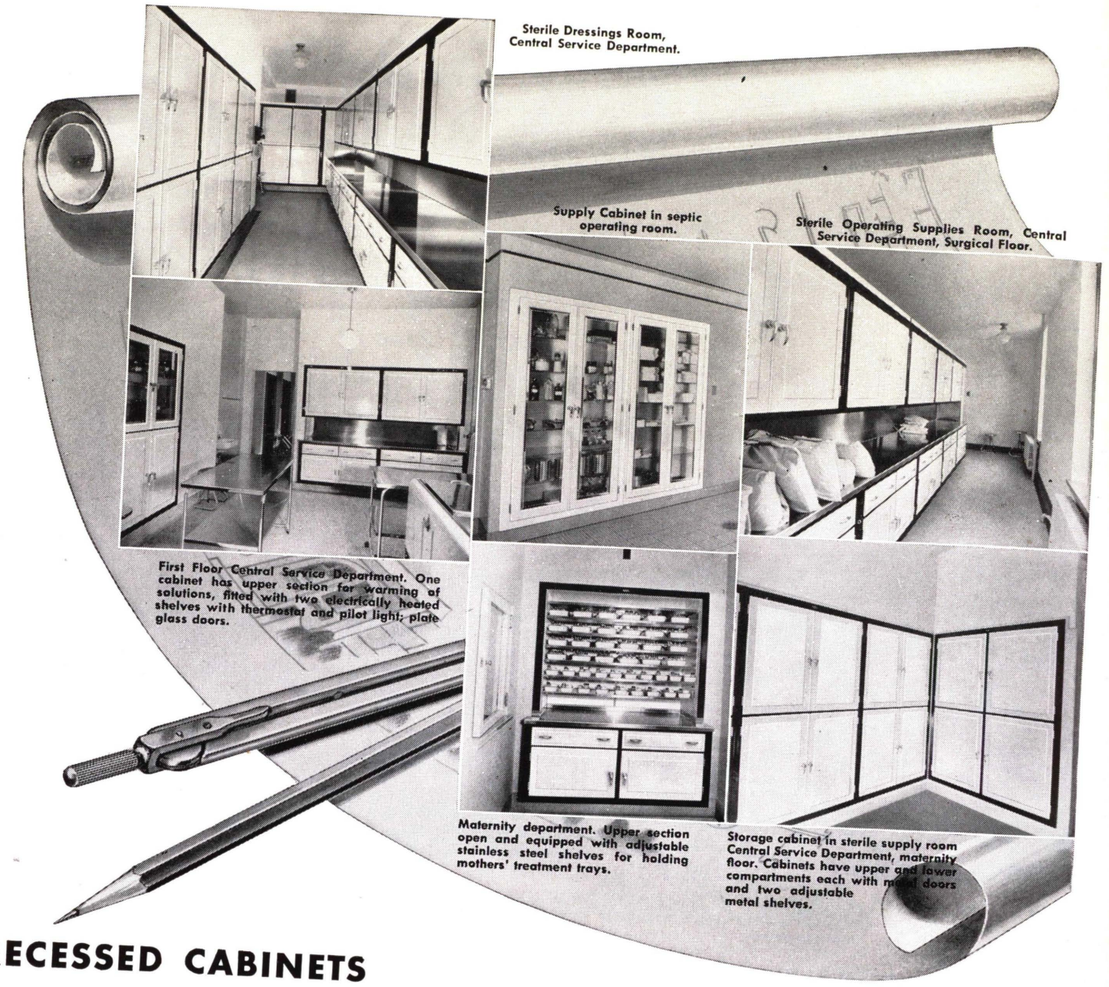
Ferro-Therm, for all its steel sturdiness, is thin and flexible . . . and comes in light, easy-to-handle sheets . . . ready for immediate and *permanent* installation . . . Also ideal for special remodelling jobs where the right kind of insulation transforms a musty attic or cold, damp cellar into a comfortable playroom, den or library . . . Write for information.

EVALUATE BEFORE YOU INSULATE

Ferro-Therm

Reg. U. S. Pat. Off

AMERICAN FLANGE & MANUFACTURING CO., INC. STEEL INSULATION 30 ROCKEFELLER PLAZA, N. Y. 20, N. Y.



Sterile Dressings Room, Central Service Department.

Supply Cabinet in septic operating room.

Sterile Operating Supplies Room, Central Service Department, Surgical Floor.

First Floor Central Service Department. One cabinet has upper section for warming of solutions, fitted with two electrically heated shelves with thermostat and pilot light; plate glass doors.

Maternity department. Upper section open and equipped with adjustable stainless steel shelves for holding mothers' treatment trays.

Storage cabinet in sterile supply room Central Service Department, maternity floor. Cabinets have upper and lower compartments each with metal doors and two adjustable metal shelves.

RECESSED CABINETS

Important factors in planning the modern hospital— Specify Scanlan-Morris

Typical of the trend in the planning of modern hospitals are these photographs of Scanlan-Morris recessed cabinets built into St. Nicholas Hospital, Sheboygan, and St. Alphonsus Hospital, Port Washington, Wis. In addition to the cabinets shown, other Scanlan-Morris cabinets in these hospitals are:

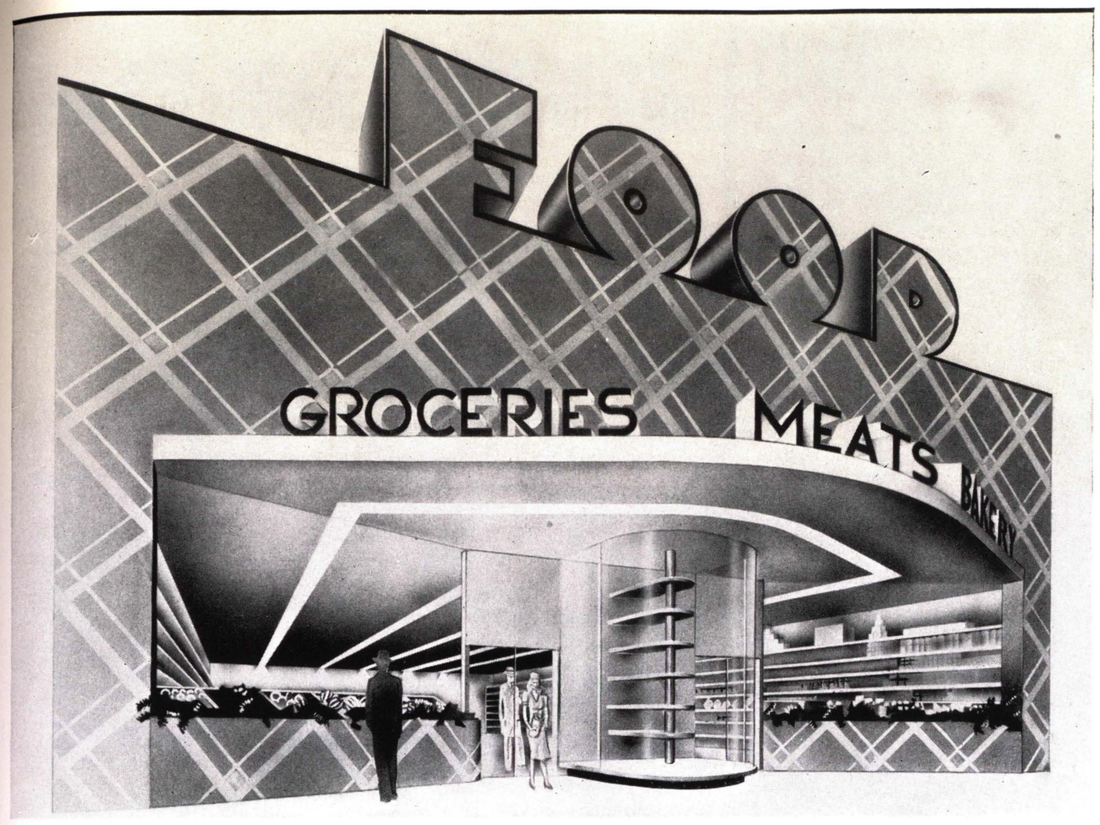
1. Recessed combination cabinet for storage and for warming of solutions and blankets — in main corridor of maternity department near Central Service Room and delivery rooms.
2. Recessed supply cabinets in unsterile work room, Central Service Department, surgical floor.
3. Recessed supply cabinet in surgical corridor.
4. Recessed cabinets in splint room, surgical floor— three equipped with swinging type harness hooks for splints and fracture equipment; others with metal shelves and plaster barrel compartments.
5. Recessed cabinets, counter type, in unsterile work room of Central Service Department—stainless steel counter tops.
6. Counter type cabinets for soiled utensils, equipped with double sink—in maternity department.

Scanlan-Morris recessed cabinets, each cabinet custom built from plans and specifications covering the individual requirements of the hospital, are installed in many leading hospitals.

The cabinet bodies are made of 20 gauge furniture steel. All corners are made with double lapped and sweated seams, insuring dust-proof construction. Frames are flat steel, electrically welded to insure maximum strength and rigidity. The cabinets may be finished in any color to harmonize with the color of walls and other equipment. Fittings are finished in nickel plate or chromium plate, as specified.

Years of designing and manufacturing experience and contact with surgeons, hospital superintendents, engineers and architects, qualify our Technical Sales Service Department to give valuable assistance and authentic guidance in hospital planning. Suggested layouts supplied without obligation.

Ohio Chemical
GENERAL OFFICES · 60 EAST 42ND STREET, NEW YORK 17, OHIO N. Y.
MANUFACTURERS OF MEDICAL APPARATUS, GASES AND SUPPLIES FOR THE PROFESSION, HOSPITALS AND RESEARCH LABORATORIES



CLEAR.. *for Action on the Sales Front*

A Complete Line for Every Design

FEW can resist the urge to enter the store with the friendly front. Through its clear and alluring windows, the tempting array of merchandise within is easily viewed from the outside. It stops the eye and makes 'em buy!

With a modern Brasco Store Front the full benefits of this new sales stimulus can be realized. For Brasco's advanced, streamlined construction harmonizes perfectly with the new conception of "exterior-interior" store front design.

Heavy-gauged members, steel reinforced for strength, insure built-in beauty for lasting economy. Exclusive patented features amply protect the show window glass. Sound engineering, backed by our thirty years of experience, assures precision manufacture and ease of installation.

That's why every plan for store modernization should include a friendly Brasco Front.

Brasco MODERN STORE FRONTS

BRASCO MANUFACTURING CO.
HARVEY · (Chicago Suburb) · ILLINOIS
National Distribution Assures Effective Installation

GOOD WASHROOMS | one of the "Big 4" in good working conditions

. . . say men and women workers in 400 plants

ISABEL: "You can tell how considerate a company is of its employees just by looking at the washrooms."

GRACE: "Can't you though! They must really want us to be happy here—they keep this one so clean and pleasant."

SANITARY modern washrooms mean a whole lot to women workers . . . and men workers too. An unbiased survey of men and women workers from coast to coast shows that these factors are the "Big 4" in good working conditions: good washrooms, proper lighting, safety devices and adequate ventilation.

Besides helping keep workers happy, plenty of hot water, soap and good quality individual paper towels help keep germs from spreading. By encouraging frequent and thorough washing, good washrooms help reduce the number of absences due to colds and their more serious complications.

Haven't you yourself been irritated by a poorly planned, badly equipped washroom? Then make sure your washrooms are designed to be "Health Zones," not "Germ Exchanges"—"morale-boosters," not "temper-testers."

Good Washrooms begin at the Drawing Board

Efficient, well-equipped washrooms that help keep workers healthy and happy are a result of careful thinking and planning in the blueprint stage. For practical suggestions on modern washroom layout, turn to our four pages in Sweet's catalog—or call on the Scott Washroom Advisory Service, Scott Paper Company, Chester, Pennsylvania.

SCOTTISSUE TOWELS STAY TOUGH WHEN WET

Thirsty-Fibre REG. U. S. PAT. OFF.

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

THE MOST VERSATILE OF ALL BUILDING MATERIALS...

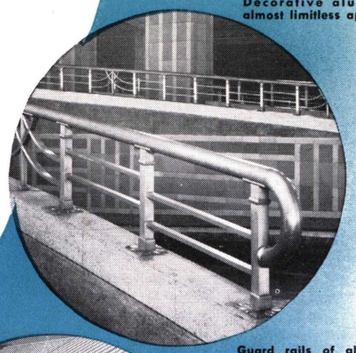
Alcoa Aluminum

Surprising but true—Alcoa Aluminum is the most versatile of all building materials. What you can do with other metals you can often do better with aluminum—plus the fact—it can often replace nonmetallic materials.

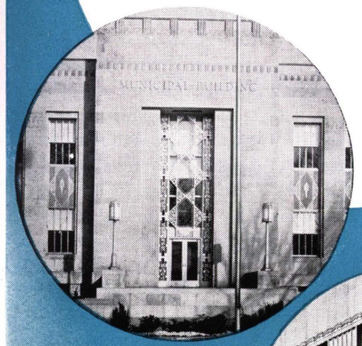
There is plenty of practical experience to prove the advantages of Alcoa Aluminum. More than 100 million pounds of Alcoa Aluminum have been used in the construction field. There are over 212 ways you can use aluminum in building construction alone. Five important uses are illustrated here—each with distinctive advantages.

Alcoa's years of experience can be valuable to you. Our nearest sales office will be glad to work with you on specific applications. ALUMINUM COMPANY OF AMERICA, 1868 Gulf Building, Pittsburgh 19, Pennsylvania.

Decorative aluminum has almost limitless applications.

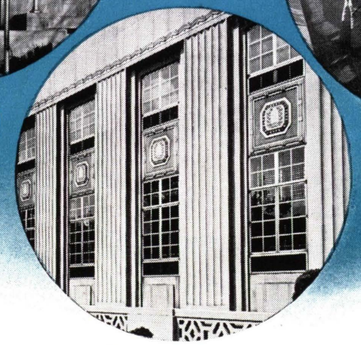


Guard rails of aluminum are maintenance-free. They never rust—never need painting.

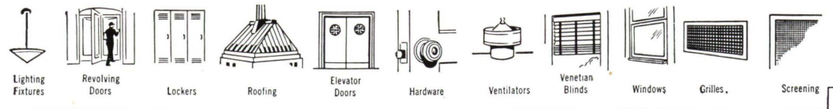


These spandrels improve the appearance of this building and will never rust or stain the masonry.

Deadweight is eliminated here. Aluminum skylights are light in weight and provide excellent weather-resisting qualities.



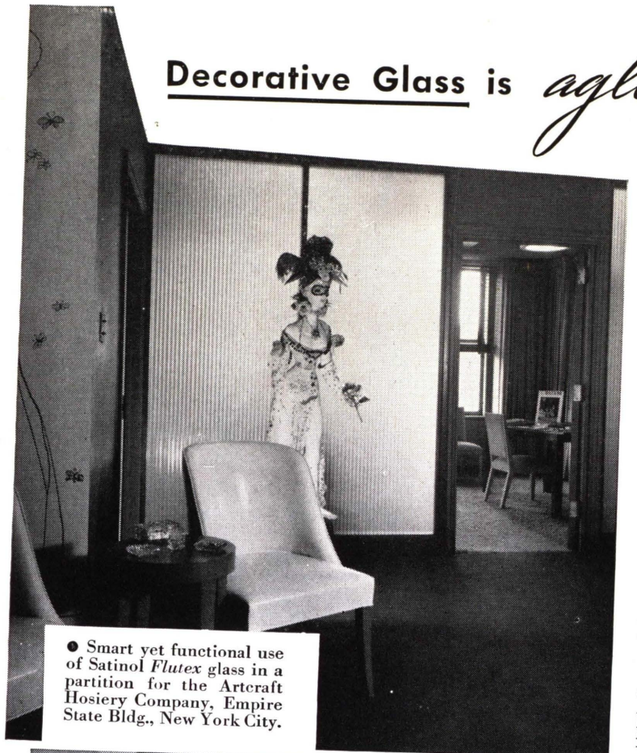
Low upkeep goes in with aluminum windows. They can't rot, rust or warp. And no paint is needed.



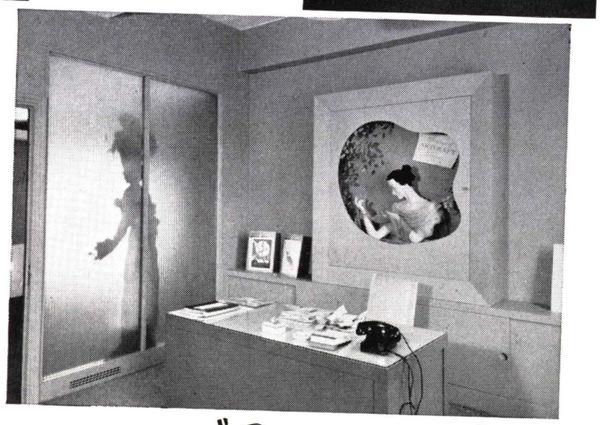
ALCOA FIRST IN ALUMINUM

REG. T. M. ALCOA ALUMINUM

Decorative Glass is *aglow with Glamor*



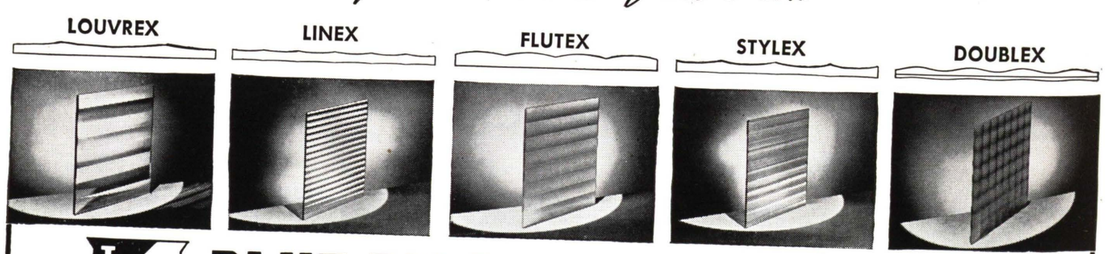
● Smart yet functional use of Satinol *Flutex* glass in a partition for the Artcraft Hosiery Company, Empire State Bldg., New York City.



Architects and designers realize the advantages of Blue Ridge *Decorative Glass* for backgrounds needing glamor and sales appeal. The translucent characteristic of patterned glass (diffusing light and providing privacy) offers a wide range of decorative opportunities. The dignified appeal of Figured Glass is seen more and more in smart shops, offices, salons, lounges and private homes.

Blue Ridge *Decorative Glass*, in a variety of patterns, is made by the Blue Ridge Glass Corporation of Kingsport, Tennessee, and sold by Libbey·Owens·Ford through leading glass distributors. Five popular patterns are shown below. The glass may be *Securitized* (heat tempered) for added resistance to thermal and physical shock . . . may be semitransparent or obscure. For further information, write Blue Ridge Sales Division, Libbey·Owens·Ford Glass Company, 9256 Nicholas Building, Toledo 3, Ohio.

"Design it with one of the 5 EX's"



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WE'RE FOREVER BUSTING BUBBLES

That's the secret of Gold Bond Macoustic— the fireproof acoustical plaster!

WHEN Gold Bond Macoustic is mixed with water, small gas bubbles form. After application, these bubbles burst, automatically creating millions of tiny sound-absorbing channels within the plaster which give this material its high acoustical efficiency.

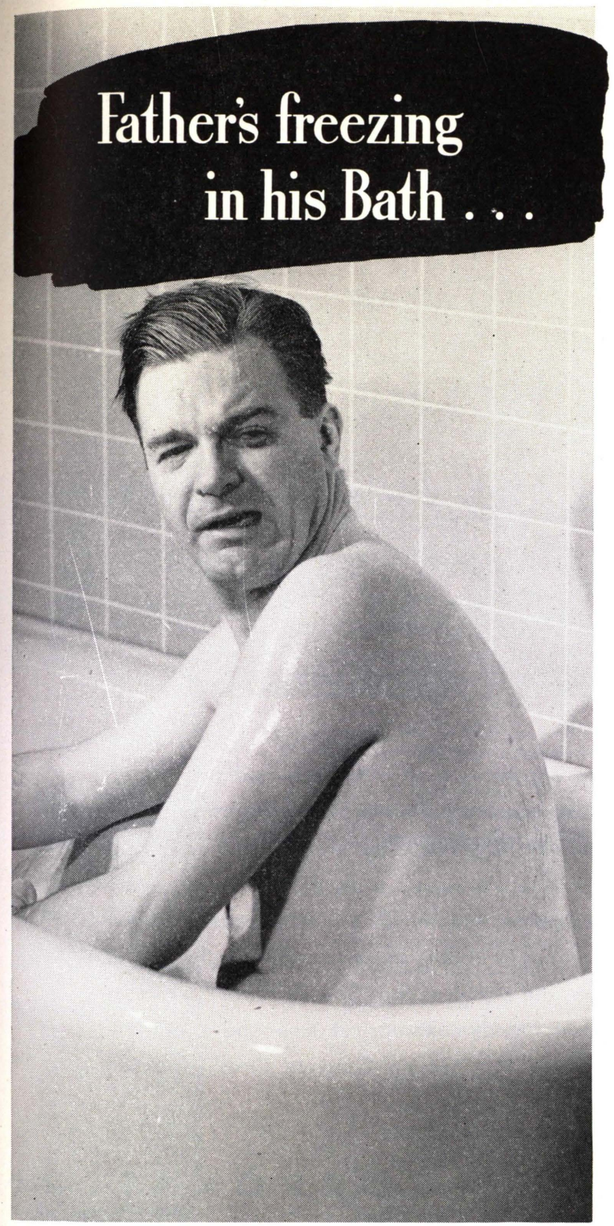
The pleasing finish of Macoustic harmonizes with practically any type of wall treatment. It imposes no limitations on design and may be used equally well over flat or irregular surfaces, coves, barrel or groined ceilings. Is applied by regular plasterers and adds so little to the cost that Macoustic sound conditioned ceilings may be included in even the most modest budgets.

Macoustic is supplied in oyster white, ivory, cream and buff. When redecoration is necessary, it may be spray-painted with Gold Bond Sunflex water-mixed paint without appreciable loss of sound absorption. For complete information, see Sweet's or write National Gypsum Company, Buffalo 2, New York.

● *Macoustic is applied over a base of gypsum plaster and saves the cost of the usual lime putty coat. May be troweled comparatively smooth or floated.*

● *Microphoto showing the sound-trapping channels created by the bursting gas bubbles in the drying process. Magnified 32 times.*

You'll build or remodel better with Gold Bond



INSTALL STEEL PIPING ADEQUATE FOR TOMORROW'S NEEDS

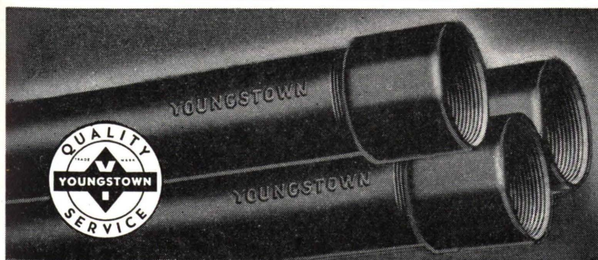
Because Mother's washing dishes!

EVERYTHING was lovely until "the boss" downstairs started scalding the dishes. That's when the hot water stopped.

Perhaps Father doesn't understand why his family can't have hot water upstairs and down at the same time. Maybe he doesn't know that the pipes were too small in the first place, and that the city water pressure cannot deliver a good healthy stream of water upstairs when somebody's using the water downstairs.

Don't blame Father for his ignorance of proper water pipe diameters. He has to be shown why he should pay a little more for adequate-size pipe when he builds that new house or modernizes the old one. He will see the advantage of providing for all those extra fixtures and extra outlets.

Always remember this: No more water can be delivered than pipes can carry under existing city pressures. To get more water, use larger diameter pipes and larger meters, too. The best protection to insure an adequate flow is to use adequate-size steel pipe.



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PROGRESSIVE ARCHITECTURE
PENCIL POINTS

WE MUST HOUSE THE VETERAN FIRST

As we write this, the Civilian Production Administration has just issued its order limiting the bulk of construction to housing, from now on until further notice. This should come as a surprise to no one. The situation it is aimed to meet is a genuine emergency—for which questionable decisions made during and after the war may be blamed but which, nevertheless, must be dealt with and overcome promptly.

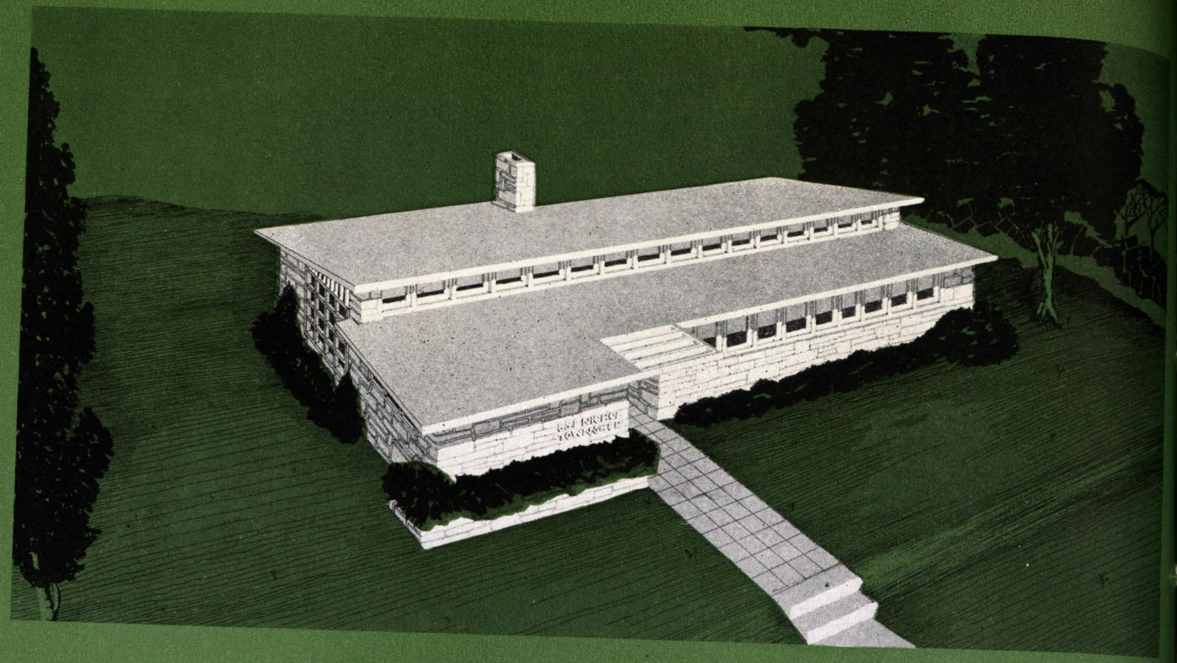
It is now weeks since Wilson Wyatt was appointed by the President as Housing Expediter and presented to the Congress the statement of legislation needed if he were to accomplish his job. Congress has been shamefully slow in acting upon his recommendations and while it has been fighting against various details of his program the needs have been growing more intense. Had the requests of the War and Navy departments for means with which to fight the war been similarly haggled over and hacked to pieces, our ultimate victory would not only have been indefinitely postponed but might never have been achieved.

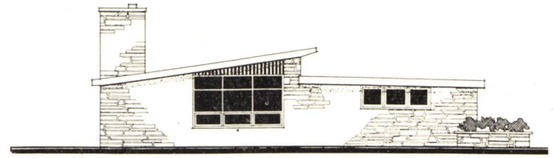
At the outset of the war we had a situation analogous to this one in respect to the position of the architects and architecture. The members of this profession then accepted gracefully the ban on all except necessary construction. We have no doubt that they will do the same thing now, realizing that the nation's number-one present need is to provide decent homes as soon as possible for the many thousands of families of war veterans and war-displaced workers who cannot otherwise go on with the job of rebuilding a sound peacetime economy.

We hope that the administration of the new CPA order will be done with wisdom and fairness and that it will be recognized that, despite the sentimental joys traditionally attributed to home ownership, it will be a sound policy to provide rental housing, rather than small houses to buy, for a large percentage of the home-seeking families. We hope that it will be recognized, too, that expanding communities cannot be made up of homes alone and that there must be various other types of buildings provided to take care of community needs. Some of these are surely "necessary and non-deferrable." We hope that architects in each locality will be invited to serve on the proposed local construction committees and that they will be guided during such service by considerations of general welfare rather than their own immediate personal advantage.

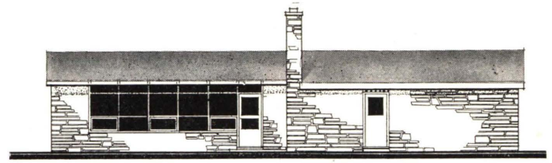
If all parties concerned will go at the thing energetically and faithfully it will not be too long before the situation will be relieved and the restrictions can be relaxed. The time for arguing is past. The housing must be provided and the sooner it is done the better it will be for all.

Kenneth Reid





EAST ELEVATION



SOUTH ELEVATION

1... ONE-ROOM SCHOOL FOR A RURAL COMMUNITY

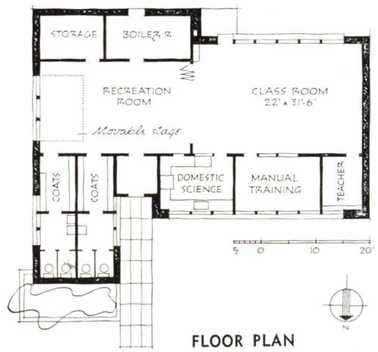
S.S.I. NICHOL TOWNSHIP, ONTARIO

JOHN BURNET PARKIN, Architect

This remarkable one-teacher school will serve all grades through the eighth. Size of the Canadian township is indicated by the fact that enrolment for these eight grades totals but 35.

The design is a vigorous departure from the traditional approach to schools of this size. The relatively open plan, the bilateral lighting, the fact that the building will be built on a reinforced concrete slab on gravel fill with integral wrought iron coils of a radiant-heating system, are but the more obvious instances.

The domestic science and manual training rooms are separated from the main room by a clear glass screen so that the teacher can supervise all activities. The recreation end of the main room may be closed off from the classroom space by a folding partition. Combined with the classroom, it forms a community hall 20 feet wide and 60 feet long. A movable, sectional stage, stored when not in use in the ample storage room, converts the east end of the room into a speaker's platform or simple stage for theatricals. This room, incidentally, will constitute the only meeting place for the district. A serving door in the domestic science room allows use in conjunction with the recreation room for children's hot lunches or for community suppers.



FLOOR PLAN

TWO COMMUNITIES ADVANCE THEIR

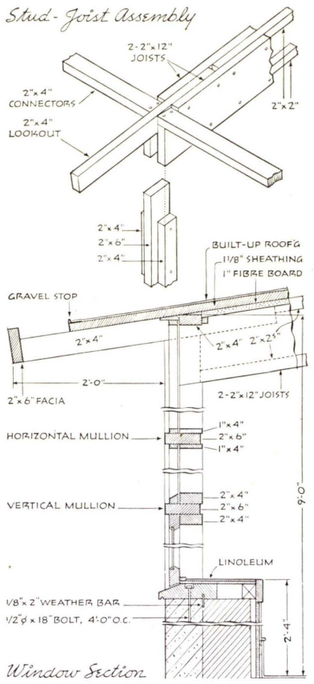
SCHOOL PROGRAMS

The Bettman Archive

"Laboratories for learning" may be an overly self-conscious term to apply to school buildings; but it does symbolize the healthy trend toward a more scientific approach that exists today in progressive school design. From the time when the little one-room school was hardly more than a shelter from the weather, much has happened in both teaching and design techniques to mark this trend. Good schools are now planned with the welfare of each teacher and each pupil the constant reference points, and this is reflected in better relations between activities; better planning of the various functional areas; better light; simpler, easier-to-maintain structures; money put into better educational facilities rather than into impressive, academic fronts—in short, better environments for learning. The schools for two communities shown in this issue are heartening examples.

