PROGRESSIVE ARCHITECTURE

PENCIL POINTS

SEPTEMBER 1946

PROGRESSIVE ARCHITECTURE

PENCIL POINTS

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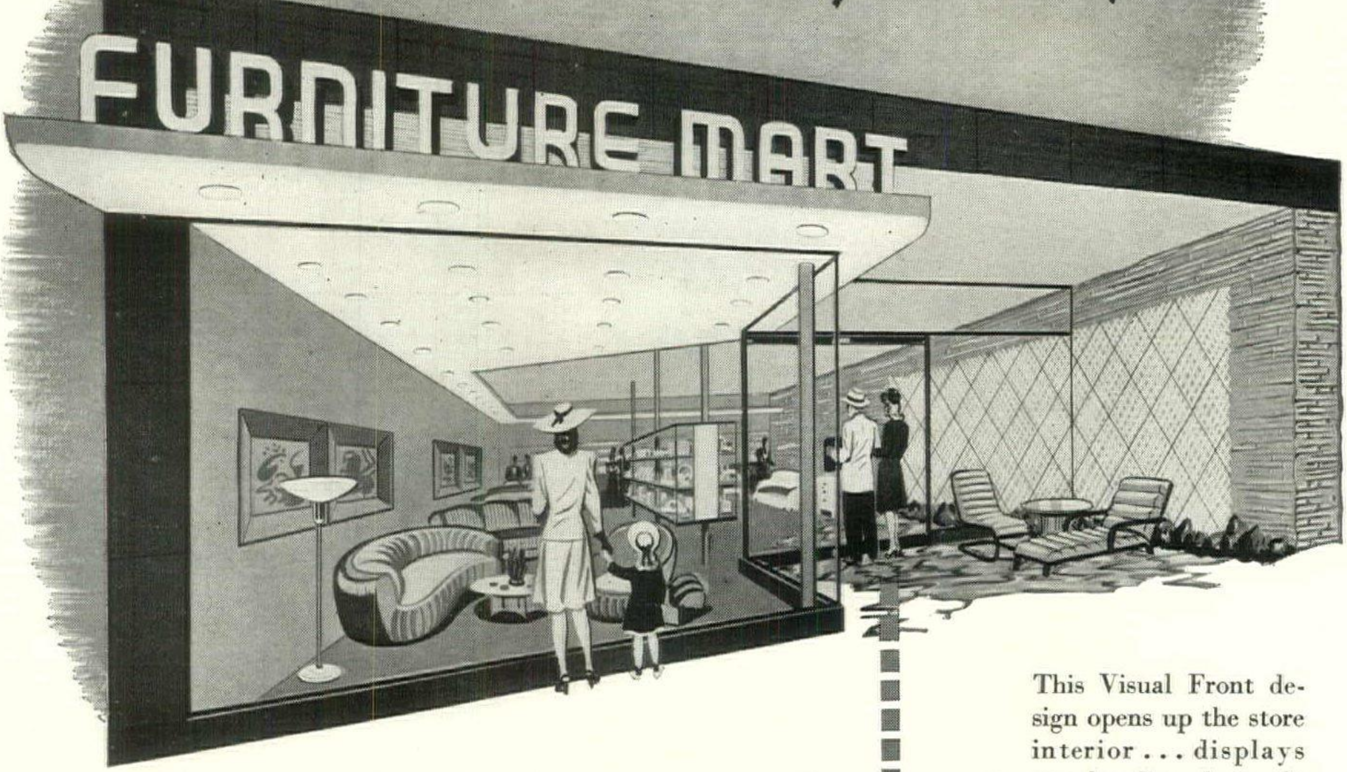
COVER: From a rendering of Cidade Dos Motores by Paul Lester Wiener and José Luis Sert

Create a sidewalk stage setting...



for a storefront that attracts more business!

This Visual Front design opens up the store interior . . . displays merchandise *from the sidewalk.* Note the spotlighted display cases on the pillars . . . the intriguing "patio" for summer furniture, with latticed side wall for design unity. Store name in cut-out letters is silhouetted against Blue Ridge Patterned Glass and *Vitrolite.*

Capture attention of sidewalk and street traffic—and hold it—by making the entire store a colorful setting. Day and night it will work to bring your client more business. And when the store is open, the view of people buying will act as a magnet to bring in others.

A Visual Front is not a fixed type—it is a *style* of front, which employs glass to "open" the store to the eyes of potential customers. It exhibits far more merchandise than could be crowded into a conventional window. It promotes sales of every item on the floor.

The invitation to enter is emphasized by doors of clear *Tuf-flex** tempered plate glass. To reduce the possibility of condensation on the clear glass front, *Thermopane**, the transparent insulating unit, is recommended. And, to accent the appeal of the front, colorful *Vitrolite** is used to face pilasters, bulkhead and facade.

BEFORE YOU DESIGN your next store, write for our Visual Fronts book. You'll find many helpful ideas that you can adapt. Write to Libbey·Owens·Ford Glass Company, 4396 Nicholas Building, Toledo 3, Ohio.

*Reg. U. S. Pat. Off.

VISUAL L·O·F FRONT

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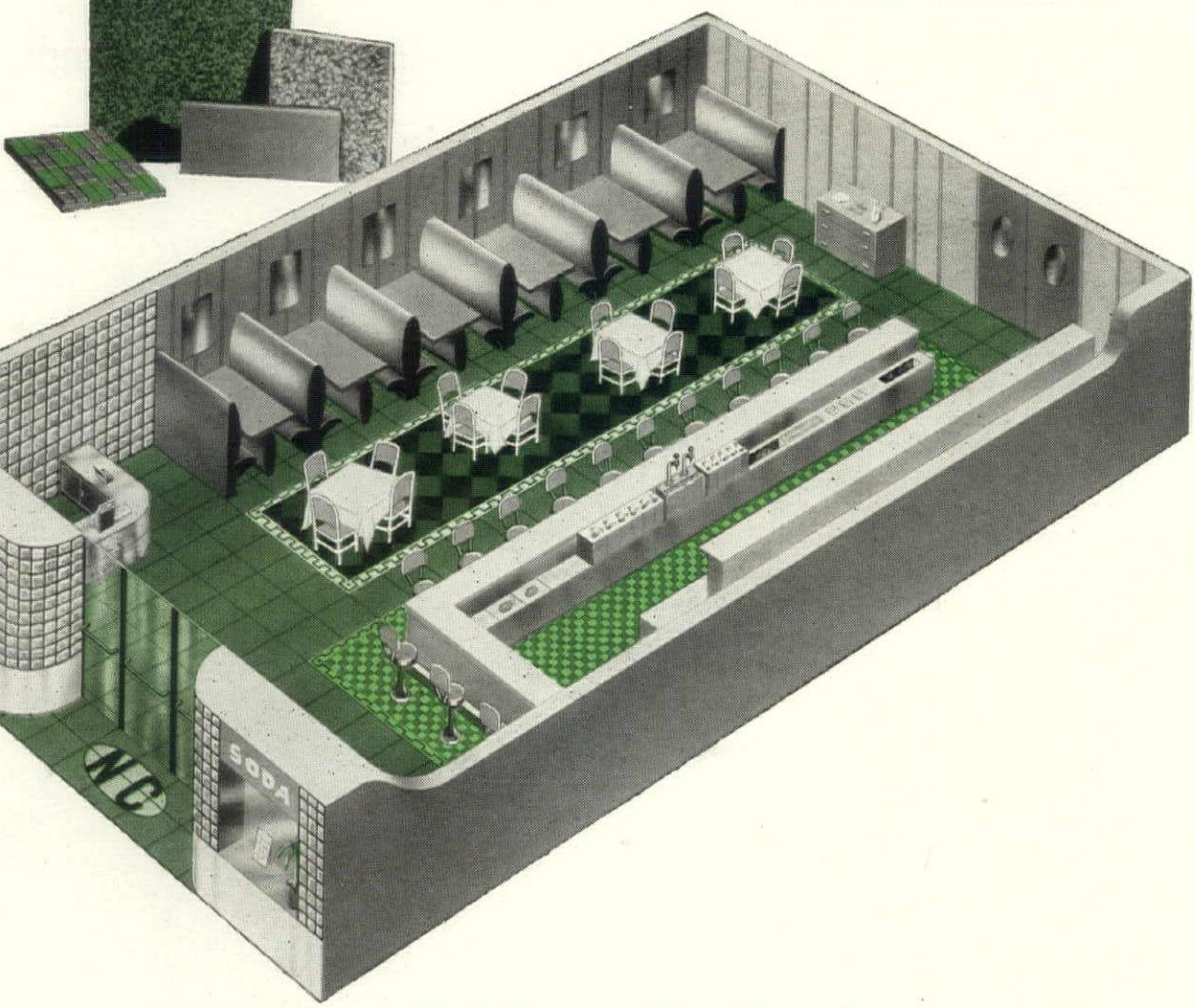
a Great Name in **GLASS**

Do your building plans include a Restaurant?



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To date the restaurant above is just an artist's drawing. However, there's nothing impractical about it, including the very practical Norton Floor which provides a wear-resistant surface that is permanently non-slip, even when wet. Here ALUNDUM Aggregate has been added to marble to make the terrazzo floor in entry way and restaurant safe from slipping hazards. ALUNDUM Ceramic Mosaic Tile adds a decorative pattern to the floor around the soda fountain, at the same time guaranteeing safety and wear resistance. For free color samples, or for further information as to how you can combine safety with beauty in your floors, stairs and ramps write to:

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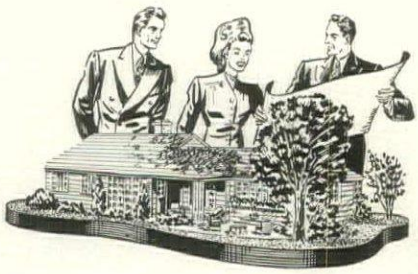

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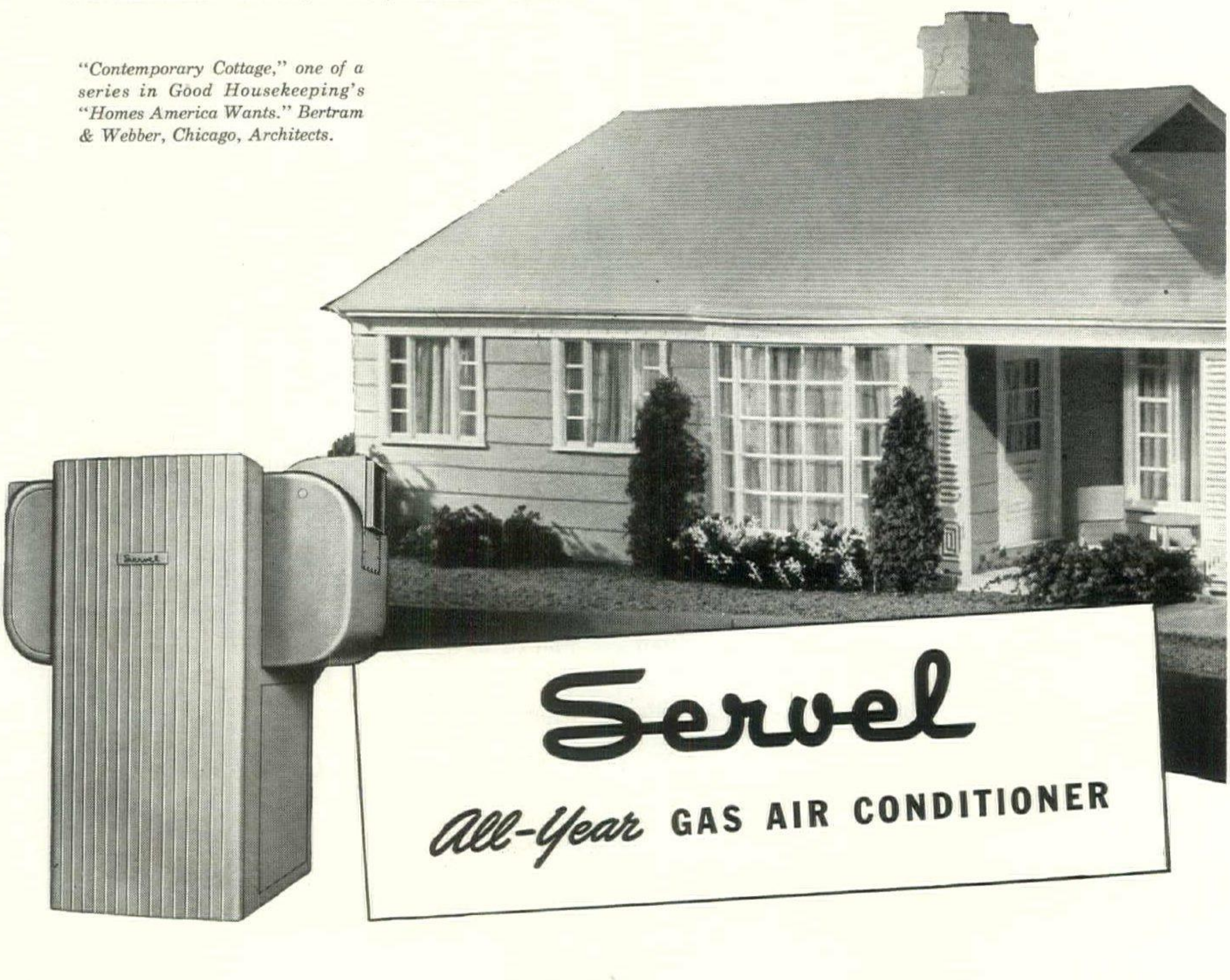
"Contemporary Cottage," one of a series in Good Housekeeping's "Homes America Wants." Bertram & Webber, Chicago, Architects.



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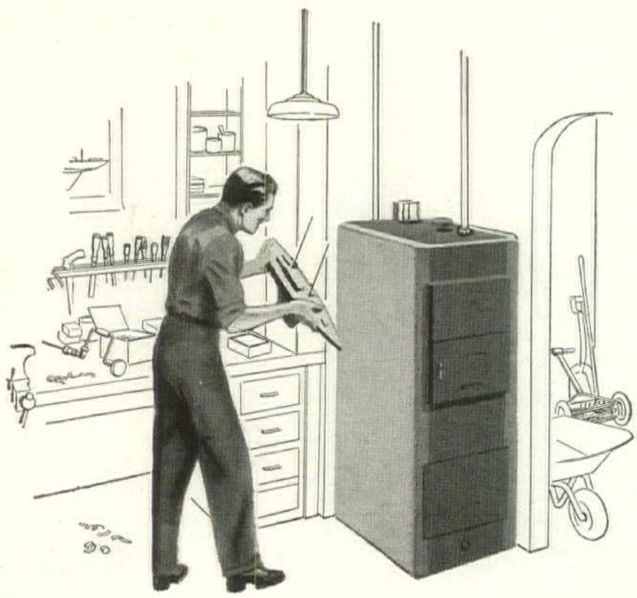

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VIEWS

MANUFACTURER ANSWERS

Dear Editor:

We have had an opportunity to read the article on "Lighting Design and Human Environment." Definitely the author has presented lighting correctly, as a fundamental part of human environment. He also made very interesting and well pointed criticisms of lighting design and construction. We, the lighting manufacturers, are first to admit the faultiness of the designs that have appeared on the market under the guise of lighting fixtures.

However, we do feel that this writer did not go far enough in his analytical discussion of the problem to take cognizance of the fact that lighting manufacturers are limited in design by the available shapes and sizes of light sources. Lighting equipment is a structural element the same as concrete, steel, and brick. Just as these materials have their limitations, so lighting equipment must have certain basic limits.

We know there is a current of feeling in the architectural field to discard manufacturers' designs of lighting equipment for their own individual designs, which is natural with these types of men in creative professions. Incidentally, looking more closely into some of the writer's criticisms and some of the examples of poorly designed lighting equipment, you'll find that many of the designs which he ridiculed were suggested originally by architects to meet some particular mode of decoration or interior planning.

Speaking individually for the designs of our company, special effort has been made to embody new fluorescent light sources in simple, unobtrusive luminaires executed in the most basic lines and modified only enough to soften the characteristic shape and inherent length of elongated fluorescent tubes.

GLENN WITTBRODT
Advertising Manager
Edwin F. Guth Company
St. Louis, Mo.

COMPLIMENT FROM PANAMA

Dear Editor:

Relative to your PROGRESSIVE ARCHITECTURE publication, I want to fervently compliment you for the great work in its editing.

I am a draftsman, having received my certificate last year. Therefore, when I look over the magazine I find the articles written by the great architects of your country to be of great help.

I appreciate the country home shown in the May issue which was well shown. The architect of this work demonstrated a talent of the first magnitude.

EDMOND V. KARBICHE
Correo Aereo, Panama

IN TANGANYIKA TALK

Dear Editor:

PENCIL POINTS, old PENCIL POINTS is No. 1 on my list of friends, most beloved of my tutors and technical instructors; it has introduced me to some of the world's best men; unquestionably, *best* men and it has been of more esthetic value to me than I can assess. . . . Get hold of some darned Yank that knows the language to say it for me and to translate "bully for you" into 20th century Broadway talk. Then you will appreciate the delicacy of my complimentary framing!

ROBERT A. GOODE
Tanganyika, East Africa

THE ANNUAL AWARDS

Dear Editor:

I was very pleased to read your announcement about PROGRESSIVE ARCHITECTURE'S annual awards, which I think is a splendid idea and should be of immense value to the profession.

LESTER C. TICHY
New York, N. Y.

BEST NOT BUILT

Dear Editor:

I like the idea of an annual award for best building. I think that progressive architecture would be served even better if an award or awards were made for designs of buildings that have not been erected. The best designs, in my opinion, seldom have a chance to be carried out, because of the ultra conservatism or lack of imagination of those who control the purse strings. So, give it a thought, please!

JOSHUA D. LOWENFISH
New York, N. Y.