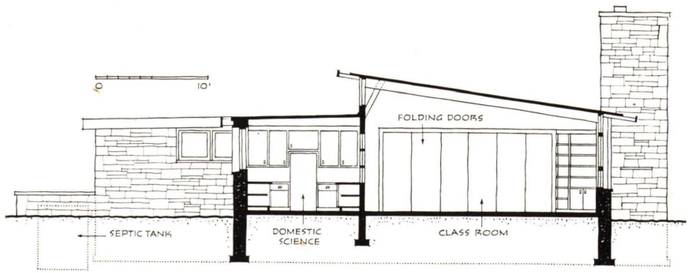
ONE-ROOM SCHOOL

JOHN BURNET PARKIN,
Architect

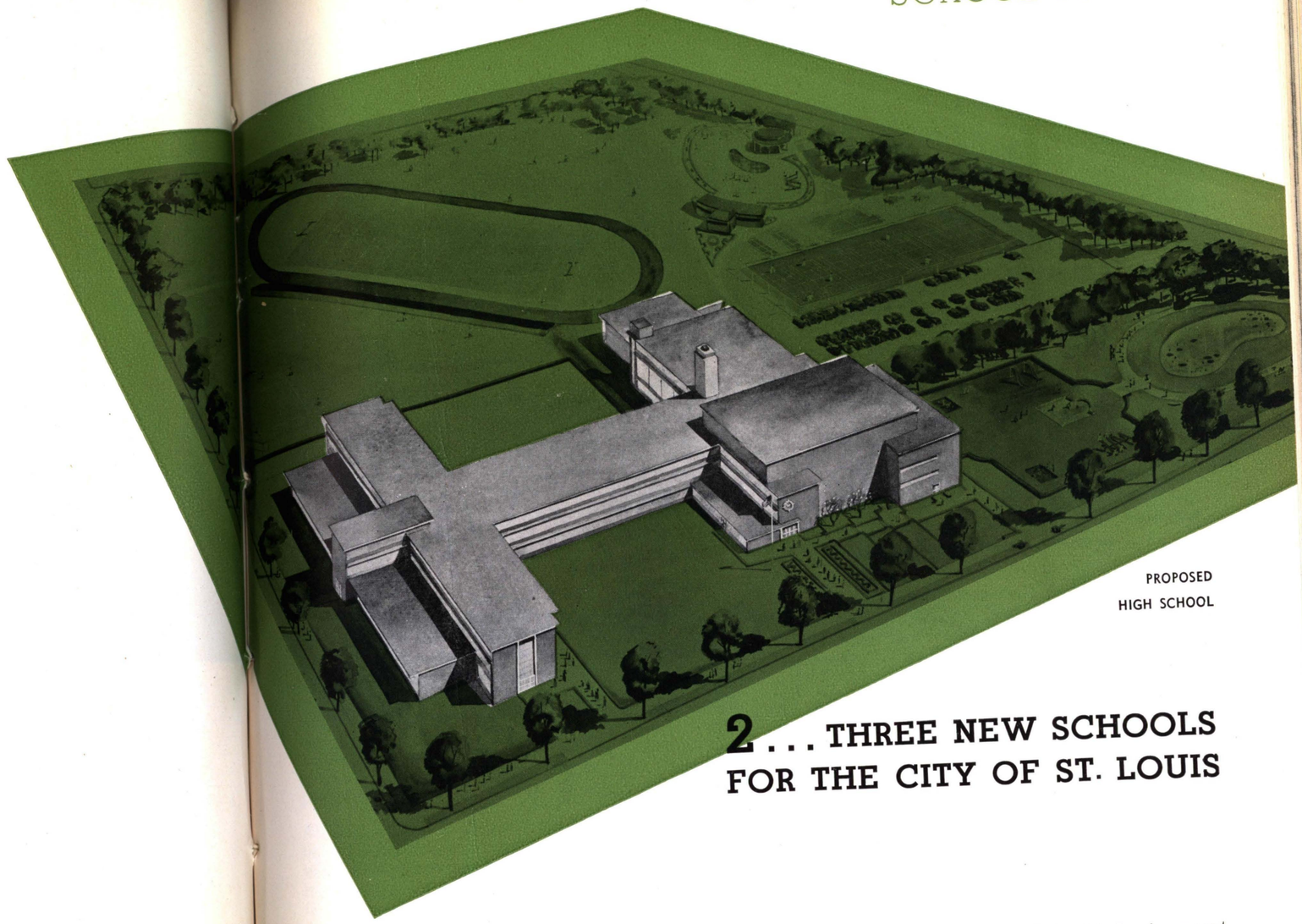


STRUCTURE

Over-all dimensioning of the building is based on a special wood-framing system (reflected in roof and window framing) designed on a 4-foot module. But, because a local stone is readily obtained, exterior walls are masonry—stone facing backed up with brick. The clerestory windows are operable from the floor level, providing cross ventilation as well as light; the main classroom window faces south and extends from the ceiling line down to the sill, 2 ft. 4 in. from the floor. Acoustical material is specified for the ceiling finish, and asphalt tile is to be used for a floor surface. Windows throughout are double-layer, insulating glass. Artificial lighting is designed to provide 20 foot-candles of illumination at desk height; fixtures will be of the semi-indirect, china bowl type.



CROSS SECTION THROUGH BUILDING



PROPOSED
HIGH SCHOOL

2 . . . THREE NEW SCHOOLS FOR THE CITY OF ST. LOUIS

BOARD OF EDUCATION OF THE CITY OF ST. LOUIS

CHARLES W. LORENZ,
Designing Architect

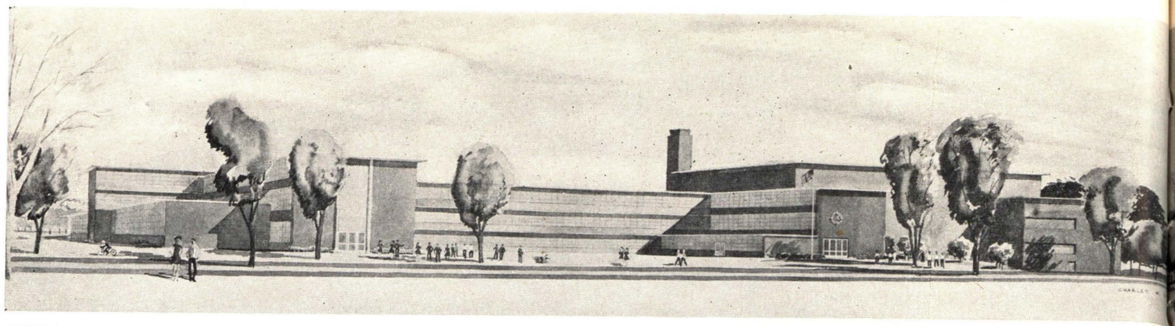
KENNETH E. WISCHMEYER,
Consulting Architect

JOSEPH P. SULLIVAN,
Commissioner of
School Buildings

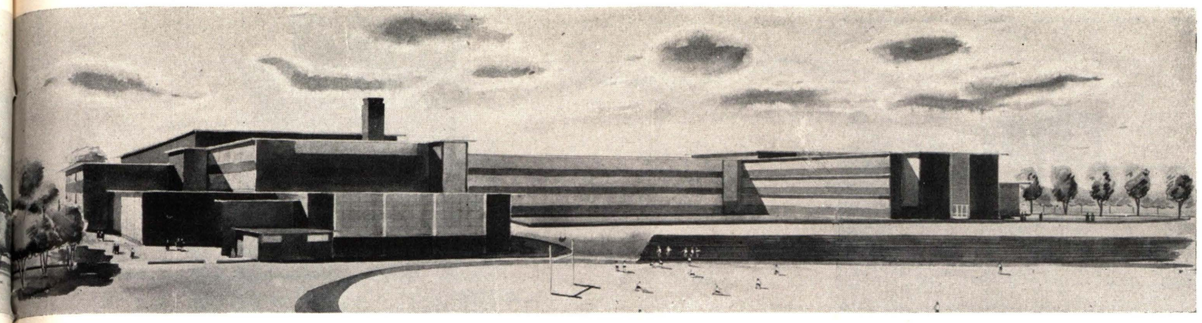
- HIGH SCHOOL
- AMES ELEMENTARY
- NOTTINGHAM ELEMENTARY

St. Louis, like many other great cities, finds its school plant today in urgent need of refurbishing and expansion. But unlike too many of its sister communities, it is not only doing something about it but has adopted a vigorously progressive approach to the problem. How much of this is due to the energetic leadership of Joseph P. Sullivan, the Commissioner of School Buildings, how much to the Board's Architects Charles W. Lorenz and Kenneth E. Wischmeyer is difficult to determine. But wherever the credit is due, this community can show spades to most other cities of its size as far as school-design progress is concerned.

Among the schools under the Board's jurisdiction are 10 high schools and 138 elementary schools. Five of the high schools were built before 1910; 13 percent of the elementary schools are more than 60 years old, and only 26 percent were built within the last 20 years. The Board's conclusions: 19 of the elementary schools need immediate replacement, and practically all the schools more than 20 years old need alterations or additions. An indication of the high design standards to be applied to this sizable reservoir of needed school building appears in the typical high school and two elementary schools detailed on subsequent pages.



FRONT



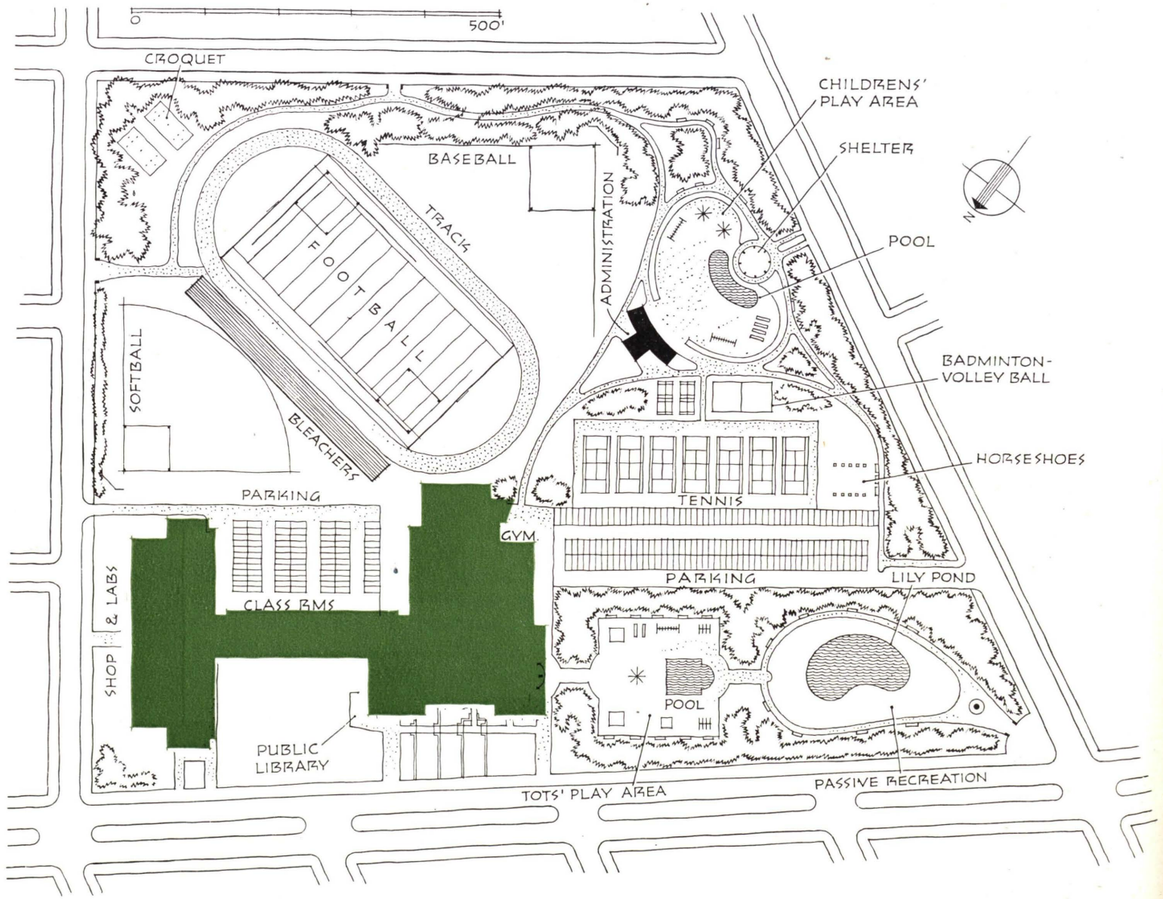
REAR

PROPOSED HIGH SCHOOL — For 2,100 Students

CHARLES W. LORENZ, Designing Architect

KENNETH E. WISCHMEYER, Consulting Architect

PLOT PLAN



An important consideration in the development of all of the new schools for St. Louis was that, in addition to serving their prime function as educational institutions, they should also be designed for maximum community or neighborhood use. In the plot plan for this proposed 2,100-student high school, this is admirably illustrated in the choice of site, which is not only ample but includes within its area a small public park developed by the City Park Department.

All recreational facilities, both outdoors and in, will be available for the use of the public on weekdays when school is not in session, on weekends, and during the summer. The "Tots' Play Area" in the park, the only area that would harbor noisy activities during school hours, is placed where the noise would not disturb those in school.

In the general organization of the H-shaped plan (shown in detail in the separate floor plans) public-use rooms such as auditorium, gymnasiums, etc., are relegated to the southwest wing toward the play garden and landscaped park. The cross bar of the H contains the typical classrooms; work shops and specialized classrooms occur in the northeast wing.

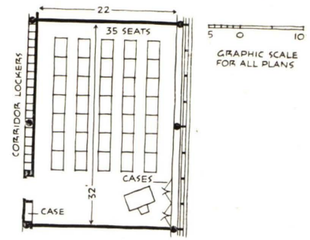
CLASSROOM RESEARCH

Nowhere is the exceptional care given to the design of the St. Louis schools more evident than in the development of the individual classrooms. Commissioner Sullivan, convinced that in most cases it would be possible to improve on what had gone before, decided that even the Building Department's own resources were not enough. Precisely what were the teaching needs? What new educational trends might affect these? How better could each room be dimensioned and arranged to meet the new need, to make each subject more intelligible and appealing to the student?

To find the answers, thorough research was made of all the existing classrooms in St. Louis being used for a certain subject; principals, teachers, and custodians were all consulted; both good and bad plan points were noted. Then, preliminary room plans were drawn up and several teachers of the subject under consideration were called in to offer their suggestions and criticisms. Final plans were adopted only when all agreed that the new room was a definite improvement over any with which they were currently working. Detailed discussion of this very realistic and human development of several such specialized areas is given in connection with the finished room plans shown on Pages 54-55.

FITNESS OF APPEARANCE

Another point which deserves more than passing mention is the appearance of the finished structures, as evidenced in the rendering. While these St. Louis structures grow quite directly from the floor plans and are expressive of them, they are considerably more than mere functional translations. These buildings look like schools, though in no case do they resort to the sentimental association of stylism. There is a fitness to the purpose, an appropriate warmth and friendliness—a character quite other than one would look for, say, in an industrial plant. They are not only rationally planned buildings; they are good school architecture. They check out well against our reference points for what constitutes true progress in architectural design.



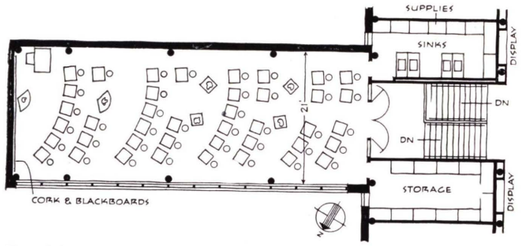
TYPICAL CLASSROOM . . . "The panel of teachers considering this unit approved this design and were particularly pleased," Mr. Lorenz tells us, "with the continuous band of windows and of open shelving and locked cases under the windows." Where a room was to be used for public speaking, it was suggested that a small soundproof glass-enclosed booth be placed in one corner for instruction in the use of a microphone.

PROPOSED HIGH SCHOOL—For 2,100 Students

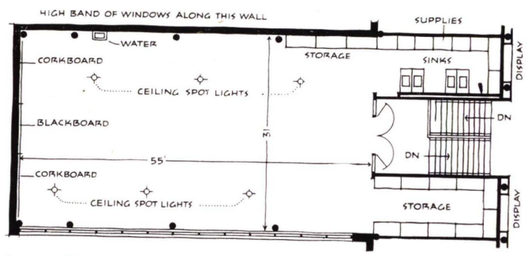
CHARLES W. LORENZ, Designing Architect
KENNETH E. WISCHMEYER, Consulting Architect

CLASSROOM PLANNING

Mr. Lorenz describes the procedure used in the development of the individual classroom plans: "After the general plan of the building had been worked out . . . we made up large scale drawings of the various rooms and called in teachers from each of several high schools in the city. Each type of training was considered separately. If, for instance, the subject was biology, we would sit down with perhaps six teachers and go over every aspect of the plan to insure that it would be thoroughly suited for the teaching of biology. This was done for every subject."

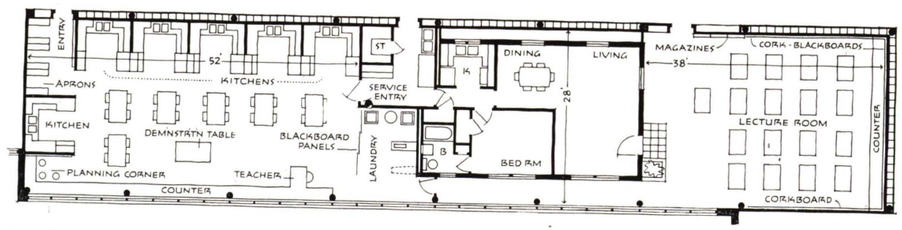


First Scheme

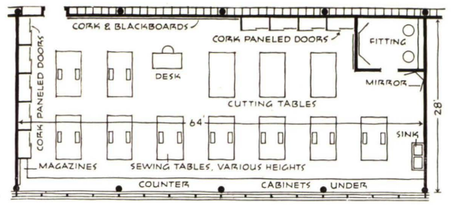


Revised Scheme

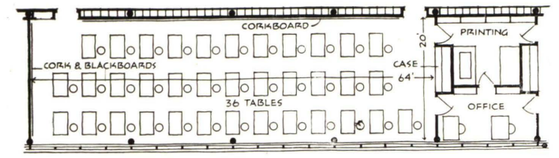
ART ROOM . . . The original proposal was for a room 21′ x 55′ in area. After criticism by a group of art teachers, the room size was increased to 31′ x 55′. Other "musts" and recommendations which grew out of suggestions made by the teachers: The south wall is to have a band of windows at the ceiling. Daylight control is to be provided by shades at top and bottom of the windows; it is considered desirable to be able to darken the windows for slide projection. All wall area from a height of 3 feet to the ceiling will be covered with corkboard, except for a 4′ x 8′ chalkboard panel. High-intensity artificial light is to be provided, with adjustable ceiling spots at model stand locations. There will be a source of water at the front of the room, storage space for 40″ x 60″ illustration boards, and showcases in the corridors for display of finished art work.



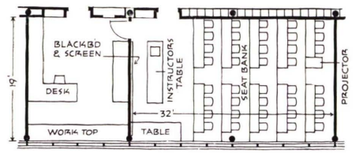
HOME ECONOMICS . . . Mr. Lorenz states: "The home economics equipment in our existing high schools is probably more out of date than that of any other study in the curriculum. As a result, the group of teachers that met for discussion of this subject was overflowing with ideas." The plans conform to their requirements. Kitchen tables and work counters are of different heights, different materials, and designed for various price brackets. Some will be equipped with aluminum utensils, others with granite ware, cast iron, stainless steel, etc. Each unit will have an electric mixer, and there will be a tackboard panel over each sink. The laundry area is designed so that it may be opened up to the foods area for proper supervision. In existing schools, the "typical home" unit has rooms of various sizes, but all have the 12-foot ceiling and high windows of the rest of the building which are as ungainly in appearance as they are unrealistic. In the new school, to achieve some semblance of the scale and appearance of a home, an actual small house is to be constructed within the available space—a house with brick walls (plastered inside), an 8-foot ceiling, standard residential windows, and hardwood floors.



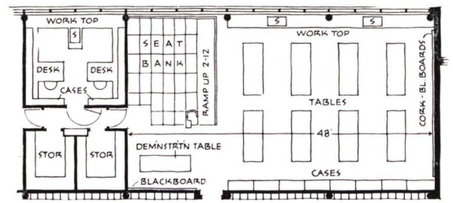
CLOTHING . . . In the plan of the clothing room, the sewing tables are arranged to accommodate 4 students each—or 2 to each machine. The machines are so installed that they fold down into the table top. A drawer with a lock is provided for each student.



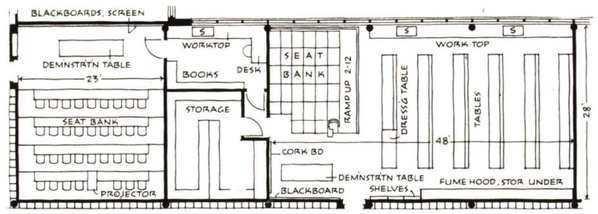
MECHANICAL DRAWING . . . "The Mechanical Drawing labs are only 20 feet in width, so that a maximum of natural lighting will be available to all tables. Each table will accommodate eight boards and have two locked instrument drawers, one for day classes and one for night. Room is provided to walk on all sides of each desk, and drawing paper is stored in the drafting room rather than in the printing room."



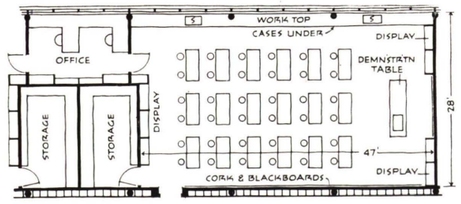
GENERAL SCIENCE . . . The proposed plan was developed in the form of a seat bank divided into 10 tables of 4 places each; each seat is accessible without interference with adjoining seats. This basic scheme was received with enthusiasm by the general-science teachers—"the most vocal of the groups consulted to date." But they suggested the following modifications: that the instructor's table be at least 10 feet long, with an additional table, with drawers and cases under, for classroom exhibits; that the front wall have, in addition to the fixed blackboard, a sliding board that would move to a position above the fixed one; that a small stand and outlet be provided for a projector, and that the windows have dark shades; that storage space include 15 to 20 drawers approximately 20″ x 12″ x 4″ (or 6″) to house complete, simple experiments, thus avoiding the need of assembling numerous materials from scratch for each demonstration; that there be a display case visible from the corridor but accessible from the storage space.



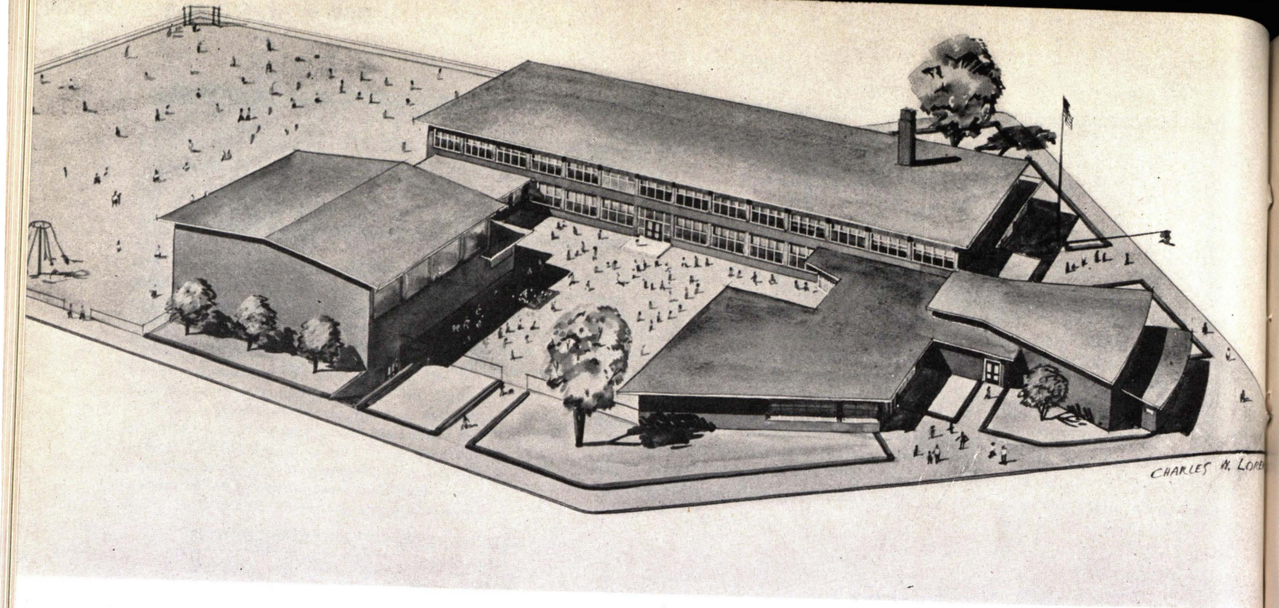
PHYSICS . . . A teacher at one of the existing schools pointed out that he had changed the customary layout by placing the demonstration table in front of the side wall, so that it would be more centrally located for the students. The panel agreed that a seat bank, preferably located in the room, was desirable, but that the demonstration table need be visible only from the seat bank and not necessarily from the students' tables. They also recommended that classes be limited to 32 pupils. Specific suggestions: that the tables be 3′ x 8′, spaced 54″ apart, and equipped with electrical outlets at each end; gas cocks should be more deeply recessed; attached, pivoted seats should be used instead of stools. For the demonstration table, an air compressor should be provided; the room should have darkening shades and an exhaust fan; there should be cabinet space under the windows, with a work top containing two sinks. After thorough discussion, the room plan shown above was developed with a ramped seat bank placed near the office end of the room.



CHEMISTRY . . . Development of the chemistry laboratory plan was similar to that of the physics room. An initial recommendation of the chemistry teachers was that, in place of the usual double-sided tables, the table be designed so that students would use only one side, thus eliminating the problem of one student backing into another and upsetting chemicals. Another point: no need for stools at the tables since lecture notes would all be taken at the seat bank.



BIOLOGY . . . The panel discussing the biology room, considering an existing room 26′ x 34′ seating 36 at 18 tables, agreed that 36 was the maximum number of students for a biology class, but they found the room a little too small. For two biology labs, they recommended that there should be one lecture room similar in design to the general science room. Further requests: that storage be provided at each table for books and purses; that the demonstration table be large, with an 18″ x 30″ sink so designed that large jars could be placed in it—i.e., that the overflow drain *not* be in the center of it.



AMES ELEMENTARY SCHOOL — For 1,000 Students

CHARLES W. LORENZ, Designing Architect

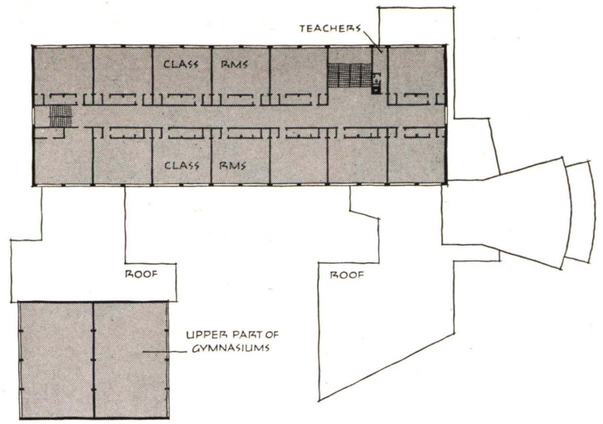
KENNETH E. WISCHMEYER, Consulting Architect

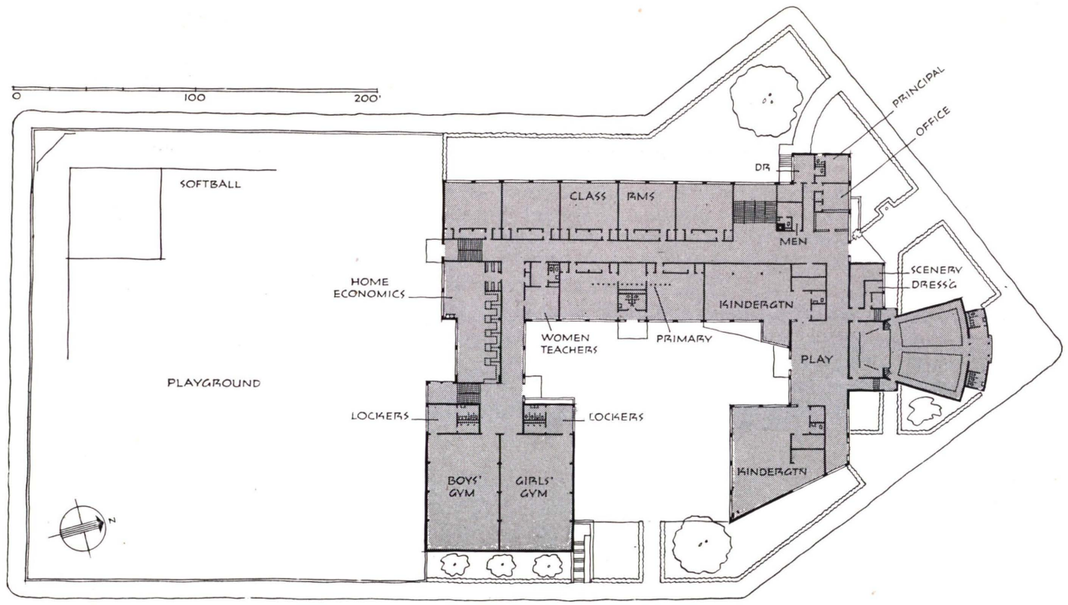
Before embarking upon the actual design of any of the schools for St. Louis, the Board of Education instituted an objective research into the desirable standards and facilities needed for schools of different size and type. For the larger elementary schools (18 to 26 rooms), of which the Ames school shown here is representative, the following tentative requirements were set up:

Classrooms
2 Kindergartens
Library
Gymnasium-Playroom
Gymnasium
Auditorium
Industrial arts room
Science room
General office
Cafeteria and kitchen, or at least a place for serving warm meals
Principal's office
Doctor's office
Teacher's room on each floor
Toilet rooms for children on lower floor only
Adequate storage space for each room
Elimination of basements where possible
Facilities for audio-visual education

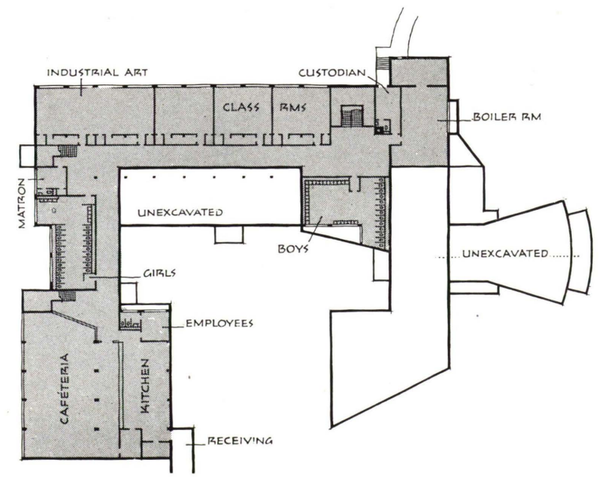
As with all of the city's schools, emphasis is placed on the desirability of designing for maximum community use. In developing the plans of the Ames school, a difficult problem was presented in the small size and irregular shape of the lot, located in a congested, industrial neighborhood. It was desirable to keep the structure to three floor levels; yet adequate playground space had to be maintained. The answer was found in an irregular, U-shaped plan with the auditorium projected to make use of an odd corner of the site. The open end of the site provides a good-sized playground for the older students; the court formed by the plan shape creates a protected play space for primary and kindergarten children.

SECOND FLOOR . . . The scheme for the coat wardrobes at the entrance to each classroom was arrived at after more conventional systems—separate coat rooms; hanging spaces behind vertical sliding or pivoted blackboard panels; metal lockers across the end of the room and corridor lockers—were discarded for various reasons. The proposed wardrobes are separated from the classrooms by 7-foot-high partitions and are so arranged that children entering from the corridor may either pass through these alcoves or enter the classrooms directly. At each end of the room is a closet the depth of the wardrobe which is used for storage of large sheets of paper and cardboard. There is a continuous row of shelving and cabinets beneath the windows.

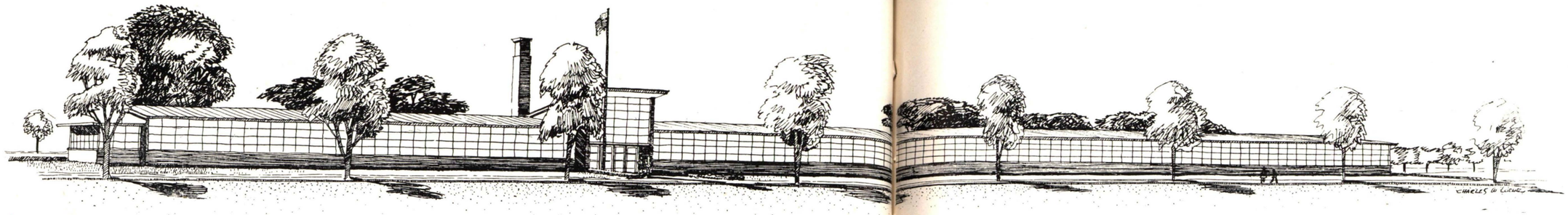




FIRST FLOOR . . . In the northern wing of the building, separate entrances are provided for the main corridor, the auditorium, and the kindergartens; a noteworthy provision is the indoor play space for the kindergarten-age children; circulation between the large playground, gymnasiums, and locker rooms is direct and separated from other foot traffic.



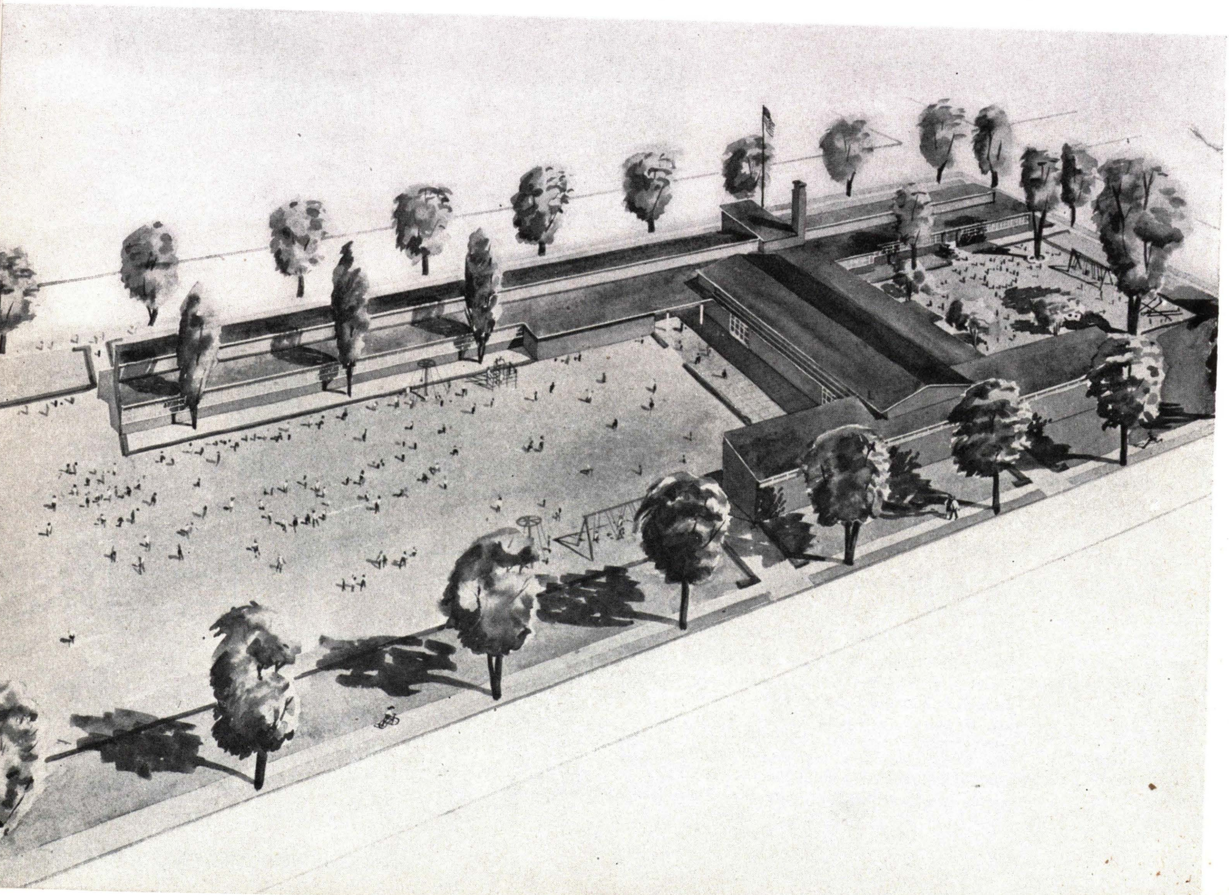
GROUND FLOOR . . . The Instruction Department of the St. Louis Board of Education has directed that toilet facilities be placed on the ground floor of all two- or three-floor elementary schools. In the Ames school, this level is also used for the school cafeteria, additional classrooms, and the industrial arts room.



NOTTINGHAM ELEMENTARY SCHOOL — For 400 Students

CHARLES W. LORENZ, Designing Architect

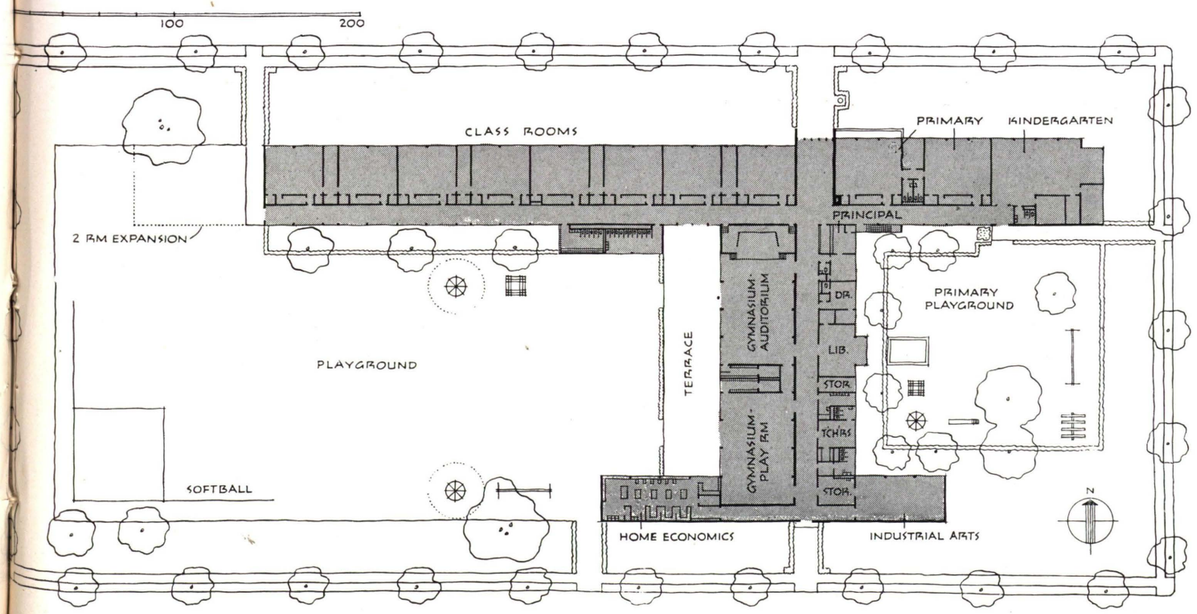
KENNETH E. WISCHMEYER, Consulting Architect

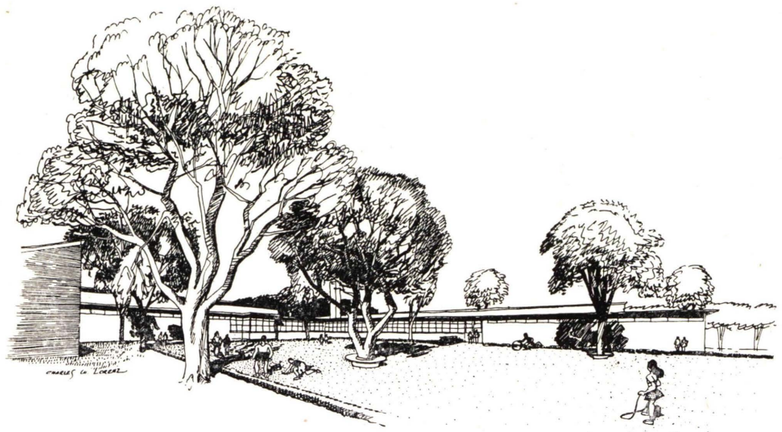


In the design of the Nottingham school, the same general standards as were used for the Ames school were applied. For the smaller (10-14 classrooms) elementary schools, however, the Board finds one kindergarten to be enough and does not require a separate auditorium. A gymnasium with a stage at one end serves both gym and auditorium functions.

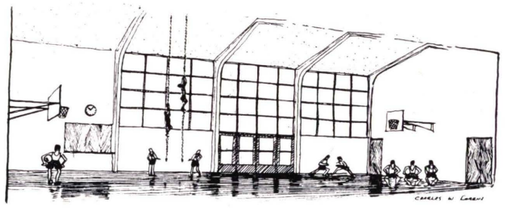
Like the other St. Louis schools, this one is conceived of as a community building, with recreational facilities available to the public at other than school hours. The home economics room (which, incidentally, is planned so that for social functions food may be served directly to the gymnasiums) can also be used for adult cooking classes.

The typical classrooms, wardrobes, and storage space follow the standard used in the Ames design, though the size of the site made it possible in this case to line the classrooms along one side of the corridor, giving the same orientation to each. The question of the use of a workroom between each two classrooms is still under discussion; in the primary room area, at least, there is a possibility that a bay off each room will be substituted.





PRIMARY PLAYGROUND: Playgrounds for primary and upper-grade children are completely separated by the building shape and placement on the large site.



THE GYMNASIUM-PLAYROOM is 40′ x 60′ in area; a room of the same size but with a stage serves as both gym and auditorium.

NOTTINGHAM ELEMENTARY SCHOOL—For 400 Students

CHARLES W. LORENZ, Designing Architect
KENNETH E. WISCHMEYER, Consulting Architect

In the Nottingham school, all of the classrooms are designed to eliminate the need for shades, except in those rooms which must be darkened for slide projection. "My experience has been that the only way to prevent most teachers from keeping the shades down is not to have any shades," says Mr. Lorenz.

It is interesting to learn how the neighborhood received this very forthright, progressive design: "We presented the plans and elevations for this school to the people living in the neighborhood where the building will be erected—one of the city's newest residential areas. While there were a few who thought it too 'modernistic,' these were very few indeed. The design was enthusiastically received by the majority and especially by the teachers."

STAIRWAY

(Drawings on next page)

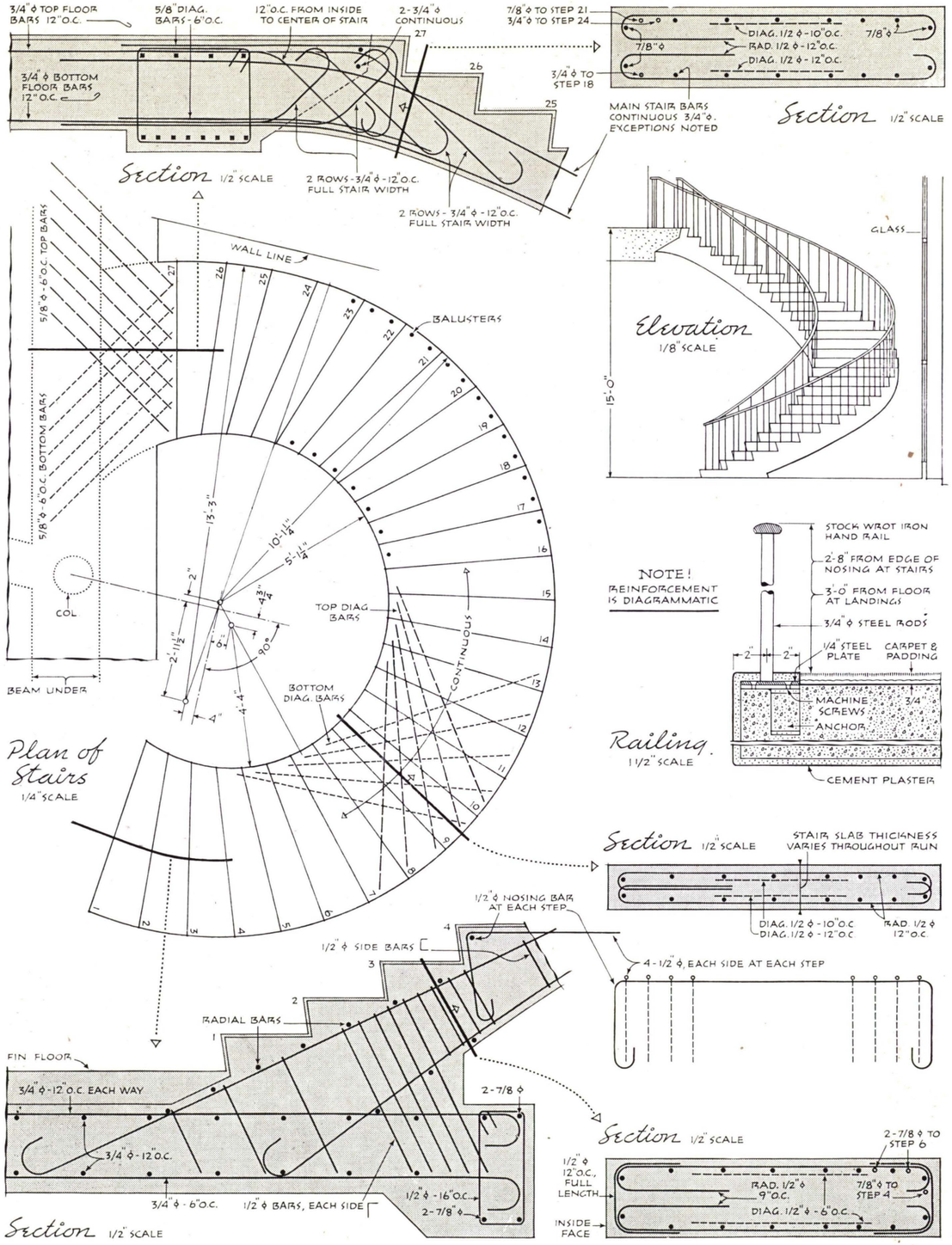
Roger Sturtevant

STERN HALL,
UNIVERSITY OF CALIFORNIA

CORBETT & MACMURRAY: WURSTER, BERNARDI & EMMONS, ASSOCIATED ARCHITECTS

(Photos on preceding page)

STAIRWAY



STERN HALL,
UNIVERSITY OF CALIFORNIA

CORBETT & MACMURRAY: WURSTER, BERNARDI & EMMONS, ASSOCIATED ARCHITECTS

DISPLAY UNITS

(Drawings on next page)

Ben Schnall

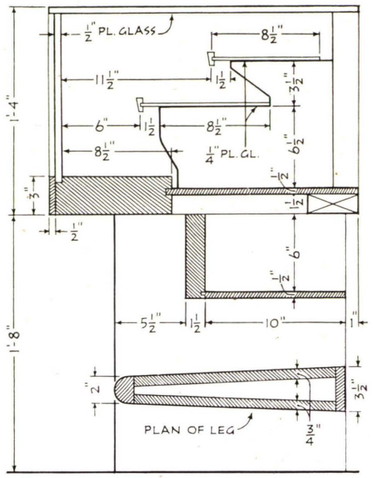
LA REINE CANDY SHOP,
NEW YORK CITY

SIMON SCHMIDERER: FELIX AUGENFELD, ARCHITECT: ASSOCIATED DESIGNERS

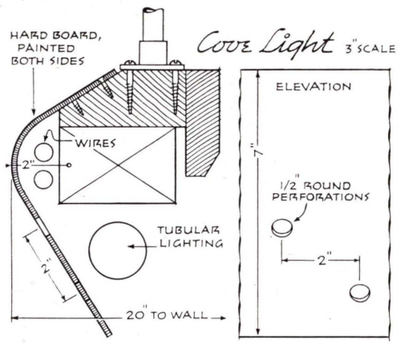
DISPLAY UNITS

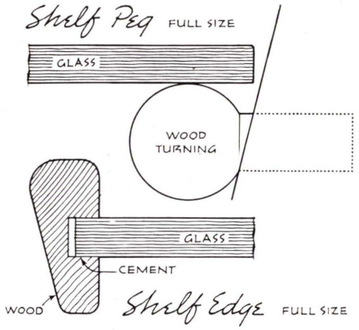
(Photos on preceding page)

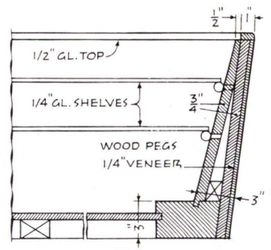
Ben Schnall



Section 1 1"SCALE







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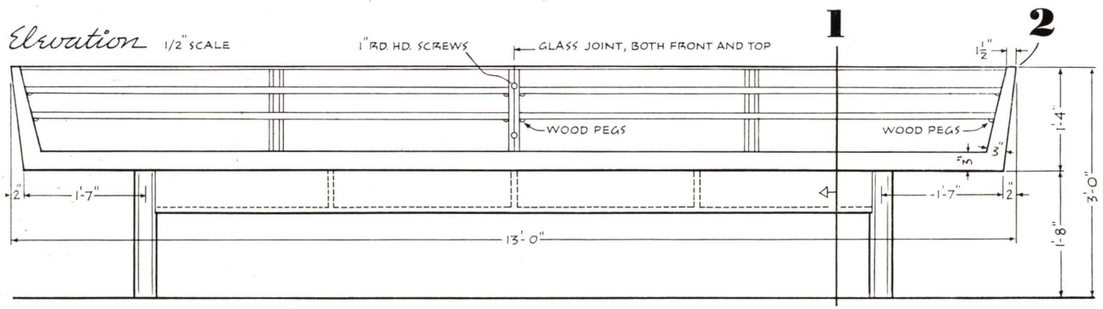
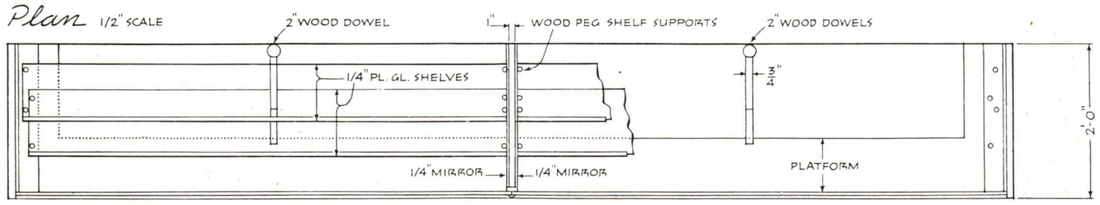




LA REINE CANDY SHOP, NEW YORK CITY

SIMON SCHMIDERER: FELIX AUGENFELD, ARCHITECT: ASSOCIATED DESIGNERS

STAIRWAY

(Drawings on next page)

Ezra Stoller

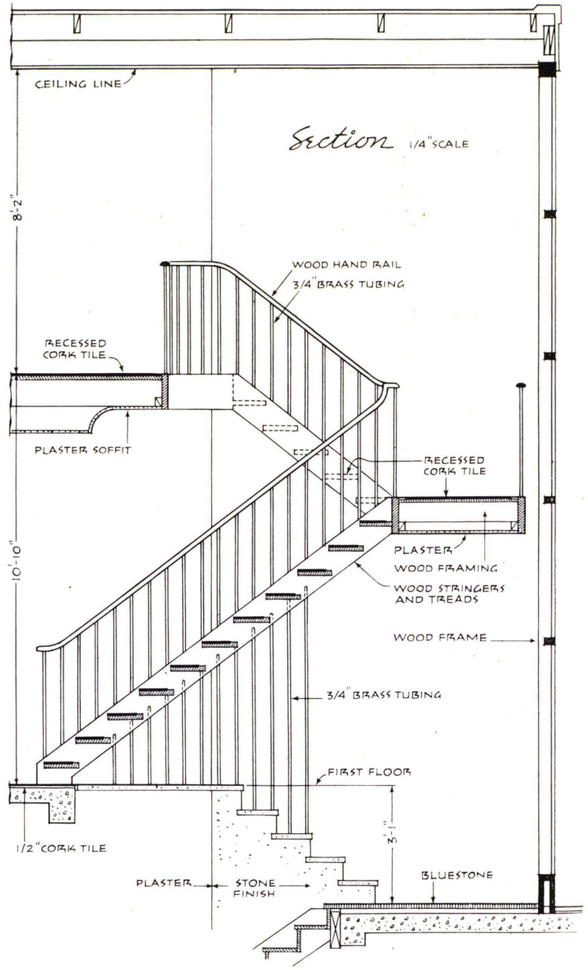
HOUSE, COS COB, CONN.

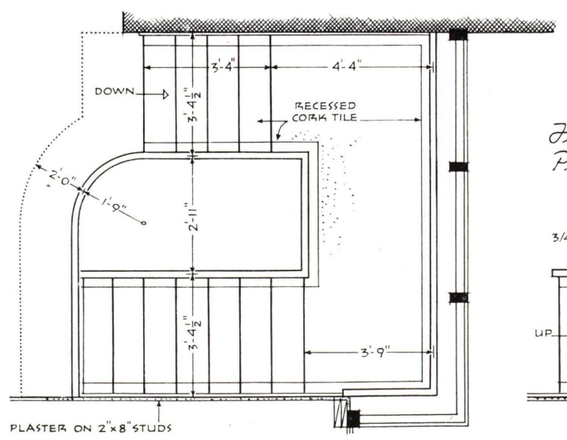
POMERANCE AND BREINES, ARCHITECTS

(Photos on preceding page)

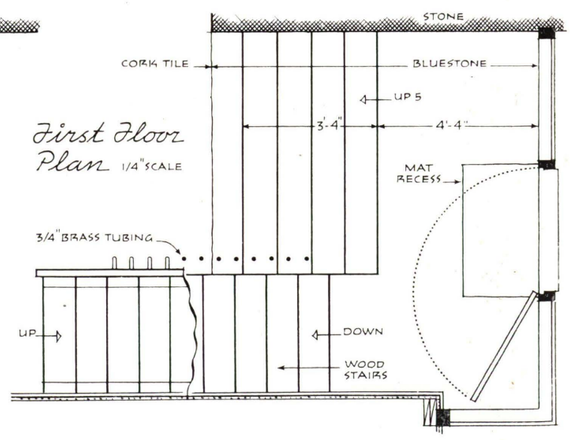
Ezra Stoller

STAIRWAY

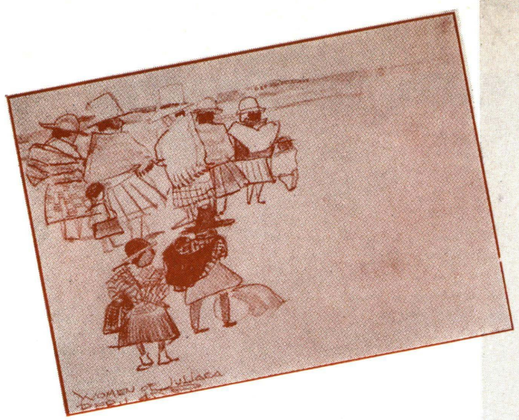




HOUSE,
COS COB, CONN.



POMERANCE AND BREINES,
ARCHITECTS



PERUVIAN PEASANT WOMEN . . . Millions of the descendants of original, native Americans, representatives of past great cultures, have now become voters and a political force. Increasingly, they will become consumers of our technological civilization. They need schools, health centers, hospitals, housing; they present urgent problems to planners, designers, and architects. In Peru, Aprismo, the Indian-friendly People's Party of Haya de la Torre, is a dominant power. But in all countries—whatever the present politics or stage of development—in Argentina, in progressive states of Brazil, in Cuba, there is a growing demand on the part of rural peoples for participation in contemporary modes of living and for being treated by governments IN A CONTEMPORARY RATHER THAN A COLONIAL MANNER. Architects and construction trades must think in non-metropolitan terms; in Mexico, as in Puerto Rico, rural projects have reached impressive scope. A similar future may be predicted for most other countries going through similar transition.

OBSERVATIONS ON LATIN AMERICA

By RICHARD J. NEUTRA

FOREWORD: Richard J. Neutra has recently returned from an extended trip through the countries of Latin America. Traveling under the auspices of the United States Department of State, he was the guest of several foreign governments, planners' and architects' associations, and universities. His studies centered on the subjects of housing; hospitals and other health facilities; schools, both urban and rural; and the physical planning of cities and regions.

Throughout his trip, much of which was made by air, Mr. Neutra spent considerable time in the company of local architectural men. From these "often young and active" professionals, Mr. Neutra says, he received immeasurable help in learning about and understanding the various local problems—the political complications and economic difficulties, as well as the encouraging trends and the progressive work the leading designers are doing to improve matters.

The following discussion is based on speeches, broadcasts, round-table discussions, and press conferences conducted, during his sojourn, by Mr. Neutra on current problems of planning and design in Lima, La Paz, Buenos Aires, Montevideo, Sao Paulo, and Rio, as well as in Santo Domingo, Haiti, and Havana. The editors feel that Mr. Neutra's opinions should be stimulating to both North and South American readers and that they have significant bearing on the over-all problems of planning in general.

To assist his memory and crystallize impressions, Mr. Neutra made numerous quick sketches during his extensive travels. Several of these are reproduced on this and the following pages to illustrate points made in the commentary. The accompanying interpretive captions were prepared by the author.

THE EDITORS

CATHEDRAL OF HAVANA . . Many Latin American countries, from Santo Domingo to Peru, have a rich architectural heritage. In some cases, city planners are puzzled how to preserve these monuments without impairing the desirable growth of their communities. Old Havana, for example, lies directly between the Cuban Republic's most important port facilities and the main highway outlets to the 800-mile stretch of an increasingly active hinterland. Almost of necessity, swarms of trucks must pass through the densely built old fortress; and parking takes place in the open area in front of the cathedral—hardly a service to this gem of flamboyant Barocco architecture of the outgoing Seventeenth Century.

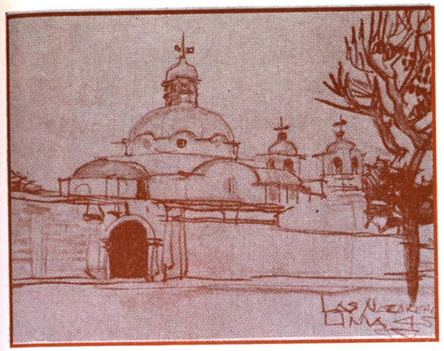
ARGENTINE HIGHWAY . . It was quite accidental to come across a white-dressed nun transporting a buggy-load of kids along the highway; Gauchos, cattle, and tree-planted chacras (tenant farms) are more typical sights. As far as they go, these provincial highways are as spick-and-span as the elaborate Automobile Club convenience structures (by Antonio Vilar) that occur every 50 miles; or the well landscaped roadside parks, reminiscent of those in Texas. In spite of its marvelous country and city parks and river views of rare beauty, however, it is not picturesqueness that makes Argentina grand. It is a country far removed from Colonial status and overtones; a country with an impressive everyday civil service routine and splendid technical administration of its cities—from the practically slumless capital down. The spontaneous, knowing cooperation on the part of the public in the use and maintenance of technical facilities signifies much to the visitor from North America. Buenos Aires is a city with a huge seaport right at its front door, just across from its well kept front lawn. But this harbor is remarkably orderly and unobjectionable, and in its newest portions, admirable.

however, areas removed from mother countries, and hence from mechanized mass production, have to struggle bitterly for any sort of participation in current amenity, whether by this we mean lying-in hospitals, good transportation services, or well equipped hotel kitchens. Many an excellent design concept and project idea has been frustrated in Latin America during recent years, when shipment of building-material catalogs, let alone the materials themselves, was difficult if not impossible.

This latter-day dependency is being vigorously combated by new enterprise in launching local manufacture of building materials and equipment. To mention but a few such ventures, there is steel sash from Monterrey, Mexico, and ingenious slender reinforced concrete sash produced in Buenos Aires and Sao Paulo. Paints, terra cotta, glass, and an amazingly diversified group of hardware products, roller shades, bathroom-kitchen cores with all prefabricated piping built in are also being manufactured and ingeniously integrated in the designs of progressive architects.

However, successful industrialized aids to construction at present depend on mass consumption, on opening up the country so that a larger and larger part of the population can share in the product—whether it be schoolroom blackboards or water pipes or window glass. Economic oligarchies, no matter how talented, can only import industrial products; no longer can they offer their countries the best homegrown technical production or cultural solution to fit their day.

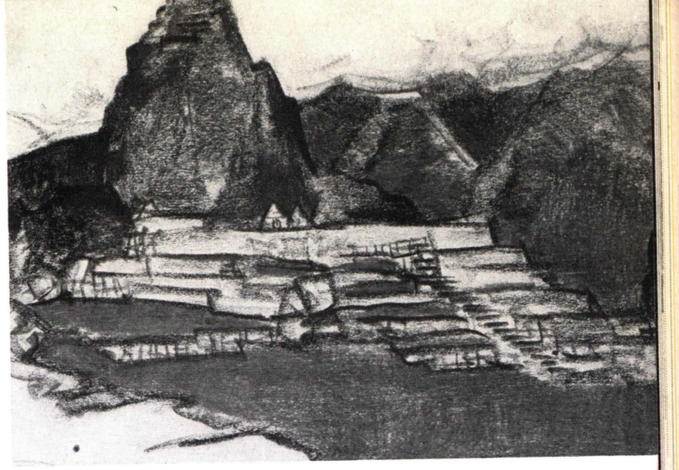
This is perhaps the simplest explanation for all of the "people's parties" that have arisen from Peru to Puerto Rico and which are developing the political power of the mass vote and *hoping for the economic power of mass consumption.*



LAS NAZARENAS . . . In Lima, the breaking through of new traffic arteries sometimes opens up vistas to beautiful old structures like the monastery, Las Nazarenas, which for centuries was hidden from view. Thus, intelligent modern planning may even help in the preservation and enhancement of historical shrines.

It must be remembered that the founding of the great Latin American cities took place a very long time ago. Montevideo, about the youngest, is more than 200 years old. Curiously, these cities seem younger and fresher in many ways than the cities of North America. One reason, of course, is that while the United States was wholly engaged in war and hence could not indulge its energies in the civilian pursuit of rebuilding its cities, the metropolises of the countries to the South have forged ahead and made old guide books outdated, if not obsolete, in a surprisingly short time.

Without being critical, I find it instructive to study how differently cities develop, quite aside from whether it is private or public money that is being expended. Take as an example the contrast between what has happened in the youngest of North America's large cities, Los Angeles, and what has occurred in Buenos Aires.



MACCHU-PICCHU . .

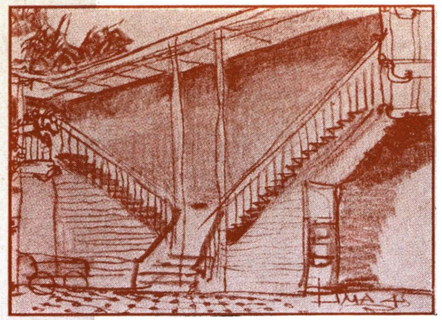
RIO'S BOTAFOGO BAY . .

Site selection for the principal Latin American towns, from the pre-Inca period through the days of exploration, has been a stunning business, even compared with the choices made for San Francisco, Quebec, or Hongkong. Undoubtedly there are many lofty places in the upper Urubamba region with fine tactical defensibility and a good water supply, but the Neolithics found an absolutely unique spot for Macchu-Picchu and must have selected it for its everlasting esthetic thrill. Religious adoration was naturally a part of it. Stone Age people evidently loved to live and busy themselves in the midst of a quarry, just as some people today like to live in the midst of the steel and manufacturing plants of South Chicago.

Rio is hemmed in by fantastically simple, gigantic granite cones and rocks. Between them is a series of metropolitan beaches similar to those so well preserved in Montevideo. The Rio beaches, however, are more varied in exposure, breeze intensity, and strength of the breakers.

An even more incredible site is that of La Paz—a breath-taking Grand Canyon-like hole in a cold and windy 12,000-foot-high plateau alongside vast Lake Titicaca. The planners and the Park Department of La Paz have tackled the most unusual land-planning projects, practically covering over a river, calculating every available square foot for use, planting a central inter-mountain park in front of a skyscraper university (under construction), and running a contemporary park- and freeway down the valley through increasingly tropical suburbs. Towering over this modern city, founded by daredevils in the early Sixteenth Century, is a fantastically beautiful glacier of Tibetan dimensions.

It is strange that no book has been written about the siting of Latin American towns—the coastal sites, the altiplano and mountain sites, the desert sites, and the sites on the banks of the powerful rivers.



LIMA, PERU . . . A tile-paved inner court with delicate stair structure

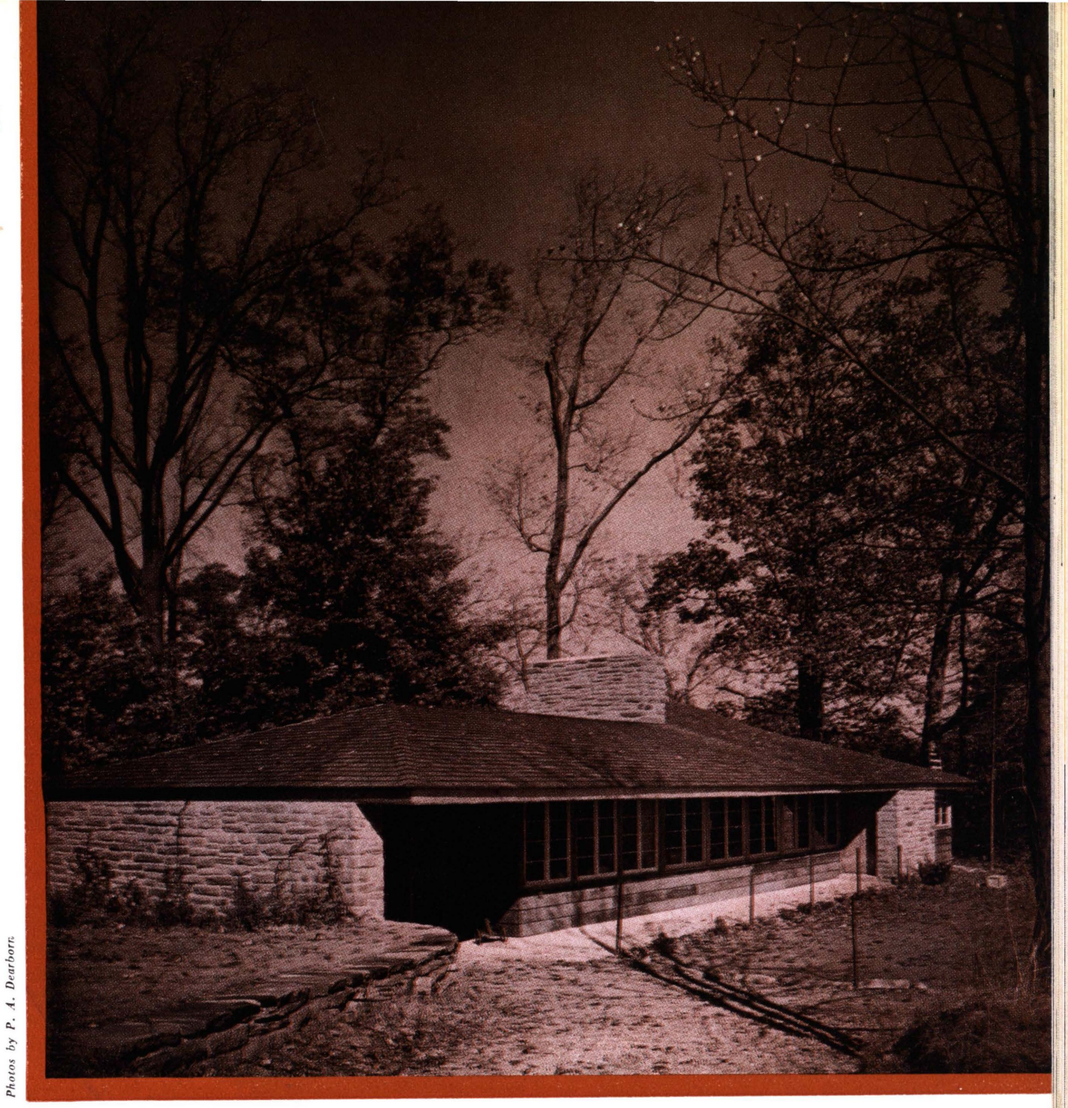
SLENDER STEEL BUILDING IN HAITI . . . The Victorian Age brought to Latin America locomotives, railroad coaches, structural steel sections, and flowery pedestal washbowls. As the populations and purchasing power continue to grow during the coming decades, these countries will become a vast market for mass-produced items for the construction and equipment of buildings. The current lack of certain materials and equipment has made Mexican, Argentinian, and Brazilian manufacturers inventive; their AVANT-GARDE architects, experimental; their engineers, daring; and their building ordinances (in some cases), very open-minded. Much has been gained; their industry adds considerably to the diversity of world production.

However, workable contract documents—working drawings, details, specifications—and the programs for "licitationes" (competitions) are almost as carefully prepared in Buenos Aires, Rio, etc., as they are anywhere in the United States. While everything is—and perhaps will continue to be—in the hectic rush of a boom period, construction standards in leading centers of the entire hemisphere, from Montreal and Vancouver to Santiago and Bahia Blanca, tend to become equalized.

In Los Angeles, a great deal of money has been put into the design and construction of restaurants—walk-ins and drive-ins—stores, from small quality shops to central and outlying department stores, middle-class residences, and housing. At first glance, all of this seems rather less in the foreground of the picture in Buenos Aires, where the outstanding objects of investment have been splendidly executed tall apartment buildings, huge modern departments of the university, research laboratories, hospitals, theaters, and the work advanced by the auto club downtown and along the well kept highways, the neat and practical subways, and the well designed, amazingly clean harbor and waterfront facilities.

It is interesting to speculate on how much different cities and regions might profit from the exchange of ideas and comparison with the experiences of others. Such cross fertilization can start with simple questions: What are the new problems with you and with us? On what might additional emphasis be placed here and there? What, outside of established local routine, might be tackled to advantage?