SOUND OF REJOICING

Dear Editor:

Your letter announcing annual PROGRESSIVE ARCHITECTURE awards has been received with much rejoicing in these parts, notably for the basis upon which these awards will be made, and for the first really intelligent jury to judge the qualifications of work for which such standards are set.

Congratulations to PROGRESSIVE ARCHITECTURE; you may set some standards inadvertently for architectural competitions generally.

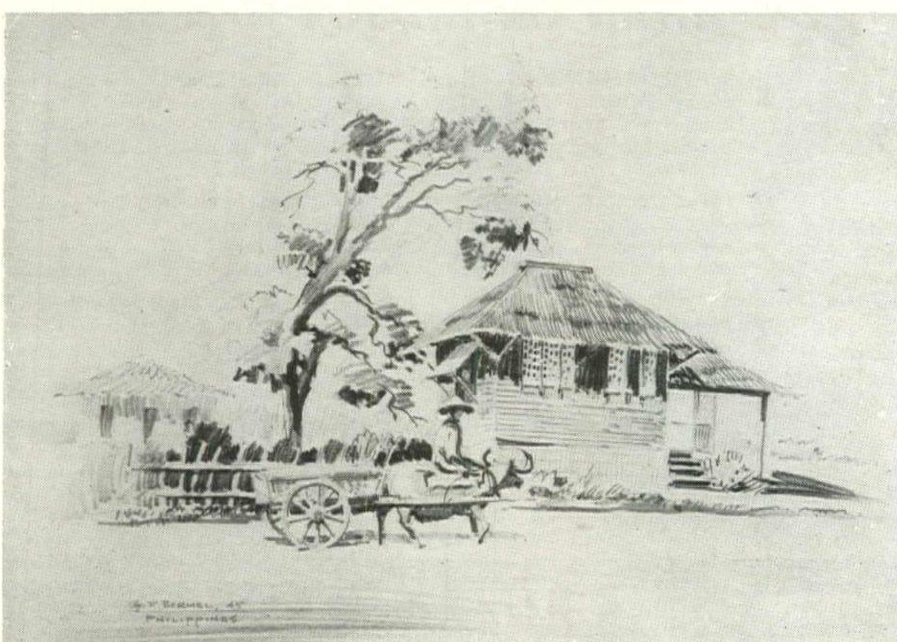
MARIO CORBETT
San Francisco, Calif.

YOUR QUESTION NOTED

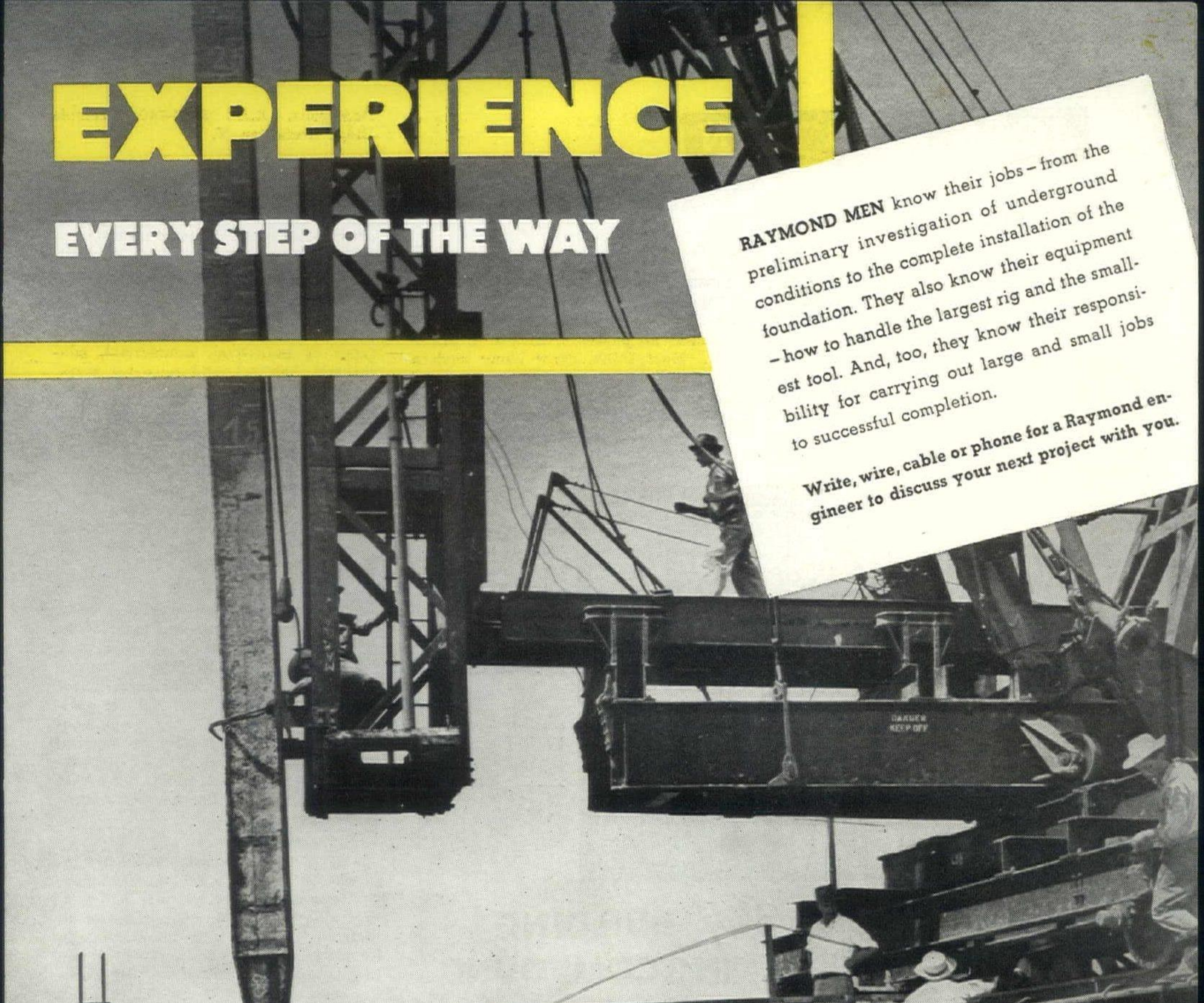
Dear Editor:

I question the ability of any jury or any magazine to properly evaluate contemporary work.

ROBERT T. BICKFORD
Elmira, N. Y.



While his Seabee unit was moving along the road to Cavite, the largest naval base in the Phillipines, Otto F. Bermel sketched this roadside scene. In the course of his duties as Chief Carpenter's Mate, he found many opportunities to record events ashore as well as aboard the flagship, "San Clemente."



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JOBS AND MEN

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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, N. Y.

ARCHITECTURAL DRAFTSMAN, experienced, capable of working drawings from sketches. Institutional and commercial buildings. Steady position for right man. Lafaye, Lafaye & Fair, Architects, 1226 Sumter St., Columbia, S. C.

DRAFTSMAN—general experience, all types of industrial, commercial, educational, hospital, and residence work. Charles C. Hartmann, Architect, 120 Jefferson Bldg., Greensboro, N. C.

EXPERIENCED ARCHITECTURAL DRAFTSMAN — schools, colleges, institutions, churches, commercial and industrial buildings. Good opportunity. State education, experience, and salary desired. Emerson, Gregg & Briggs, 300 First Nat'l Bank Bldg., Peoria 2, Ill.

ARCHITECT, southern seacoast city, needs capable, experienced man. Some design and coordination of other work in drafting room, disposition to work and cooperate with other men. Office does not specialize, work includes various types of buildings. State age, education, experience, references, marital status, salary desired, etc. Good opportunity for proper man who is not afraid of work. Box 286, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL ENGINEER—We are interested in locating a well qualified man, preferably graduate who has had general all-around experience. This is an unusual position with internationally known company. The work is on the board, good salary, and best of working conditions. Write for details. Box 298, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL ENGINEER—Top-flight, experienced man, capable of developing structural design of institutional, industrial, commercial buildings from preliminary sketches through final design and drawings. Well established southern firm. Straight salary for first year, opportunity to share profits thereafter. Submit personal data, photograph. Qualified applicants interviewed at present address or expenses paid to firm's location. Box 299, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN and MECHANICAL MAN majoring in lighting and general electrical layouts, wanted by long established architectural firm. Box 300, PROGRESSIVE ARCHITECTURE.

EXPERIENCED MAN to take charge of 8- to 10-man drafting room. Work consists of schools, churches, mercantile, and industrial buildings. Good salary. Wisconsin firm of architects. Box 301, PROGRESSIVE ARCHITECTURE.

(Continued on page 12)

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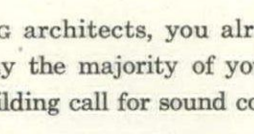

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JOBS AND MEN

(Continued from page 10)

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ARCHITECTURAL DRAFTSMEN — desired by well established firm specializing in the design of school and college buildings. Location Michigan. Box 306, PROGRESSIVE ARCHITECTURE.

ARCHITECTS—Tennessee Valley Authority announces openings in design department at Knoxville, Tennessee, for work on industrial, recreational, power, and office buildings. Salaries range from $3,420 to $4,950 per annum with provisions for automatic increases based on satisfactory work performance. Candidates should write Tennessee Valley Authority, Personnel Office, Knoxville, Tenn.

JOBS WANTED

ARCHITECT-ARTIST AND DELINEATOR of long experience offers services for free-lance architectural renderings and perspectives, bird's-eye views or architectural treatment of engineering structures such as highways and bridges. Theodore A. de Postels, A.I.A. Studio at 644 Riverside Drive, New York 31, N. Y. Audubon 3-1677.

ARCHITECTURAL DRAFTSWOMAN — three years' general drafting experience in leading firms. Educational background —three years at Cooper Union and one year at University of Illinois. Box 297, PROGRESSIVE ARCHITECTURE.

TWENTY YEARS in private architect's offices. Fifteen years and at present in Government. Experienced any type building project, community housing. Work traditionally or along modern trend. Preliminary schematics, contract drawings, checking, coordinating. Had charge of and prefer working in smaller office. Box 302, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL ENGINEER, age 31, registered architect in two states, college graduate, wishes position leading to partnership in firm. Available immediately. Box 303, PROGRESSIVE ARCHITECTURE.

ARCHITECT, registered, presently employed, desiring to locate in Southern California, seeks key position of responsibility, heading large project or drafting room, or chief of specifications. Thorough knowledge of materials and methods. Able to engender cooperation. University training, long experience, hospitals (federal, state, private), hotels, public buildings, churches, and educational institutions. Box 304, PROGRESSIVE ARCHITECTURE.

ARCHITECT with thirty years of practical experience, free-lance and with architectural offices, desires connection with architectural or contracting concern. Basis, 100 hours monthly for $400. Excellent designer in progressive, modern style (not "caboose"). Architectural artist, maker of many black-and-white and color perspectives. Write N. M., Room 1703, 22 W. Monroe St., Chicago, Ill.

INDUSTRIAL DESIGN AND ART GRADUATE, 33, with two additional years' college architecture, desires position with industrial designer, architect, or manufacturer. Five years' experience in mechanical engineering design and drawing. Excellent draftsman and letterer. Good at perspectives, delineating, clay modeling, and water colors. Knowledge of engineering production processes. Box 307, PROGRESSIVE ARCHITECTURE.

ARCHITECTURAL DRAFTSMAN desires position in the Southwestern states. 18 years' experience on complete working drawings for restaurants, residences, schools, and public buildings. Available November 1st. Box 290, PROGRESSIVE ARCHITECTURE.

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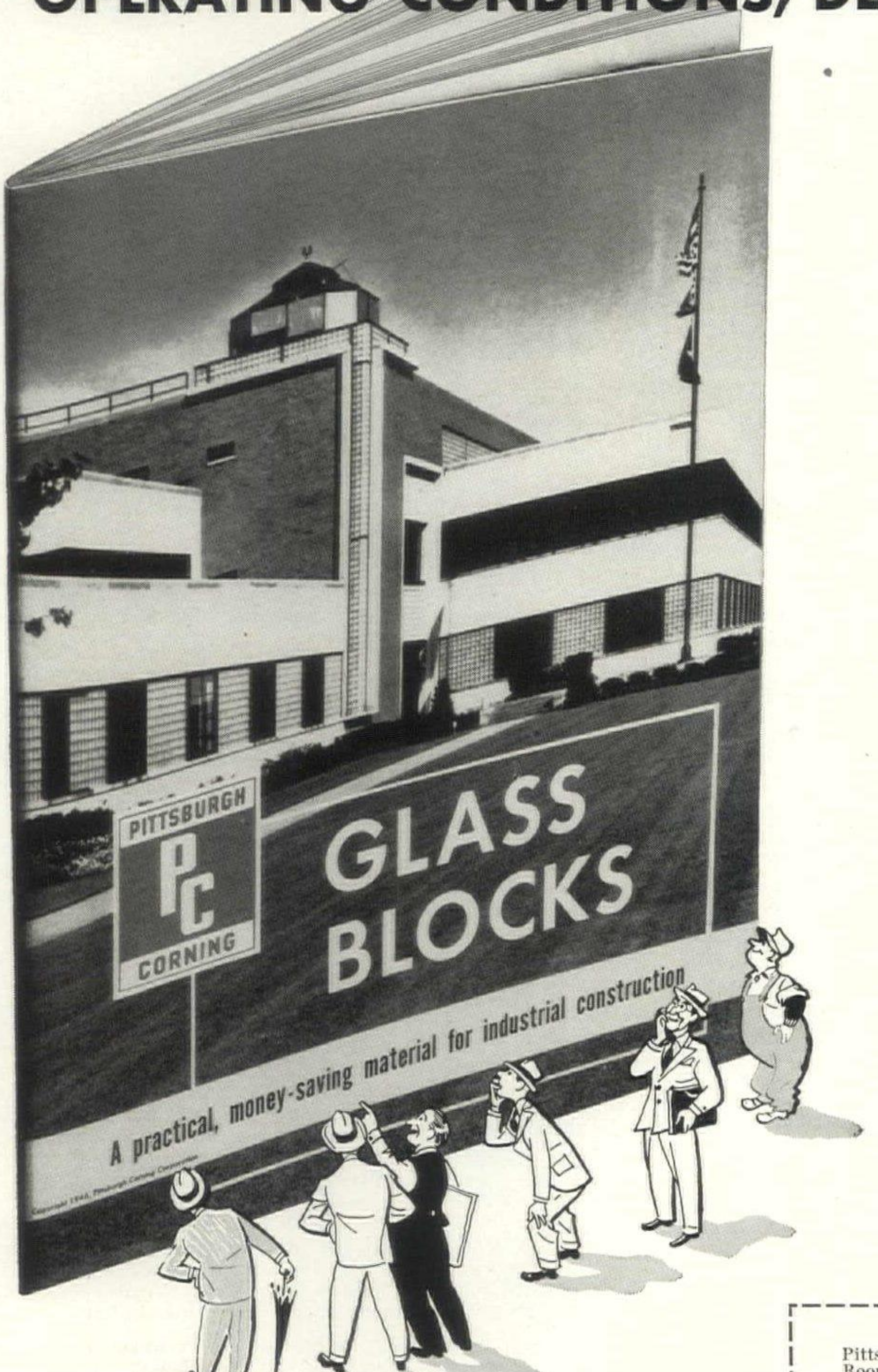

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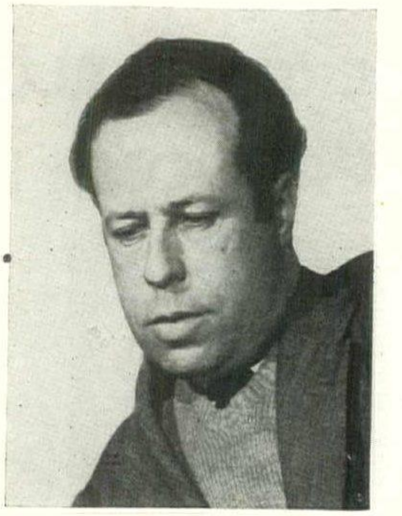
THIS MONTH

PAUL LESTER WIENER



JOSE LUIS SERT

KENNETH KASSLER

The Cidade Dos Motores featured in this issue results from the collaborative effort of **Paul Lester Wiener** and **Jose Luis Sert**, Town Planners. For their broad yet infinitely detailed scheme to develop a complete modern city, both have drawn on years of experience and accomplishment that have won for them international renown.

Wiener maintains a New York office with Sert, and also is president of Ratio Structures, Inc. He has built abroad and is a member of the American Society of Architects and Planners, American Society of Planning Officials, National Planning Association, National Committee on Housing, American Institute of Designers, and the Pan American Society. He has been decorated by France with the Legion of Honor and by Brasil with the Cruzeiro do Sul; and is an honorary member of the Instituto de Arquitetos do Brasil and a director of C.I.A.M. (Congres Internationaux D'Architecture Moderne) American Chapter. He served as consultant to the Office of Production Research and Development of the War Production Board and also acted as director of Technical Studies at the New School for Social Research. He has lectured at universities in this country and was guest professor at the University of Brasil, Rio de Janeiro, and also at Sao Paulo, Brasil, and Lima, Peru.

Sert, widely known as a champion of modern architecture and progressive urban planning, is vice president of C.I. A.M., to which he also is the Spanish delegate. He is an honorary member of the Royal Institute of British Architects and a member of the American Society of Architects and Planners, as well as the planning committee of the Citizens' Housing Council of New York. He is vice-president of Relief and Postwar Planning, Inc. In collaboration with C.I.A.M. he was author of a town planning book, "Can Our Cities Survive?" (Harvard University Press, 1942). He was Consultant Professor for Planning in the School of Fine Arts, Yale University (1943 to 1944). He has built several apartment houses, schools, country houses in Barcelona. In collaboration with G.A.T.E.P.A.C. he also built the central dispensary for Catalonia and a large housing development with community services, planned a recreation center for the city of Barcelona, and developed a master plan for this city together with the above mentioned group and the architects, Le Corbusier-Jeanneret. He also designed the Spanish Pavilion in the Paris World's Fair, 1937, in collaboration with Luis Lacasa.