HOUSES



Photos by P. A. Dearborn

HOUSE AT WALLINGFORD, PENNSYLVANIA

ROBERT F. BISHOP, Architect

A wooded ridge with an excellent view to the southeast is the setting for this compact country house, located but 12 miles from downtown Philadelphia. Perhaps the chief reasons why the house looks so thoroughly indigenous are that its masonry portions are of stone from local quarries, the plan is studiously worked out to take fullest advantage of the site opportunities, and the architect adjusted placement of the house so that not a single desirable tree among the fine stand of oaks, maples, and tulip poplars was removed. The house itself is a notable instance of integration of plan, structure, and finished design.

Photos by P. A. Dearborn

ENTRANCE WALK

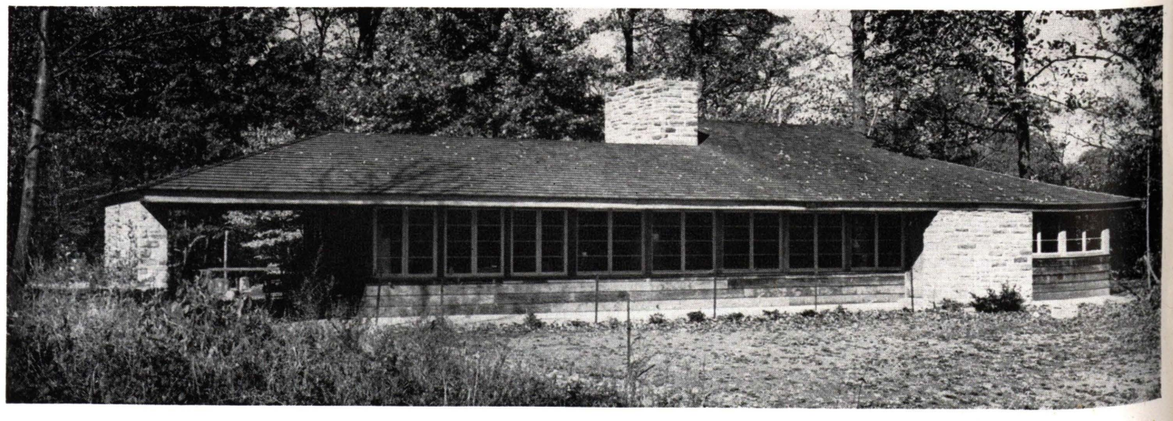
HOUSE AT WALLINGFORD, PA.

ROBERT F. BISHOP, Architect

The property slopes up to the west and southwest; the other directions, except for the southeast (which is open and coincides with the best outlook), are wooded. Hence, the southeastern orientation of all main living rooms. The clerestory crosslights and ventilates the center of the house.

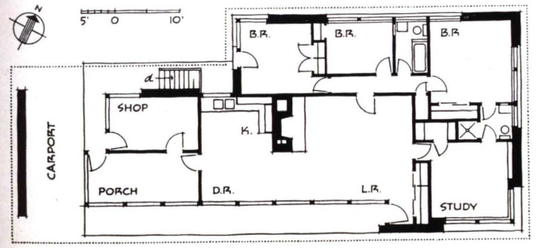
The owner is a teacher and needed a study; the shop was provided for his woodworking hobby. His wife suggested the combined kitchen and dining room, as informal family living (there are three boys) was the prime consideration.

Structure is combined local stone masonry and conventional frame; sash are standard, horizontal sliding, fitted with double glazing; shingles and siding are of cypress. The house is heated by a gas-fired forced hot-air system; the roof has 4-inch wool-type insulation.



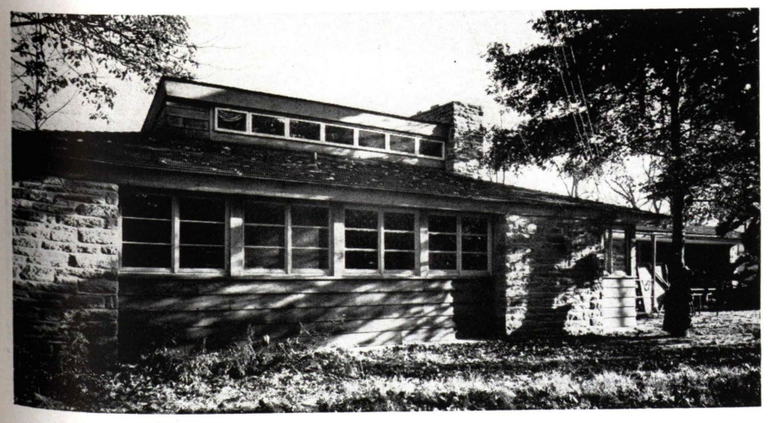
THE SOUTHEAST FRONT

LIVING ROOM.
Dining space beyond

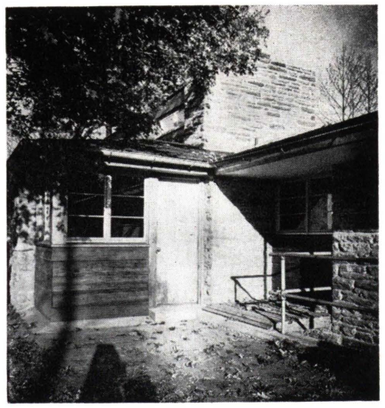


Floor Plan

KITCHEN



ROOF CONSTRUCTION provides a clerestory band



DOOR TO BEDROOM

HOUSE AT NETARTS BAY, OREGON

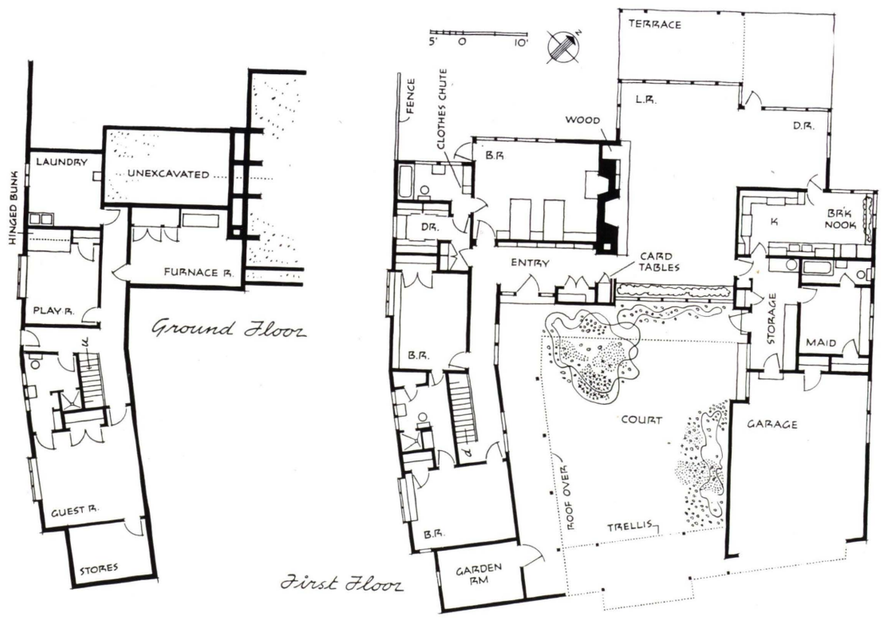
PIETRO BELLUSCHI, Architect

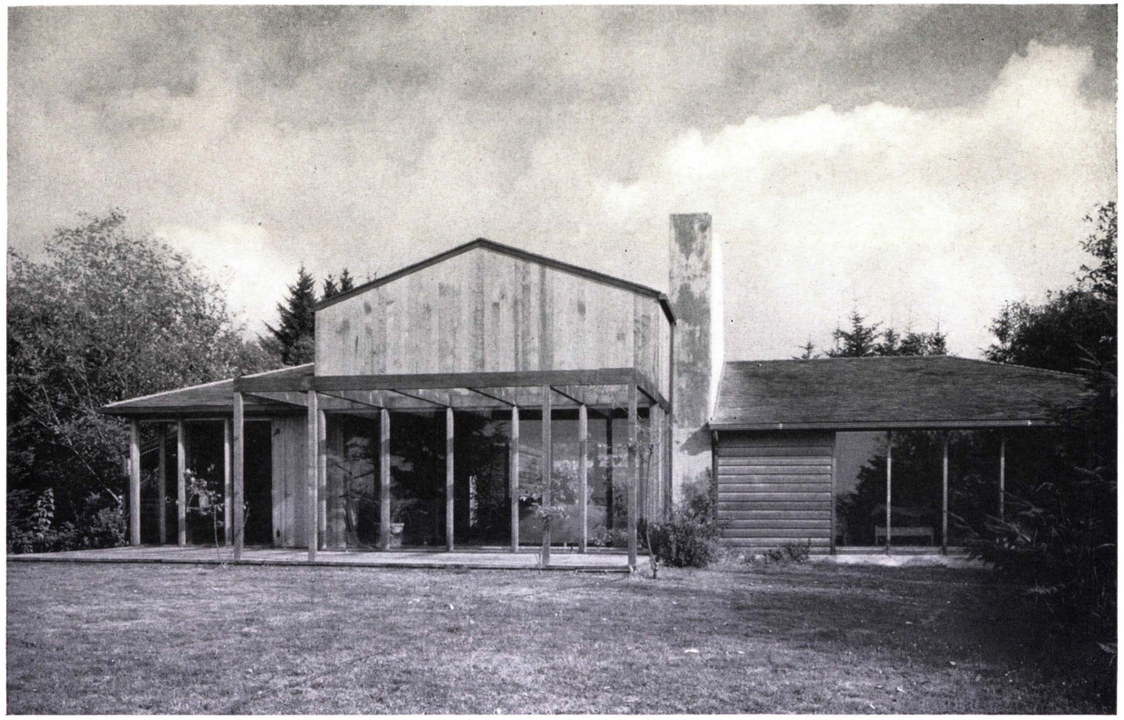
As is the case with so many successful houses, this one on the Oregon coast started with the selection of a remarkable site—a finger of rich wooded land, with the ocean bordering it in a rough semi-circle and a meandering inlet at one side. The house, oriented for the ocean view, is planned in a U shape, with the windowed main living rooms on the view side and a sheltered, wood-paved entrance courtyard within the enclosing wings.

A regional expression adds much to the essential logic of the planning; the woods of the Northwest are imaginatively used, and there is a simplicity to the detail that seems wholly in keeping with the locale. A point that is difficult if not impossible to analyze is what appeals to us as the "inevitability" of the design as a whole —a factor which cannot, of course, actually be separated from the fundamental factors of good planning and construction. Scale, proportion, angling of roof pitch are parts of it. But the result—the esthetic satisfaction which the design creates, quite apart from consideration of the house as a suitable home for its occupants—falls in the realm of pure inspiration. The various factual determinants have been blended with notable success, in our opinion; in addition, the unit achieves unusual harmony with the environment of which it is now a part.

Leonard Delano

ENTRANCE COURT. Log sections are used for paving.





Photos by P. A. Dearborn

VIEW SIDE OF HOUSE

HOUSE AT NETARTS BAY, OREGON

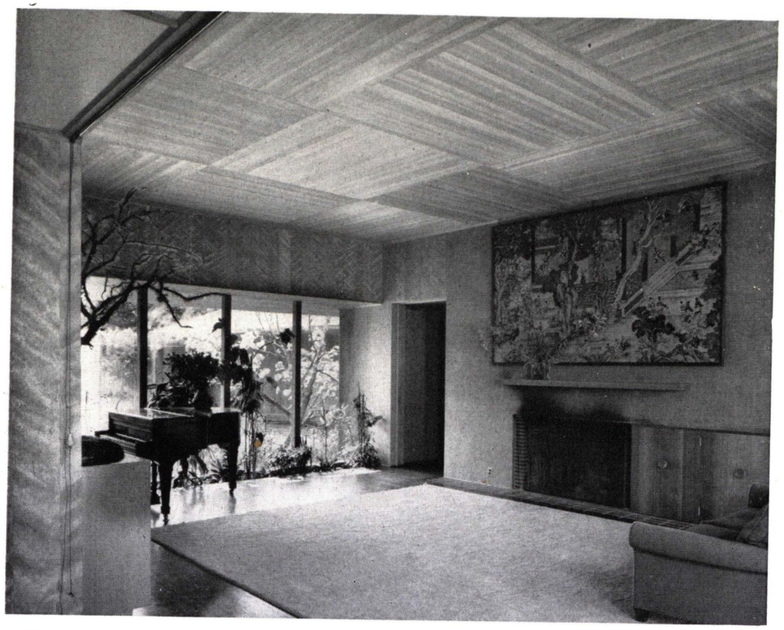
PIETRO BELLUSCHI, Architect

The family consists of the parents and two daughters. The U shape of the plan provides complete separation between the service wing and the family-bedroom wing. Between is the large living-dining space, opened up by full-height windows to both the ocean and courtyard views.

It is somewhat surprising to discover that on the downhill side the house is a full two stories in height. On the lower level are a guest room suite, a playroom, the laundry, and furnace room.

The exterior of the frame house is of rough sawn spruce; double-layer insulating glass is used in all large windows; the courtyard is paved with cedar-log sections.

LIVING-DINING SPACE. Wall paneling is spruce burl.



LIVING ROOM. Doorway leads to the entry.

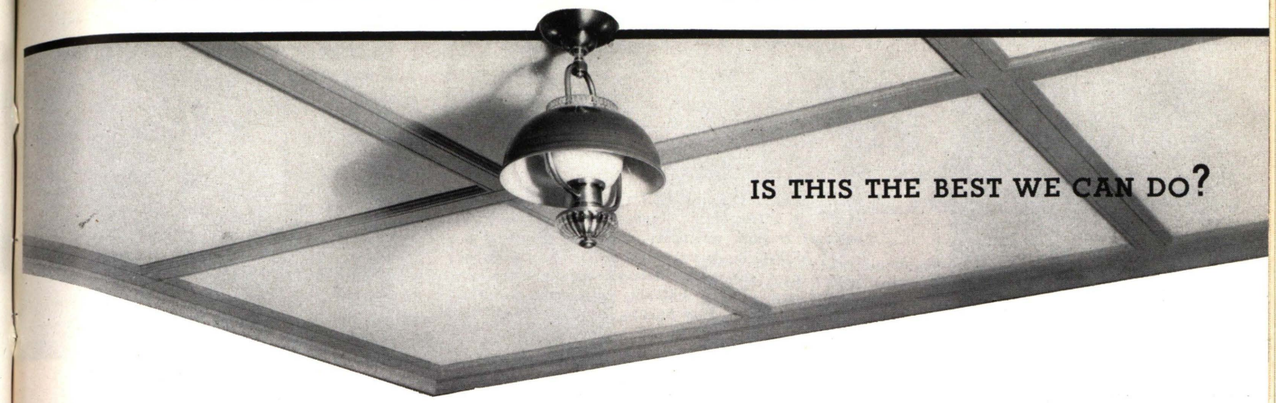
HOUSE AT NETARTS BAY, OREGON

PIETRO BELLUSCHI, Architect

The architect was able to make some unusual applications of wood, since the owner is in the lumber-processing business and could furnish from his own mills material that is not ordinarily available. Perhaps the most striking instance is the spruce burl used for the wall paneling of the living-dining room; ceilings of this area are of 3-inch fir flooring. The living and dining spaces open into one large, L-shaped area; a ceiling track and curtain allow partitioning when desired, however. The kitchen is large enough to include a corner-windowed breakfast nook. An important plan provision, all too frequently given slight attention, is the extra storage space. In addition to a large room in the basement, there is a special storage room on the ground floor, between the kitchen and garage, that opens out to the courtyard.

ENTRY, looking toward living room.

KITCHEN



LIGHTING DESIGN

AND HUMAN ENVIRONMENT

By E. R. DAGGY, Design Engineer, Milton Callner & Co., Chicago

Editor's note: Originally written for lighting fixture designers and engineers, this paper appeared in the December 1945 issue of "Illuminating Engineering" in somewhat longer form. The author, design engineer with Milton Callner & Co., Chicago, has had considerable experience in lighting design, and his remarks on the fitness of fixtures are comforting, to say the least. Illustrations for this presentation have been selected by the editors.

The author neither desires nor intends to attempt specific solutions to lighting design problems, nor to deal with the basic principles of light control or the science of seeing. The thoughts here stem rather from the feeling of a need to examine the subject of lighting design generally in the belief that the process will promote wider acceptance of the principles which underlie the functional approach.

AS TO FIXTURES

There is an increasing tendency in the architectural and industrial design professions to spurn manufactured lighting equipment, to turn to custom-built lighting, specially designed. Why? A quotation from a prominent architect may explain:

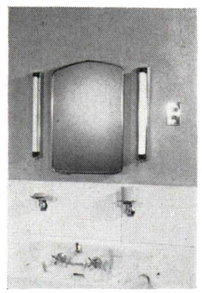
"Whether they know it or not, manufacturers of cheap fixtures increase the cost of building by making it necessary for anyone who wants to do a good lighting job to design special fixtures. Sweden is one country that I know that has seen to it by one method or another that mass-manufactured products are good in design."

There are reasons, of course, for this deficiency in our lighting products. For one thing, manufacturers, when the advent of the fluorescent light source was increasing considerably the complexity of the whole lighting subject, quite naturally concerned themselves principally with sales urgencies, competition, and desire for a quick turnover. Time was when lighting practices were pretty well standardized. It was all in the book. Usually if one could manage to pour 20 to 25 foot-candles of indirect light all over everything the problem was considered solved; there was a pointing with pride and everyone was happy. The need to think was present only to the extent of selecting a fixture shape.

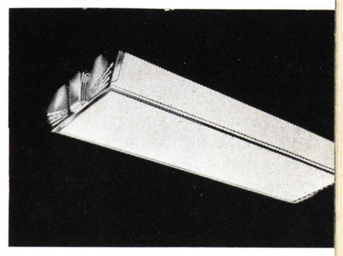
Then came along the fluorescent tube, a new shape, higher efficiencies, and the possibility of higher illumination values

Louis H. Dreyer

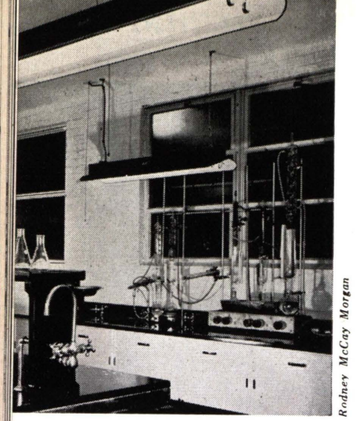
Libbey-Owens-Ford



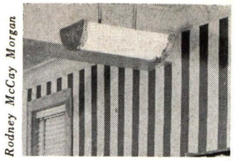
Mitchell Mfg. Co.



Sixteen coach lamps and a stained glass bowl were once tops for pompous architecture, semi-inverted kerosene lamps (head of page) for the "cottage." Tubular lamps can't be quite that badly mishandled; but bare tubes are often questionable and even the pleasantly simple commercial fixture has mechani-
cally embossed ends.



Rodney McCay Morgan



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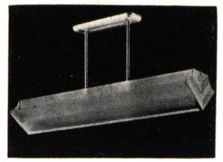
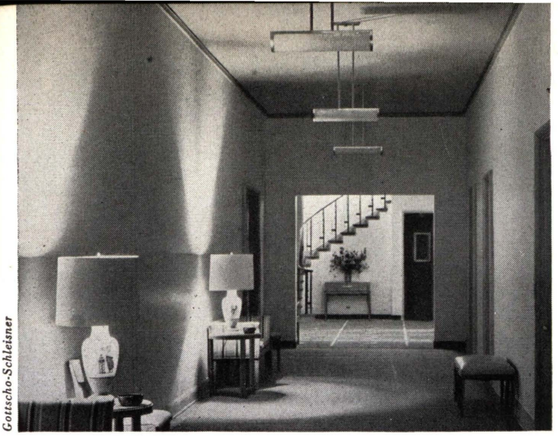


PROGRESS WITH FLUORESCENT: Wartime fixtures (LEFT, in a laboratory), stripped of non-essentials, achieved a stark rationality; the store proprietor (LEFT ABOVE) has had to accept an innocuous rather than a good commercial fixture; the recent commercial unit (RIGHT ABOVE), considerably more direct in application of lighting principles, is still slightly ponderous. AT RIGHT, tubular lamps, end-to-end and enclosed, create "lines of light."

Hedrich-Blessing



Gottscho-Schleisner

Wakefield Brass Co.

LEFT, ceiling fixtures furnish only a small portion of the illumination required; contrast these with the visually important, pottery-based portables. ABOVE, an engineering drafting room with continuous, louvered fluorescent fixtures so designed that the entire ceiling becomes the source of illumination, the individual lamp or fixture diminishing in importance.

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This all means that we are caught up in evolutionary progress, and, for a change, we must think. It is the time to recognize that a new procedure in design is part of this evolution. Here is a direction in which we are inevitably moving, a direction in which we in the lighting profession must channel our thoughts if we would fill our rightful function and lead in lighting progress instead of following the insistent public demand that is being rapidly awakened by the progressive architect and industrial designer. It is high time we recognized light for what it really is, part of our atmosphere of living, a means to an end; and that what really counts is that we see what we wish to see, clearly and comfortably. We need an approach which realizes that, to be right, lighting *should* be part of our atmosphere of living—unobtrusive and effortless.

APPROACHES TO DESIGN

The light source is important only as the tool with which we work. The paint in the artist's tube has no importance until it is placed on the canvas. The tube that holds the paint is important only in that it does its job, doesn't leak, and squeezes properly under the artist's fingers. To change the simile, gone (and surely not missed) are the decorative efforts, the frills and heavy ornamentation once considered necessary to beautify stoves, registers, and radiators. We know now that glamor is unnecessary in our heating equipment. Warmth and human comfort are what really matter. Perhaps we can produce better lighting if we look into the methods of approach to a design problem and try to find out how we can improve our own methods of going about a job.

The approach that walks backward is probably the most commonly used. It consists simply of seeking out and applying without question previous solutions to similar problems—a sort of "making the best of what's to be had" method. Unfortunately it eternally copies the mistakes of the past. Frequently the designer who is used to working this way obeys a daring urge to venture into "antiquism;" quite cleverly he converts a cowbell into a table lamp or a rocking chair into a chandelier or whatever. Because nostalgic recollection is so human, we probably must always expect a certain carry-over of outmoded forms and usages. But surely it is death to be forever saddled with useless remembrances that are not even first-hand recollections of the current generation. Oxen yokes and wagon wheels are used for lighting fixtures, gates, hatracks. Candle shapes, kerosene lamps, crystal chandeliers, useless today in their original form, are tinkered to work with electricity and are widely used in present-day residences and "period" commercial interiors. This is retrogression. It admits an inablity to develop interesting forms to fit present-day needs. When we see its foolishness clearly we will purge such trickery. So, also, must we surely treat needless ornamentation, a process carried over from a more leisured period when craftsmen considered every surface a legtimate playground on which to exercise their whimsies.

UNCREATIVE BORROWING

Another, more subtle, design approach is **eclecticism,** a big word that means to borrow the forms and ideas of other systems and apply them to the problem at hand. This method is sometimes used with cleverness and effect and, although it is basically dishonest, the results may occasionally be justified by good intent. More often it is forced and foolish; witness the indiscriminate streamlining of stationary objects. See materials wilfully contorted out of their appropriate functional usage in order to perpetuate a style or fad. See "moderne" abortions that have brought to ill repute an excellent word. At its best eclecticism adds little to the stream of progress.

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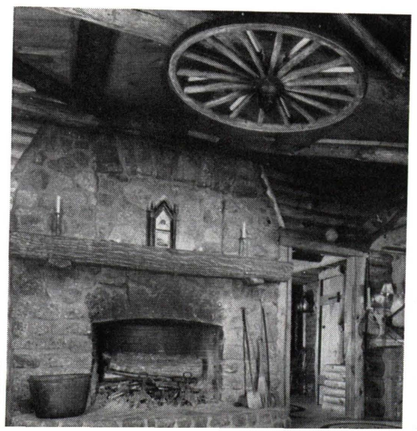
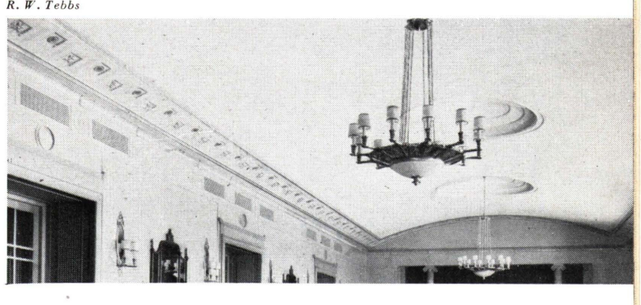


Ezra Stoller

St. Thomas



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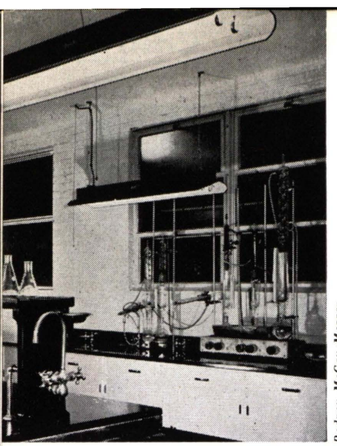

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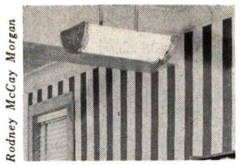

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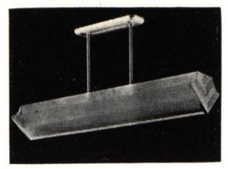

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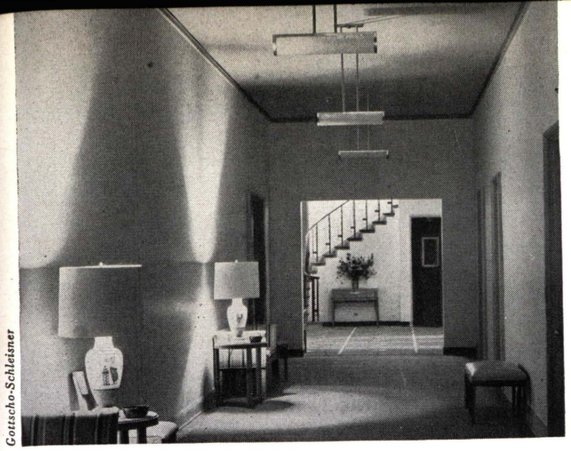

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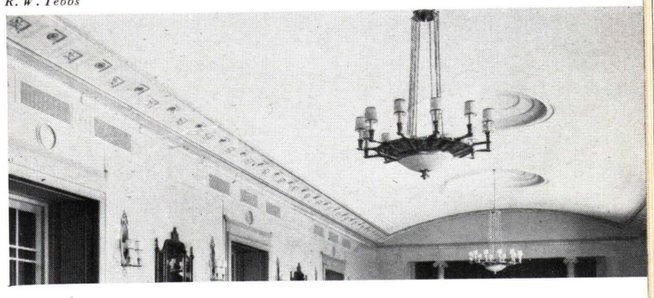

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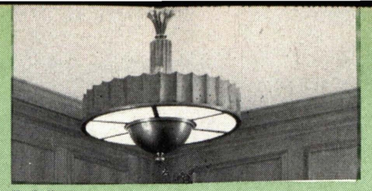
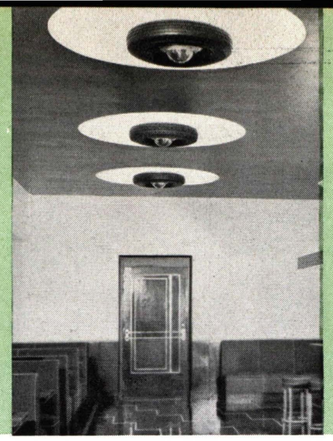


Haskell



THE ECLECTIC APPROACH: LEFT, a masterpiece of the enthusiastic but unfertile design genius of the twenties; ABOVE, a slice of a Doric column becomes a lighting fixture; RIGHT, automobile tires—yes, tires!—put to an amazing use.

LIGHTING DESIGN

examine for a moment the subject of color and color intensity. In the first place, color in relation to human environment is beginning to be more widely understood and used. There seems little doubt that this trend will continue to develop.

The possibility of benefits to humanity in release from drabness and monotony in our surroundings is very great indeed. We spend a third of our lives in our working environment; yet until recently little thought has been given to making this environment stimulating, or even pleasant. We have been inhibited; it has been unbusinesslike to be exuberant and happy in our business surroundings.

Our habits are changing. The change will gain momentum as business comes to realize more fully that psychological and physical benefits to the employe are directly reflected in the amount and quality of the work he does. We can surely expect to see an ever widening use of carefully planned color schemes in our stores, offices, schools, and factories—color schemes planned to make use of the stimulative qualities of bright bold colors as well as those that bring quietness and relaxation.

This is functional use of color as truly as is its use to reflect light. Color has other functional possibilities: as a valuable aid in displaying and selling merchandise, as an absorber as well as reflector of light, and as a means of complementing or concealing architecture.

To return to lighting and its relation to the functional use of color: now it becomes clearer that there may be times when reflection factors may be considered for other reasons than those dealing strictly with the science of seeing.

LIGHTING SALES AREAS

There is room for careful study of the functional coordination of color and light in merchandise display. It does not seem, for instance, that full use is being made in store interiors of the impact possibilities of deep colors on walls that back merchandise of a very light nature. In such a use general lighting might suffer through absorption; but the merchandise display, which is the important consideration, would be enhanced through contrast. The use of deep colors may also be justified at the expense of light when reflections from glass surfaces are present; if the surface behind a person facing a glass-covered object is dark, there is noticeably less surface reflection from the glass than if the same surface were light. Thus it becomes easier to see through the glass in spite of a loss in over-all footcandles. The principle may be used to advantage in planning color schemes for picture galleries, instrument panel rooms, and the like. It also seems likely that there may be spots where it would be advantageous to paint ceilings and walls dark in the reflective vicinity of illuminated show cases.

LIGHTING IS PART OF ARCHITECTURE

In considering lighting in conjunction with architecture we find a great need generally expressed for a better coordination of lighting equipment with architectural form. To accomplish this should not be too difficult if we consider the function of light and strive to subdue the light source as much as possible. Such a procedure would automatically tend to bring about a sort of flowing together of light and architecture to their mutual advantage. Whether the lighting is built in or is added in the form of fixtures, this seems a worth-while goal.

Ernest Graham

Rodney McCay Morgan

RESIDENTIAL LIGHTING: FAR LEFT: not long ago it was fashionable to eliminate most permanent fixtures, rely on portables, making designed home lighting impossible. NEXT PHOTO shows a wartime expedient, pierced plywood; THE NEXT, light diffused from a skylight, natural by day, artificial by night. BOTTOM, with plan and purpose carefully coordinated, many fixtures built in, contemporary houses encourage the lighting designer.

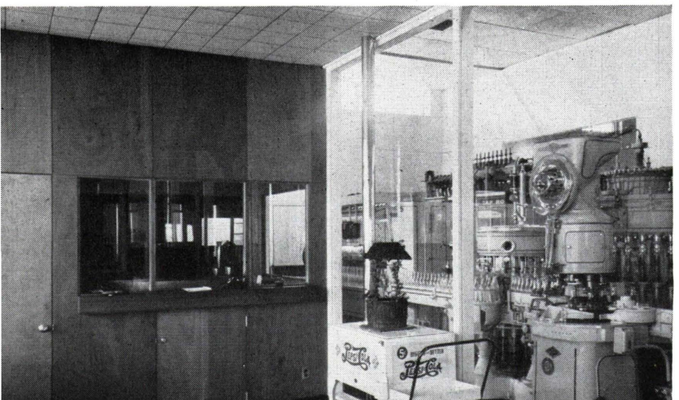
There is a challenge in all this for the lighting profession, a challenge to take up this cause of creative thinking, to apply it to lighting coordination, for the benefit of all concerned. It seems now that the utility lighting engineer can extend the greatest cooperation in meeting this challenge. To repeat, the manufacturer of lighting equipment is restricted by sales considerations. The architect and the industrial designer have tried to meet the need, but they do not often enjoy specialized training in the theory and handling of light sources that enables them to solve all lighting problems without making costly mistakes. The lighting engineer, on the other hand, is highly trained in fundamentals, has had experience in controlling light, and has digested most of the available information on his subject. He has a clear track for thought that is ideal for a creative approach. He is the natural go-between for the architect and the manufacturer of lighting equipment and can offer them his services without constraint. He is in a position to benefit his customers, and the results of his efforts are reflected in good will to the company he serves. If he will do less fumbling for fixtures and more thinking about the designing of lighting he will find himself in a position to lead the lighting industry into progressive ways that keep pace with contemporary thought.

One can hardly think much about design without feeling that it involves more than approaches to the solution of mechanical problems. The solutions affect directly our philosophy of life and living. Acceptance of functional-creative thinking will grow because it is honest, straightforward, and considerate of the needs of mankind. It does not disdain the lessons of the past, but continually strives to improve upon them. Its works are of lasting benefit because they are basically sound in conception and execution.

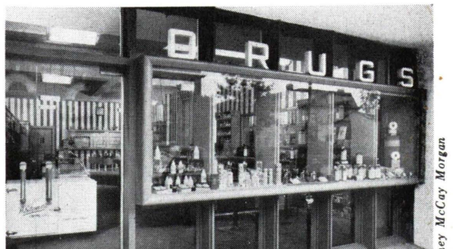
Roger Sturtevant

Ezra Stoller

Cushing-Gellatly

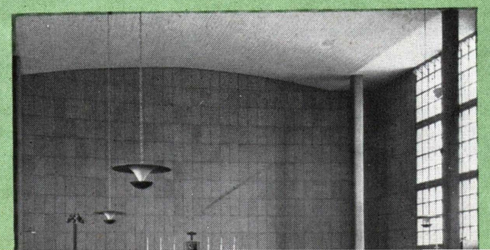


LIGHT FOR MERCHANDISING: LEFT, dark surfaces close to a clear glass display partition reduce reflected images to the minimum. BELOW, despite careful design and recessed storefront, reflections of the outdoor scene obscure the merchandise on display.



Rodney McCay Morgan

CHURCH LIGHTING: Would the average American congregation accept church lighting fixtures as beautifully simple as these in the Catholic Church in Dornach, Switzerland, Hermann Baur, architect?