The adroitness of **Kenneth Kassler** in blending the "Brookhouse" (p. 75) with its setting results in part from his thorough familiarity with the Princeton scene. He received his architectural degree from Princeton University and taught there from 1930 to 1933. He began active architectural practice two years later and has devoted most of his attention to residential work; except for a year spent in Washington, on site planning for the Suburban Resettlement Administration, and for his war

(Continued on page 16)

NEXT MONTH

● New houses in Massachusetts, Michigan, and California will be shown in the October issue—houses that are by no means average because the architects are all topnotch in their field. From Massachusetts will come three houses by Carl Koch, one of them done in collaboration with Robert Woods Kennedy. The Michigan house is one of the smaller examples of the distinctive work of Frank Lloyd Wright. A long comfortable house designed to take full advantage of the California climate comes to us from the office of Wurster, Bernardi & Emmons of San Francisco. The landscaping in this instance is by Thomas D. Church.

● Key designs for a new building type—airport hotels for accommodation of passengers at large commercial fields—also will be shown next month. These are the work of Fred Bassetti, Cambridge designer who defines them as "an extension of service to solve the inconveniences and discomforts of present-day air travel." Such facilities may well become a necessity of the airport of tomorrow, and the editors offer this presentation to stimulate creative thought among our readers.

● Two important articles, one on "Functional Lighting" by William H. Kahler and a second on "Sun Control" from Richard Neutra, are included in the Materials and Methods section of the October issue. The first recounts an investigation by a Westinghouse lighting engineer into the problems of glare, reflected glare, intensity, etc., in four types of buildings: offices, schools, department stores, and industrial buildings. The numerous architectural devices and methods of design for control of sunlight penetration into buildings are discussed in the second article, which is based on material gathered by Neutra, internationally famous architect of Los Angeles, supplemented by a list of examples assembled by the editors. This featured survey should become valuable reference material for the designer's library.

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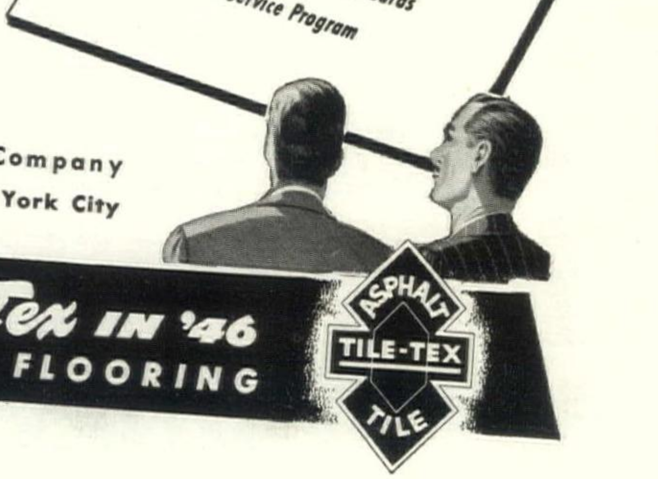

THE TILE-TEX COMPANY, Inc.
Asphalt Tile Mfr. Subsidiary of The Flintkote Company
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THIS MONTH

(Continued from page 14)

service—first as an officer with the U. S. Marine Corps directing construction and aircraft operations work in the South Pacific, then for a year in Washington as station development officer, Bureau of Aeronautics, Navy Department, supervising public works development of all continental Marine air stations.

Inventive and talented as a designer in many fields, **Morris Sanders** now is winning attention with his new Module Furniture (p. 86). In his 18 years in New York he has experimented, designed daringly, won numerous professional and public awards. From his board have come houses for town and country, department stores, restaurants, a Park Avenue beauty salon, buildings and exhibits for the New York World's Fair; as well as lamps, screens, radio cabinets, ceramic tableware, special-purpose lighting fixtures, and many new tools for the plastics field (in which he conducted some of the first experiments in furnishings). He also has written for technical and popular papers, given radio interviews, lectured here and in Canada, and served as an adviser to large companies on product development. During the war he helped to organize The Consumers' Durable Goods Branch of OPA, and along with other war jobs in Washington served as an adviser on conversion, substitute materials, manufacturing, and design. He is a graduate of Yale and traveled and studied abroad before starting his New York practice. He is vice president of the New York Chapter, A.I.A., and also serves as a judge of The Modern Plastics Competition.

MORRIS SANDERS

L. N. ROBERSON

L. N. Roberson, author of "Electric Radiant Heat," featured in the Materials and Methods section this month, is owner and manager of L. N. Roberson Company, engaged in the manufacture and erection of steel greenhouses and electrical heating and ventilating equipment, originally for agricultural purposes only. He also owns and operates a commercial nursery, where equipment is tested before being placed on the market. During the war he worked in the Hull Engineering Division of Todd Pacific Shipyard, then as electrical engineer for 13th Naval District Headquarters, Public Works Division; and when the war ended he resigned as Design Engineer in charge of Public Works Design Section, U. S. Naval Station at Seattle, Washington. Associate member of the A.I.E.E. and a member of the American Association of Nurserymen, he also is past president of the Washington State Nurserymen's Association.

Handsome is — as Kentile does!

We promise you—with Kentile—the handsomest floor in town. For Kentile is tile-set, not sheet-laid . . . Kentile puts flexibility, versatility and personality right at your fingertips—fits into any color scheme—any decor.

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614 Olympia Road, Pittsburgh 11, Pa.
1211 National Broadcasting Co. Bldg., Cleveland 14, Ohio

NOTICES

ECKBO, ROYSTON & WILLIAMS announce the opening of new offices at 121 Beale St., San Francisco, Calif.

ALBERT MELNIKER, A.I.A., recently of the Engineers Corps, AUS, has opened his office for the practice of architecture at 130 Bay St., St. George, Staten Island, N. Y.

Following ten years' service as manager of his municipality, HOWARD C. FRANK has reopened his architectural office at 126 Pittsburgh St., Scottdale, Pa.

JOHN E. SOMERVILLE and MILO GRIGGS have opened an office recently at 230 E. Walnut St., Green Bay, Wis., for the practice of architecture and engineering, specializing in industrial and commercial plants and processes.

After four years in construction work for war plants, LEROY W. THOMPSON, Architect and Engineer, announces the reopening of his office at 355 Congdon Ave., Elgin, Ill.

THOMAS J. BIGGS, A.I.A., Architect, HARRY E. WEIR, A.I.A., Architect, and SYDNEY W. CHANDLER, A.S.C.E., Civil Engineer, announce the formation of an association of architects and consulting engineers at 224 N. Congress St., Jackson, Miss.

RAYMOND BROWN, JR., has announced the opening of his office for the practice of architecture at 60 Main St., Torrington, Conn.

CHARLES E. THOMAS announces a partnership with GORDON SWEET for the practice of architecture under the firm name of THOMAS AND SWEET, ARCHITECTS. Their office is located at 224 Colorado Springs National Bank Bldg., Colorado Springs, Colo.

JOHN DUDLEY SCRUGGS AND CLARENCE ELLIOT HAMMOND have opened an office for the practice of landscape architecture and engineering at 300 Central National Bank Bldg., Peoria, Ill.

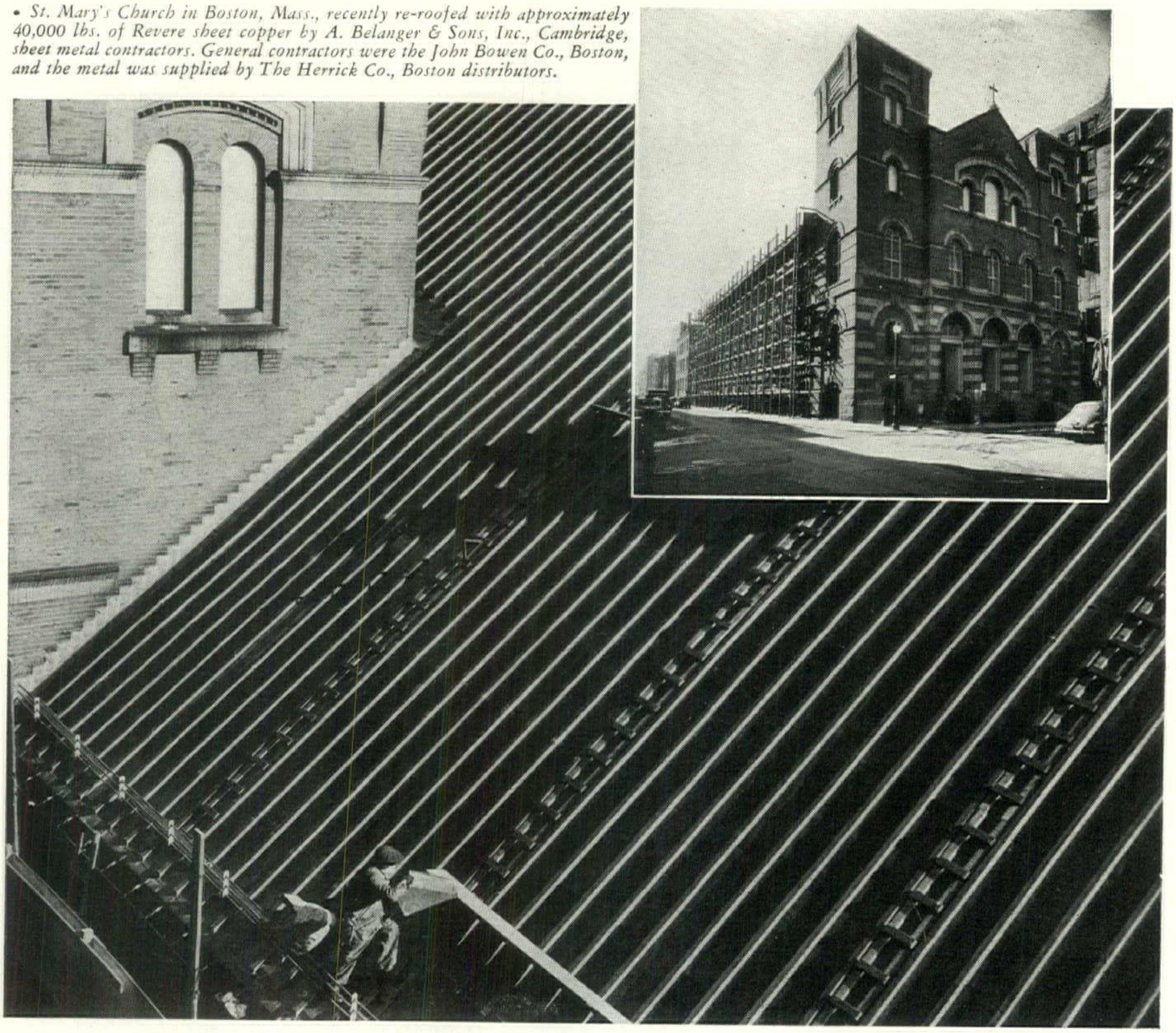
GRAHAM LATTA, recently discharged from the Seabees, has returned to practice architecture at 940 Alma St., Glendale, Calif.

FRANCIS E. GRIFFIN, Architect, and formerly staff faculty member of the School of Engineering and Architecture at Howard University, has joined DONALD F. WHITE, Architect-Engineer, as an associate and co-partner of the firm WHITE & GRIFFIN, ARCHITECT-ENGINEER ASSOCIATES, 1727 St. Antoine St., Detroit, Mich.

HUSON JACKSON AND JOHN HANCOCK CALLENDER have announced the formation of a partnership for the practice of architecture, design, and housing research. JACKSON and CALLENDER are located at 299 Madison Ave., New York, N. Y.

DAVID MAXWELL has joined BERTELL, INC., New York design and development organization, as director of product development and company associate. Offices of the firm are at 40 E. 49th St., New York, 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

REVERE believes that its responsibility only begins with the production of fine metals, and does not end until those metals are giving satisfactory service in the hands of users. Often, this means not only metallurgical research, but also extensive field and laboratory work in the practical application of Revere products.

As a result of such research, architects and contractors throughout the country now have new and vastly improved information on which to base sheet copper construction. Using the clear, simple charts supplied by Revere, sheet metal contractors are already taking wide advantage of the advanced engineering principles Revere has developed. These experts are convinced, as is Revere, that this new sheet copper construction will far outlast that done by former methods.

Nearly all prominent architects and contractors have Revere's new book on the subject, "Copper and Common Sense." We urge you to use the data in this book. It was prepared especially to help practical men in their day-to-day problems. Call on the Revere Technical Advisory Service, Architectural, for any further help you may wish. Revere products are sold by Revere Distributors in all parts of the country.

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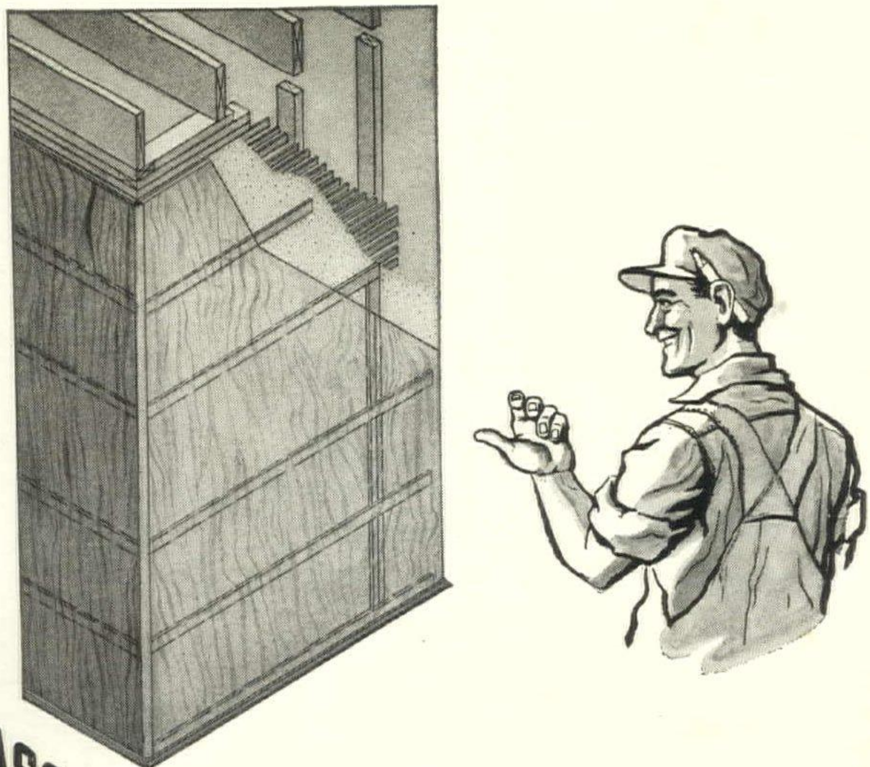
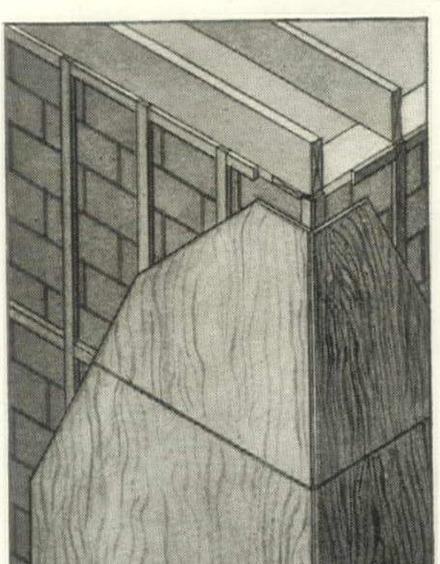


HOW TO PANEL MASONRY AND PLASTER WALLS

with WELDWOOD PLYWOOD



Walls of plaster, cement blocks, or poured concrete can be made to take on new warmth and charm . . . when paneled with Weldwood Plywood.

In applying Weldwood panels to plaster or masonry, furring sticks should first be set up on 16-inch centers. On plaster walls, the furring is applied horizontally across the studs and is secured with 8d box nails. (See illustration at top.)

For masonry walls, vertically placed furring is recommended. The strips should be fastened with steel cut nails driven into pre-drilled holes.

The above suggestions are just a few of the many which you will find in the new WELDWOOD APPLICATION MANUAL. This booklet contains a fund of valuable, up-to-the-minute ideas for using Weldwood Plywood. It shows construction details and illustrates time-saving and money-saving application methods.

Today, Weldwood Plywood is filling a great post-war demand . . . in many types of construction. If, therefore, your dealer's stocks are temporarily low, please be patient, ample supplies will be available soon.

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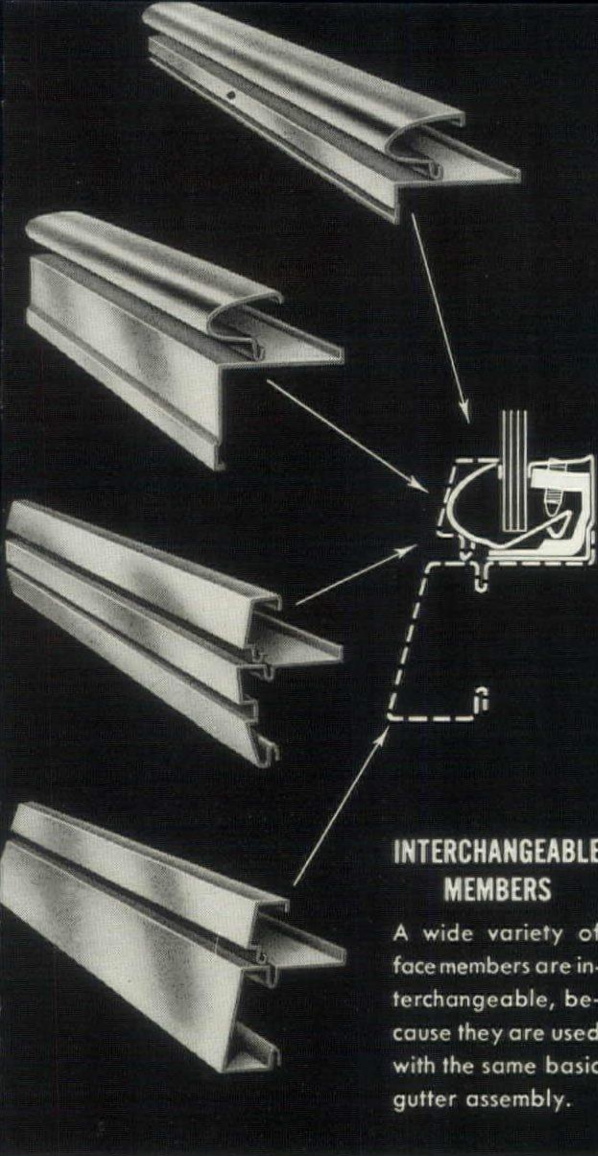
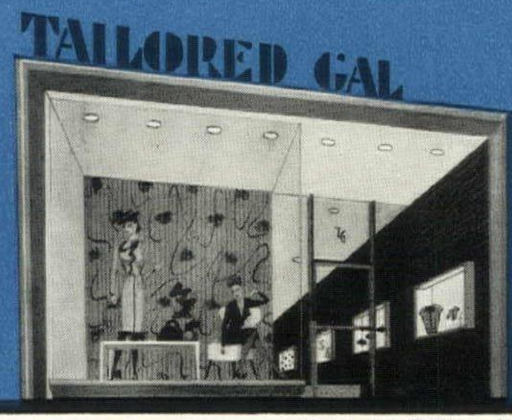


INTERCHANGEABLE MEMBERS

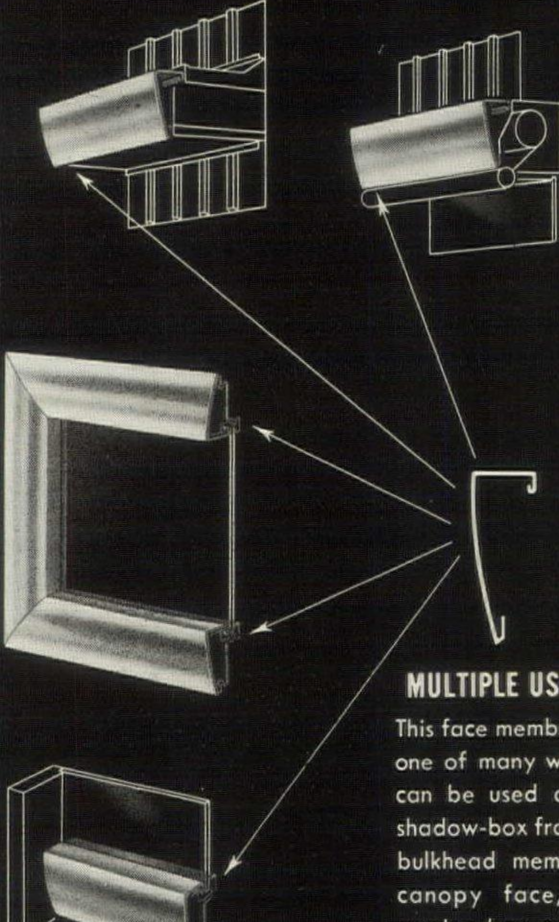
A wide variety of face members are interchangeable, because they are used with the same basic gutter assembly.

new

Interchangeable Members With Multiple Uses



Designed by Ketchum, Gina and Sharp, Architects, New York City.



MULTIPLE USES

This face member is one of many which can be used as a shadow-box frame, bulkhead member, canopy face, or awning box cover.

You can create an endless variety of custom-styled store front designs with the K-47 Line of store front metals, because its members are interchangeable and they also serve multiple uses.

A typical example of K-47 interchangeability is illustrated in the upper panel at the left. It shows a few of the many face members which are used with this same gutter assembly. And an illustration of the multiple uses of a K-47 member is shown in the lower panel.

These two outstanding features enable you to obtain unparalleled flexibility and freedom in designing a limitless number of distinctive store fronts.

They also reduce drafting expenses, since you can use the elements of a good design more than once and obtain new effects with K-47 interchangeable members. The use of a standard assembly for each type of construction simplifies installation and minimizes the costs of job supervision.

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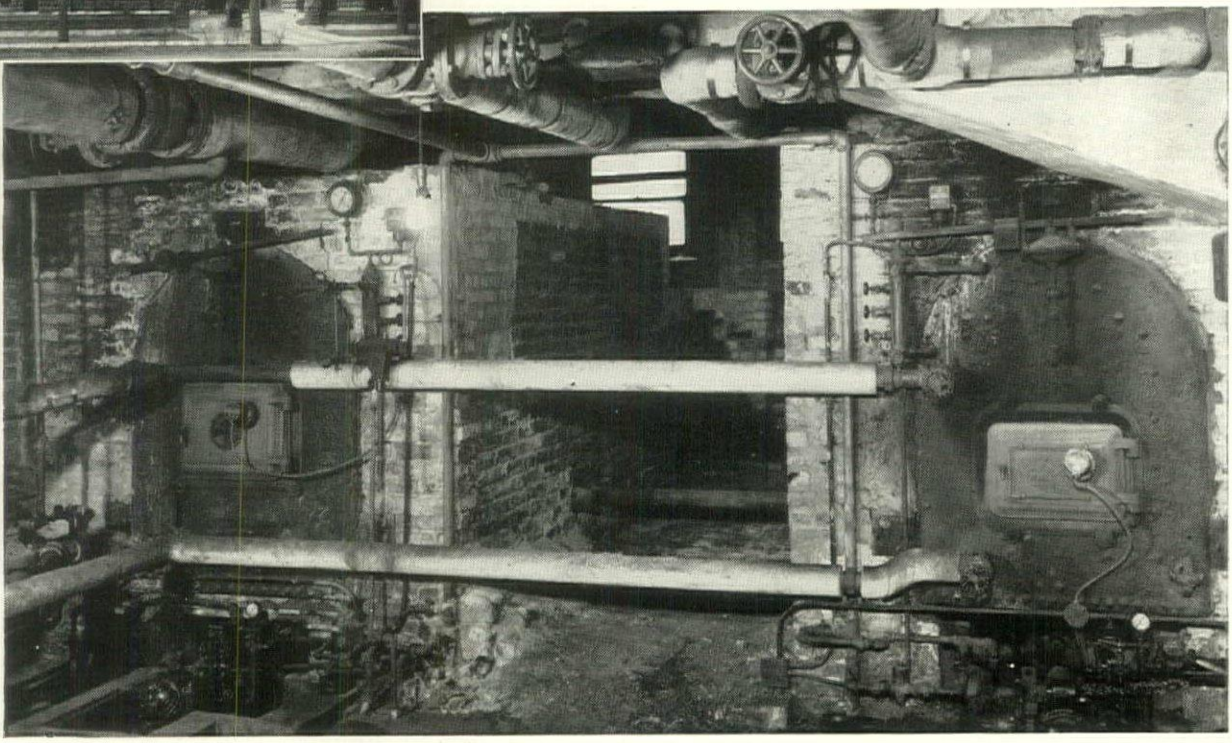

Erected more than 60 years ago, the famous Potter Palmer "Castle" on Chicago's Lake Shore Drive has, from the first, been heated with this pair of Kewanee Steel Firebox Boilers, installed by L. H. Prentice Co.

Yet . . . *after more than 60 years* on the job . . . they are still in serviceable condition.

Originally installed for hand-fired coal, they were later equipped for oil burning.

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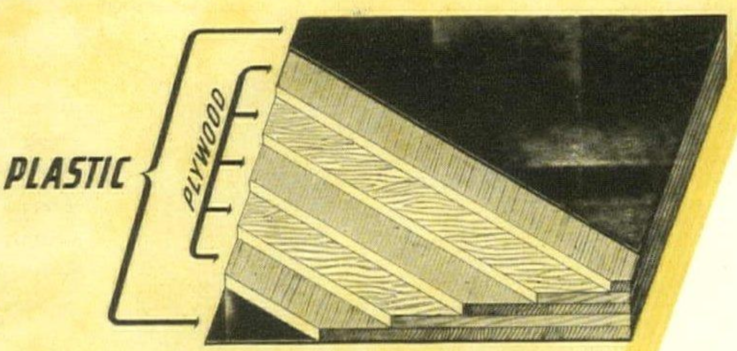

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Made by weld-pressing a plastic surface on phenolic resin bonded plywood, Laminex Plastic Faced Plywood combines the strength, flexibility and easy working characteristics of plywood with the permanence and hard surface of plastic!

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Laminex Plastic Faced Plywood has a HIGH STRENGTH-WEIGHT RATIO . . . a HIGH RESISTANCE to chemical action, abrasion and decay. It is STAINPROOF . . . IMPERVIOUS to alcohol . . . WATERPROOF even under extreme conditions . . . and it TAKES PAINT WELL.

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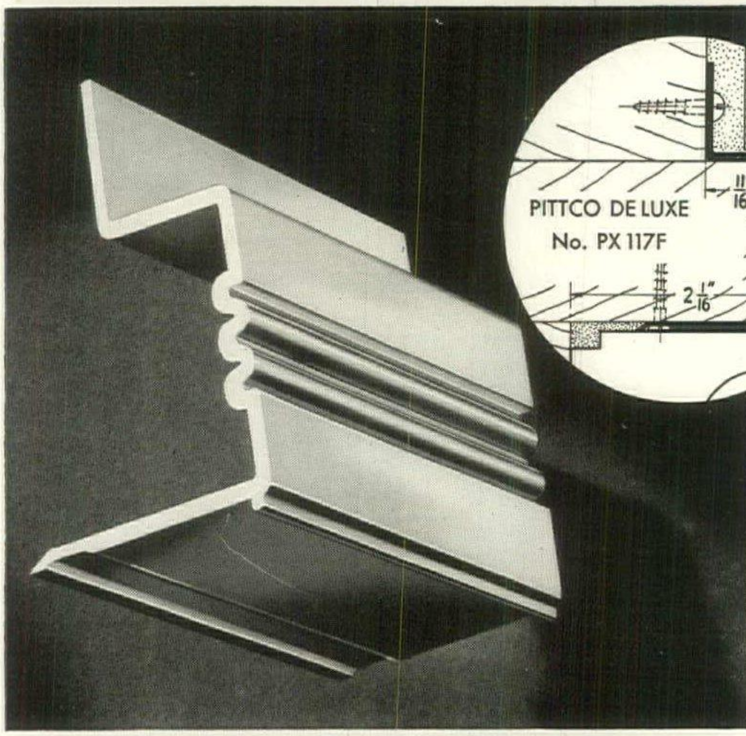
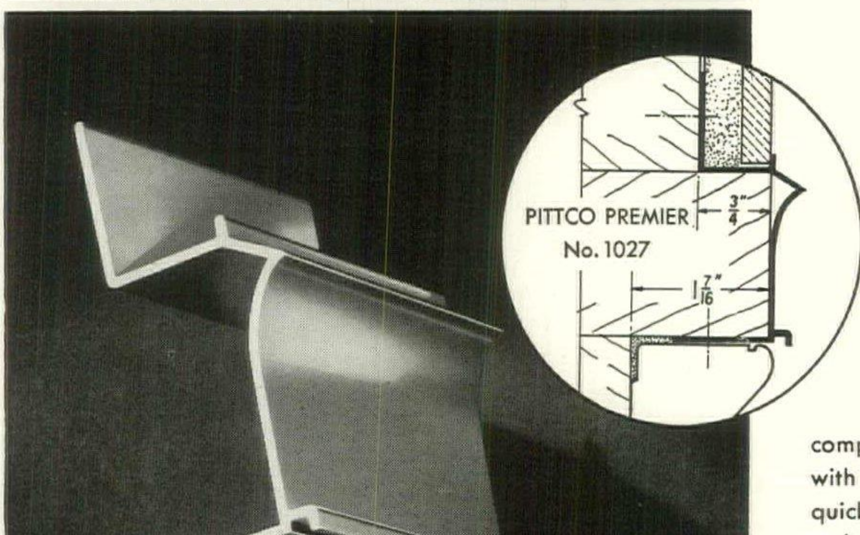
Two lines of PITTCO METAL with the same rich finish



PITTCO DE LUXE Pittco DeLuxe Store Front Metal has a satin-smooth finish, rich in tone and gloss, which has delighted both architects and store owners. They like it because it harmonizes perfectly with any material or color combination. And the Pittco De Luxe line also has rugged, sturdy strength and clear, sharp profiles assured by its extruded method of manufacture. Imaginative styling and the wide variety of bars, mouldings and sash in the De Luxe line permit the architect many effective combinations. For symmetry, strength and perfect finish, Pittco De Luxe is the ideal choice for impressive, distinctive store fronts of high quality.



PITTCO PREMIER Pittco Premier, although lighter in weight and more moderately priced than Pittco De Luxe, has the same rich, smooth finish. And into the Premier line, too, has gone the same careful planning which has made the De Luxe line so popular. All Premier members were styled at one time so that perfect harmony would be inherent in the line . . . each Premier unit complementing the beauty of other pieces used with it. Pittco Premier construction can be set quickly and easily . . . a simple outside procedure that effects a substantial savings in setting time. In Pittco Premier architects will find a lightweight, economical metal with which to create pleasing, appealing store fronts.

PITTCO STORE FRONT METAL

"PITTSBURGH" *stands for Quality Glass and Paint*

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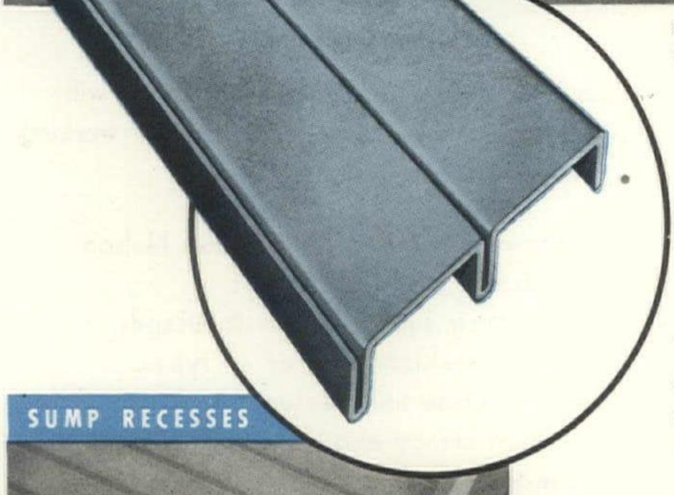
STEEL DECK...



Note the angle of the third and fourth purlin in the illustration above. These have been set to create a valley at the sump location.

for ROOFS and SIDEWALLS

Today the advantages of Mahon Steel Deck in both roof and sidewall construction are manifold . . . one advantage in roof construction—the creation of saddles by warping the Steel Deck in the drainage area, is accomplished by sloping the purlins to produce the desired angle for drainage to the sump location. This requires no cutting, fitting, or additional Steel Deck Plates, and it eliminates the necessity of constructing saddles of other material. Sump Recesses, illustrated at the left, can be furnished with Mahon Steel Deck to fit any sump or meet any roof pitch requirement. For complete information on Mahon Steel Deck, see Sweet's, or call in a Mahon engineer.

SUMP RECESSES

Mahon Sump Recesses have been designed for use with Mahon Steel Deck. They are manufactured in 14 gauge steel and welded to the surrounding Steel Deck in a manner which adequately reinforces the opening.

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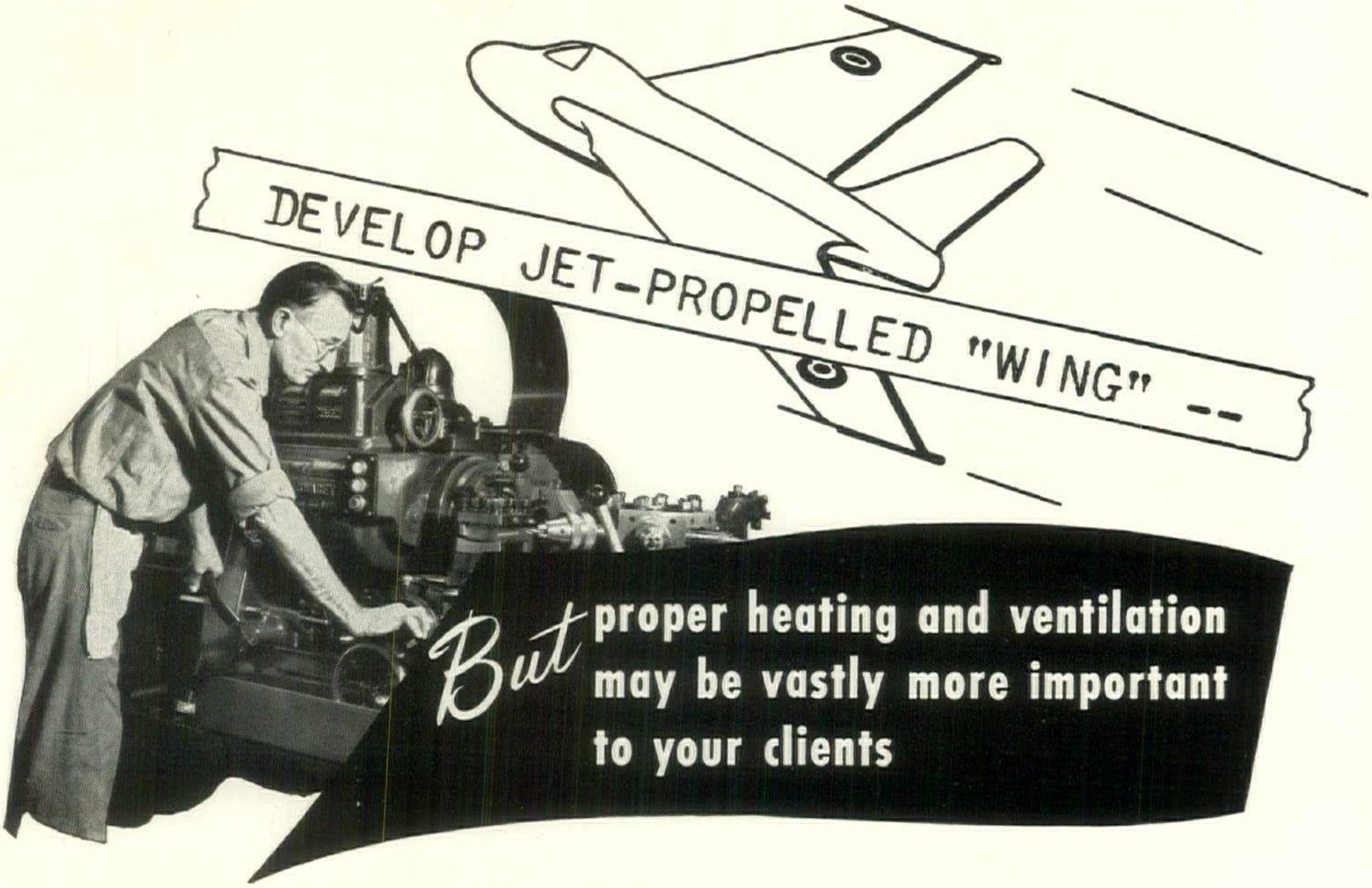
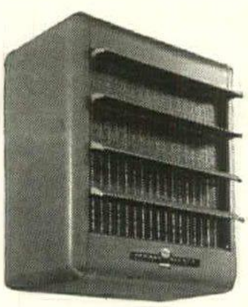
MAHON





Herman Nelson Horizontal Shaft Propeller-Fan Type Unit Heaters

Herman Nelson Blower-Fan Type Unit Heaters

Today . . . perhaps more than ever before . . . equipment which will help speed up production, cut down absenteeism and improve working conditions, is important to every type of business.