PREVENTING MOISTURE CONDENSATION IN BUILDING CONSTRUCTION

By PAUL D. CLOSE, Technical Secretary, Insulation Board Institute

Paul D. Close was previously Technical Secretary of the American Society of Heating and Ventilating, and was for a number of years associated with the Celotex Corp. and Johns-Manville. He has contributed widely to architectural, engineering, and building publications, has presented numerous papers before the A.S.H.V.E., and has been closely identified with preparation of several issues of the A.S.H.V.E. "Guide." He is also affiliated with several technical committees of A.S.H.V.E. and A.S.T.M.

Moisture on interior building surfaces is often a serious problem. Water dripping from a ceiling may cause damage to manufactured articles and machinery and annoyance to the occupants of the building. Short circuiting of power and lighting equipment may also occur in severe cases.

Unless proper precautionary measures are taken, surface condensation may be a problem in almost any building in which high humidities are required by, or result from, manufacturing processes. Buildings in this category are numerous and include laundries, paper mills, canning factories, textile mills, bakeries, and tobacco factories. Surface condensation may even occur in residences or other buildings devoted to human occupancy if sufficiently high indoor humidities prevail. However, surface condensation in buildings of this type is usually confined to window surfaces rather than wall and ceiling surfaces, except in unusual circumstances such as in kitchens and bathrooms.

Moisture will not only condense under certain conditions on inside wall and ceiling surfaces, but may also pass into or through the building materials and condense within the insulation or the wood, brick, plaster, or other construction materials, where it may cause considerable damage. The first problem—condensation on interior wall and ceiling surfaces—can usually be solved by installing the proper thickness of insulation. The second problem—condensation within the walls or ceiling, or in attics—can be corrected by the use of vapor barriers, supplemented in certain cases by attic venting. In order more readily to understand these problems let us review some of the fundamentals.

WATER VAPOR

Water exists in three states, namely, gaseous, liquid, and solid. In the gaseous state it is known as *water vapor* or "humidity."

Air is a mixture of water vapor and a number of gases, including nitrogen and oxygen. The amount of water vapor air can hold, or that can be mixed with air, depends solely upon temperature—the higher the temperature, the more water vapor the space can contain. The presence of the air mixed with the water vapor has no relationship to the amount of water vapor or humidity the space can contain, although it is common practice to speak of the humidity of the air.

RELATIVE HUMIDITY

As stated in the preceding paragraph, the capacity of a space to hold water vapor depends upon and increases with the temperature. When a given space contains the maximum amount of water vapor at any temperature, it is said to be saturated, or to have a *relative humidity* of 100%. Usually, however, "air" is not saturated with water vapor and therefore the relative humidity is less than 100%.

For practical purposes—although the practice is not entirely correct—relative humidity may be considered to be the ratio of the amount of water vapor present at any given temperature to the amount the space could hold at that temperature if saturated. For example, at 70F, 1000 cubic feet of space if saturated could hold a maximum of 1.15 pounds of water vapor. It would then have a relative humidity of 100%. If, instead, the same space contained only 0.70 pound of water vapor, the relative humidity would be

$$\frac{0.70}{1.15} \times 100, \text{ or about } 61\%.$$

DEW-POINT TEMPERATURE

The capacity of a space to hold water conversely decreases as the temperature decreases. Consequently, if the air at any specified temperature is not saturated and the temperature is reduced, the capacity to hold water vapor will be correspondingly reduced and the relative humidity increased, until eventually the air will be saturated; that is, it will have a relative humidity of 100%. If the temperature is reduced below the dew point, some of the water vapor will be condensed to liquid.

In the example previously cited, the space contained 0.70 pound of moisture at 70F and was 61% saturated at this temperature. If the temperature were reduced to 47.7F, the "air" would be saturated, or in other words, the relative humidity would be 100%. Moisture would begin to condense on any surface at or below this dew-point temperature.

WET- AND DRY-BULB TEMPERATURES

The relative humidity in a space is usually measured by two ordinary thermometers, secured to a common base. The bulb of one thermometer is exposed and the temperature reading taken with this thermometer is the same as that taken with any other ordinary mercury thermometer. This is called the *dry-bulb temperature*. The bulb of the other is enclosed in a small cloth bag which is moistened with water and which, due to the evaporation of this water, will give a lower temperature. This is called the *wet-bulb temperature*. Such a combination wet-and-dry-bulb thermometer is called a psychrometer or a hygrometer.

ESTIMATING INSULATION REQUIRED

It will be apparent from the foregoing that whenever warm humid air comes in contact with surfaces which are below the dew-point temperature, condensation of water vapor will take place. Therefore, in order to prevent condensation on any inside wall or ceiling surface, it is necessary to maintain that surface above the dew-point temperature. The dew-point temperature may be determined in the case of existing buildings from wet- and dry-bulb readings, which are used in conjunction with a psychrometric table or chart. For buildings not yet constructed, the probable dew-point temperature can often be estimated by comparison with relative humidity and temperature conditions in existing buildings of similar types.

Total required resistance. After the dew-point temperature has been established, the next step is to determine how much insulation must be added to the wall or roof structure to maintain the interior surface above this dew-point temperature at all times. This involves two steps: first, calculation of the total required resistance of the wall or roof to prevent condensation for the conditions involved; and second, subtraction of the resistance of the wall or roof to determine how much insulation resistance must be added, from which the required thickness of insulation may be calculated.

Resistance to prevent condensation: temperature gradient. The first step—calculation of the resistance required to prevent surface condensation—is based on the principle that the *temperature gradient* or change is proportional to the resistance. For example, if the over-all temperature difference is 100 degrees and the total resistance (including the inside and outside surfaces) is 10, there will be a change or gradient of 10 degrees for each unit of resistance.

The total required resistance to prevent surface condensation based on the foregoing temperature gradient relationship is expressed by the following equation:

$$R_t = \frac{0.61\,(t - t_o)}{t - t_d}$$

where

R_t = total resistance required to prevent surface condensation
0.61 = inside still-air surface resistance
t = inside temperature near surface involved
t_o = outside temperature
t_d = dew-point temperature based on inside temperature (t) and the correct relative humidity (or wet-bulb temperature).

The thickness of insulation must be sufficient to prevent surface condensation during the coldest weather. Consequently, the calculations must be based on a reasonable minimum outside temperature (t_o) for the locality of the building. The inside temperature (t) should be the air temperature near the surface involved, but not the surface temperature. The following example will illustrate the use of this formula:

Example: Calculate the total resistance required to prevent condensation on the ceiling of a roof for a relative humidity of 79%, an inside temperature (near the roof) of 80F and an outside temperature of +10F. (The dew-point temperature for a relative humidity of 79% and a temperature of 80F is approximately 73F.)

Solution: $t = 80$, $t_o = 10$; $t_d = 73$. Substituting these values in the above formula:

$$R_t = \frac{0.61(80 - 10)}{80 - 73} = \frac{42.7}{7} = 6.1$$

Determining required insulation thickness. The following example will illustrate the method of determining the required insulation thickness to prevent surface condensation.

Example: If in the foregoing example the roof were constructed of 4" concrete and covered with built-up roofing (total resistance = 1.38) what thickness of insulation having a conductivity (k) of 0.30 would be required to prevent surface condensation?

Solution: The resistance per inch of an insulation having a conductivity of 0.30 is $\frac{1}{0.30}$ or 3.33. Therefore the required thickness of this insulation would be:

$$\frac{6.1 - 1.38}{3.33} = \frac{4.72}{3.33} = 1.42$$

inches. The nearest commercial thickness greater than 1.42 would be used, probably 1½ or 2 inches. This problem could also be solved by simply multiplying the conductivity of the insulation by the total required resistance, or 3.30 x 4.72 = 1.416 (1.42"). It should be understood that insulation alone will not solve condensation problems where extremely high humidities are involved, the practical limit being about 94%. For higher humidities, the insulation thickness becomes prohibitive.

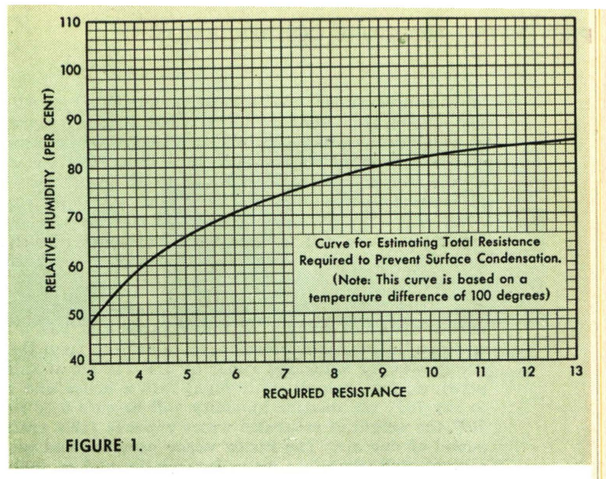


FIGURE 1.

CONDENSATION CHART

Figure 1 may be used for estimating the total required resistance to prevent surface condensation for various inside relative humidities. This curve is based on an inside-outside temperature difference of 100°. For smaller temperature differences the required resistance will be correspondingly less as the resistance is directly proportional to the temperature difference. The required U value (maximum) in each is of course the reciprocal of the required resistance: $U = \frac{1}{R_t}$

PREVENTING CONDENSATION ON WINDOWS

Moisture condensation on windows can sometimes be prevented or lessened by installing storm sash or double windows. This, however, depends on temperature conditions and relative humidity.

The curves of **Figure 2** show maximum permissible relative humidities for both single and double windows for various relative humidities and outside temperatures, based on an inside temperature of 70F. For example, for single glass the maximum permissible relative humidity (to avoid condensation on the windows) when the outside temperature is +30F, is about 24%. If, however, storm sash are used, the permissible relative humidity is about 59% for the same outside temperature. Thus, the storm sash increases the maximum permissible relative humidity from about 25% to 59%, which is sufficient to preclude surface condensation in most cases.

CONDENSATION WITHIN WALLS

As previously stated, water vapor, instead of condensing on interior surfaces, may pass directly through the structural materials. No damage would result from this fact if the vapor continued to pass through the construction to the outside in gaseous form. Instead, however, the vapor will condense to a liquid when it reaches any surface in the structure whose temperature is below the dew point. The outer structural materials frequently are below the inside room dew-point temperature during cold weather, and if proper precautionary measures are not taken the resulting condensation will often cause paint blistering on wood siding and damage to decorations as well as structural materials.

VAPOR PRESSURE

The question naturally arises as to why water vapor passes through certain structural materials. What is the impelling force in this phenomenon? Which materials permit vapor to pass and which do not?

Water vapor mixed with air has a certain pressure which is dependent upon the temperature and the degree of saturation or relative humidity. For example, at 0°F, the pressure

of saturated vapor (100% relative humidity) is 0.0185 lb per square inch and at 70F is 0.363 lb per square inch, or about 20 times as much. Vapor pressure is also a measure of the amount of water vapor in a given atmosphere. At 0° the weight of saturated vapor is 5.5 grains per pound of dry air and at 70F the weight of saturated vapor is 110.2 grains per pound of dry air. At 50% saturation these vapor pressures and weights would, of course, be one-half the amounts stated, and so on for any other degree of saturation.

Air at low temperatures, even if saturated, contains a comparatively small amount of water vapor and has a correspondingly low vapor pressure, as is evident from the foregoing data for saturated vapor at 0°F. If air at this temperature, for example, is brought into a house and heated to say 70F, the relative humidity will be only 5%, since at 70F, the weight of saturated water vapor is 110.2 grains per pound of dry air. The inside vapor pressure and moisture content will therefore be substantially higher than that outside, or than that which would prevail inside if the outside atmosphere were the only source of moisture. Laundries, kitchens, and bathrooms contribute large quantities of water vapor, and these are often supplemented by humidifiers of various types or by automatically controlled humidification devices such as are used in conjunction with air-conditioning systems. Furthermore, with the tendency toward tighter walls resulting from the use of weather strips, storm sash, calking, and other improvements in building construction, there is greater probability than formerly was the case for the moisture to be retained and to build up within the enclosure.

Condensation within walls does not occur in all cases; it is the exception rather than the rule. The probability of condensation increases as the inside relative humidity increases and as the outside temperature decreases.

VAPOR BARRIERS

Condensation within walls can be prevented by installing adequate vapor barriers on the warm side of the construction. In the case of a frame wall, this would be the inside face of the studs, or on the interior surface. Important requirements are: first, that the vapor barrier be installed at a location such that the temperature on the warm side of the barrier is above the dew point of the air-vapor mixture in the room at all times; and second, that the vapor resistance of this barrier be substantially greater than that of the materials on the cold side.

Vapor barriers are of two general types, namely (1) paints or liquids, applied as finishes on the interior surface of the wall; and (2) paper or sheet types, installed on the inside face of the studs or furring strips before the interior finish is applied. Of the first type, aluminum, asphalt, and varnish vehicle paints are among the most efficient; and in the second classification, duplex or laminated papers, smooth-surface roll-roofing, and aluminum foil are among the best vapor barriers.

When to use vapor barriers. While there is no hard and fast rule for determining when vapor barriers shall be used, the line of demarcation for ordinary conditions is generally considered to be the 35-degree January isotherm. In other words, for average conditions, vapor barriers should be used where the average January temperature is 35 degrees or *colder*. Roughly speaking, this condition obtains everywhere north of the Ohio River. Where exceptionally high indoor humidities prevail, however, vapor barriers should be used in practically all climates where any cold weather is experienced.

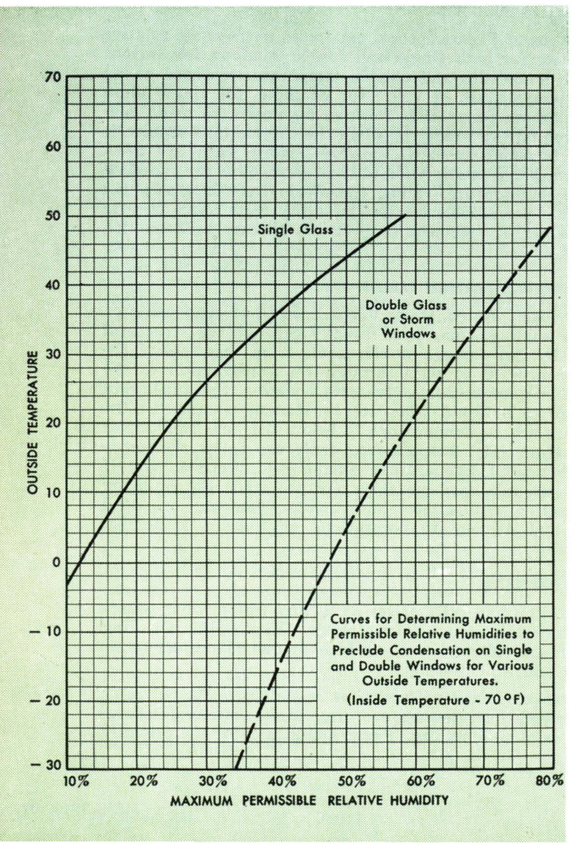
Required value of vapor barriers. To perform satisfactorily, vapor barriers should have a certain maximum vapor-permeability rate. In other words, to qualify as a vapor barrier, a material should not permit the passage of more than a certain amount of vapor through it in a given period of time based on a certain standard vapor pressure difference. According to Univ. of Minnesota Engineering Experiment Station Bulletin No. 22, this permeability rate should not exceed 1.25 grains of moisture per hour per square foot per inch of mercury pressure difference.

As previously indicated, materials which generally meet this requirement include certain duplex papers (a sheet of asphalt between two layers of paper), asphalt-coated roofing papers, and aluminum foil. Ordinary saturated roofing felt (paper) and building papers are not good vapor barriers as they permit the passage of more than the maximum permissible amount of vapor.

Vapor-barrier paints include certain oil paints and varnishes, and aluminum and asphalt paints. However, not all paints of these types are of necessity good vapor barriers, nor are casein or other water-emulsion paints good vapor barriers. Usually at least two or three coats of paint are required to obtain satisfactory results but there may always be some doubt as to whether the coating as applied is continuous and sufficiently efficient for the purpose. For this reason, paper or sheet vapor barriers of known value are generally preferred to the liquid type, provided the barrier is properly applied so that all joints are lapped and, if possible, sealed.

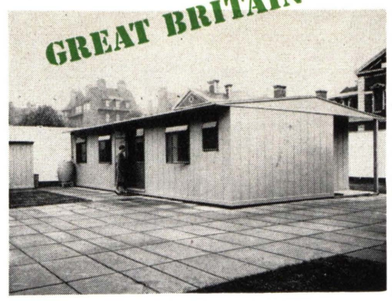
ATTIC VENTING

Vapor barriers, when needed, should be used in both walls and top floor ceilings and should always be applied as near the warm surface as possible, either on the face of the interior finish such as on the plaster (if paint is used), or just in back of the lath and plaster (if paper is used). Theoretically, as far as ceilings are concerned, if an efficient vapor barrier is applied no further protection is required. However, in many cases there are openings in top floor ceilings such as hatches, scuttle holes, or attic stairways, through which vapor can pass. For this reason, insulated attics should be vented to the outdoors to permit the escape of any vapor which may enter the attic. These openings should have a total area of at least ¼ square inch per square foot of ceiling (or attic floor) area. Louvers having this amount of opening may be installed, one at each end of the attic. If mechanical venting is used, the amount of air change should be at least 6 cubic feet per hour per square foot of ceiling area.



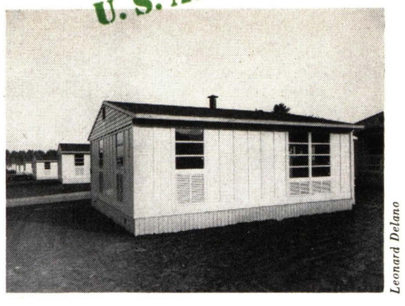
Carroll A. Towne

Emergency housing, outskirts of Hamburg, Germany. Walls: precast concrete slabs in wood frame; floors and roof, prefab wood panels.



Sport & General Press Agency, Ltd.

The Portal house, never built in quantity.



Leonard Delano

Prefabricated TDU's (Temporary Dwelling Units) in a war development near Portland, Oregon.

HOUSING AND PREFABRICATION

IN GERMANY, GREAT BRITAIN, AND THE U. S. A.

By CARROLL A. TOWNE, Department of Regional Studies, TVA

Today practically everybody agrees that there are too few houses for the families of America. Practically nobody agrees on how to correct the situation. V-E Day found Germany, England, and the United States each in its own way struggling with the problem of emergency housing. Herewith is presented a purposely brief review of those events in hope that the application of brevity to recent housing history will highlight some important points to be considered in charting the course ahead.

These observations are obviously biased by the writer's limited exposure to the events cataloged. This exposure included, however, a whirlwind tour of the American and British zones in Germany during July 1945, and a month's visit in London—all for the purpose of finding out, as a representative of the U. S. Technical Industrial Intelligence Committee, what Germany had done with prefabrication during the Nazi regime. This explains why the date for recording these events was set at a month after V-E Day.

STATUS

In Germany, the Speer administration had decreed that emergency housing meeting strict government specifications should be built by occupants on the outskirts of bombed cities. A number of prefabrication methods, all government-sponsored, were permitted. In Great Britain, Churchill had made his famous speech promising half a million prefabs to returning veterans and bombed-out families, the Portal house had been designed but never built in quantity, and the government had launched a huge ten-year prefab program to provide 145,000 temporary dwellings for Britain's unhoused families—to be written off as a cost of war.

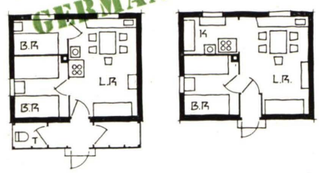
In the United States, government-financed war housing projects had spawned all over the country. On-site prefabrication had made a heavy contribution; off-site methods had made little. The Prefabricated Homes Institute had carried on a long battle with FPHA, claimed victory when the latter's WDU design was adjusted to meet some of their demands. TVA designs had been used by the U. S. Army Engineers to contract with six private firms to produce 5,000 complete factory-built houses for the atomic bomb plants at Oak Ridge, Tennessee, and Pasco, Washington. Just after V-E Day, American prefabbers got a shot in the arm and housing economics took a nose dive when the U. S. contracted for 30,000 prefabs to be exported under Lend-Lease to Great Britain.

GOVERNMENT-INDUSTRY RELATIONS

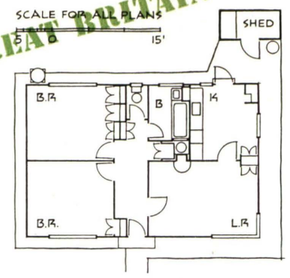
In Germany, the government provided complete plans, shop drawings, and specifications for wood-panel prefabs to local manufacturers, who were permitted no leeway in changing details or in volume of production. A few isolated research efforts, all sanctioned by government, produced a smattering of novel prefab methods, mostly curiosa. In Great Britain, the government established space and performance requirements for the temporary housing program, illustrated them with the Portal house, and then negotiated contracts ranging in size from 1,200 to 50,000 units with at least seven large contractors. Each contractor initiated his own design and production methods. The use of government-designed storage and cabinet units and kitchen-bathroom plumbing assemblies was, however, mandatory.

In the United States, the government continued to initiate designs for publicly financed prefabs, striving to provide a base for evaluating competitive bids on conventional, on-site prefab, and off-site prefab techniques for the same design.

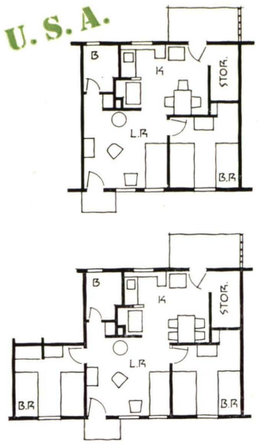
GERMANY



GREAT BRITAIN



U.S.A.



LEFT, variants of the standard plan for German emergency housing, all confined to 21 square meters. CENTER, plan of the "Uni-Seco" house, typical of the many British two-bedroom schemes, all limited to approximately 640 sq ft. RIGHT, plans showing 1-bedroom and 2-bedroom variations of the standard American "WDU-10." Variations ranged from no bedroom to three, for families of from 2 to 6 people.

HOUSING AND PREFABRICATION

Some company-designed prefabs qualified for FHA insurance, but the volume was relatively small.

SPACE STANDARDS

In Germany, all emergency housing was confined to 21 square meters, divided into two rooms, with a tiny ell—used for storage, toilet, or child's sleeping cubicle—permitted in some localities. In Great Britain, the temporary program was based on two or three variants of a basic two-bedroom floor plan covering 640 square feet.

In the United States, the WDU was the government standard for publicly financed prefabs.

In all three countries, the word "temporary" plainly referred to *space standards* but the public persistently wed that word to *prefab durability*. (It will take a lot of doing to unravel public confusion on this point.)

LABOR

In Germany, factory labor was frequently prisoner labor, supervised by native foremen. Field labor was mostly by prospective occupants, although some contract (and some municipal) labor was used. In England, scarcity of bricklayers and other traditional skilled labor temporarily stopped organized labor opposition to novel methods.

In the United States, the A.F. of L. declared a truce on battles against factory and on-site prefabrication. The C.I.O. continued to organize prefab factories, and the A.F. of L. devised some factory contracts in order to compete. Organized labor began to develop an awareness to the fact that its constituents were housing customers.

MATERIALS

In Germany, everything was short or missing. The biggest volume in prefab houses and barracks was in timber construction. Runner-up was precast concrete post-girder-slab construction. There were some risky innovations, including "asbestos" board made with paper scraps; and exterior wall panels made of gypsum-sawdust plaster were tried with fair success. No plywood and virtually no steel were in use.

In Great Britain, lumber was scarce but remained mandatory for floors in all housing. (British families insist on this, regardless of the nation's state.) Asbestos board in a great variety of molded shapes was used. (At one time, 80% of Great Britain's asbestos board capacity was earmarked for housing.) Steel framing and some steel cladding were used. The Aluminum House, pride of the Aircraft Ministry, was devised to absorb the huge stock-pile of aluminum scrap which threatened the economic future of the government-sponsored aluminum industry. Steel would have been cheaper—and fully as practical.

Precast concrete slabs, panels, blocks, and the like, along with prelaid brick panels and thin brick veneer on concrete backing, were being studied, mostly for permanent postwar housing. Britain's archaic plumbing standards were the center of hot debate, but up to September 1945 the Ministry of Health stood firm for the old standards that force British houses to use one-third more metal in plumbing than is required by United States standards.

Active research in and some use of foamed concrete (notably in the Aluminum House) was under way. (Foamed concrete has insulating value, some structural value—depending on weight—low moisture absorption, and is cheap.)

In the United States, materials bottlenecks came, went, and came again like colored bits in a kaleidoscope. The story is too familiar to be repeated here. But for some reason, little that was really new in materials emerged to become established in industry.

SYSTEMS

In Germany, the predominant prefab system, applied to both barracks and housing, was a factory-built wood panel system developed by the Holzbau Konvention, a prewar research organization located at Niesky. The elaborately detailed system, composed of standard panels of 1" T-and-G boards on 2" x 2" framing, was not exceptional as compared with U. S. practice, and produced structures a little better than U. S. CCC barracks built during the depression.

Another system given a big play by Neufert, architect and official advisor to the Reich on prefabrication, used precast concrete posts, lintels, and roof girders, between which were inserted and mortared precast concrete slabs about 30" long, 18" high, and 2" thick. A variant of the basic system used double slabs to provide a cavity wall, with or without insulation. Other variants used 4" thick slabs of lightweight (and in a few cases foamed) concrete. Competent U. S. contractors who inspected this system rated it clumsier and more expensive than U. S. concrete block construction with no compensating advantages.

A third system, developed by the research staff of the Stuttgart Technical High School, used for several hundred houses, was based on a standard wood-frame panel surfaced on both sides with a gypsum-sawdust mix applied to woven reed matting. Panels were neat, lightweight, rigid, and had stood up surprisingly well under two years of exposure to Stuttgart weather without special waterproofing treatment.

In England, as of June 27, 1945, government contracts for emergency prefabs were as follows:

U. S. Lend-Lease	30,000
Swedish purchase	3,000
Ministry of Aircraft Production (Aluminum House)	50,000
Arcon	25,000
Uni-Seco	20,000
Tarran	15,000
Phoenix	2,400
Universal	2,000
Spooner	1,200

Of the three largest British housing contracts, that of the Aluminum House used the section system devised by the TVA in the United States, the Arcon house a field-erected steel frame, field-clad with asbestos sheets, partitioned and ceiled with prefabricated wood-frame wallboard panels, and Uni-Seco a standard panel system featuring wood posts between panels to preserve identical dimensions in all possible panels.

All three of these systems, together with the others, used Ministry of Works-designed standard storage cabinets, closets, and kitchen-bathroom units, furnished by contractors who dealt directly with the Ministry of Works.

In the three principal systems, the following construction details were of interest: exterior walls of the Aluminum House were made up of an aluminum frame, clad on the outside with 20-gage aluminum, filled solid with foamed concrete and clad on the inside with ½" wallboard. Both surfaces were bonded to the core with bituminous adhesive. Interior partitions were framed in aluminum, clad both sides with ½" wallboard, and bonded to a solid core of foamed concrete with bituminous adhesive. The floor and roof frames were of aluminum, the roof surfaced with aluminum sheets. All cabinet work, window sash, and window frames were of aluminum. Panels, cabinets, and other components were factory-assembled into four three-dimensional sections, which were trucked from factory to building site, and assembled. Field-assembly time was estimated at 50 man-hours.

Exterior wall, partition, and roof panels on the Uni-Seco house were wood-frame, asbestos board clad, and filled solid with wood-wool (a mixture of wood shavings and Portland cement). Panel edges were grooved or tongued to mesh with tongues or grooves in filler posts between panels, and in floor and roof plates. Field-assembly time was estimated at 300 man-hours.

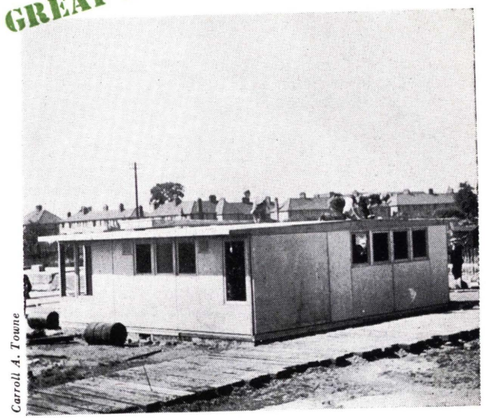
The Arcon system definitely broke away from the panel idea, featuring instead a number of ingenious devices to permit rapid erection of the steel frame and rapid application of cladding and trim. A complete system of metal trim, serving as a wiring raceway which could be sprung into place and required no fasteners, was designed for this house. Another unique feature—the large curved and cor-

GERMANY

Carroll A. Towne

"Self-help" houses on the outskirts of Nuremberg, Germany, conventionally built of salvaged materials by amateurs.

GREAT BRITAIN



Carroll A. Towne

American Lend-Lease prefab being erected in Tottenham Court Road, London, England.

U.S.A.

TVA

TVA-designed prefabs in production at the E. L. Bruce factory, Memphis, Tenn., for shipment to Oak Ridge, the "atomic city" 400 miles away.

GERMANY

Carroll A. Towne

Prefab emergency house, Stuttgart, Germany, with wall panels of gypsum-sawdust applied to reed matting; photo taken July 1945, two years after construction.

GREAT BRITAIN

Sport & General Press Agency, Ltd.

Panel-type prefabs built on bombed-out sites in London; note bomb shelters. (More than any picture we've seen, this emphasizes the need for reconstruction in the wake of war; unfortunately, the situation in the U. S. A. is not so easily summed up.—Editor.)

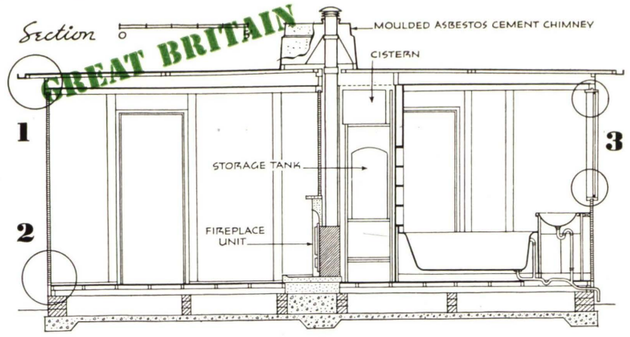
U.S.A.

TVA

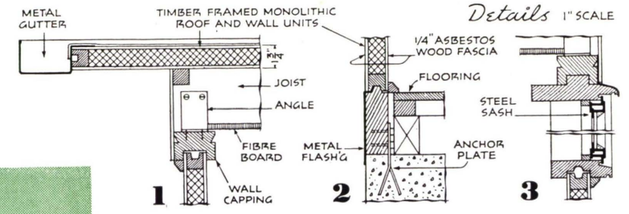
Three-bedroom TVA-designed prefab, principally of plywood; Oak Ridge, Tenn. Contrast this and the preceding photo.

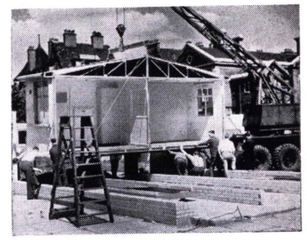
GREAT BRITAIN

Section



Details 1" SCALE





Carroll A. Towne

Right, Aluminum House assembly, Tate Gallery, London. Above, Uni-Seco House; panels are wood shavings and cement, covered with asbestos board.

HOUSING AND PREFABRICATION

rugated asbestos board cap sheet on the roof—gave the pitched roof an appearance vaguely reminiscent of a Nissen hut. Estimated field-assembly time for the Arcon house was 300 hours.

In the United States, the biggest volume of prefab production was found in the various on-site systems. Most of these preassembled framing for walls, partitions, floor panels, and roof trusses in jigs built either in the open or under cover at the building site. Thorough organizing of work at the site secured some very rapid results. Virtually all this type of work was of frame construction.

Most off-site prefabrication was based on panel systems which differed only in detail. Plywood cladding was featured when it could be obtained. The TVA-designed sectional house, featuring stressed-skin plywood construction, went into volume production for the atomic bomb projects. But the most spectacular contribution to the U. S. housing emergency was made by the trailer industry, which spewed trailers (built to government specifications and with non-critical materials) into every nook and cranny of the country's war-production areas.

PRODUCTION AND MARKETS

In Germany, the "market" never warranted tooling up for large-scale volume production of any prefab components. Largest factory setups were in woodworking plants, which used stock machinery supplemented by unremarkable jigs for wood panel fabrication. Usual dimensional tolerances were 1/8" or greater.

In Great Britain, the huge government orders created dream markets for prefab contractors—except for one flaw. Contracts called for completion within two to three years *with no assurance of renewal.* This is reputed to be the reason why the elaborate plan to tool up for the all-steel Portal house was abandoned, and is definitely the reason why all other systems except the Aluminum House did not. Elaborate plans were under way for tooling up to produce the Aluminum House. Included were metal jigs (tolerance control 1/32") for framing, kilns for curing foamed concrete panel cores, conveyor systems for moving materials and components to final assembly lines, and the like. Government-owned aircraft factories were being converted for production. Reports on tooling-up costs varied from $24 to $320 per house, with heavy bets on the higher figure unless the production period was extended to cover a period longer than two years, or unless some of the tooling-up costs were trimmed. Curiously, the Ministry of Works parceled out its contracts for standard cabinets and kitchen-bathroom units to a number of small companies, thereby tending to inhibit machine production of components ideally suited to mass production.

A month after V-E Day, there was little but speculation to go on regarding the effectiveness of prefabrication in England.

In the United States, a similar uncertainty about the long-term market kept prefabricators from plunging on tooling-up for mass production. Government-controlled designs, markets, materials, and labor were all aimed at the current emergency, and subject to radical adjustments to meet rapidly changing conditions. Even when substantial orders for factory-built prefabs were placed, short delivery periods forced contractors to confine tooling-up pretty much to stock machinery and inexpensive panel jigs. No investments in specialized machinery remotely comparable to that found, for example, in the automobile industry, were ventured.