It's no wonder there is such a growing demand for Herman Nelson Unit Heaters. These units, available in a wide range of sizes and capacities, have proved their superiority in thousands of industrial plants and commercial establishments of all types. Like other Herman Nelson Products, these unit heaters are designed and built for maximum operating efficiency and economy. They incorporate laboratory and "use-tested" features, resulting from 40 years confined exclusively to the manufacture of quality heating and ventilating products.

The statement, "You can't buy better products than those bearing the Herman Nelson nameplate," is as true today as it was in 1906.

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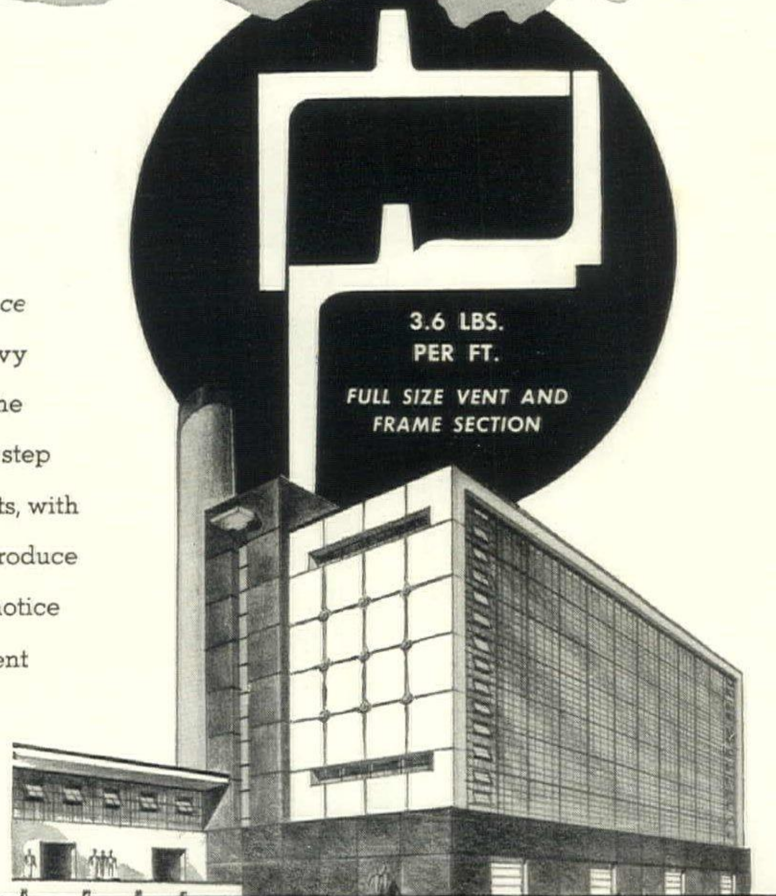
...assured by massive sections

Where specifications demand *"performance and endurance for the life of the structure"*... build with Mesker Heavy Duty Sash! Mesker engineers spent years perfecting the techniques for strength and durability that go into every step of their construction. Gruelling abuse and punishment tests, with laboratory models, have given them the know-how to produce windows that can "take it." Inspect a Mesker window... notice its *double* riveted-welded features... its important allotment of extra metal-thickness in every bar and muntin... note the lifetime durability of operating units, so typical of Mesker workmanship.



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Home office of New England Mutual—Cram & Ferguson, Architects; Turner Construction Co., Builders. Air-conditioning system installed by Buerkel & Co., Inc., of Boston.

The cool comfortable cafeteria (above) in the air conditioned building refreshes employees.

GREATER COMFORT for employees was one of the policies adopted by The New England Mutual Life Insurance Company when it built its new Boston home six years ago. The building is air conditioned throughout with General Electric and Carrier conditioning units of 150 and 300 horsepower using "Freon" refrigerants exclusively. This modern installation maintains ideal conditions within the structure ... the temperatures averaging 73° but with never more than 15° difference from outside temperature on extremely hot days, with relative humidity of approximately 50%.

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So keep the proven safety and dependability of "Freon" safe refrigerants in mind when *you* plan your next building. The compact, efficient air conditioning equipment made possible by "Freon" will prove to be a sound policy for safer comfort.

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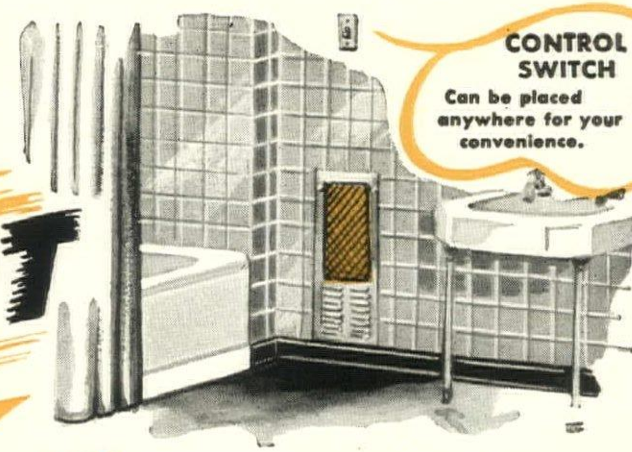
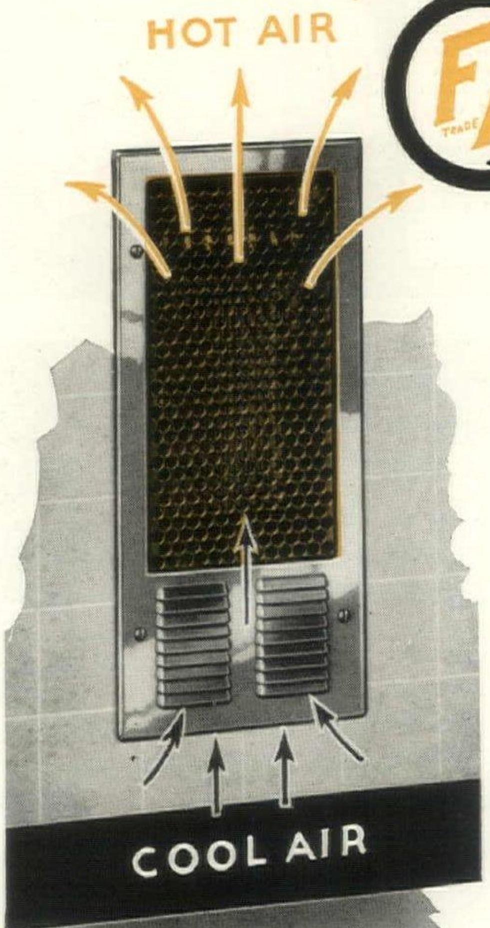


FOR THOSE **CHILLY AUTUMN** MORNINGS....

WHEN YOU INSTALL THE *ELECTRIC*

FA QUIKHETER



Quick, comfort-giving heat with the simple flip of a switch! That is what the new, improved Built-in FA Quikheter affords.

FA Quikheters are ideal for those damp, chilly fall and winter days — days when regular heating plants are off... or for taking the chill out of the house on cold, blustery winter days.

Equipped with a genuine Nichrome heating element that should never wear out, these quick-acting units send forth a glow of warm air that will change the temperature of the average room in three to five minutes.

There is no need to wait for the heater to heat-up. There is no lost motion or electricity — no waste of fuel. FA Quikheters are hot the minute they are turned on. And they are neat and attractive, too—ideal for bathrooms, kitchen, and other rooms. They can be easily installed in the wall or in the base of mantles.

For maximum home comfort and convenience, therefore, install Built-in FA Quikheters — today's contribution to tomorrow's better living. For details write for bulletin No. 73 or contact your nearest electrical dealer. Be sure, however, to specify FA Quikheters.

FA Quikheters are available in single units of 1000 and 1500 watts and twin units of 2000 and 3000 watts.

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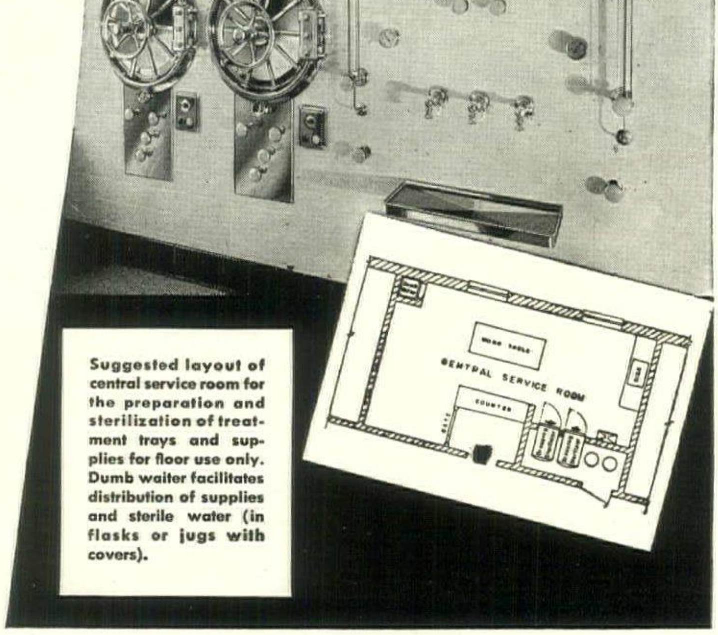
Authentic Aid in Planning Sterilizer Installations



Suggested layout of central service room for the preparation and sterilization of treatment trays and supplies for floor use only. Dumb waiter facilitates distribution of supplies and sterile water (in flasks or jugs with covers).

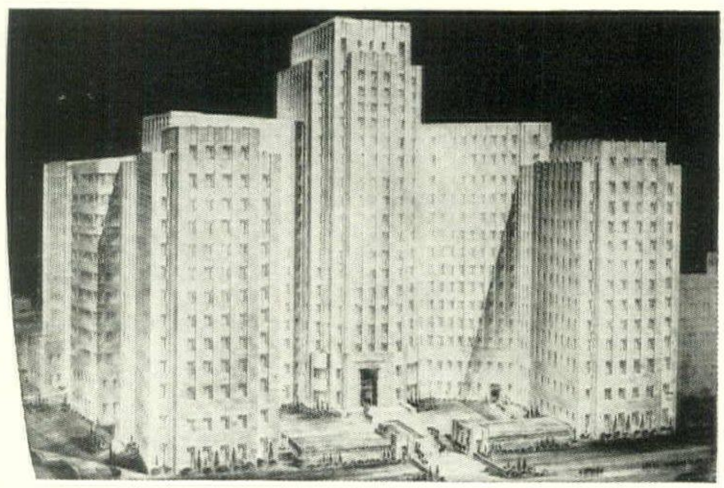
for the Small Hospital or the Largest

• Any estimate of the number, sizes and types of sterilizers required to take care of the various departments of a hospital should be based on bed capacity, amount of surgery and obstetrics to be done, and the general layout of the building. Consideration should also be given to possible future additions to the hospital. If finances permit the purchase of only a bare minimum of equipment, space should be provided for additional sterilizers that might be required in the future.

40 Years' Experience

in manufacturing hospital equipment and in contacting superintendents, surgeons, hospital engineers and architects, have qualified the Technical Sales Service Department of the Scanlan-Morris Division to supply valuable data and assistance in proper planning for sterilizers. This department will gladly supply complete engineering data, suggestions and recommendations upon receipt of estimated requirements and a set of floor plans or a sketch of the proposed building. This service is available to architects and hospitals without obligation.

Write for literature on Scanlan-Morris sterilizers.



CHARITY HOSPITAL, NEW ORLEANS

The 125 sterilizing rooms in this 3000-bed hospital are equipped with Scanlan-Morris sterilizing apparatus.

THE OHIO CHEMICAL & MFG. CO.
General Offices:
60 East 42nd Street, New York 17, N. Y.

Medical Gas Division, Cleveland. Hospital Supply and Watters Laboratories Division, New York. Heidbrink and Scanlan-Morris Divisions, Madison, Wis. Represented in Canada by Oxygen Company of Canada Limited, and Internationally by Airco Export Corporation, 33 W. 42nd St., New York.

Ohio Chemical

Manufacturers of Medical Apparatus, Gases, and Supplies for the Profession, Hospitals and Research Laboratories

BRANCH OFFICES IN PRINCIPAL CITIES

OHIO

NOW AVAILABLE! A. W. FABER'S The WINNER

handy easel box assortment of the 12 most popular colored pencils

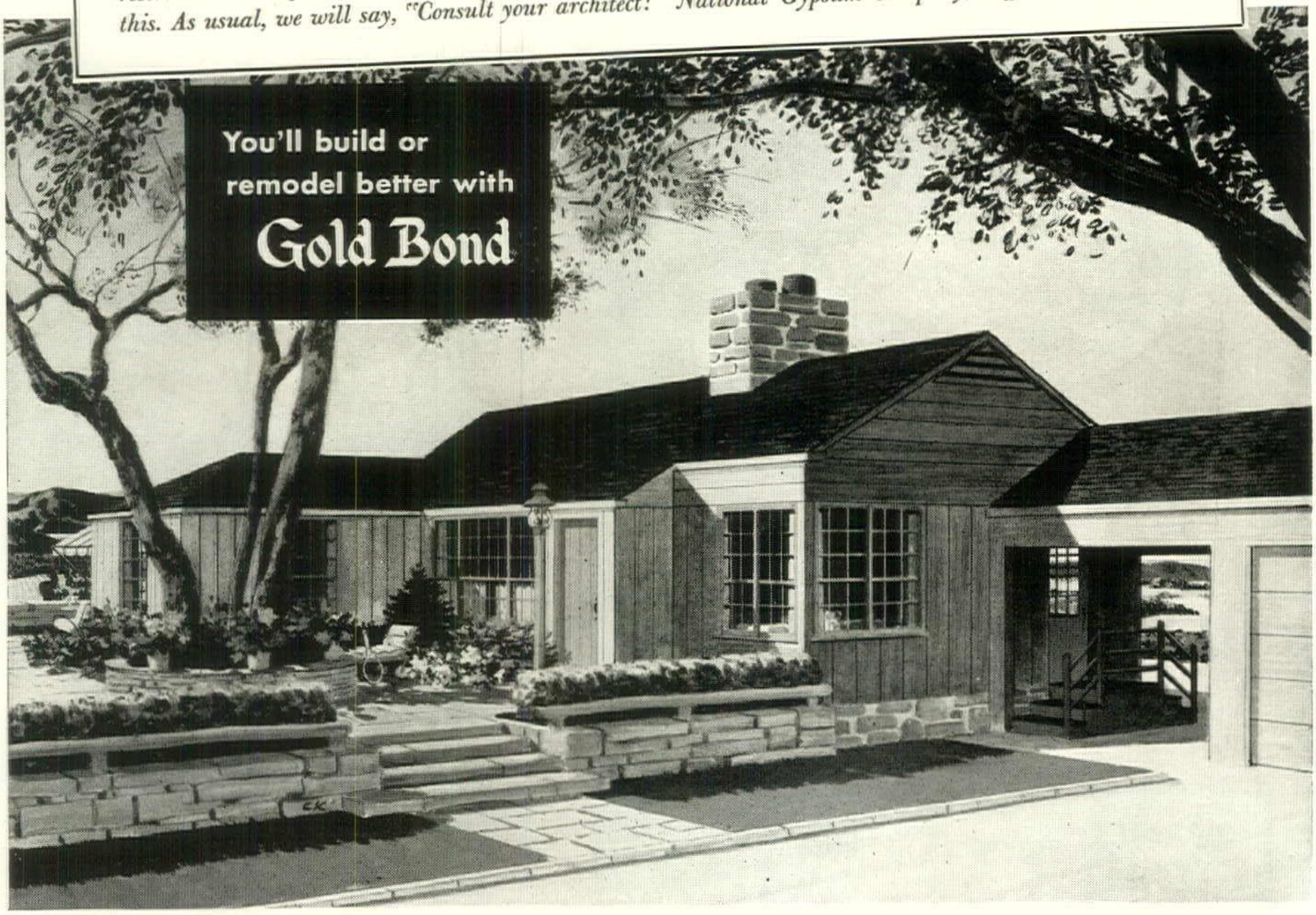
RETAILS FOR $1

Belongs on the drawing board of every Architect, Artist, Engineer, Draftsman and Designer

A. W. Faber—the most important name in pencils since 1761—now brings you the famous assortment of The WINNER thin lead colored pencils. Packed in a swing-type box for fingertip convenience, The WINNER offers all the qualities that have endeared it to pencil craftsmen the country over... breath-taking brilliance, insolubility in water (prevents finger marks on your drawings), easy sharpening, crayon practically as strong as lead in your black lead pencil. Even sharpened to a needlepoint, it stands up when you bear down. If your Dealer doesn't yet have his supply, write to A. W. Faber, Inc., Newark 4, N. J.