FORECAST

In Germany, the housing problem is catastrophic. One of several possible solutions may lie in a continuation of the war-born self-help program, but with a great increase in the amount of prefabricated components provided the distressed families. The self-help idea seemed to work, but the technical research and production needed to secure good results was pathetically weak.

In England, the Labor Government seems to be gradually replacing the temporary program with a slower and longer-range permanent program. It remains to be seen whether this can satisfy the enormous pressure for immediate results in re-housing bombed-out families and returning servicemen with a program that meets permanent space standards. A separate and presently unanswered question relates to the role prefabrication may play in the permanent program. Its prospects may improve because the foreseeable market covers at least a ten-year period.

In the United States, the immediate future is too clouded by uncertainty to make more than one or two long-range points. First, in the long run, markets for prefabs in this country are going to be built on the foundation of popular demand, not on government orders. Second, government orders, no matter how large, are likely to continue to be short-term and therefore will fail to provide the incentive for the kind of mass production that replaces manpower with machinery and thereby cuts costs. Third, building markets is a slow business at best, and involves heavy risk expenditures. Under these circumstances, during the next decade the bulk of U. S. endeavor may aim at increasing the percentage of prefabricated components in the average house, rather than in replacing conventionally built houses with all-out prefabs. It may prove a lot simpler to establish a mass market large enough to warrant machine production of a storage closet than to do the same thing for a whole house.

EDITOR'S NOTE:

The current housing program, concerning which there is considerable debate in and out of Congress, is based upon the report which Wilson Wyatt, then National Housing Expediter, rendered to President Truman on February 7, 1946. Since then Wyatt has been appointed Housing Administrator, the controls slapped on non-low-cost-construction still have people gasping, and the essentials of Wyatt's program seem about to be enacted into law. Considering everything, this is, for America, swift action; but it's far from being swift enough. Perhaps nothing better could have, or can be accomplished.

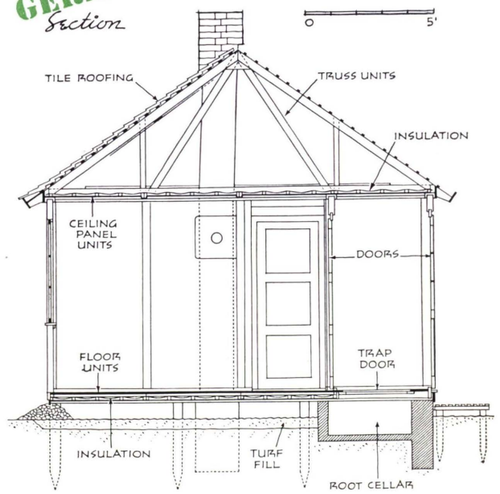
The program envisioned 250,000 prefabricated houses in 1946, out of a total of 1,200,000 homes to be started during the year; in 1947, the corresponding figures were to be 600,000 out of 1,500,000. Wyatt urged such a substantial use of factory prefabrication in order to utilize fully the existing prefabrication industry, and because the idea is well adapted to the use of surplus war plants and substitute materials—yes, we still face materials shortages. At the time of his report Wyatt recognized that the prefabrication industry's lack of distribution facilities and sales outlets might be a serious obstacle; therefore he proposed that Government stimulate this phase of industry development by requiring producers to meet certain standards as to amenities, price, distribution and erection, and quantity of units to be produced in a given time; and by guaranteeing to accept delivery of a given proportion of total output provided—and **only** provided—the manufacturer could not sell them through normal channels. Houses so accepted would be disposed of in the manner usual for surplus Government property. As far as prefabs are concerned, that remains the essence of the bill now in Congress.

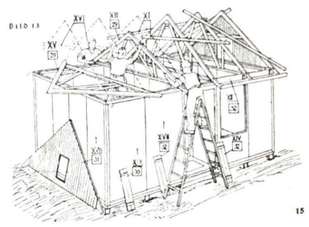
In December 1945, 64% of 50 prefabricators out of 200 queried by "Prefabricated Homes" magazine stated that they were in "partial" production; that after 1946 they expected to double or treble output; and 37 producers alone expected to provide 131,175 dwelling units in 1946, priced mostly between $2000 and $6000. This was far from representing capacity production; since development of the Wyatt program, every prefabricator has been feverishly engaged in stepping up output, potential or actual. In February 1946, the Prefabricated Home Manufacturers' Institute stated that capacity of some 70 prefabricators (which the Institute said was "the number of firms engaged in producing prefabricated housing") was 162,000 dwelling units per year; that if sufficient materials became available to permit two-shift operation, this might be increased to 200,000. This statement, conservative as it obviously is, implies that a further 50,000-unit expansion to meet Wyatt's demand would not be an insuperable difficutly; but the Institute was holding its head and muttering about materials deliveries; and potential troubles of the same sort in 1947, with production demands more than doubled over 1946, loomed tremendous to them. The Institute made no great point of Wyatt's reservations as to prefabricators' sales and distribution facilities.

Thus the picture now is still confused. It will probably remain so until the crisis is over. But this time the country is, at the outset of action, putting factory-prefab dwelling units firmly into its program. For the industry, that is a substantial advance. If the industry delivers the goods, the consumer will benefit substantially. It is too bad that there is developing, due to the emergency situation, a situation like that during the recent war, when space, amenities, etc. were inevitably held to a minimum. Let us hope that such stringencies do not become as harsh as they were then.

GERMANY

Section





Right, diagram from German pamphlet furnished to help amateurs erect an emergency prefab; above, section; house has two rooms, vestibule toilet in outbuilding.

from the TECHNICAL PRESS

By JEAN SHORT and DAVID ALDRICH

PAMPHLETS, MANUALS

Minimum Design Loads in Buildings and Other Structures. *American Standard Building Requirements, sponsored by National Bureau of Standards, published by American Standards Association, 70 E. 45 St., New York 17, N. Y. Paper pamphlet, 26 pp., tables, charts, appendix.*

This standard is one of a series presenting recommended basic building code requirements that are being developed by technical committees under the procedure of the American Standards Association. These standards can be used as a guide for revision or development of local building regulations, and can also be drawn upon for the chapters of a basic American Building Code. The requirements presented are intended to govern assumptions for dead, live, and other loads (soil and hydrostatic pressures, wind loads, earthquake loads) in the design of buildings and other structures which are subject to building code requirements.

Modular Coordination as Related to Building Design. *The American Standards Association Project, published by the Producers' Council, Inc., 815 15 St., N. W., Washington, D. C. Paper pamphlet, 15 pp., illus.*

This pamphlet is an explanation to architects and engineers of a basis for the coordination of dimensions of building materials and equipment and the correlation of building plans and details with such dimensions. Such a coordination involves:

1. *Sizes* of building materials and equipment which permit their field assembly with a minimum of cutting and filling.

2. *Details* which show the assembly of the above, and

3. *Building Plans* which correlate building dimensions with the above Sizes and Details.

The text explains at length and with numerous illustrations the practical use of the module in building layout, masonry wall layout and detailing, masonry openings, sill and sill installation details, steel window details, and double hung wood details.

Chimneys and Fireplaces, *Small Homes Council, University of Illinois Bulletin, Mumford House, Urbana, Ill. Pamphlet, 8 pp., illus., graphs.*

A new Small Homes Council Bulletin, Chimneys and Fireplaces, gives a homebuilder an over-all picture of the do's and don't's of chimney building. Clearance heights above roofs, acceptable materials for chimneys, types of insulation, required thicknesses of masonry, and depth of footings are given, supplemented by sketches and tables.

Teaching Timber Engineering. *Frank J. Hanrahan, Structural Engineer, National Lumber Manufacturers' Association. Paper read before the Society for the Promotion of Engineering Education.*

Essentially a spanking intended for instructors of engineering, Mr. Hanrahan's paper includes many suggestions on teaching methods which should be applied in architectural schools. The well known complaints that many modern buildings have been "overdesigned" by engineers, and that new materials which are not allowed to do the work for which they were developed are the bases for Mr. Hanrahan's arguments. Engineers, he says, remember few facts taught them in school; find "rule of thumb" figuring good enough. This, he says, is due mainly to the separation of classes. That there is little or no real coordination of courses in engineering (and architectural) schools is well known. The speaker recommends a breakdown of administrative barriers between college departments and frequent discussions between teachers of related subjects. Although this paper is devoted to recommendations for further studies in wood engineering design, its advice might well be applied to all studies in engineering or architectural schools.

TECHNICAL ARTICLES

Science in the Construction of Houses. *William Allen in* The Architects' Journal, *45 The Avenue, Cheam, Surrey, England. Dec. 13, 1945, 2 pp.*

Faced with the necessity of supplementing orthodox building forms with alternatives, the British Government set up the Department of Scientific and Industrial Research to determine to what standards the alternative forms should be built. Mr. Allen, of the Department's Building Research Station, here describes how organized research has been marshalled to work out the alternative forms. The normal prewar house was shaped partly by tradition and otherwise was a compromise between what seemed desirable and what could be built in brick. The widely used 11" brick cavity wall has more strength than necessary, but less thermal insulation than was economically justified. Because of the necessity of reducing all waste to the minimum compatible with efficiency, prewar building tradition is not acceptable for postwar standards.

Normal procedure would not have enabled the recommendations of the Station to be generally attained in time to influence the present vital rehousing program. The danger was circumvented by a system of study, licensing, construction, and testing which provided early factual knowledge of new types. The best types go forward to pre-production trials and technical consultation. The important factor in this scheme is that designer and researcher are brought together in the pre-licensing period and remain in touch over the period of construction and testing.

One of the most interesting studies made was to determine the portion of the total strength of the frame system which is contributed by the cladding, the partitions, the stairs, the chimney, and so on. Normally they are ignored but all play a part and cannot be neglected without waste. Tests showed that measured stress is always smaller than calculated, even after due allowance of a normal factor of safety. Most important, before strains reach the point of failure deflections reach a point which should not be exceeded for other reasons. Deflection is thus the important factor and in this respect the researchers were able to establish a group of reasonable acceptance criteria.

In the field of acoustics an insulation standard of 55 db was based on calculation and prewar experience. Traditional 9" brick party walls were entirely unsatisfactory; 11" cavity walls were no better. In prototype recently studied, the party wall consisted of two 3" leaves of breeze-concrete cast *in situ*.

Such a wall gives the desired standard with no excess, involves no unfamiliar techniques, and is as cheap as the traditional brickwork. Very recently a new, thin, double-leaf construction with dry sand in each leaf has proved to exceed the requirement of 55 db. The efficiency of this unit is markedly greater than that of previous construction. Over-all thickness is only 4½" and the idea appears most promising in party wall construction. Further study is proceeding, including investigation to meet fire-stop standards.

As a result of their investigation, the British are certain that alternative construction of the next two or three years will far surpass in quality the effort after the last war and in some respects will outdo even very good prewar houses.

Plastics in Building—*A Report to Architects, Decorators, and Builders. Paul Robinson Hunter, A.I.A., Architectural Consultant to* Pacific Plastics *magazine, 124 W. 4 St., Los Angeles 13, Calif. Paper bound, illus., glossary.*

Pacific Plastics magazine commissioned Mr. Hunter to make a thorough and unbiased report in the interest of furnishing the building trade with an understanding of plastics as a material and an appreciation of its uses and promises. Mr. Hunter concluded that plastics in building offer the most exciting opportunity in combination with other materials (wood, metal, glass, and fabrics) and in the form of adhesives, impregnating agents, and surface coatings. This conclusion is supported by brief descriptions of the following uses of plastics: structural (laminated timber, plywood structural panels, seamless wood, laminated tubing); exterior surfaces (plywood and overlays); walls and insulation (plywood again, decorative papers and fabrics with protective plastics films, fibrous glass, plastic foam); transparent and translucent partitions (the acrylic plastics—expensive and lacking in surface hardness, translucent fabric); screening (woven extruded filaments); venetian and roll-up blinds (plastic slats or extruded strips); flooring (vinyl compounds in sheets or tiles, non-skid troweled or sprayed applications); hardware accessories and trim; painting; lighting fixtures; plastic insulated wiring; tubing and piping (conflicting reports from the plumbing trade); furnishings (monocoque molded wood or canvas laminated furniture, impregnated fabrics, plastics fabrics, molded plastics furniture).

Notes on the Development of Architectural Acoustics, Particularly in England. *E. G. Richardson, B. A., Ph.D., D. Sc.; Lecturer on Physics, Kings College, New-castle-upon-Tyne,* Journal of the Royal Institute of British Architects, *No. 66, Portland Place, W.1, London, England.*

From Vitruvius to Johns-Manville (etc.), the history of acoustical treatment is reviewed by Professor Richardson. Earliest known acoustic aids were resonance cavities in cell form found under the front tiers of seats in Roman amphitheaters. This article, while interesting to a historian, will be of little use to twentieth-century architects.

The Transmission of Solar Radiation through Flat Glass under Summer Conditions. *George V. Parmelee, Published in the Oct.-Nov. 1945 issue of* Heating, Piping, and Air Conditioning. *Kenney Publishing Co., 6 No. Michigan Avenue, Chicago 2, Ill. 14 pp., graphs, tables, diagrams.*

This article presents a mathematical analysis of the transmission and absorption characteristics of unshaded, unfigured, smooth, flat glass for direct radiation from the sun and scattered radiation from the sky. The results are presented in the form of curves for single and double glass of all degrees of transmissivity and include the highly transparent types such as ordinary window glass, as well as those types, such as the so-called heat absorbing glasses, which absorb much infrared radiation.

In addition, charts are presented showing the rate of heat transfer to the interior from the surfaces of the glass, as it is influenced by the indoor and outdoor temperatures and by the amount of solar energy absorbed by the glass. The transmission characteristics of some typical window glasses are given together with data on the intensity of the direct solar and sky radiations. A sample problem illustrates the use of the information.

The report is a mathematical parallel of exhaustive tests now being conducted by the American Society of Heating and Ventilating Engineers' Research Laboratory on the transmission of solar radiation.

Caulking Methods. *R. G. H. Salmon, in* The Architect's Journal, *45 The Avenue, Cheam, Surrey, England. Feb. 28, 1946. 2 pp.*

To quote directly, "The great interest now being aroused in new forms of building construction has focused . . . attention . . . on efficient jointing. It has been found quite impossible to seal joints between large units used in prefabricated building by . . . traditional methods, and a study of this particular work has brought the realization that much jointing even in ordinary stone and brick houses has, in the past, given rise to many serious, if not so obvious, failures."

(So, we remark in passing, does a new technique not only necessitate unforeseen changes in subsidiary techniques, but also re-emphasize inadequacies in the old which had become acceptable through long acquaintance.)

Materials traditional in England almost always are applied in a malleable state but set hard and become rigid. Since the joints themselves are not rigid, but may be subject to movement or vibration, and since such joints occur more widely than we think, the rigid filler cracks, falls out, and must be laboriously cleaned out and replaced—which is a temporary remedy. Even small joints which do not change size appreciably may be subject to vibration due to traffic or nearby machinery. The problem calls for a material which will seal the joint under all such conditions, which will retain sufficient plasticity, elasticity, and adhesion to conform to changes and yet remain weather-tight.

After pointing out that many compounds advertised as "permanently plastic" won't remain pliable for more than a matter of weeks, Mr. Salmon sets up a list of properties desirable in a first-rate caulking compound:

1. It must retain excellent adhesion, plasticity, and elasticity.

2. It should be paintable; that is, it should "take a surface skin."

3. It must be resistant to the action of alkalies, metals, etc.; and it must be non-staining.

4. It must hold its place and retain its properties under extremes of temperature.

5. It must be easy to apply over a wide range of working temperatures.

Admitting that these desiderata are contradictory—that retention of plasticity and rapid skin formation, or stickiness and ease of application, don't seem compatible—there are yet a few effective compounds. Mr. Salmon publishes satisfactory formulae, most of which are not commercially available at least in England, which are strikingly similar to their less satisfactory commercial parallels. He states that pre-treatment of the oils used in formulating caulking compounds is of first importance, and that selection of fillers and the process of manufacture, though less important, have great bearing on the nature of the material. The article concludes with a short exposition on the use of the caulking gun, which we had not realized was a peculiarly American development.

The Relative Efficiency of Single and Multiple Windows. *Percy J. Waldram, F.S.I. from the* Journal of the Royal Institute of British Architects, *No. 66 Portland Place, W. 1, London, England. Nov. 1945, 2 pp., graphs.*

Mr. Waldram's article supplements the N.P.L. tables (*The Natural Lighting of Houses and Flats, with Graded Daylight Factor Tables*—reviewed in PROGRESSIVE ARCHITECTURE, November 1945) for determining the efficiency of single windows in lighting a room. The N.P.L. tables are limited to single windows not exceeding 6' x 6'. Mr. Waldram presents graphs comparing performance of two and three windows 3' x 6' and 6' center to center, with one window equal in area to the aggregate of the others. The slight disparity in plotted graphs leads to the conclusion that the N.P.L. tables might be used for both single and multiple windows equal in aggregate area with but slight error. Another graph enables the architect to determine at a glance the penetration of a sky factor of 0.5% for windows up to 20 feet by 20 feet.

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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.

Acoustics

1-45. *Burgess Acousti-Booth Scout Model No. 602.* Illus. pamphlet on an all-steel, sound-absorbent telephone booth for wall or shelf installation. Burgess-Manning Co.

1-38. *Burgess Acousti-Booth (Bulletin 459),* Burgess-Manning Co. Reviewed Apr.

1-39. *Zonolite Acoustical Plastic,* Universal Zonolite Insulation Co. Reviewed Apr.

Adhesives

1-36. *Manual of Technical Data,* 23 pp., illus. On "Pliobond" plastic adhesive: description, possible bond types, properties, applications; data on preparing surfaces for bonding, special information and precautions; specifications. U. S. Plywood Corp., Industrial Adhesives Div.

Airport Equipment

1-40. *Announcing Bayley All Metal Prefabricated Tee Hangar,* William Bayley Co. Reviewed Apr.

1-41. *Low Cost Housing for Small Airplanes, AIA File 19-B,* Timber Engineering Co. Reviewed Apr.

Air Treatment

1-42. *AAF in Industry (Form 502),* American Air Filter Co., Inc. Reviewed Apr.

1-43. *Electro-Matic Self-Cleaning Air Filter, Model E (Bulletin 250-E),* 16 pp., illus. Description of electric precipitator built in standardized, self-contained sections easy to install. Technical and installation data, suggested specifications, capacity and dimension chart. American Air Filter Co., Inc.

1-44. *Disinfectaire Ultraviolet Germicidal Equipment (Cat. 845),* Art Metal Co. Reviewed Apr.

1-46. *Filtered Air (Form 501),* 18 pp., illus. Information on air filtering from standpoints of health, efficiency, economy. American Air Filter Co., Inc.

1-47. *Roto-Clone (Dust Control) (Form 270),* 16-p. bulletin illustrating installations of industrial dust control system. American Air Filter Co., Inc.

Communications Systems

3-60. *Executone Inter-Communication for the Home,* illus. consumer folder (4x7½) on a 2-way home inter-com appliance operable on 110 volts A.C. or D.C. Executone, Inc.

9-48. *Talk-A-Phone Presents Complete Inter-Communication Systems (Cat. 1944),* 8 pp., illus. Catalog of intercom models available for limited or unlimited station systems. Talk-A-Phone Mfg. Co.

Concrete

3-61. *Concrete Floors,* Lone Star Cement Corp. Reviewed Apr.

Concrete, Air Entraining

3-58. *Manual for Using Darex AEA,* 18-p. booklet (5-3/5 x 9). Examples given to estimate correct amounts of "Darex AEA" water-soluble compound to be mixed with cement for air entrainment. Factor and strength tables, working curves. Dewey and Almy Chemical Co.

Connectors

3-62. *Teco Connectors for Timber Construction in Railroad Service, AIA File 19-B,* Timber Engineering Co. Reviewed Apr.

Corrosion Resistance

3-63. *Corrosion-Resistant Materials and Equipment (Bulletin E),* 14 pp., illus. Brief descriptions of synthetic plastic materials and their uses as linings, paints, tubing, rods, rigid or flexible sheets, gaskets, masking films; on acid-proof masonry; on chemical stoneware, lead coatings, etc. U. S. Stoneware Co.

Drafting Room Equipment

4-46. *More Useful from Any Angle,* illus. folder (3½ x 6¼) describing a transparent plastic triangle, adjustable to any angle. Charles Bruning Co., Inc.

4-48. *Protect and Preserve with Bruning Dulseal.* Illus. folder on transparent adhesive sheet of cellulose acetate for protecting drawings, tracings, prints, etc. Charles Bruning Co., Inc.

Fireplace Equipment

6-61. *Bennett Fireplace Supplies,* Bennett-Ireland, Fireplace Div. Reviewed Apr.

Floors, Coverings

6-59. *Ideas for Better Business Floors (F-362-645),* Armstrong Cork Co. Reviewed Apr.

Floor Finishes

6-62. *Roach Repellent Cement,* H. H. Robertson Co. Reviewed Apr.

2 folders on a monolithically applied magnesium finish for wood or concrete sub-floors and on preparation of sub-floors for its application. From H. H. Robertson Company:

6-63. *Hubbellite (T-1-45).*

6-64. *How to Prepare Sub-Floors for Hubbellite Floor Surfacing (T-4-44).*

Garage Equipment

7-43. *Your Own Private Doorman,* Aviation Corp., Horton Mfg. Div. Reviewed Apr.

Glass

7-44. *Magnalite Diffusing Glass, AIA File 26A 526,* J. Merrill Richards. Reviewed Apr.

Gypsum Products

7-45. *Beauty and Quiet (SC-43),* U. S. Gypsum Co., Acoustical Tile Div. Reviewed Apr.

7-46. *Pyrobar Gypsum Short Span Roof Tile (CD-18),* 6-p. illus. folder on 30" precast gypsum units supported by sub-purlins, for short-span roof tiling; details; specifications. U. S. Gypsum Co.

7-47. *Gyplap Measures Up,* 12-p. illus. consumer booklet (3¼ x 6⅛) on fireproof sheathing with gypsum core. U. S. Gypsum Co.

7-48. *"Quiet, Please" with Auditone (SC-53-Rev.),* 10 pp., illus. Descriptive manual on a wood fibre acoustical tile; erection and maintenance data; specifications; detail drawings. U. S. Gypsum Co., Acoustical Tile Div.

Hardware

8-91. *Corbin Locking Devices and Special Hardware for Metal Application Specification Products (Cat. K396, 7th ed., revised),* 32 pp., illus. Catalog of bronze locking devices for various special uses, among them hospital equipment: medicine cabinets, patients' lockers, blanket warmers, narcotic compartments, etc. American Hardware Corp., P. & F. Corbin Div.

8-88. *Hardware for Sound-Deadening Doors (K-335),* 8 pp. List and drawings of heavy-duty bolts, door checks, turnbuckles, lock and lever handles, butts, especially adapted for sound-deadening of doors. American Hardware Corp., P. & F. Corbin Div.

8-87. *Solid Brass and Bronze Hardware,* Copper & Brass Research Assn. Reviewed Apr.

Heating Equipment

8-92. *Standard Electric-Welded Steel Boilers (Bulletin S-67), AIA File 30C-1,* 8-p. illus. bulletin on boilers featuring low water line; smokeless, direct draft, coal hand-firing, stoker-, oil-, or gas-firing types. Dimensions, details. Brownell Co.

8-83. *A Step Ahead in Hospital Heating (Bulletin 633), AIA File 30-C23,* 24 pp., illus. Discussion in understandable terms of a differential vacuum steam heating system as applied to hospitals; data on actual installations. C. A. Dunham Co.

8-85. *Series 15 Unit Heater, AIA-30-D11 (Cat. 15c-2),* 4-p. illus. folder on unit heaters with copper fins and tubes; capacity to 209,000 Btu. Feders Mfg. Co., Inc., Industrial Heating Div.

8-89. *Tempered-Aire (H-550),* Gar Wood Industries, Inc., Heating Div. Reviewed Apr.

8-90. *Hot Water Circulators, AIA File 29-D-2,* Vita Motivator Co. Reviewed Apr.

Hospital Equipment

8-93. *Capital Cubicles Turn Hospital Wards Into Private Rooms,* illus. sheet on overhead metal track and curtains to form cubicles for hospital wards; specification sheet; 2 pages of typical layouts. Capital Cubicle Co.

Insulation

9-46. *B-H No. 1 Insulating Cement,* Baldwin-Hill Co. Reviewed Apr.

9-47. *PC Foamglas Insulation for Tanks, Towers, Ducts, and Breeching (G5711),* Pittsburgh Corning Corp. Reviewed Apr.

Kitchen Equipment, Commercial

11-09. *Case Histories of Successful Mass-Feeding Operations,* G. S. Blodgett Co., Inc. Reviewed Apr.

Laboratory Equipment

12-61. *Laboratory Equipment (Bulletin 498),* U. S. Stoneware Co. Reviewed Apr.

Lighting Equipment

12-62. *Lighting with Corning Flur-O-Guide,* Corning Glass Works, Lighting Div. Reviewed Apr.

12-63. *Flexible Lighting to Step Up Furniture and Appliance Displays (Y-548),* 6-p. illus. folder presenting lighting ideas for furniture and appliance stores, sketched by E. H. Silverman and Abraham Levy. General Electric Co., Lamp Dept.

12-59. *G-E Slimline and Circline Lamps Seen in Many Roles (LM-20),* 12 pp. Reprints of articles by C. M. Cutler and J. L. Tugman. Technical and design data on "Slimline" fluorescent lamps for store or theater lighting; sketches. General Electric Co., Lamp Dept.

12-64. *Let There Be Light,* 8-p. illus. reprint of article by Dr. R. M. Stecher. Technical discussion of lighting for reading purposes, particularly in relation to libraries. General Electric Co., Lamp Dept.

12-65. *Light for Tomorrow's Food Store,* 2-p. illus. folder. Reprint of article by James M. Ketch, illuminating engineer. General discussion of requirements for over-all illumination of food-stores. General Electric Co., Lamp Dept.

12-66. *Slimline Diameters and Lengths Presage Expansion of the Lighting Art.* Illus. folder. Data on thin fluorescent lamps; diameters, lengths, arrangement patterns, ballasts. General Electric Co., Lamp Dept.

Metals

13-31. *Wrought Iron for Sewage Treatment and Disposal Installations,* A. M. Byers Co. Reviewed Apr.

13-32. *Rigidized Metals,* Rigid-Tex Corp. Reviewed Apr.

13-33. *Expanded Metals,* U. S. Gypsum Co. Reviewed Apr.

Paint

16-80. *The Proper Use of Color in Hospital Decoration,* O'Brien Varnish Co. Reviewed Apr.

16-81. *Texolite Color Selector,* illus. folder on uses of a washable interior paint, a not-so-washable interior paint, and a flat paint in powder form. Color charts. U. S. Gypsum Co.

Photomurals

16-92. *Chosen by America's Four New Streamliners,* 8-p. illus. booklet (4x8½) presenting photomural installations on 4 railroad trains. Kaufmann & Fabry Co.

16-82. *From Blank Walls to Pictorial Epics with Kaufmann & Fabry Photomurals,* Kaufmann & Fabry Co. Reviewed Apr.

16-93. *No Priorities on Smartness or Increased Business,* 4-p. folder showing photomurals used in restaurants and bars. Kaufmann & Fabry Co.

Piping Equipment

16-83. *How to Cash in on the Silver Alloy Ring,* 10-p. illus. booklet on "Silbraz" corrosion-vibration resistant joint for bonding I.P.S. copper tubing and brass pipe. Air Reduction Sales Co.

16-84. *Functional Spring Hangers and Vibration Eliminators (Cat. 2026),* 32-p. illus. catalog on design of flexible power piping layouts. Information on standard and special spring hangers and vibration eliminators; detail drawings; engineering data. Blaw-Knox Co., Power Piping Div.

16-85. *Duriron Acid-Proof Equipment, AIA File 29b81 (Bulletin 702-p),* Duriron Co., Inc. Reviewed Apr.

16-86. *Better Drainage Made Easy,* Fibre Conduit Co. Reviewed Apr.

16-87. *Orangeburg Fibre Conduit (Cat. 77),* 16-p. illus. catalog on standard conduit for concrete encasement and "Nocrete" conduit for underground installation without concrete. Data on fittings; dimensions. Fibre Conduit Co.

16-94. *Orangeburg Pipe (Cat. 304),* 20 pp., illus., on sewer pipe service records, industrial uses, irrigation lines, laying instructions, joining to other kinds of piping; data on perforated fiber pipe for drainage purposes. Fibre Conduit Co.

Plastics

16-88. *Selecting the Right Thermosetting Molding Materials,* 36 pp., illus. (6x9). Compiled as a brief guide to proper choice of plastic for final molded part. Definition, selection information, properties of thermosetting molding materials. Bakelite Corp.

16-89. *Chemaco Molding Materials,* Chemaco Corp. Reviewed Apr.

16-78. *Cellulosic Thermoplastics (Form 500-29-A),* 20 pp. Illus. discussion of dimensional stability of cellulose thermoplastics at high temperatures and humidities. Test data, physical property tables. Hercules Powder Co., Cellulose Products Dept.

16-96. *Why Cellulose Plastics? (Form 500-19),* 4-p. folder, color-illustrating manufacturing uses for cellulose acetate-based plastics. Hercules Powder Co., Cellulose Products Dept.

16-90. *Plastics, The Story of An Industry,* Committee on Plastics Education, Society of the Plastics Industry, Inc. Reviewed Apr.

Plumbing Equipment

16-95. *Recipes for Hot Water,* 14-p. illus. consumer booklet (6 x 9) on automatic electric water heaters for the home; single, twin, table top models; capacities 10 to 86 gal. Edison General Electric (Hotpoint).

Pump Equipment

16-91. *Worthington Vertical Turbine Pumps (Bulletin H-450-B33),* 12-p. illus. booklet presenting photos of typical applications of vertical turbine pumps having capacity ranges to 12,000 gpm. Worthington Pump and Machinery Corp., Pump Div.

Stage Design

19-54. *So You Are Going to Build A Stage,* illus. folder on an engineering service for stage and television studio planners; specification sheet on standard stage rigging for underhung type gridiron using wire guide counterweight equipment. J. R. Clancy, Inc.

Steel

19-51. *Eastern Stainless Steel Sheets, A Condensed Handbook for the Engineer and Layman,* Eastern Stainless Steel Corp. Reviewed Apr.

19-55. *Laclede Steel Joists, AIA-13G,* 36 pp., illus. Lightweight steel joists: construction and standards data; design tables; specifications; accessories; strengths. Steel Joist Institute Code of Standard Practice. Laclede Steel Co.

Trim, Metal

20-22. *Chromedge,* B. & T. Metals Co. Reviewed Apr.

Welding

23-59. *Airco Arc Welding Accessories (Cat. 130),* Air Reduction Sales Co. Reviewed Apr.

23-60. *The Welding, Flame Cutting, and Flame Descaling of Wrought Iron,* A. M. Byers Co. Reviewed Apr.

23-61. *Arc Welding Electrodes (ADW-75),* Wilson Welder and Metals Co., Inc. Reviewed Apr.

MANUFACTURERS' LITERATURE

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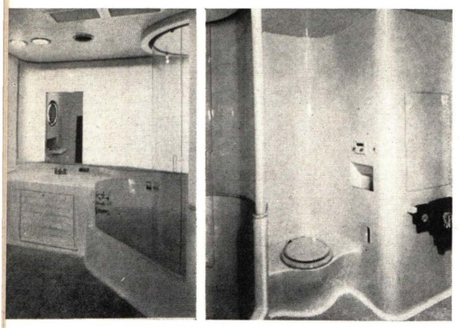


Immediately above are two views of the internally streamlined bathroom of the Fritz B. Burns model house on a $75,000 lot in Los Angeles. (See p. 96, PROGRESSIVE ARCHITECTURE, January 1946; *Architectural Forum*, March 1946; *Arch. Record*, April 1946.) Note built-in wall radio, magazine rack, and ash-slot. The Plexiglas walls and shower stall are undoubtedly sanitary, but they hardly seem consistent. Mr. Burns' original news release said, in part: ". . . these fantastic stories about houses of . . . plastics . . . are misleading. They're confusing the public." Not only the public, Mr. Burns.

MODULAR COORDINATION IN KITCHENS

According to the Subcommittee on Modular Products of ASA Committee A62 (Modular Coordination), a study committee on kitchen equipment is at work under the Chairmanship of John C. Thornton, architect, of the Detroit Edison Company in this field. We can imagine no field in which coordination is more necessary—nor, we should think, any in which it would be more difficult. Let's hope the protruding range and the sore-thumb-like refrigerator are on the way out.

SANDWICH WALLS, FOAMED PLASTICS . . .

We've heard, from time to time, of various multilayer walling materials; several of these "sandwich" products have been developed experimentally. Now Chrysler Corporation's Cycleweld Division announces a war development, a sandwich panel: a nitrogen-filled hard sponge rubber core with sheet aluminum surfaces. To resist termites and other bugs in the South Pacific, Cycleweld developed instrument cases and houses for technicians, using this new product bonded together with a special adhesive, and eliminating nails, rivets, or other bonding agents around which termites might work their way in.

Du Pont also announces a foamed plastic, cellular cellulose acetate ("CCA" for short), lighter than cork, which has good thermal insulating properties and "remarkable" structural strength when bonded between two sheets of metal, wood, or plastic. It is of uniform density—a mass of pin-point-sized bubbles—and will not disintegrate under vibration, resists heat sufficiently so it can be bonded with thermo-setting resins, and may be tooled with ordinary woodworking machinery. Its density can be controlled in manufacture to produce a product weighing from four to nine lb per cu ft as desired. Du Pont stresses its suitability as a core for a sandwich product.

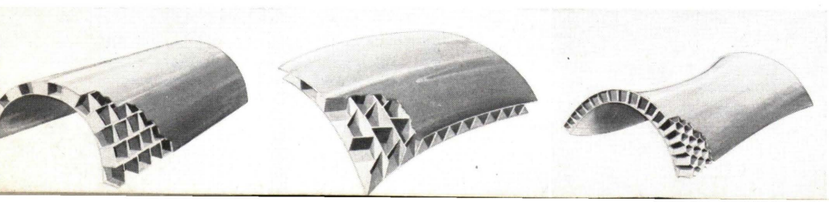
And of course there's the Glenn L. Martin—U. S. Plywood Honeycomb sandwich, shown below. How will you like, Dear Reader, to live between "sandwich" walls, eat sandwiches at lunch, and marry a girl who collects Sandwich glass?