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

Sure as shootin' this big full-color Gold Bond ad in The Saturday Evening Post will hit straight at the hearts of home-loving Americans. They'll be building and remodeling the Gold Bond way, just as soon as restrictions are lifted and materials are available. And they'll probably write us for plans of houses like this. As usual, we will say, "Consult your architect!" National Gypsum Company, Buffalo 2, New York.



Haven't you dreamed of such a home? You can have it a lot sooner if you start planning now. See your local Gold Bond dealer.

How not to build a Haunted House . . .

NOT all haunted houses are old. Many a new house starts to haunt its owner from the day he moves in. Haunt him with troubles, worries, and ever mounting expense. This has always been true. And it's even truer today with so many people wanting homes that there isn't enough good material to go around.

But whether you can build today or not it's wise to start planning now. Planning to build so soundly that the ghosts of shoddy construction and flimsy materials will never rise up to haunt you. For, thanks to scientific research, new methods and modern materials assure you greater comfort and long-lasting freedom from annoying repair expense. Take walls and ceilings for example. For over 100 years almost no progress was made in this field. Then research developed lightweight fireproof gypsum lath. Stronger than wood lath, it bonds so securely to modern improved gypsum plaster that a team of horses can't pull them apart.

The same kind of research discovered how to lock winter heat in and summer heat out, with fireproof high-efficiency rockwool home insulation. Pays for itself in fuel savings alone!

You can plan on stronger, tighter outside walls at low cost, too, thanks to fireproof Gold Bond storm-sealed gypsum sheathing under the outside finish. In normal building times more than 10,000 lumber and building material dealers can supply all you need of the 150 research-produced Gold Bond Building Products. Today things are different, for even our full production can't keep up with demand. But just the same your local Gold Bond dealer is on the job, helping GIs to get housed, helping his customers in every way he can.

See him first when you plan your own house. He will help you build better. Not today perhaps, but tomorrow sure! National Gypsum Company, Buffalo 2, New York.

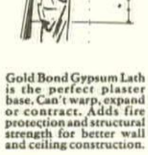
Over 150 tested Gold Bond Building Products for new construction or remodeling add greater permanency, beauty and fire protection. These include wallboard, lath, plaster, lime, sheathing, wall paint, insulation, metal and sound control products.

DEMAND THESE SIX GOLD BOND FEATURES IN YOUR NEW HOUSE

GOLD BOND FIREPROOF GYPSUM SHEATHING

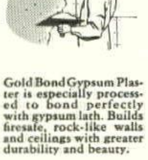
Big, weatherproofed panels of Gold Bond Storm Sealed Gypsum Sheathing add structural strength and built-in fire protection. Costs less than old-style sheathing.

GOLD BOND FIREPROOF GYPSUM LATH



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

GOLD BOND FIREPROOF GYPSUM PLASTER



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

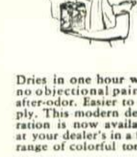
GOLD BOND FIREPROOF FINISH LIME

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

GOLD BOND FIREPROOF ROCK WOOL INSULATION

Builds a fireproof blanket of insulation around the house for greater year 'round comfort, family health, and fuel savings up to 30%. Available for new or old homes.

GOLD BOND—SUNFLEX 1-HOUR WALL PAINTS



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

CELCON is the Plastic for all-temperature toughness!

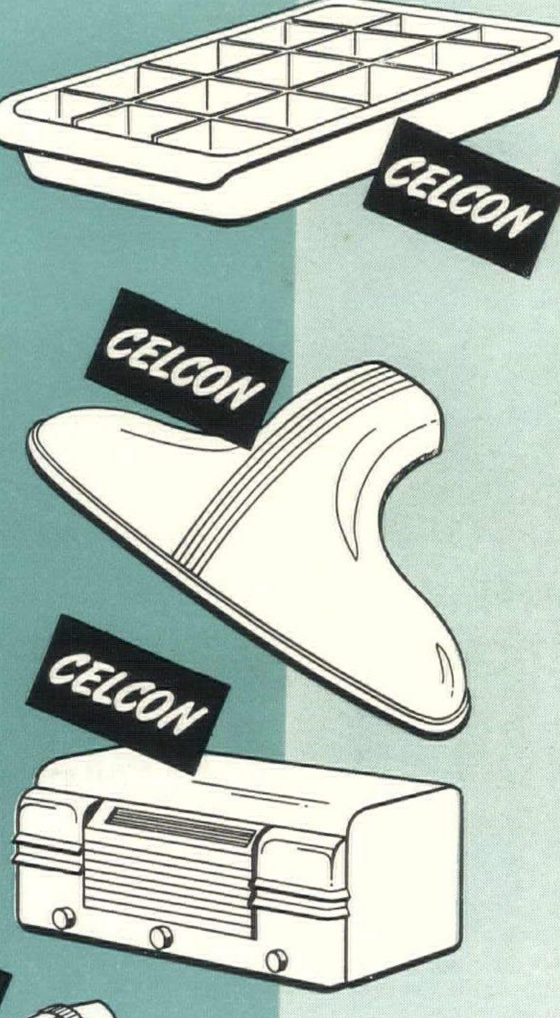
Manufactured goods with national distribution must meet the test of practically every type of climate—from sub-zero arctic temperature to tropical moist heat. That is why it is important to use materials which will stand up to temperature and humidity variations. In thermoplastics, that means CELCON.

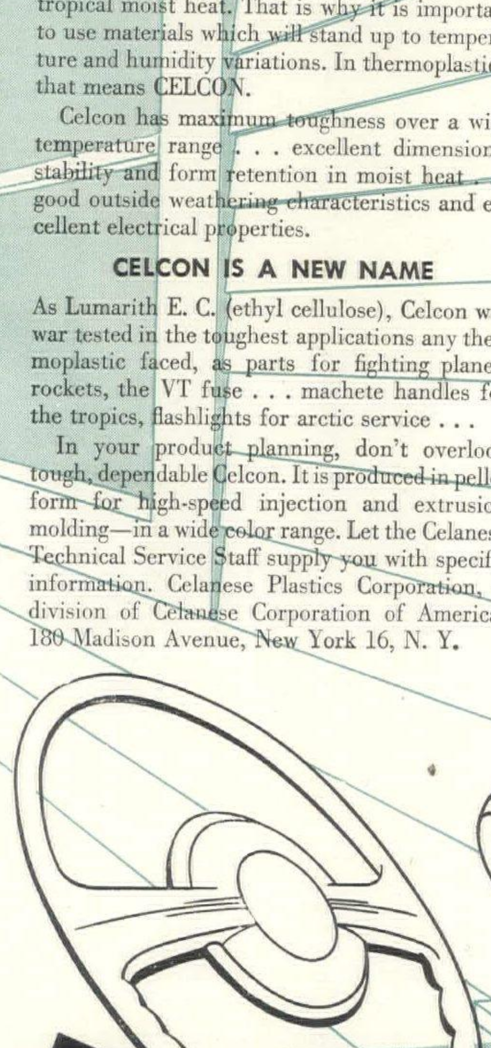
Celcon has maximum toughness over a wide temperature range . . . excellent dimensional stability and form retention in moist heat . . . good outside weathering characteristics and excellent electrical properties.

CELCON IS A NEW NAME

As Lumarith E. C. (ethyl cellulose), Celcon was war tested in the toughest applications any thermoplastic faced, as parts for fighting planes, rockets, the VT fuse . . . machete handles for the tropics, flashlights for arctic service . . .

In your product planning, don't overlook tough, dependable Celcon. It is produced in pellet form for high-speed injection and extrusion molding—in a wide color range. Let the Celanese Technical Service Staff supply you with specific information. Celanese Plastics Corporation, a division of Celanese Corporation of America, 180 Madison Avenue, New York 16, N. Y.

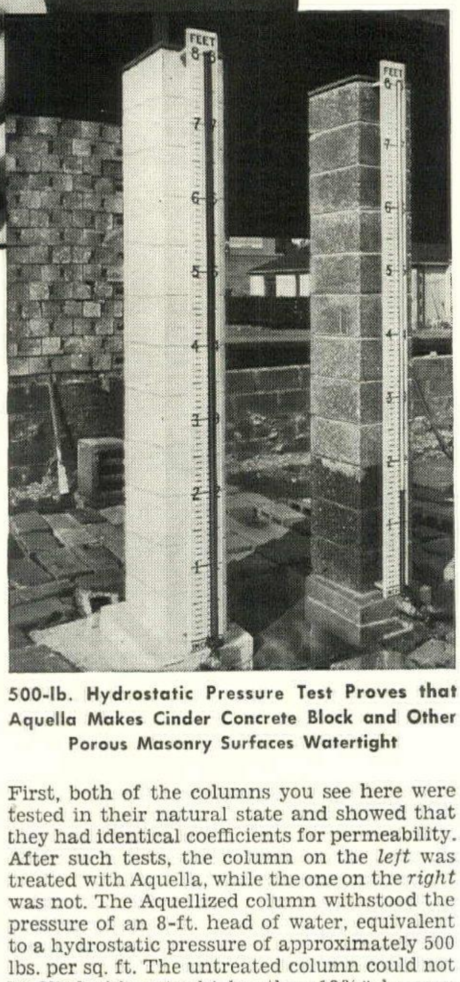




Celanese* Plastics

LUMARITH* FORTICEL* CELCON†
CELLULOID* VIMLITE*

†Trademark *Reg. U.S. Pat. Off.



500-lb. Hydrostatic Pressure Test Proves that Aquella Makes Cinder Concrete Block and Other Porous Masonry Surfaces Watertight

AT LAST...THE LIGHT WEIGHT CONCRETE MASONRY UNIT HAS A PERFECT WATERPROOFING PARTNER

...AQUELLA!

What does this "partnership" mean to you as an architect, engineer or contractor planning or constructing a building of light weight concrete masonry units?

It means simply this...

That now...with Aquella adding the advantage of *watertightness* to the desirable construction qualities this type of masonry provides—you have a building material excellent in every respect.

Furthermore...Aquella also gives an attractive, glistening white, eggshell-like finish that is truly beautiful in its natural color—or when painted to match any decorative scheme. Aquella does not powder or rub off, nor does it blister, peel or flake.

Specify Aquella for Brick, Concrete, Stucco or Cement Plaster

Aquella is the new, scientific way to insure watertightness inside or outside...above or below ground...on all porous masonry surfaces, such as brick, concrete, stucco or cement plaster.

SEE DATA IN SWEET'S CATALOG

First, both of the columns you see here were tested in their natural state and showed that they had identical coefficients for permeability. After such tests, the column on the *left* was treated with Aquella, while the one on the *right* was not. The Aquellized column withstood the pressure of an 8-ft. head of water, equivalent to a hydrostatic pressure of approximately 500 lbs. per sq. ft. The untreated column could not be filled with water higher than 18¾", because the water seeped through the cinder blocks at the rate of 2 gallons per minute.

Aquella, having proved its effectiveness on cinder concrete blocks, under conditions as extreme as this, must necessarily be equally successful when applied to other types of masonry construction such as concrete, brick, stucco or cement plaster.

AQUELLA IS A "MUST" ***on every light-weight concrete masonry unit job!***

You'll want this information for your waterproofing file

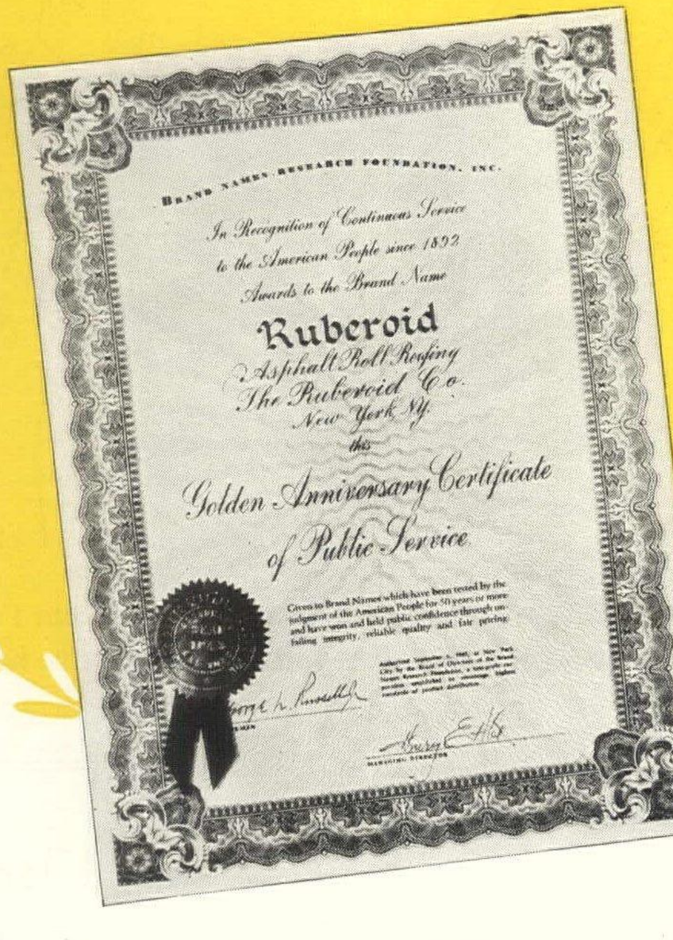
Write today for your copies of "Aquella and Concrete Masonry Construction," and the "Key to Aquella Specification Types."

PRIMA PRODUCTS, INC.

Dept. F, 10 East 40th Street
New York 16, N. Y.

FOR OVER FIFTY YEARS

"A name to remember"



THE Certificate of Public Service is awarded by Brand Names Research Foundation to names "which have been tested by the judgment of the American people for 50 years or more and have won and held public confidence through unfailing integrity, reliable quality and fair pricing."

Ruberoid recently received this honor. Naturally we take pride in this recognition of our constant endeavor to bring our customers the best.

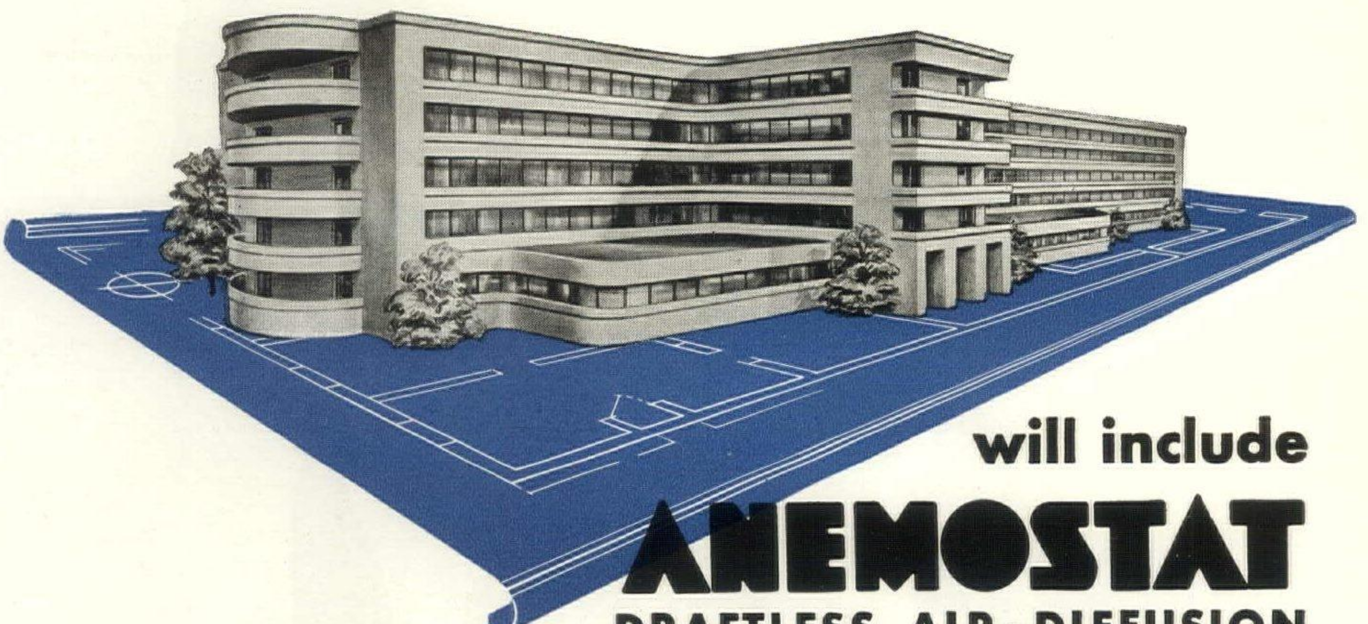
Since 1892 many outstanding products have been pioneered by Ruberoid—products not yet old enough to be eligible for a 50 year Certificate of Public Service, but each distinguished for the same high standards of workmanship and service. Architects, contractors, dealers and the public can rest assured this company will spare no effort to maintain the policies and standards which have made Ruberoid "A name to remember."

RUBEROID

The RUBEROID Co., Executive Offices: 500 Fifth Ave., N. Y. 18, N. Y.

ASPHALT AND ASBESTOS BUILDING MATERIALS

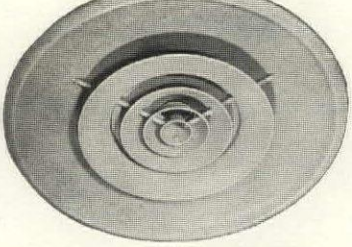
The Best Laid Plans...



will include ANEMOSTAT

DRAFTLESS AIR-DIFFUSION

for *successful* air-conditioning



On the boards today, the ultra-modern commercial and industrial buildings of tomorrow are being designed to assure unsurpassed production. Incorporating all the newest advances in architectural design, they will add much to worker efficiency and comfort.

The best laid plans for newly designed commercial and industrial buildings include *successful* air-conditioning. To get it, more and more architects, engineers, and contractors are specifying Anemostat—the patented air-diffuser—which completes the air-conditioning process by providing scientifically correct distribution of the conditioned air to every part of the conditioned rooms.

The extreme changes proposed in building and structural design, the new ideas for interiors and equipment, *all* magnify the need for correctly engineered air-distribution as provided by Anemostat. Without it, the air-conditioning system is incomplete—drafts occur . . . stale air-pockets persist . . . temperature and humidity are unequalized.

The Anemostat eliminates these trouble-breeders by distributing conditioned air in pre-determined patterns, and precisely in accordance with prescribed-for-comfort air velocities. The result: *SUCCESSFUL* air-conditioning for *true* air-comfort!

Anemostat engineers are air-diffusion specialists. Backed by 25 years of experience, they can capably solve difficult air-diffusion problems. A consultation can be arranged today. There is no obligation.

Descriptive literature is available on request.

AC-1092

"No air-conditioning system is better than its air-distribution"

ANEMOSTAT

REG. U. S. PAT. OFF.

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

REPRESENTATIVES IN PRINCIPAL CITIES

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

"A sloppy washroom sure gets my goat!"

TOM: *"This one's always so shipshape it's a pleasure to clean up in."*

BOB: *"You said it! The boss must know we appreciate a good washroom as much as he does."*

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

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

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

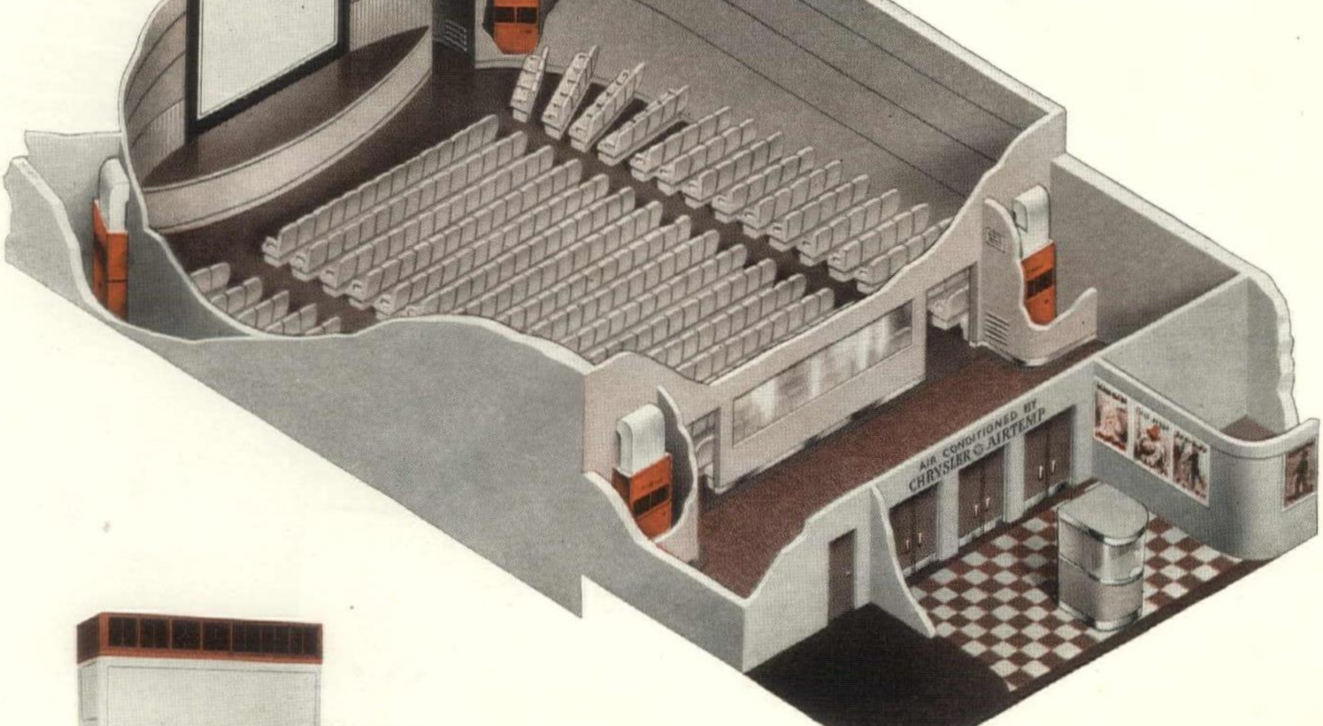
Good Washrooms begin at the Drawing Board—Good washrooms are a result of careful thinking and planning in the blueprint stage. For practical suggestions on modern washroom layout, turn to our four pages in Sweet's catalog—or call on the Scott Washroom Advisory Service, Scott Paper Company, Chester, Pa.

SCOTTISSUE TOWELS
STAY TOUGH WHEN WET

Thirsty Fibre

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

Chrysler Airtemp



Simplified Cooling for Small Theaters

"Packaged" Air Conditioner

A simplified form of easy-to-install air conditioning for every kind of business. Heating coil can be added right in the package for Winter air conditioning.

A Number One Box Office Attraction for small theaters can be planned right on the architect's drawing board. It's Chrysler Airtemp "Packaged" Air Conditioners.

Architects will find this simplified form of automatic air conditioning so compact and flexible that it will fit perfectly into even the most unusual plans. And theater owners will find that Chrysler Airtemp "Packaged" Air Conditioners quickly pay their way by increasing summer audiences.

Backed by Chrysler Corporation, these "Packages" of cool comfort are reasonable in price and give trouble-free operation at an amazingly low cost. All are equipped with the famous Chrysler Airtemp Sealed Radial Compressor for economical operation, long life and finer performance.

For specifications, architects are invited to write Airtemp Division of Chrysler Corporation, Dayton 1, Ohio; in Canada—Therm-O-Rite Products, Ltd., Toronto, Ont.

CHRYSLER AIRTEMP

HEATING • COOLING • REFRIGERATION

When the blueprints call for RADIANT HEATING . . .

here's why you'll want *Copper Tube*

YOU'RE designing for *lasting* appreciation. So, for the radiant heating system, be sure to include *copper tube* in your specifications. The great durability and long-range economy of Chase Copper Tube mean a satisfied client, and satisfied clients build business and prestige for you.

You boost your stock with heating contractors, too, when the specifications call for Chase Copper Tube. It's easy to bend, light in weight, comes in long lengths, and is sold through plumbing and heating wholesalers throughout the country.

The demand for Chase Copper Water Tube is so great that we are not able to satisfy it at all times. However, the technical information is now available to you for future planning. For a complimentary copy of our new handbook write, on business letterhead, to Dept. PA 96.

7 Reasons

WHY CHASE COPPER TUBE FOR RADIANT HEATING

1. *EASY TO BEND*
2. *LIGHT IN WEIGHT*
3. *SOLDERED FITTINGS*
4. *SMALL DIAMETERS*
5. *LONG LENGTHS*
6. *LOW COST*
7. *LONG LIFE*

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BRASS & COPPER CO.
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Waterbury 91, Connecticut
SUBSIDIARY OF KENNECOTT COPPER CORPORATION

This is the Chase Network—handiest way to buy brass

ALBANY† ATLANTA† BALTIMORE BOSTON CHICAGO CINCINNATI CLEVELAND DETROIT HOUSTON† INDIANAPOLIS JACKSONVILLE† KANSAS CITY, MO. LOS ANGELES MILWAUKEE MINNEAPOLIS NEWARK NEW ORLEANS NEW YORK PHILADELPHIA PITTSBURGH PROVIDENCE ROCHESTER† SAN FRANCISCO SEATTLE ST. LOUIS WASHINGTON† *(†Indicates Sales Office Only)*

Windowalls by ANDERSEN

The view . . . the sunshine . . . the ventilation . . . the section of the wall, that although of glass, is thoroughly insulated . . . is an Andersen WINDOWALL.

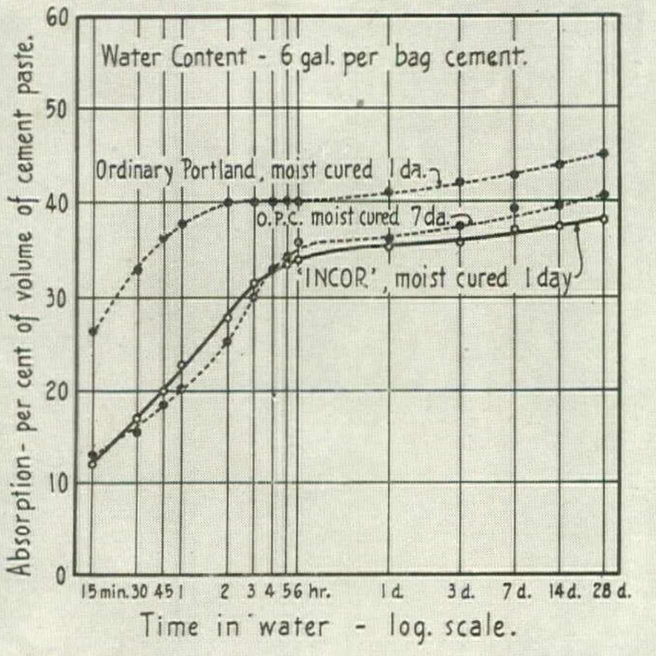
Architect Frank Pichler specified Andersen Wood Casement Window Units arranged in an angle bay for this home in Columbus, Ohio. The sash in the center is fixed, while the two casements on each side swing out to catch cooling breezes.

This is just one of the countless WINDOWALLS made by combining stock size Andersen Complete Wood Window Units. For additional information, consult Sweet's Catalog, or write Bayport.

Andersen Corporation • BAYPORT • MINNESOTA

CASEMENT • GLIDING • DOUBLE HUNG AND BASEMENT WINDOW UNITS

'INCOR' HELPS KEEP WATER In or Out



EFFECT OF CURING TIME ON ABSORPTION.

Tests of 3×3×15-in. mortar bars.
Age of bars, when immersed - 18 mo's.

Faster, thorough 'Incor' curing makes it easier to get watertight work. Left, Municipal Swimming Pool, Moss Point, Miss. 'Incor' concrete keeps water IN.

Right, heavy-duty floor at Dr. Pepper Bottling Works, Springfield, Mo. 'Incor' keeps water OUT—longer wear, better service.

LONE STAR CEMENTS COVER EVERY CONSTRUCTION NEED

GOOD concrete—a good mix, properly placed and THOROUGHLY CURED—is watertight, of itself and by itself. But thorough curing means keeping ordinary concrete wet 6 to 8 days—next to impossible on most jobs. That is why it pays to use 'Incor' 24-Hour Cement. 'Incor' cures, that is, combines with water, so much faster that you get THOROUGH curing in 24 to 48 hours, saving 5 to 7 days on each pour. Tests summarized in graph, above, show that 'Incor' cured 1 day has less absorption than ordinary cement cured 7 days.

Specify 'Incor'* wherever water has to be kept in or out—see the all-important difference in durability and watertightness. Illustrated book, "Watertight Concrete," on request to Lone Star Cement Corporation, 342 Madison Ave., New York 17, N. Y.

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

PROGRESSIVE
ARCHITECTURE
PENCIL POINTS

WHY PUBLISH ARCHITECTURE?

We are proud of the fact that PROGRESSIVE ARCHITECTURE has always been a professional magazine. In somewhat the same way that doctors use their medical journals and lawyers their law journals for the discussion of professional problems and the dissemination of professional knowledge—for the general elevation of the body of practitioners—all the architects must have available a fully illustrated publication intended solely for those engaged in the design of buildings, communities, and cities.

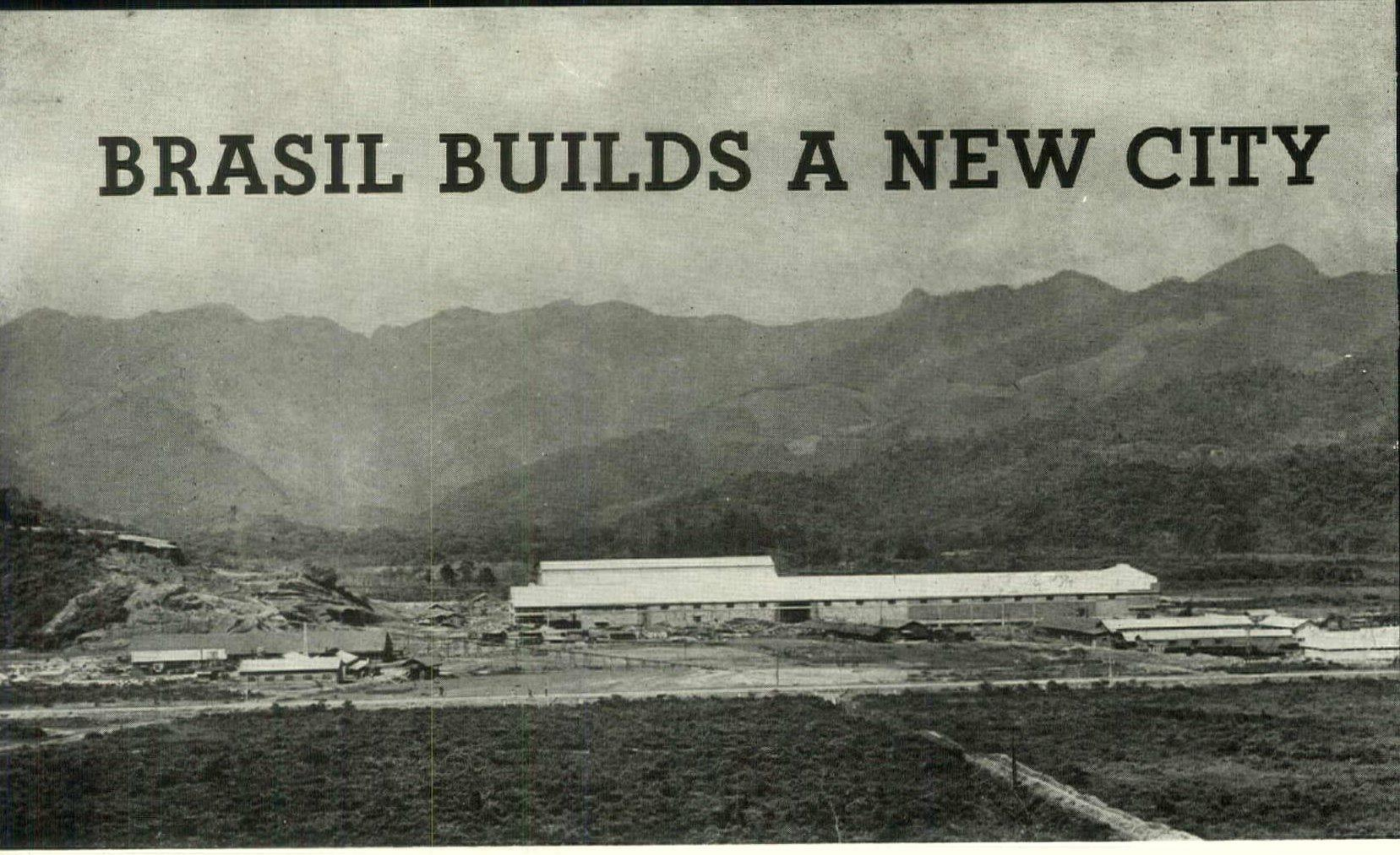
A magazine intended to reach a large lay group, or even a group engaged in *related* activities, obviously could not deal with professional matters in the same detailed, technical way that a purely professional magazine can. A medical journal edited for laymen, for example, would have to present medical material in the *Reader's Digest* manner; if its readership included X-ray technicians and morticians, it would be either vague or subdivided in its contents. The same thing is true of an architectural magazine. That is why PROGRESSIVE ARCHITECTURE, and before it PENCIL POINTS, has always insisted on remaining a magazine edited solely for the designing profession.

If this fact is granted, then the thoroughness with which a completed work of design or technical discussion is published becomes important. We believe that the casual showing of a plan and several pictures would not be a professional presentation. Our editorial judgment is weighted by the consideration that experts will be reading our pages, and those pages will be worthless if the experts do not gain something from the reading. That is why we have to refuse a good many interesting contributions; we prefer to use the available space to describe fewer projects more thoroughly. In this issue, for instance, Brasil's new city is rather completely studied. Its many excellences in town planning and building design could not have been explored, professionally, in less space. The same thing is true when we deal with important developments in materials and equipment. We could have printed one photograph of an electric radiant heating installation and covered its news value; we preferred to study its advantages and disadvantages, the methods of design and installation, and costs.

Professional editing differs from popular editing. We appreciate the fact that our readers evaluate the material we present month by month for its worth to them in their practice, not for its appeal to any other group.

The Editors

BRASIL BUILDS A NEW CITY



CIDADE DOS MOTORES, BRASIL

PAUL LESTER WIENER AND JOSE LUIS SERT,
Town Planners

OTTO DA ROCHA E SILVA,
Architect and Builder

Many planners have dreamed of designing a complete new city, but that chance has come to very few. PROGRESSIVE ARCHITECTURE is proud to present Brasil's Cidade Dos Motores, an industrial city for which ground is now being broken. Today there is a tropical Brasilian plateau on which the only buildings are a factory and some farms. Tomorrow a modern city of 25,000 people will begin to rise there. The Brasilian Government and a pioneering official—Brigadier-General Antonio Guedes Muniz, the Chief of the Brasilian Airplane Engine Factory Commission, in charge of this whole regional development—recognized in their program that the haphazard growth of the region would repeat the chaos which exists in most industrial cities.

The new town is located about 20 miles from Rio de Janeiro, in the direction of the mountain city of Petropolis. The site is rugged, lush, picturesque.