BUCKMINSTER FULLER AGAIN

The current housing crisis would have been incomplete without a re-appearance of R. Buckminster Fuller, the perennial idea man of prefabrication. As you've doubtless heard long since, he's the still-bubbling genius of Fuller Houses, Inc., with a new igloo-like house of aluminum alloys, stainless steel, and plastics, supported by cables from a central mast, with a revolving air intake on the roof.

Apparently Beechcraft, airplane manufacturers, will take your order. The house measures 33 ft in diameter, 22 ft in height, will cost $6500 (if manufacture can start 50,000 at a time), and will be completely equipped with prefabricated bathroom, refrigerator, dishwasher, clotheswasher, heating, and air conditioning. It is one of the most stimulating of recent developments, partly because Fuller is willing to discard accepted conventions to get at the root of the house problem. But it is *outré*, it will have hard sledding, and the next time we have a housing crisis, a Fuller will reappear to shock us into Fuller realization of our difficulties. That's a prognostication, son!

Below, three variations of the Honeycomb structural sandwich (see also last month's column) designed to meet conditions imposed by compound curvatures. Left, square-patterned core for single curvatures; center, trapezoidal core for double curvatures; right, standard hexagonal core for saddle shapes. The Glenn L. Martin Co., and the U. S. Plywood Corp. announced it jointly.



THIS MONTH'S PRODUCTS

AIR CONDITIONING

Tamper-Proof Cap for Air Diffuser. Cap added to base of damper control screw in "K" type "Kno-Draft" air diffuser (removable only with special screwdriver) locks damper in desired setting. W. B. Connor Engineering Corp., 114 East 32nd St., New York 16, N. Y.

Climate Cabinet. Home cooling unit installable in central warm-air heating system; controls temperature and humidity in summer months. Westinghouse Electric Appliance Div., 306 Fourth Ave., P. O. Box 1017, Pittsburgh 30, Pa.

CONSTRUCTION EQUIPMENT

Electro-Bond Woodwelder. Portable, high-frequency, spot welding gun for polymerizing (in 10 sec. or less) bonding resin through wall board panel or plaster board; simplifies forming plywood curves, scrolls; welds mortised and other types of joints under pressure; eliminates nailing. Short Wave Plastic Forming Co., 2921 W. Alameda Ave., Burbank, Calif.

Janitrol Portable Heater. Gasoline-, kerosene-, or light fuel oil-burning unit operating on whirling-flame principle. For heating construction materials, equipment, service lines, during winter weather. Surface Combustion Corp., 2375 Dorr St., Toledo, Ohio.

DOORS, GARAGE

E-Z Lift Garage Door. Overhead type of heavy-gage aluminum for 8' x 7' door frame; lifting mechanism operates within frame; sealed-in ball bearings; quick installation; fingertip operation. Wilson Foundry & Machine Co., Pontiac 11, Mich.

FABRIC

Plexon. Plastic-coated yarn for upholstery fabrics and webbing. Weatherproof, resistant to oil, grease, mild acids, heat; will not mildew or sag; cleans by damp-cloth sponging. Fabrics to be made in colors, patterns; 2" webbing, 36" and 5" widths. Plexon, Inc., 212 Fifth Ave., New York 10, N. Y.

PLUMBING EQUIPMENT

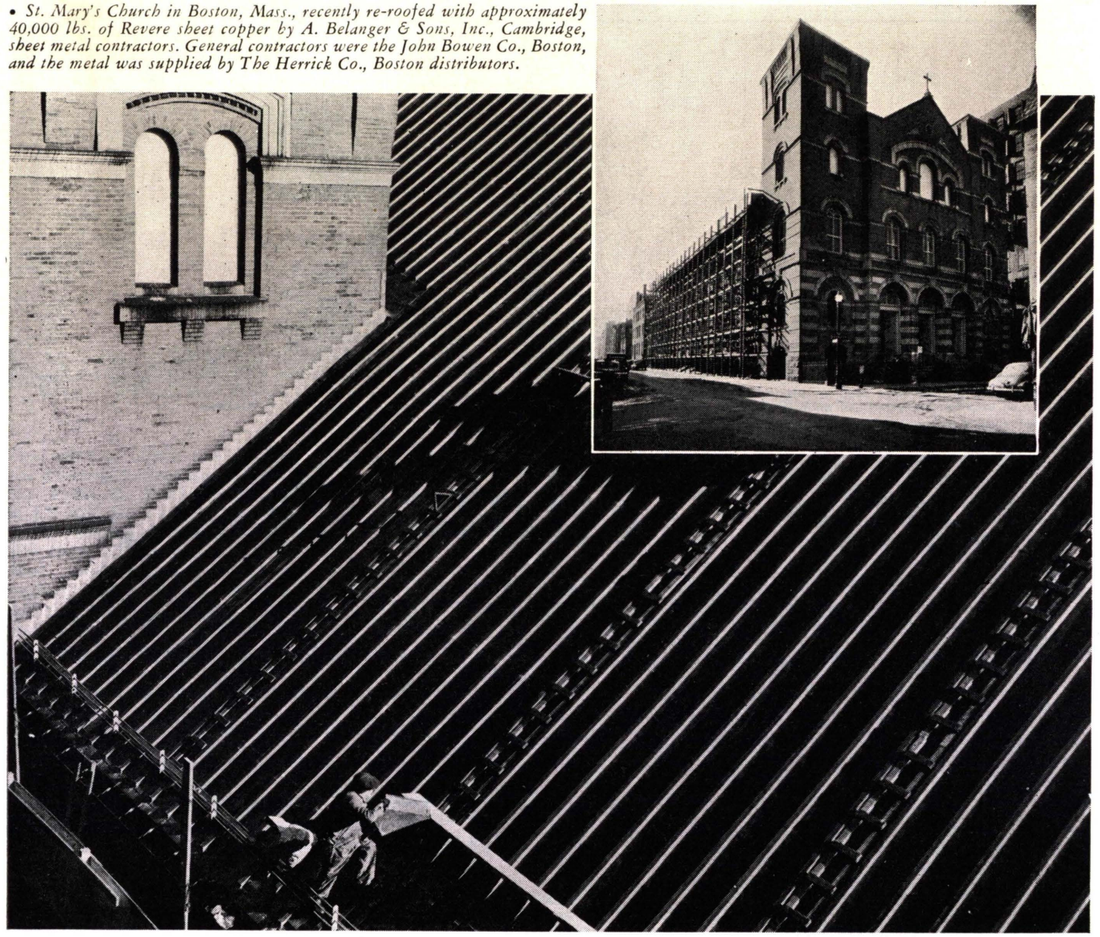
Model 50 Plastic Toilet Seat. Non-breakable, fire- and moisture-proof, in black and white; of phenolic resin plastic with "self-sustaining" hinges in plastic housings which need no lubrication, will not break or freeze; fits all standard bowls. Sperzel Co., Dept. PA, 911 Hennepin Ave., Minneapolis 3, Minn.

3 Point Pipe Gage. Steel, pocket-size device for quick, accurate measurement of ⅛" to 12" pipe (in any position), all electrical conduit and electrical metallic tubing; gives drill size for tapping; also bears inch-metric rule. Three-Point Gage Co., 3767 N. Racine Ave., Chicago 13, Ill.

WINDOWS

Stormtite Windows. Of prefabricated aluminum, complete with hardware, weatherstripping, in standard sizes; residential double hung, casement, glass block construction, basement, architectural and casement projected types. Albert Storms & Co., 101 Park Ave., New York 17, N. Y.

• *St. Mary's Church in Boston, Mass., recently re-roofed with approximately 40,000 lbs. of Revere sheet copper by A. Belanger & Sons, Inc., Cambridge, sheet metal contractors. General contractors were the John Bowen Co., Boston, and the metal was supplied by The Herrick Co., Boston distributors.*



HEADQUARTERS FOR THE FACTS ON SHEET COPPER CONSTRUCTION

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REVIEWS

BOOKS

THE FAMILY'S DILEMMA

The Book of Houses. John P. Dean and Simon Breines. Crown Publishers, 419 Fourth Ave., New York, 1946. 144 pp., illustrated. $2.00

Unless the acute housing shortage is relieved by speedy, large-scale production of homes, an estimated 3½ million families will be without homes by the end of 1946; millions of other families want new homes. The consequent widespread interest in home building and purchasing is understandable. Publishers are striving strenuously to fill an apparently insatiable demand for books on these subjects. New books on houses are potential best-sellers.

When one of these is unabashedly called *The Book of Houses*, its right to that exclusive title is immediately under suspicion. The burden of proving such right falls upon it. This book does not sustain its claim. However, despite its misguided choice of name, it does have some value for a prospective home purchaser.

One of the authors, John P. Dean, regional economist of the Federal Public Housing Authority, recently published a scholarly, candid inquiry into the soundness of home ownership.* The several chapters on the subject in *The Book of Houses* heavily draws upon the earlier work. Their frank, factual information will be helpful to one in the quandary of whether to build or to rent. The order of choice indicated as proper for the average family at this point is: to rent a single-family house, to buy a second-hand one, to buy a ready-built, and lastly, to build a house to suit individual tastes. This last alternative is given little encouragement.

These chapters on home ownership, the best in the book, briefly discuss the financial and legal hazards of home purchasing. These hazards are not minimized. Their seriousness must be understood if this nation is to avoid a repetition of the disastrously high foreclosure totals of the early 1930's.

The name, as co-author, of Simon Breines, who has been associated with modern, progressive house design on the East Coast, leads one to expect more than this book gives. The authors realistically state the fact that, at the lower cost levels, homes of good modern design are seldom available to the prospective home purchaser. "The writers personally feel that a modern house will yield more housing for your money. Most home-purchasing families will find few if any *good* modern homes on the market to choose from. . . . For some time to come, good modern is likely to remain a luxury product of the well-to-do." Failure by the authors forcibly to demonstrate that good modern need not be a luxury product is a cause of disappointment.

The photographs show a few modified modern houses, but chiefly the usual contractor-built houses, the eclectic, half-timber, Cape Cod, French chateau adaptations, and all the other synthetic architectural styles which the last fifty years have produced. House plans of the latter group are intelligently analyzed and their faults are pointed out. Their shortcomings are skillfully contrasted with the merits of their prototypes.

The book contains no bibliography, but the frequent use made of sketches and illustrations from Federal Housing Administration publications recalls the refreshing excellence of these Government pamphlets. Some of the material appeared in *FHA Technical Bulletin No. 4, Principles of Planning Small Houses, FHA Land Planning Bulletin No. 1, Successful Subdivisions*, and in *FHA Technical Bulletin No. 7, Planning Profitable Neighborhoods*. This re-use highlights the value of these booklets, which are available for a few cents from the Superintendent of Documents, Washington, D. C. Recommendation might here be made also of *FHA Technical*

(Continued on page 104)

*Home Ownership: Is It Sound? John P. Dean. Harper and Bros., New York, 1945. 215 pp.

REVIEWS

(Continued from page 102)

Bulletin No. 1, Recent Developments in Dwelling Construction, and particularly of *No. 2, Modern Design.*

Other than the points of merit mentioned, little can be found to distinguish this book from any one of several recent books in the same field. The usual check lists for prospective home owners and sketchy discussions of estimated costs, neighborhoods, the lot, house plans, kitchen and bath, construction details, remodeling, prefabrication, style, vacation cottages, are all here. To the progressive architect, this book offers nothing new.

LAWRENCE E. MAWN

INSIDE WRITING

My Father Who Is On Earth. John Lloyd Wright. G. P. Putnam's Sons, 2 W. 45 St., New York, N. Y., 1946. 195 pp., illus. $3.50

To help you decide whether you may want to read this intimate account of the Wright family, we offer a typical page:

"A fifteen-foot Christmas tree, fully trimmed, cornucopias and all, sparkled in the center of the octagon. The sound of sleighbells signaled Santa's arrival with his bag of gifts which were passed out to each person by name. The grown-ups danced, the children played. Papa was always the life of the party. It seemed that the party was given for him and the other children. It never started till he arrived and it ended when he left. Mrs. Waller was a gracious hostess.

"Papa liked Mrs. Waller—Mr. Waller, too! Mrs. Waller liked Papa—so did Mr. Waller!

"Mother always looked pretty at the parties. She wore the dresses Papa designed for her.

"Papa designed most of Mama's dresses. Most of Mama's dresses were brown!

"When the Susan Laurence Dana Estate was completed in Springfield, Mrs. Dana threw a housewarming for everyone who had worked on the building. It was really a mixed crowd, all formally dressed in owned or rented attire. One of the hod carriers brought his twelve children. Except for the formal getups, it could have been called a democratic affair. Papa was master of ceremonies. He looked like a Three-Tail Pasha among his people. I think the party was given for him.

"Papa liked Mrs. Dana!

"Mrs. Dana liked Papa!

"I liked to smell her *Chanel.* So did Paa-pa."

C. M.

TRIPLE CONFUSION

Building Today. Martin S. Briggs. Oxford University Press, London, 1944. 112 pp. $2.00

Our Building Inheritance. W. H. Godfrey. Faber and Faber Ltd., London, 1945. 87 pp. 10s. 6d.

Architecture Arising. Howard Robertson. Faber and Faber Ltd., London, 1945. 125 pp. 10s. 6d.

Godfrey, Briggs, and Robertson present opinions of three confused architects. They deplore the existing esthetics and functional chaos of our cities, towns, and rural areas. They abjure "extremes" either of modernism or traditionalism and each flounders in the quandries of city planning. But they cannot be said to agree; each has his own point of view and pet proposals. Without doubt, "natural" growth in certain byways of England, America, and probably every other country has produced ingratiating and successful towns, market places, shopping centers, and streets. It is for the protection of these against modern improvements that Godfrey pleads. I suspect that not everyone would agree with his appraisal of what should be retained or

(Continued on page 106)

REVIEWS

(Continued from page 104)

his damnation of everything contemporary because it may not conform to the existing patterns.

Like Godfrey, Briggs eschews modern design in architecture; usually labeling it "foreign" or "Central European." Both authors are guilty of trying and convicting the wrong culprit—and without permitting a defense. The sins they cite to damn contemporary architecture are those of planless speculation and pseudo-modern eclecticism. That Piccadilly Circus and Times Square are ugly and uninspiring, though they maintain an appeal for millions, may be true; but that one or two items of fairly clean (non-conforming) design are responsible for the general untidiness of the scene would be hard to prove.

Traditionalists have long pointed out that eclecticism need not be wholly evil. Robertson's case for design which stems from traditions is a healthy reappraisal of this thesis by one who understands and appreciates the best of contemporary work—and his argument is convincing. I think it worth every architect's time to read this book, which points to some of contemporary architecture's prize productions as evidence that a new tradition, based upon ancient knowledge of building materials and human desires, is being built up. Eclecticism, according to Robertson, need not be the slavish imitation even of Le Corbusier's idioms, but rather an appreciative understanding of what such exceptional geniuses are able to produce.

Unfortunately, *Architecture Arising* is weakened by its city planning discussion. It does not suffer, though, from a lack of imagination, as do the Briggs and Godfrey books. Robertson's proposal for free-standing buildings in city centers is a sensible and reasonable attempt to solve circulation and space problems, but it is too much an architect's concept. It presupposes a continuous piling-up in central areas and merely creates a more humane (trees, safety zones, parks) treatment of congestion. Though it belies Godfrey's assurance that all contemporary architecture must be oppressive, it would not succeed in preventing a spiral of crowding in shopping and commercial areas.

The architect's great hurdles are esthetics and social goals and these books indicate healthy disagreement.

WILLIAM SMULL

TO CATCH UP

Atomic Energy in War and Peace. Gessner G. Hawley and Sigmund W. Leifson. Reinhold Publishing Corporation, 330 W. 42 St., New York, N. Y., 1945. 211 pp., illus. $2.50

This small book, explaining atomic energy comprehensibly for those with a good high school background in science, indicates that there are many hidden properties of matter. Even the placid brick may have to be regarded with new respect if the concepts which led to the atomic bomb are fully explored. Atomic energy exists in all atoms, and its release will surely become simpler and more economical as well as more controllable as more research is developed.

On the other hand, it seems to us that the application of atomic research to the problems of shelter may revolutionize architectural conceptions completely. This still may be in the Jules Verne stage, but if a concerted effort, similar to the wartime search for the destructive utilization of atomic energy, were directed to peacetime problems, including building, infinitely more economical shelter might be achieved. Messrs. Hawley and Leifson limit their discussion to the atomic bomb and indicate clearly the drawbacks, under present limited knowledge, for everyday uses of atomic power. This is the book for catching up on the scientific achievement of our age in just a few hours of interesting reading.

DAVIDSON-SMULL

(Continued on page 108)

GUIDE TO PUBLISHED WORK

Prepared by CHARLOTTE ZAGER

THIS CLASSIFIED SUMMARY of the various types of buildings published in the architectural press here and abroad is to appear monthly, replacing the familiar reviews of periodicals. It is intended to afford our readers a more ready reference to the latest architectural work. The source magazines and their addresses also will be listed.*

CLUBS

"Remodeling Project — from Plush Spanish to Modern Club"—DOUGLAS HONNOLD, ARCHITECT; JOHN LAUTNER, ASSOCIATE. Photographs and floor plans. (Feb. Arts and Architecture, p. 41)

COMMERCIAL

"Commercial Buildings in North Africa"—A SURVEY BY J. WELLS HASTINGS of the great progress made in the design of commercial buildings in North Africa in the past 15 years. Fully illustrated. (Feb. Architect and Engineer, p. 16)

Offices.

"Design Office"—ROBERT SIDNEY DICKENS, DESIGNER. Informal office serves dual purpose of conference room and business office in compact setup. Photographs and floor plans. (Feb. Architectural Forum, p. 101)

"Design Laboratory"—BARTOLUCCI-WALDHEIM coordinates drafting, testing, and display facilities in remodeling a package design workroom. Photographs and floor plans. (Feb. Architectural Forum, p. 102)

Office Buildings.

Office Building, Mexico City—CARLOS OBREGON SANTACILIA, ARCHITECT. Bank-office building for Mexico's largest insurance company, covering a full block. Renderings and floor plans. (Feb. Architectural Forum, p. 116)

Aluminum Company of Canada Limited main office building at Arvida, Quebec, Canada—FETHERSTONHAUGH AND DURNFORD, ARCHITECTS. Photographs. (Feb. Journal of the R.A.I.C., p. 30)

(*) PERIODICALS NOTED IN THIS ISSUE:

ARCHITECT AND ENGINEER, 68 Post St., San Francisco 4, Calif.
ARCHITECTURAL FORUM, 350 Fifth Ave., New York 1, N. Y.
ARCHITECTURAL RECORD, 119 West 40th St., New York, N. Y.
ARTS AND ARCHITECTURE, 3305 Wilshire Blvd., Los Angeles 5, Calif.
DOMUS, Via Monte di Pieta, 15, Milan, Italy
HOUSE AND GARDEN, 420 Lexington Ave., New York 17, N. Y.
HOUSE BEAUTIFUL, 572 Madison Ave., New York 22, N. Y.
HOUSING PROGRESS, 95 Madison Ave., New York 16, N. Y.
JOURNAL OF THE R.A.I.C., 57 Queen Street West, Toronto 1, Canada
JOURNAL OF THE R.I.B.A., 66 Portland Place, London W. C. 1, England
PROGRESSIVE ARCHITECTURE-PENCIL POINTS, 330 West 42nd St., New York 18, N. Y.
THE AMERICAN CITY, 470 Fourth Ave., New York 16, N. Y.
THE AMERICAN HOME, 444 Madison Ave., New York, N. Y.
THE AMERICAN SCHOOL BOARD JOURNAL, 540 N. Milwaukee St., Milwaukee 1, Wis.
THE ARCHITECTS' JOURNAL, 45, The Avenue, Cheam, Surrey, England
THE ARCHITECTURAL REVIEW, 45, The Avenue, Cheam, Surrey, England
THE NATIONAL HOUSE BUILDER AND THE BUILDING DIGEST, 17 Stratford Place, London W. 1, England
THE NATION'S SCHOOLS, 919 N. Michigan, Chicago 11, Ill.

Showrooms.

Showroom for Wool Fabrics—ROBERT GRUEN ASSOCIATES, DESIGNERS. Moniteau Mills showroom and offices, New York. Photographs and floor plans. (Feb. Architectural Record, p. 122)

Showroom for Boys' Clothing—ROBERT GRUEN ASSOCIATES, DESIGNERS. Office and showroom for Windsor Clothing Co., New York. Photographs and floor plans. (Feb. Architectural Record, p. 126)

Stores.

Hobby Horse Shop, New York—GRUEN AND KRUMMECK, DESIGNERS. Photographs and floor plans. (Feb. Architectural Forum, p. 118)

Barton's Bonbonniere, New York—GRUEN AND KRUMMECK, DESIGNERS. Photographs and floor plans. (Feb. Architectural Forum, p. 119)

Department Store—J. GORDON CARR, ARCHITECT. Unique feature of this remodeling job was the unit design that uses prefabricated panels assembled at the site. Photographs and floor plans. (Feb. Architectural Forum, p. 120)

Gotham Hosiery Shop, New York—CARSON AND LUNDIN, ARCHITECTS. A tiny 8-foot store achieves maximum space and attention in a compact space. Photographs and floor plans. (Feb. Architectural Forum, p. 121)

Jewelry Shop—JOSE A. FERNANDEZ, ARCHITECT. Photographs and floor plans. (Feb. Architectural Forum, p. 122)

Rock-a-Bye Children's Clothing Store, Brooklyn, N. Y.—MORRIS LAPIDUS, ARCHITECT. A free-flow plan in tight areas. Photographs and floor plans. (Feb. Architectural Record, p. 100)

Rock-a-Bye Children's Furniture Store, Brooklyn, N. Y.—MORRIS LAPIDUS, ARCHITECT. A small store with large displays. Photographs and floor plans. (Feb. Architectural Record, p. 106)

Pat Darling Shops, Baltimore, Md.—JOSE A. FERNANDEZ, ARCHITECT. Photographs and floor plans. (Feb. Architectural Record, p. 108)

"Department Store for a Highway Location"—KETCHUM, GINA, AND SHARP, ARCHITECTS. Kawneer Co. store placed out in a country location for the convenience of the motorized farm trade. Elevation and plans. (Feb. Architectural Record, p. 112)

"Pace-Setter for a Candy Chain"—CHARLES C. S. DEAN, DESIGNER. Loft Candy Store, New York City. Photographs and floor plans. (Feb. Architectural Record, p. 114)

"Pioneer Design for Candy Shop"—First retail outlet for the Garrott Candy Co., St. Paul, Minn. Cleanliness is accented in the design by HAROLD SPITZNAGEL, ARCHITECT. Photographs and plans. (Feb. Architectural Record, p. 118)

EDUCATION

Articles.

"Eyes and Ears in School" — Part I: Audio-Visual Classroom Planning. PHILIP WILL, JR., ARCHITECT, discusses planning methods which could make audio-visual education practical in every kind of common classroom. Fully illustrated.

Part II: Light on Growing Children. The effect of better "architectural" planning upon the health of school children, from the viewpoint of better lighting, is treated by DR. DARELL B. HARMON, Director, Division of Educational Services, Texas State Department of Health. (Feb. Architectural Record, p. 66)

Schools.

"A Model Swiss Elementary School"—A. H. STEINER, ARCHITECT. The Kornhausbrucke School here shown represents in design, plan, and equipment the high standards of completeness and functional utility of the newest Swiss schools. Photographs and floor plans. (Feb. The American School Board Journal, p. 43)

"School Architecture from the Educational Administrator's Point of View"—An address given at the annual meeting of the Ontario Association of Architects by DR. J. G. ALTHOUSE, Chief Director, Department of Education, Province of Ontario. (Mar. Journal of the R.A.I.C., p. 49)

"Designed for Growth"—ERNEST J. KUMP, ARCHITECT. The aim for the White Oaks School at San Carlos, Calif., is that it become a true "neighborhood school," reflecting the needs of the community. Article by RUTH W. MELENDY, District Supt., Elementary Schools, San Carlos, Calif. Photographs, construction details, and floor plans. (Mar. The Nation's Schools, p. 34)

"New Elementary School Provides for Modern Educational Needs"—SAMUEL G. WIENER, ARCHITECT. Modern, 26-room Winnfield, La. school, built on plot adjacent to that of the high school. Includes an auditorium to serve both schools, so constructed as to enable rest of building to be shut off when it is used for community purposes. Photographs, construction details, floor plan. (Mar. The Nation's Schools, p. 38)

ENTERTAINMENT

Theaters.

"Theatre at Utrecht"—W. M. DUDOK, ARCHITECT. This Dutch theater tends to the romantic and picturesque rather than the monumental. Has the convenient combination of a restaurant with the auditorium. Photographs and floor plans. (Feb. The Architectural Review, p. 57)

"Theatre at Malmo"—LALLERSTEDT, LEWERENTZ, AND HELLDEN, DESIGNERS. The auditorium of this Swiss theater can be made to accommodate audiences of 1200, 800, or only 400 by merely drawing forward some laminated screens which run suspended in tracks in the ceiling. The unusually large revolving stage has an added apron stage projecting into the auditorium by as much as 29′ 6″, claimed to be something novel in Europe. Photographs, axial section, floor plans. (Mar. The Architectural Review, p. 72)

Radio Studio.

Broadcasting Studio—CARSON AND LUNDIN, ARCHITECTS. Illustration of a novel acoustical treatment developed for a small NBC studio, stressing more dispersion and less absorption of sound. Photographs and diagrams. (Feb. Architectural Forum, p. 98)

HEALTH

Hospitals.

Faith Hospital, St. Louis, Mo.—JOSEPH DENIS MURPHY, ARCHITECT; ANGELO G. CORRUBIA, ASSOCIATE; DR. A. J. SIGNORELLI, MEDICAL DIRECTOR. An outstanding example of sound basic planning, the Faith Hospital project is here presented for its over-all organization as a health-care facility. Use is to be made of new techniques in planning and construction, with the contention that modern hospital efficiency will be directly affected and help reduce the average length of stay of a patient. Renderings and floor plans. (Mar. Progressive Architecture, p. 52)

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GUIDE

(Continued from page 108)

Oxted and Limpsfield Hospital—H. EDMUND MATHEWS AND E. D. JEFFERIES MATHEWS, ARCHITECTS. A small hospital in a mixed agricultural and residential area in England, happily combining intimacy of character and efficiency of design. Photographs and floor plans. (Feb. The Architectural Review, p. 43)

HOUSING

Housing Projects.

"Emergency Housing"—Study made by three American soldiers of their own base in England showing how existing military installations could provide stop-gap shelter for the bombed-out civilians in that country. Residences, shopping center, and community center considered. Photographs, floor plans, and renderings. (Feb. Architectural Forum, p. 110)

Development Restricted to Houses of Contemporary Design, Little Switzerland, Knoxville, Tenn.—ALFRED AND JANE WEST CLAUSS, DESIGNERS. 10 houses have already been built in this cooperative development. Owners are assured permanent protection by clauses in their property deeds as to cost, modern design, and staggering of houses. Photographs, site plan, floor plans, and selected details. (Feb. Progressive Architecture, p. 66)

Bryn Gweled, A Cooperative Homestead Development in Pennsylvania—ANALYSIS AND DISCUSSION BY RITA DAVIDSON AND WILLIAM SMULL. Walter T. Robinson, Paul Beidler, Robert F. Bishop, Cornelius Van R. Bogert, Jr., architects. Full coverage of this Rochedale-type development, including founding, legal framework, and financing. Most of the houses built so far are of the contemporary expression. Photographs, site plans, floor plans. (Mar. Progressive Architecture, p. 65)

Project for a Group of Six Houses at Cheslyn Hay, Staffs, for the Cannock R. D. C.—W. J. PAGE, DESIGNER. Example of the policy of planning authorities to develop and reintegrate the existing small towns, at present urban centers, rather than to encourage additions to spread along the main roads. Floor plans, site plans, interior and exterior sketches. (The Architects' Journal for Feb. 21, p. 164)

Residences.

A Cottage at Carmel—Rendering by ANGELO HEWETSON, ARCHITECT. (Feb. Architect and Engineer, p. 9)

A Group of Small Homes—CHESTER H. TREICHEL, ARCHITECT. Renderings. (Feb. Architect and Engineer, p. 14)

"House Equipment Packaged"—BORG-WARNER'S utility unit, and its application to 12 houses built especially around it. Architects of the Kalamazoo, Mich., homes are Dow, Harris, Keck, Stone, Stubbins, Wills, Yost, and Lankton. Photographs and floor plans. (Feb. Architectural Forum, p. 81)

Vacation House—HUGH STUBBINS, JR., ARCHITECT. Drawing and floor plans. (Feb. Architectural Record, p. 91)

"Designed for Site and Season"—JOHN E. DINWIDDIE, ARCHITECT; GARRETT ECKBO, LANDSCAPE ARCHITECT. Residence in Walnut Creek, Calif. Photographs and floor plans. (Feb. Architectural Record, p. 92)

"Four Houses to Start Arizona's New Boom"—These four homes by ARTHUR T. BROWN, ARCHITECT, stress outdoor living. Elevations and floor plans. (Feb. Architectural Record, p. 94)

"Steep Site, Small Budget"—RAPHAEL S. SORIANO, DESIGNER. Interesting cube form on a difficult plot; Los Angeles, Calif. Photographs and floor plans. (Feb. Architectural Record, p. 96)

"Plan to Build in Four Stages"—RICHARD J. NEUTRA, ARCHITECT; DION NEUTRA, COLLABORATING. A house designed to be built in four steps, as finances allow. Elevation and floor plans. (Feb. Architectural Record, p. 98)

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GUIDE

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Case Study House 12—WHITNEY R. SMITH, ARCHITECT. Interesting use of the lath house in a design for a man who planned his home with housing for his horticultural collection in mind. Renderings, elevations, floor plans. (Feb. Arts and Architecture, p. 44)

"A Room on the Lake"—GIULIO MINOLETTI, ARCHITECT. A single-room house of modern design fulfilling all the various functions of living-, dining-, and bed-room. Curtains and sashes are used to separate the room into the distinct zones. Photographs and floor plans. (Jan. Domus, p. 38)

"One of the Great Houses in America" Full coverage of the A. R. Watzek house in Portland, Ore., DESIGNED BY JOHN YEON. Article by Elizabeth Gordon. Photographs and floor plans. (Feb. House Beautiful, p. 80)

Small Country House, Alpine Woods, N. Y.—GEORGE NEMENY, ARCHITECT. Sound basic contemporary thinking shines through incidental bows to tradition in this small house. Photographs. (Feb. Progressive Architecture, p. 63)

"Why Play Second Fiddle to a Wall-Eyed Pike?"—Small cabin for sportsman and nature-lovin' family built near the Des Moines River. Article by MARY K. KNUDSON. Photographs and floor plans. (Feb. The American Home, p. 19)

"It All Began With a Friendly Brook" Small summer house built right over a brook. Article by WILLARD B. PRINCE. Photographs. (Feb. The American Home, p. 22)

"High on a Rocky Perch Above Lake Tahoe"—Home rising above Lake Tahoe, Nev., on a steep rocky slope. Article by WILLIAM J. HENNESSEY. Photographs and floor plans. (Feb. The American Home, p. 24)

"Hideaway in the Treetops"—Weekend cabin built on inverted tripods 200 feet above White River at High Dive, Mo. Article by PAULINE AND CHARLES S. MARTZ. Photographs and floor plans. (Feb. The American Home, p. 27)

"Iowa Isn't California"—Story of a home built successfully in Iowa without a basement. Article by JEANETTE EYERLY. Photographs. (Feb. The American Home, p. 70)

"The Jemm Flatted House"—2-story house erected in Sussex, England, illustrating a new system of construction, the basis of which is a patented concrete pier brick. The pier brick is about the same size and weight of an ordinary brick, but the reinforced piers give it certain decided advantages over the ordinary brick. Article by JOHN E. M. MACGREGOR. Photographs, details, floor plans. (The Architects' Journal for Feb. 7, 1946, p. 127)

Remodelled Week-end House in U.S.A.—HENRY WRIGHT, DESIGNER. Remodeled Victorian summer home in Pennsylvania. Main new feature is an 18-foot high window serving both the living room and the bedroom on the south side, double glazed with sealed air space, and a removable winter window. Photographs and floor plans. (The Architects' Journal for Feb. 28, 1946, p. 179)

"The Coventry House"—The New Houses (No. 6—Designed by D. E. E. GIBSON, CITY ARCHITECT of Coventry, in collaboration with Radiation Limited. Design for a pair of semi-detached two-story houses of experimental construction and planning. The construction is of a tubular steel frame: three long tubular steel uprights reaching the full height of house, fixed at the four corners on corner foundation. The essential structure is completed by a horizontal lattice framework between, forming the floors and the roof. The structure lifts the house above the ground so that air circulates underneath, which serves to keep the house dry. Photographs and floor plans. (Feb. The National House Builder and the Building Digest, p. 13)

INTERIORS

"Ready Assistance"—5 proposals by as many architects from Domus to help those still with houses to reorganize with the little furniture remaining to them. Functional architectural arrangements are stressed. Photographs. (Jan. Domus, p. 6)

Display Partition—JEDD STOW REISNER, ARCHITECT ASSOCIATED; ARTEK-PASCOE, DESIGNERS. Photograph and construction details. (Mar. Progressive Architecture, p. 81)

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GUIDE

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Study Corner—FELIX AUGENFELD, ARCHITECT. Photograph and construction details of built-in desk. (Mar. Progressive Architecture, p. 83)

Children's Shoe Sales Unit—MORRIS LAPIDUS, ARCHITECT. Display and fitting platform. Photographs and construction details. (Mar. Progressive Architecture, p. 85)

"Color Goes to Work in a Community House"—Photographs of the results of *American Home's* collaboration with the Grosvenor Neighborhood House in N. Y. in redecorating two rooms in their community house. Vivid colors used generously to liven the formerly dull rooms. (Mar. The American Home, p. 44)

LANDSCAPE DESIGN

"Planning and Planting the Site"—DONALD M. CALL, ARCHITECT. Photographs. (Housing Progress, Winter 1946, p. 11)

MEMORIALS

"The Era of War Memorials"—Article by THADDEUS M. GRABOW, Chairman, Committee on War Memorials, Association of Landscape Architects, San Francisco Region. (Mar. Architect and Engineer, p. 6)

"Living Memorials in the Recreation Field"—Article by HOWARD JOHNSTON proposing that a recreation facility, building, or park, can best memorialize the spirit of those who fought in and for the war. (Mar. Recreation, p. 638)

"Trends in Living Memorials"—Article re brochure published by the American City Magazine Corporation, "Commemoration Thru Community Services." Forwards proposal that war memorial be a building of a worthwhile community life instead of a static memorial. Schematic arrangement for a living memorial by architect Antonin Raymond. (Feb. The American City, p. 89)

PLANNING

City.

"Proposed City Redevelopment"—POMERANCE AND BREINES, ANDREW J. THOMAS, PERCIVAL GOODMAN, ARCHITECTS. Plan for the rejuvenation of the area in Long Island City, N. Y., extending from Hallet's Cove at the north to 35th St. at the south. Site plans. (Feb. Architectural Forum, p. 113)

Community.

"Community Development"—MARIO CORBETT, OWNER-ARCHITECT; ECKBO AND WILLIAMS, SITE AND LANDSCAPE DESIGNERS. Plans for a community development for professional people, in particular, on a "spectacular natural site" outside of San Francisco, Calif. The project, not a commercial venture, will be built from a master plan of residences and a community center. Renderings and site plans. (Feb. Arts and Architecture, p. 35)

Home.

"19 Steps"—A realistic approach to the building of a house, this article is a complete and quick checklist for prospective home-builders, from scrapbook of ideas to decoration of completed article. (Feb. House and Garden, p. 40)

"Putting Their Dreams into Four Walls"—CPL. EVELYN McCLAIN tells of the AAF convalescents at Fort Wright, Wash., and their personalized course in home planning as given by a former architect, Sgt. Douglas T. Howell. Photographs. (Feb. The American Home, p. 17)

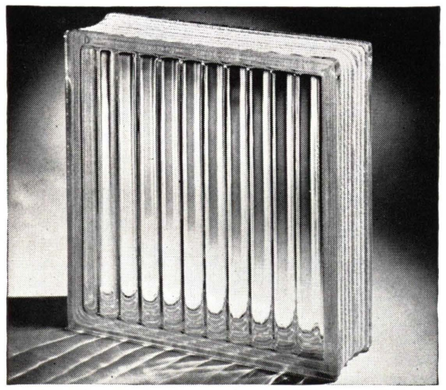
Traffic.

"Underground Parking for Detroit"—Report on the proposed project by V. B. STEINBAUGH, President, Allied Engineers, Inc., giving fees, expenses of construction, annual income derived, etc. (Feb. The American City, p. 112)

(Continued on page 116)

COMMERCIAL SOLVENTS CORPORATION, penicillin plant, Terre Haute, Indiana. Diffused natural daylight floods areas where laboratory workers conduct experiments with white rabbits. Insulux has high insulating properties which reduce cost of air conditioning and heating.

SPERRY GYROSCOPE COMPANY, precision manufacturing, Long Island, New York. Insulux panels bring light to stairways and other dark corners in factories or homes. Insulux transmits and diffuses light better than ordinary windows.



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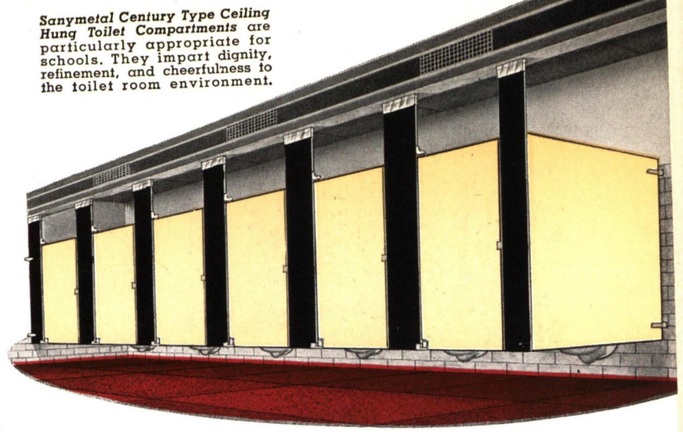

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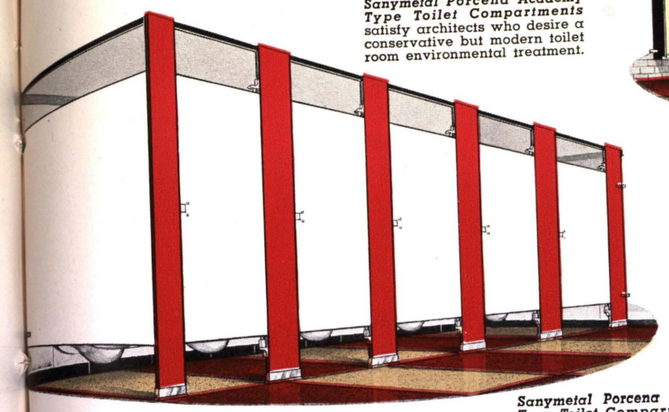

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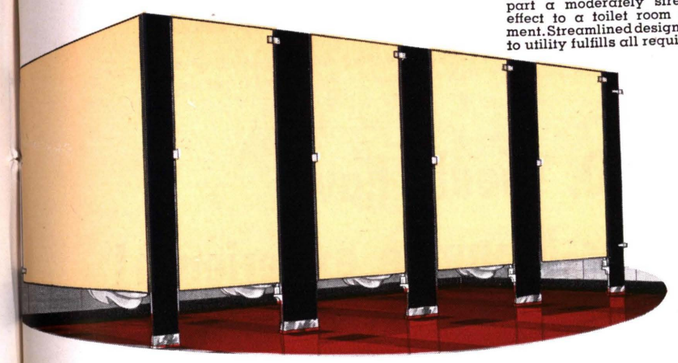

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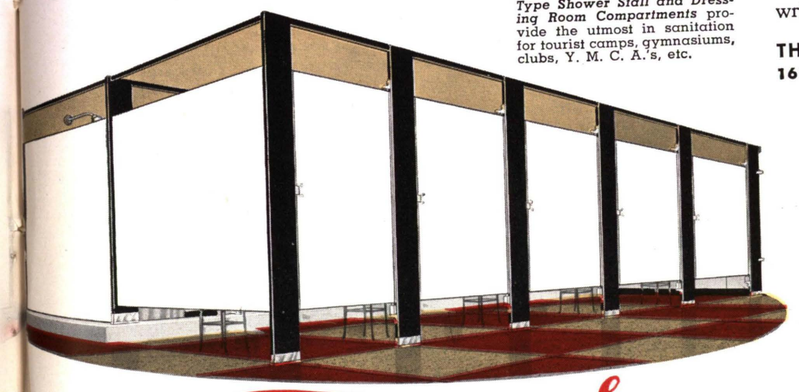

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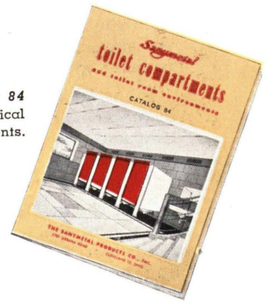
Sanymetal Catalog 84 illustrates several typical toilet room environments.



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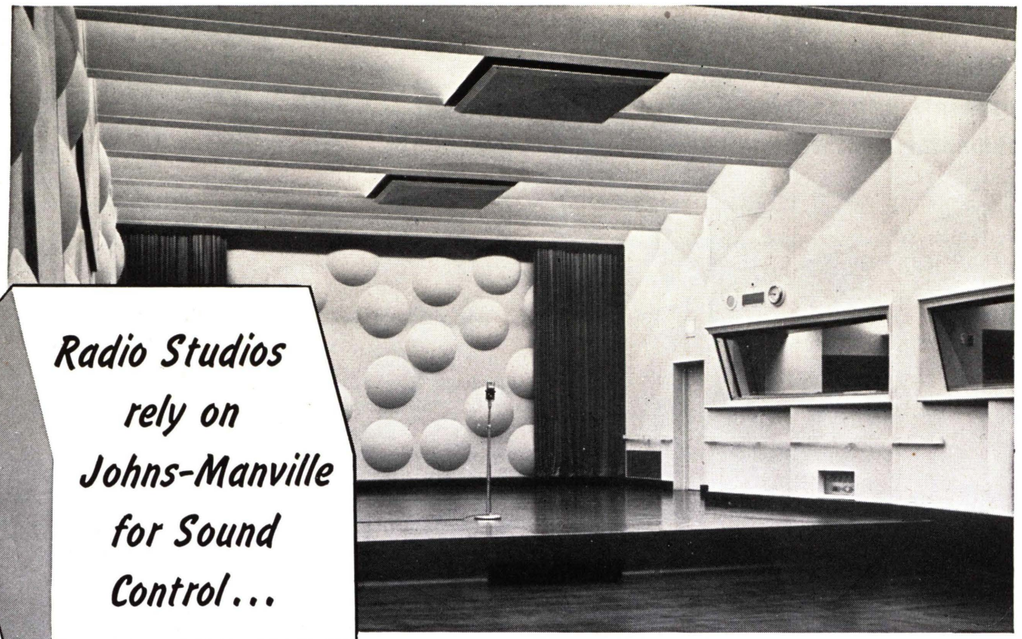

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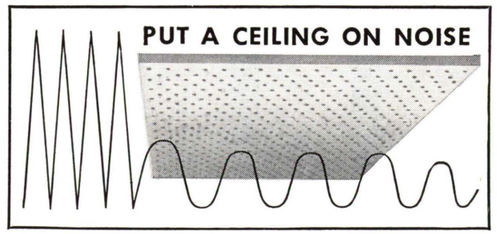

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Almost any roof looks good when it is new. The real test comes after it has been exposed to tough conditions . . . to water lying in low spots . . . to breaks caused by vibration . . . to years, years, years.

That is why roofs are like beauty that is skin deep.

If a roof fails for any reason, the client is apt to think you are to blame. That is why it is safest to specify the kind of roofing materials that long years of experience have proved will last . . . roofing whose "beauty" goes clear through to the deck. Your safest bet is coal tar pitch roofing. With all the improvements that have been made in other things, no one has been able to find any better built-up roofing than this old true-and-tried material. For your own sake, as well as for the sake of your client, specify coal tar pitch.—Koppers Company, Inc., Tar & Chemical Division, Koppers Building, Pittsburgh 19, Pa.

Why are roofs

sometimes like

"skin-deep"

beauty?

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coal tar built-up roofing

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coal tar membrane waterproofing

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"Oh no", says Brown, "it's OIL"

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Boiler for steam or hot water heating systems

G-E Winter Air Conditioner (warm air)

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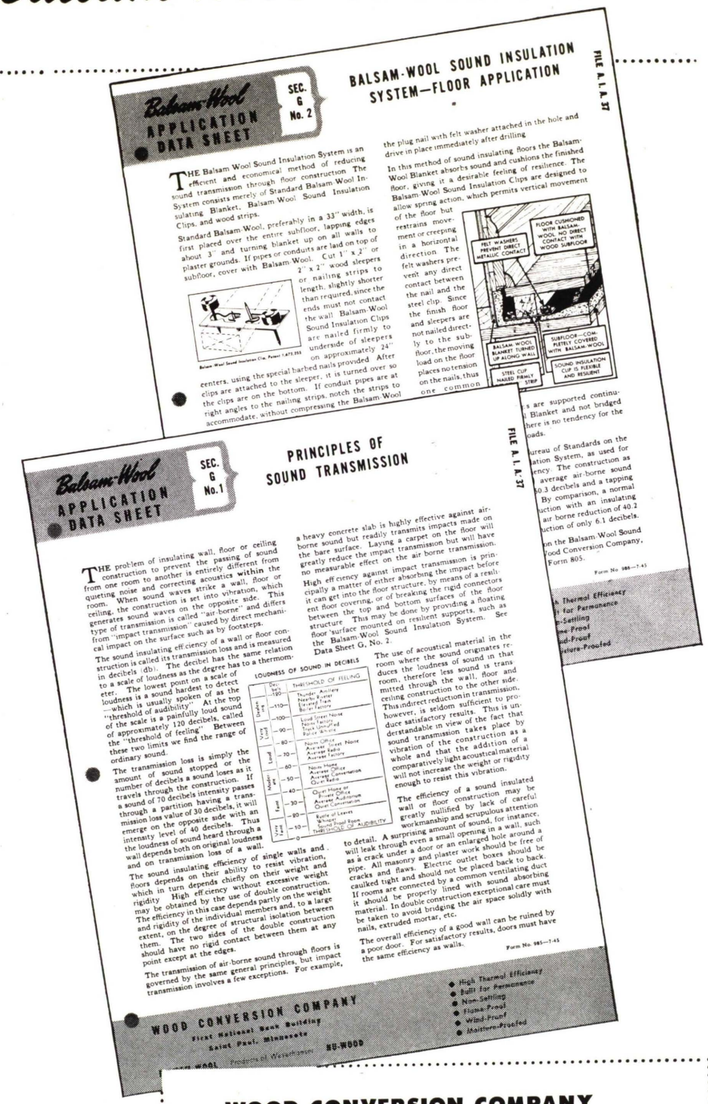

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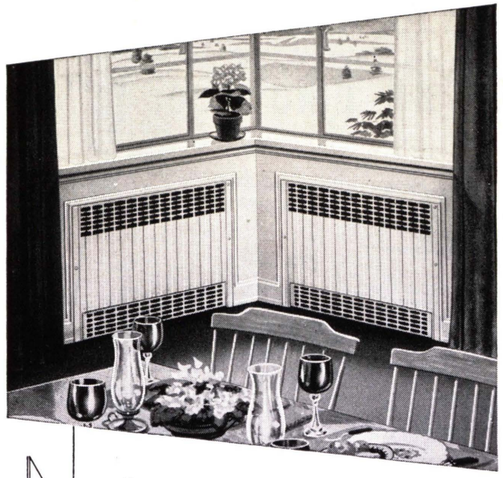

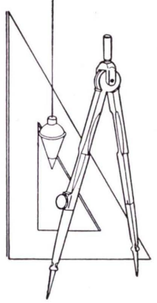

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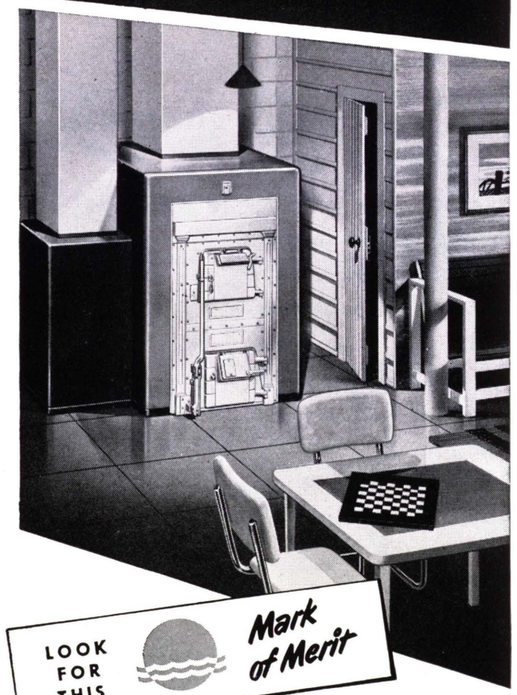

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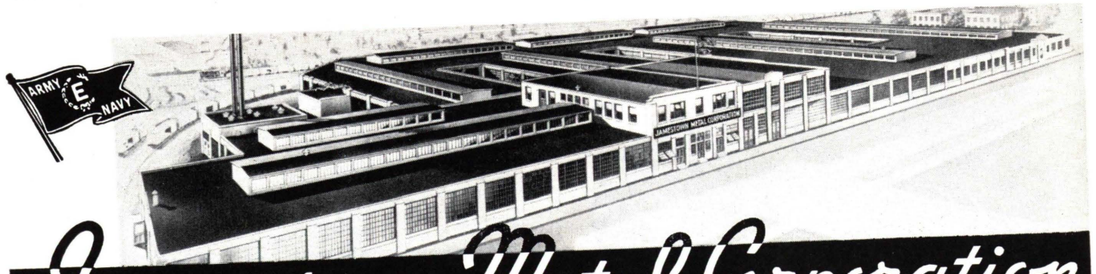

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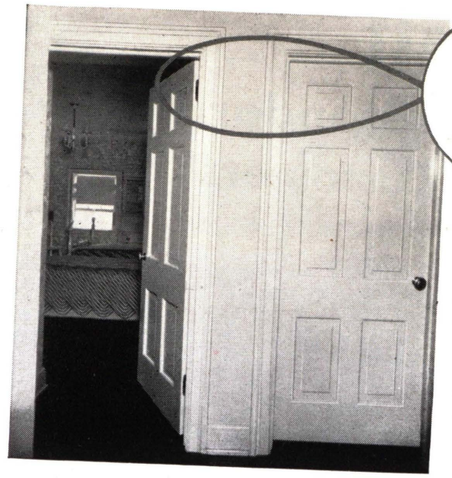

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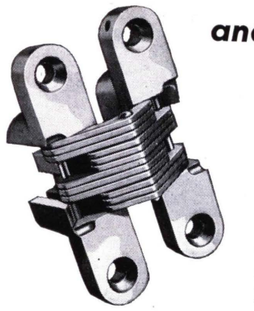

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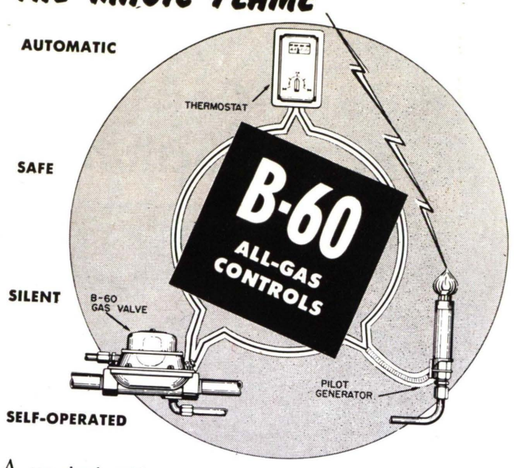

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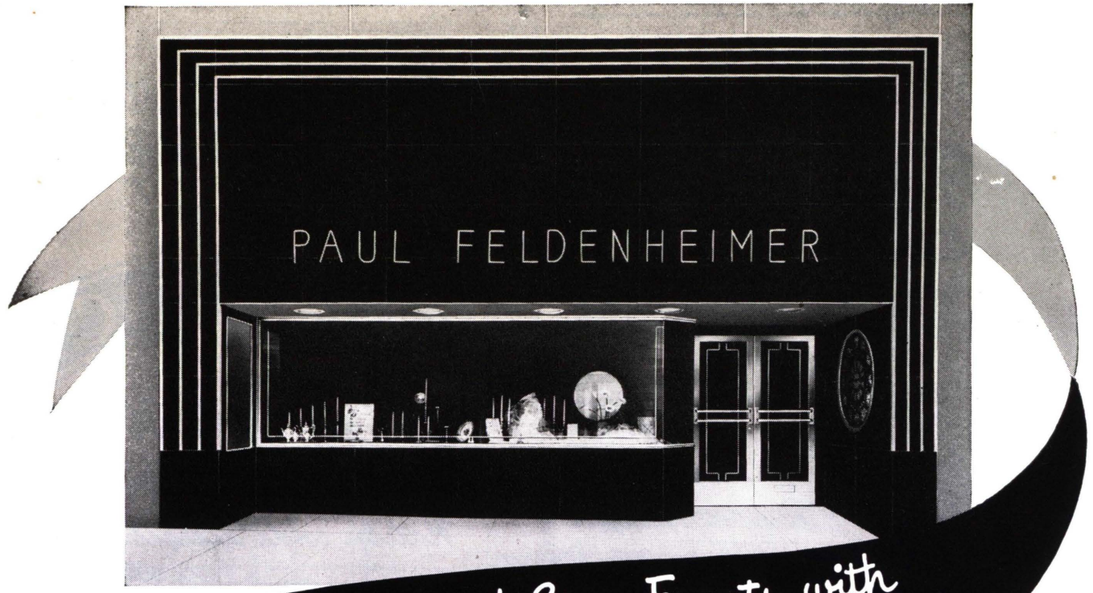

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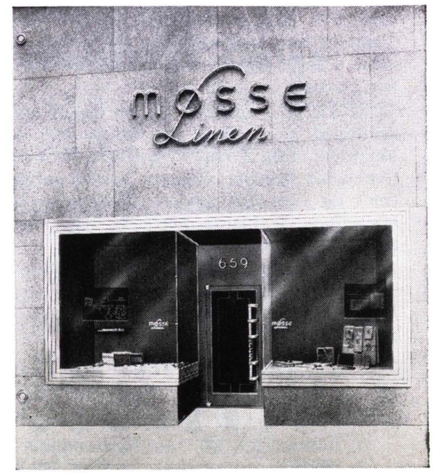

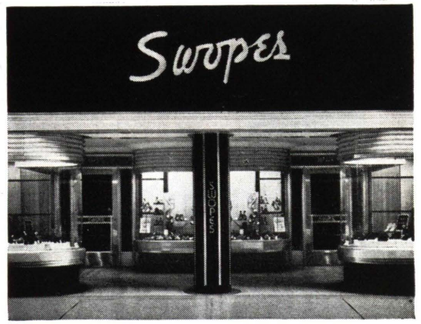

It may be poor policy to judge a book by its cover but "sales-minded" architects know that many a store is judged by its outside appearance. That's why architectural metal work is used so extensively in store front design.

Both architects and store owners, interested in dignified smart-looking store fronts, know and appreciate the feeling of quality, reliability, and dignity that is associated with artistic metal work.

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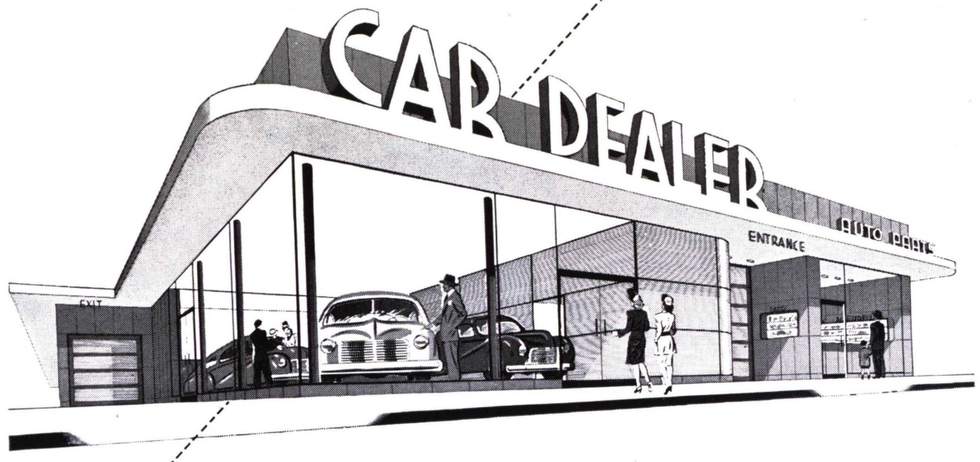

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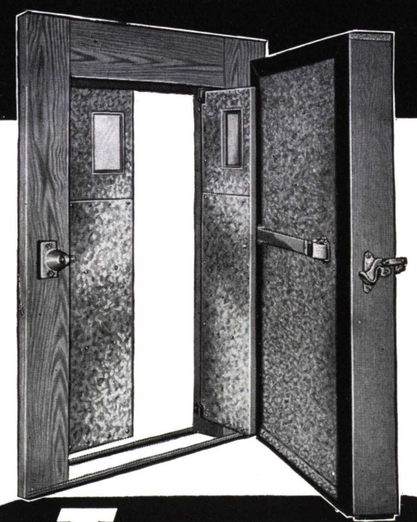

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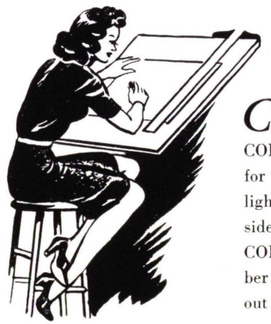

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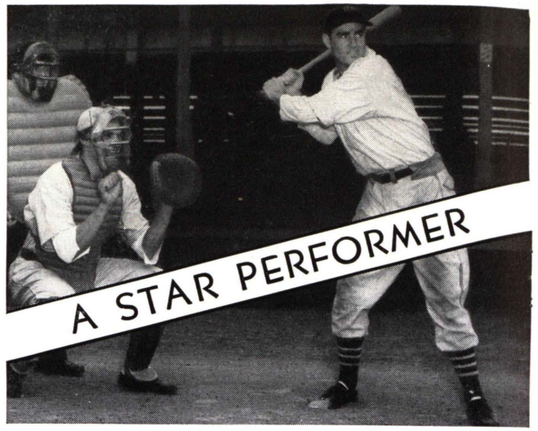

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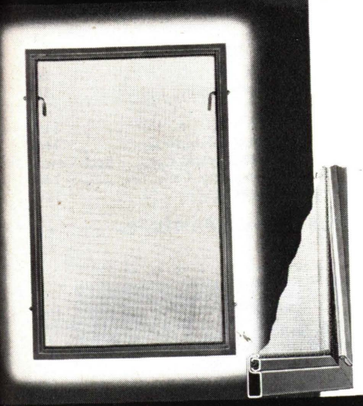

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OBSERVATIONS

AFTER SOME TRAVELING ABOUT AND TALKING TO A NUMBER OF ARCHITECTS IN VARIOUS CITIES, I am almost convinced that the only things consistently true in the profession are that all architects are busy, and that draftsmen are scarce. Sometimes it is difficult to believe that two men working in adjacent offices are practicing the same profession, their views on every conceivable topic are so at variance. And yet, on analysis, there appears a thread of agreement in *principle* on many things.

IT IS EASY TO LOSE SIGHT OF THIS UNDERLYING AGREEMENT, THE DIFFERENCES ARE SO OBVIOUS. On professional matters (architect-builder relationship, pre-qualification lists, the value of competitions, etc.) the profession is split wide open. On the role of the architect in the body politic there are Republicans and Democrats, and yes, communists and fascists. On matters of design, there is an agreement that we must progress, but there is beautiful bickering on the subject of what *constitutes* progress. If an architectural publication intended to reflect the state of architecture in this country right now, it would show something as distorted as do the wavy mirrors in a sideshow.

JUDGING FROM LETTERS RECEIVED AND CONVERSATIONS HELD, THIS MAGAZINE IS DOING A NECESSARY JOB, not in *reflecting* the profession as a whole, but in taking a stand for certain definite objectives (and illustrating them with specific buildings) on which there is agreement in principle, if not in practice.

TO COME BACK TO THAT THREAD OF UNITY, WHICH CAN BE SO EASILY LOST —we know it is there when an architect whose work the editors would probably vote against publishing compliments us on the job we are doing. The desire for progress is the unifying principle. The architect who is designing an advanced group of buildings for a certain university is taking full advantage of progressive design principles. His neighbor who is getting away from collegiate Gothic to a freer, if still stiff and formal expression in another college project, is working for progress, even if he has not fully succeeded. Around the corner another architect who has been beaten down by a stodgy group of trustees is designing academic Georgian buildings for a third school, guilty and unhappy because in his case progress has been impossible. Three designers producing completely different work, apparently going in different directions, yet united in their realization that *design progress is desirable.*

THIS NEAT LITTLE THEORY WOULD BE KNOCKED INTO A COCKED HAT if there were any validity in Edwin Bateman Morris' series on "Architecture of Today and Tomorrow" in the A.I.A. Journal. Meandering through the pages of the Journal, beginning with the November issue, this essay attempts to show, ostensibly without intending "to take active sides," that "Modern" architecture is acceptable only if it is expressed in traditional terms. Morris appears to believe that contemporary techniques, materials, and building purposes should be expressed by using "the same architectural forms which . . . have by centuries of usage become laden with meaning and appeal." Yes, this actually appears to mean that a steel continuous frame structure sheathed in glass in the twentieth century should "use design forms which were definitely reminiscent of the column and lintel idea, even if traditional."

THIS WOULD SEEM TO INDICATE THAT OUR CONSISTENT THREAD OF DESIRABLE PROGRESS HAD BEEN BROKEN AND LOST, if Mr. Morris did not give away so naively his lack of touch with the present scene, by pointing out that the buildings he considers "the most interesting of the Modern examples—Goodhue's Science Building, and Cret's Federal Reserve Building in Washington —are Greek in expression. Also the Folger Library, with its metope-like sculpture." There has been considerable technical and esthetic advance beyond that point, which Mr. Morris seems to have missed. For a quick review, we refer him to our January issue.

ANOTHER SORT OF COMPLAINT THREATENS THE CONSISTENCY OF PURPOSE IN THE PROFESSION: that from the thoroughly rooted or completely converted designer in the modern idiom who has no patience with those brethren who are slower to progress because of limited opportunity, ability, or understanding. Several grouses have arrived which say in effect, "you are committed to progressive architecture; why must you continue to defend it? Aren't your readers all modernists?" The answer is a resounding "No!" We believe that our readers are all (or almost all) committed to progress in design. But they very articulately are not in agreement on what constitutes proper present expression of the progress that has been made.

RECENTLY A QUESTIONNAIRE ON EDITORIAL POLICY WAS SENT OUT OVER MY SIGNATURE. The response was staggering, and the replies were interesting. From the anonymous individual who wrote the single word "SHUCKS" across the face of his, to the old master who wrote an essay on the back of his, they came in, some 1300 strong. The first question asked was whether the subscriber felt that contemporary design expressed basic principles or was a superficial style, and 942 agreed that it could no longer be considered a superficial mannerism. Yet about a third of those who replied wished that some buildings designed in traditional "styles" should be presented. Thus appears the thread of consistency—there are thousands of architects practicing in the United States today who, for one reason or another, are producing traditional architecture, but who *recognize the essential correctness* of the contemporary expression.

DO YOU SEE WHY IT'S IMPOSSIBLE TO BE A MIRROR? You can't reflect both black and white; you get gray, which is neither one nor the other. Our aim is to serve the profession by pointing to and illustrating progress, and by documenting our presentations with worthwhile technical material. Only 22 responses to the questionnaire admitted to not reading Materials and Methods.

WHILE I AM ON THE SUBJECT OF THE QUESTIONNAIRE, IT IS WORTH REPORTING THAT 934, AN OVERWHELMING MAJORITY, voted for "fewer buildings, more completely presented." We are very happy about that. It is a crying shame, I think, for an architectural publication to give inadequate space to an important job, neglecting many aspects of its detail, structure, or purpose. The publishing business being what it is, the very fact that a building has been printed in one magazine tends to kill it for another, which might want to do a fuller job. The aim of PROGRESSIVE ARCHITECTURE continues to be to select only structures which we consider to show important progress, and go to town on their presentation. The editors are glad you like that approach.

I CAME BACK TO THE OFFICE AFTER A WEEK'S TOUR RECENTLY AND PROCLAIMED IN AN EDITORIAL MEETING THAT I HAD TALKED TO SOME TWENTY ARCHITECTS from small towns and from big cities, designers of houses and designers of factories, traditionalists and modernists, who almost unanimously had told me that they considered PROGRESSIVE ARCHITECTURE the most useful of the national architectural magazines. "Yeah," says our publisher, "then why is it we don't show best in all the preferential polls run by our advertisers?" I don't know what the answer is. I'm certainly not gullible enough to be taken in by pure flattery, and our own questionnaire turned up a pretty amazing friendship within the profession. I don't know that answer, but I have learned that there's a big lag in the response readers have; I've heard readers evaluate various magazines today on the basis of what they were three years ago. There was also the architect who hadn't even heard of the Materials and Methods section, and then proceeded, in order to demonstrate what he *really wanted* in the way of technical information, to pull out of his file—yes, tear sheets from Materials and Methods.

Interesting profession, isn't it?

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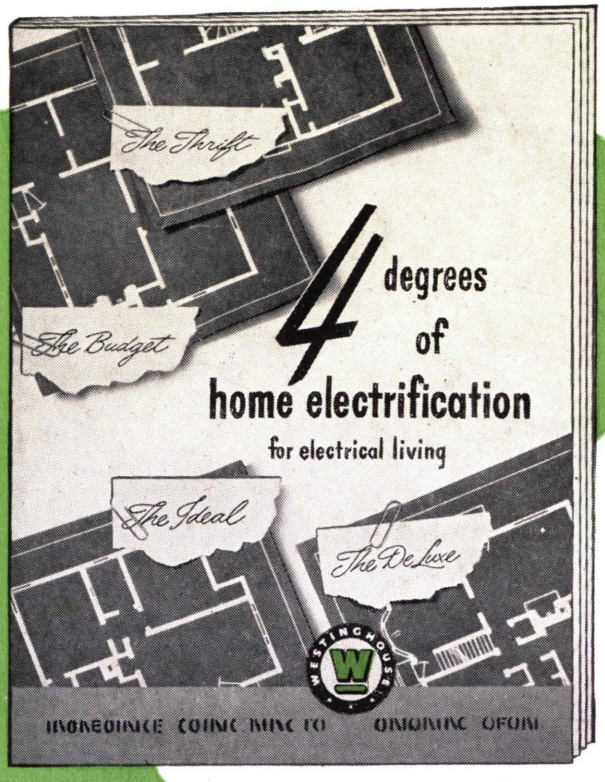

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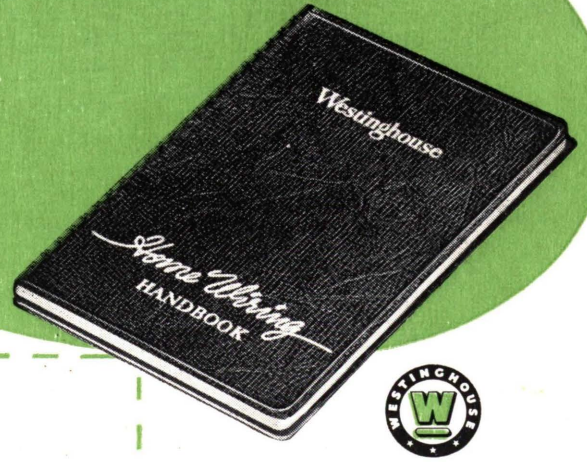

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