After they had completed a comprehensive study looking toward the growth of a new city, the planners were commissioned to make a master plan within flexible outlines and prepare working drawings. The program called for the new town plan to serve as a model for Brasil, to demonstrate a harmony of industrial efficiency with high living and welfare standards. The aim was to set a new town plan standard and at the same time use new technics of construction. Mass produced building parts were to be used in a way that would produce variety of appearance as well as economies in construction cost. The following pages will show, step by step, with what complete success the planners met these aims from the over-all pattern to the last detail of construction.

The first stage was the development of the region. The expanded factories, the farms, and the airport are related to the site, to the highway, and to the city. Industrial, agricultural, and urban development have a planned relationship. The main highway by-passes the city, yet is linked to it in a logical manner.

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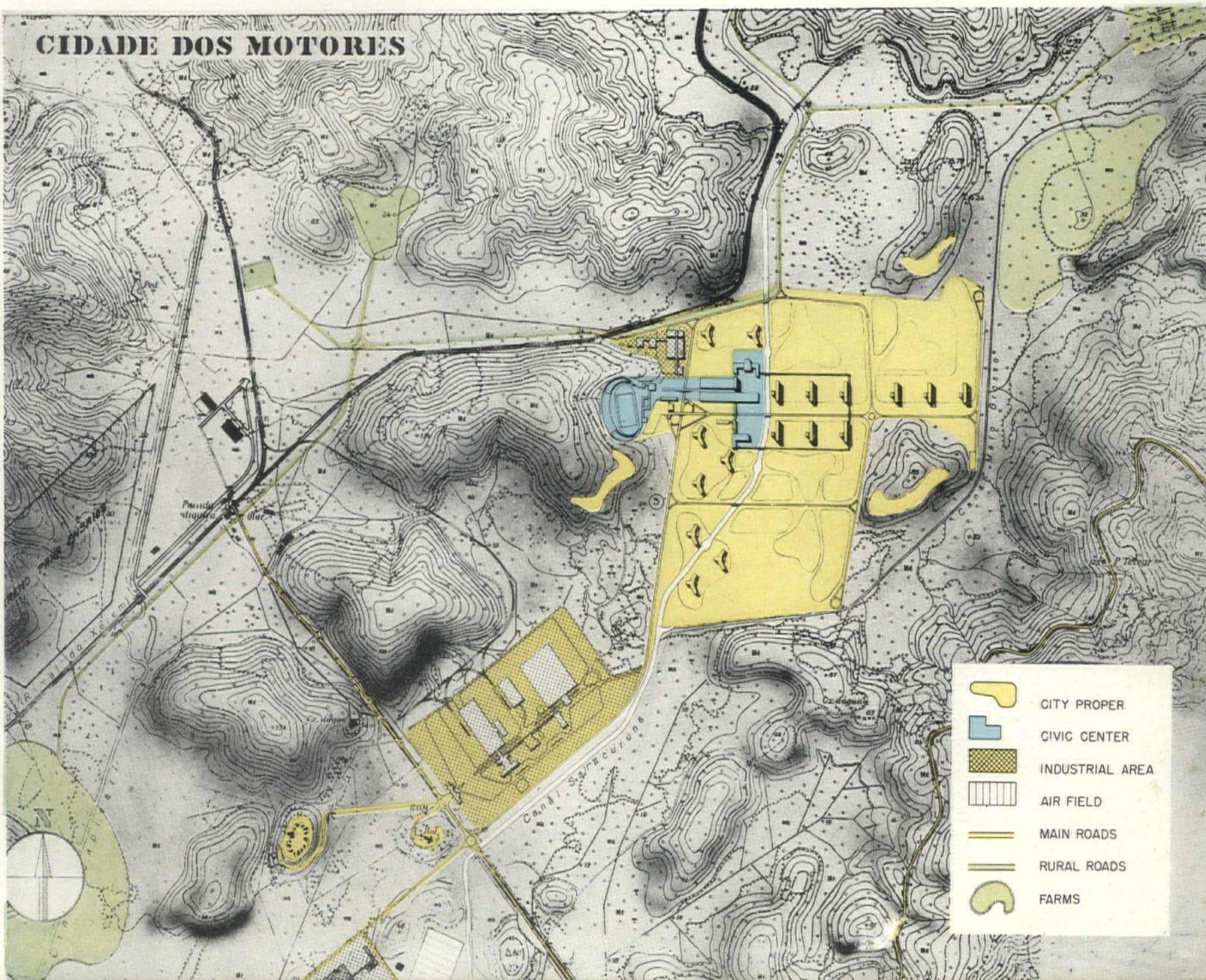

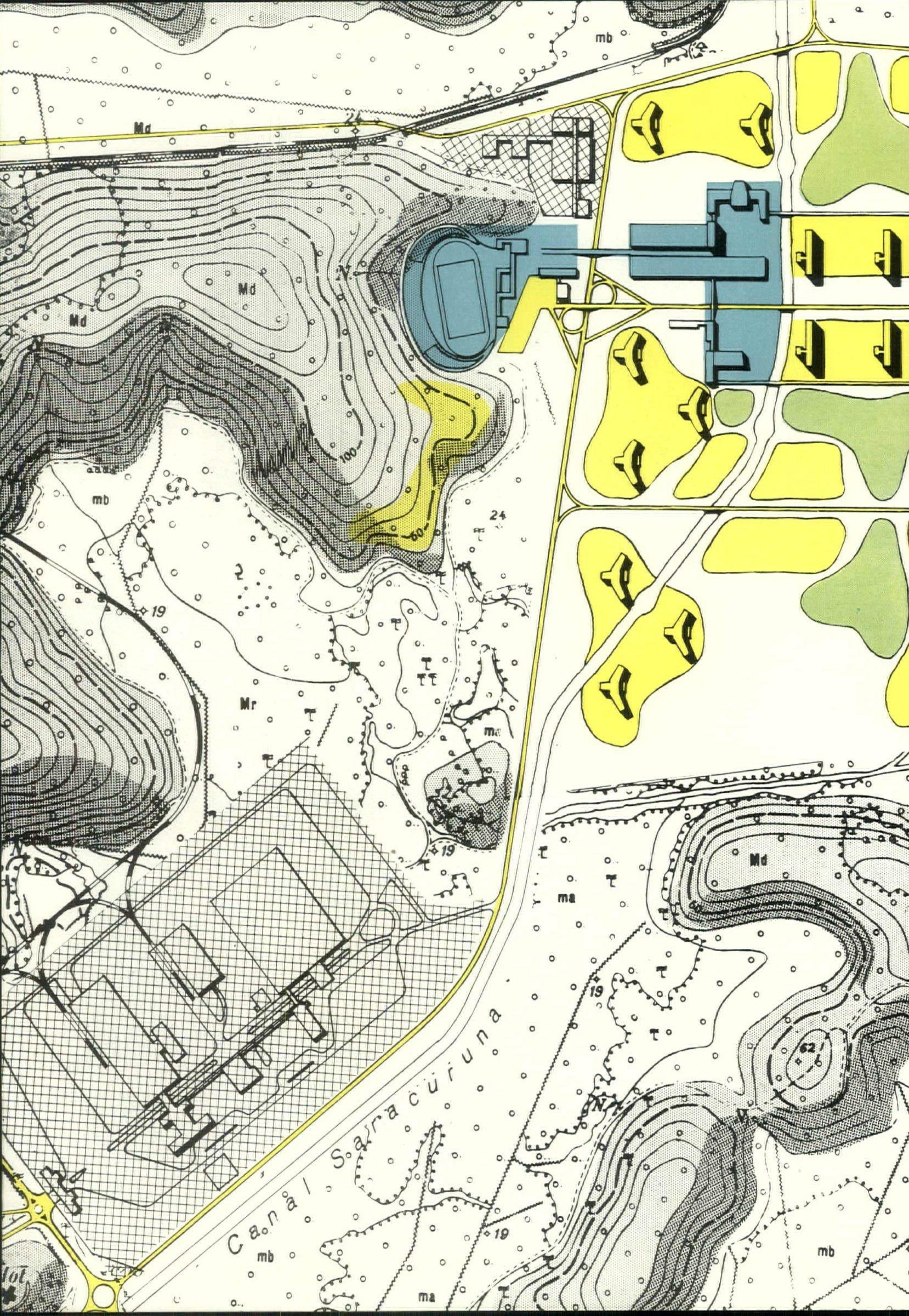

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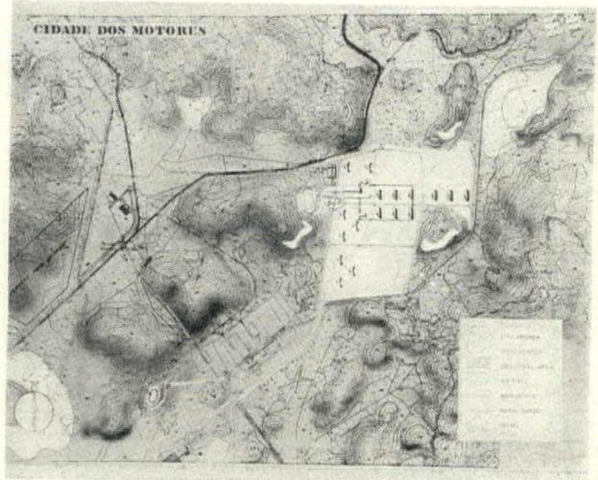


THE CITY PLAN

ADAPTS ITSELF TO THE SITE

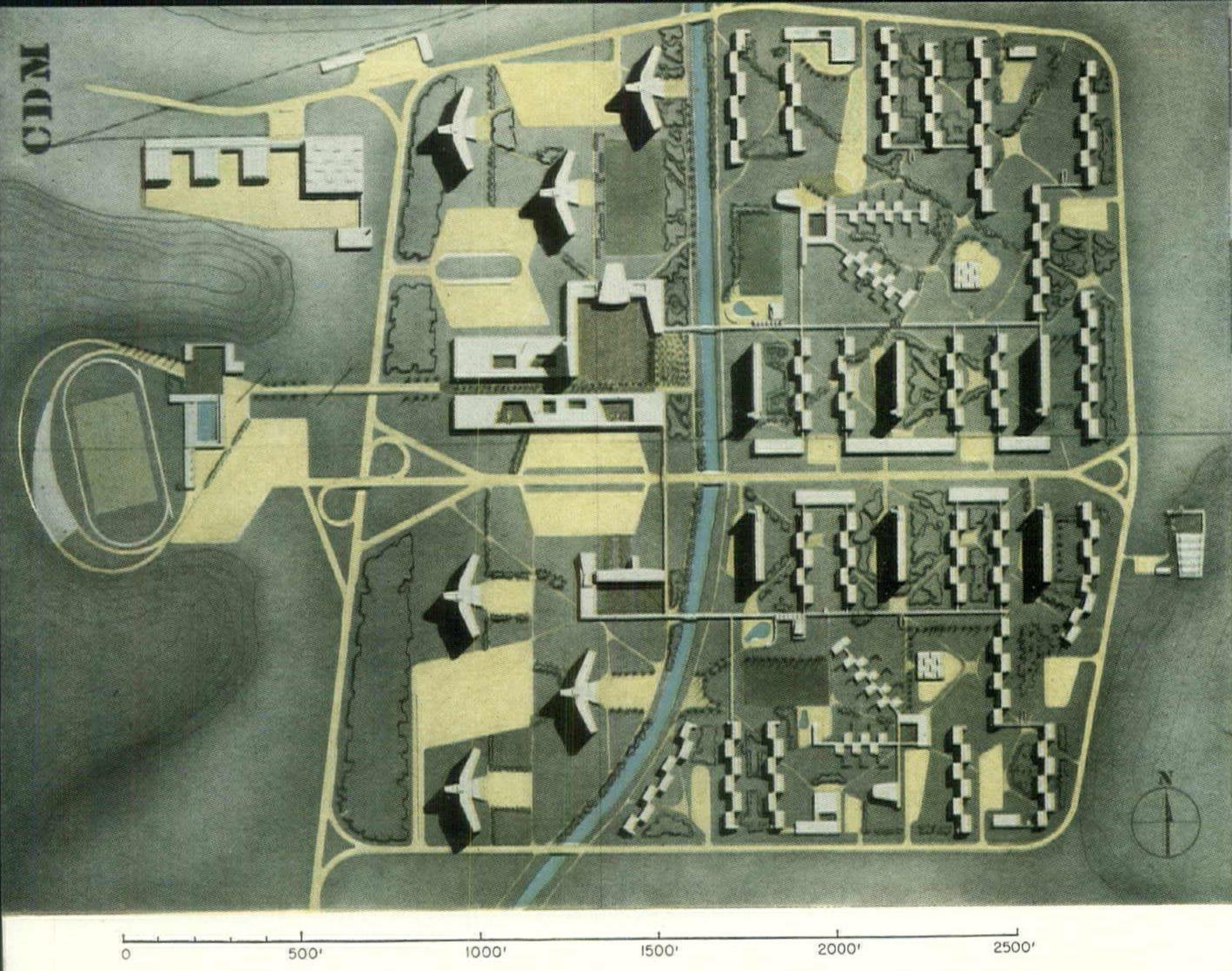
Planned in four neighborhood units, the city is shaped to the contours of the plateau. Through it flows a canal, whose banks will be used for walks and pleasant recreational areas.

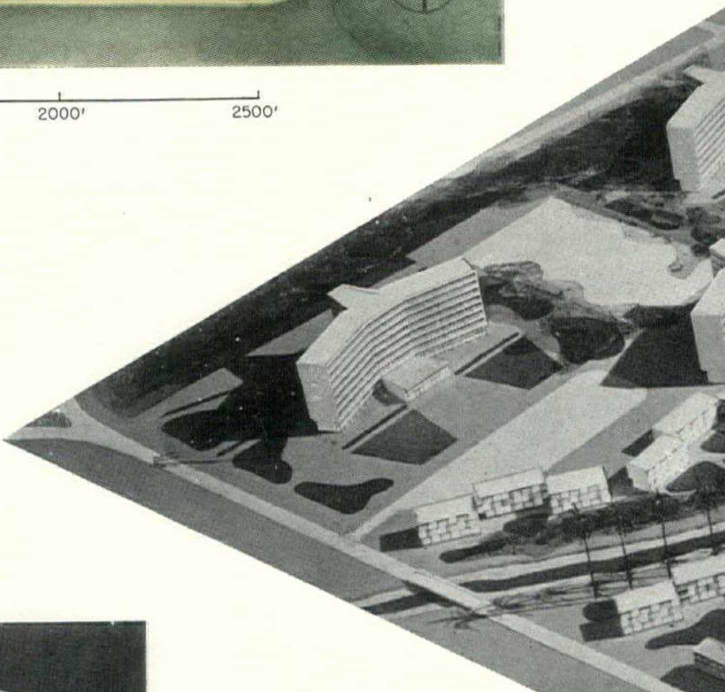
The cohesive arrangement of the four units makes traffic simple, and economizes on road surfacing. Planning throughout has been kept in the scale of the pedestrian citizen; average walking distance to the civic center is under a quarter of a mile. Peripheral roads allow for automobile access to the neighborhoods, but within the units all traffic is by foot, under covered passageways which protect from the tropical sun.

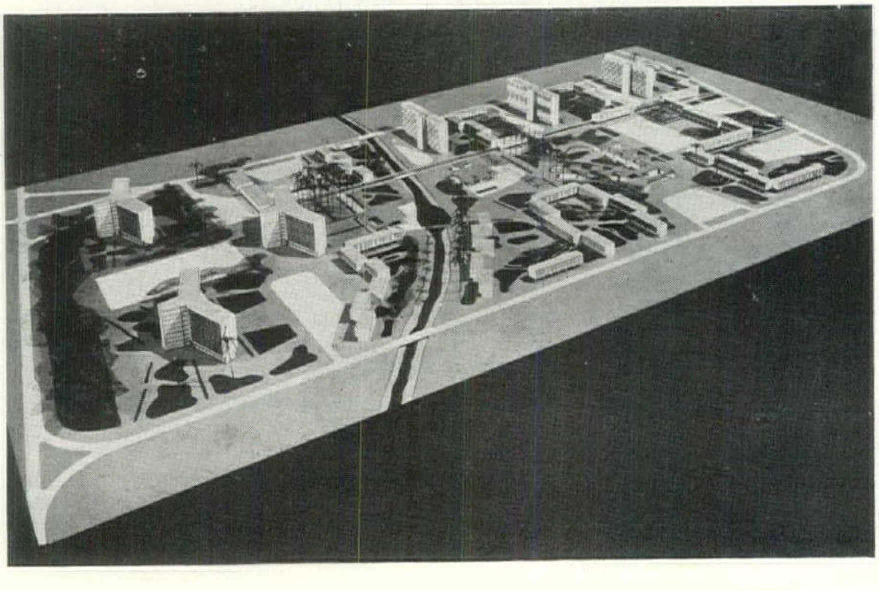
In each neighborhood unit there are several types of group housing. Some individual houses will be built on the outskirts of the city, at the foothills. In addition to housing, the neighborhoods will have their own community buildings, schools and playgrounds, dispensaries, shops, and restaurants.

In addition to these neighborhood services, there is a civic center located towards the center of the first two neighborhoods to be built, which will eventually serve the whole city. Tall apartment buildings together with the civic center form a "spinal" architectural composition in the center of the city.

The population density is about 100 persons to an acre, a figure reached after considering climatic conditions, walking distances, and maintenance problems. Accessibility and usability for the individual have determined this city's plan in all its elements, with the over-all result well fitted to a challenging terrain.







Photos of model by Anna Wachsmann

Here is the neighborhood developed as an integral part of the city, with its open areas functioning as usable, thoughtfully planned community space. Repetition of a constant module for all buildings (3.5 meters, or about 11½ feet) provides a pleasing consistency.

Nothing is mechanical or tiresome about the unit plan, yet the arrangement is well studied. Open spaces and free arrangement of the buildings should result in pleasant and varied vistas.

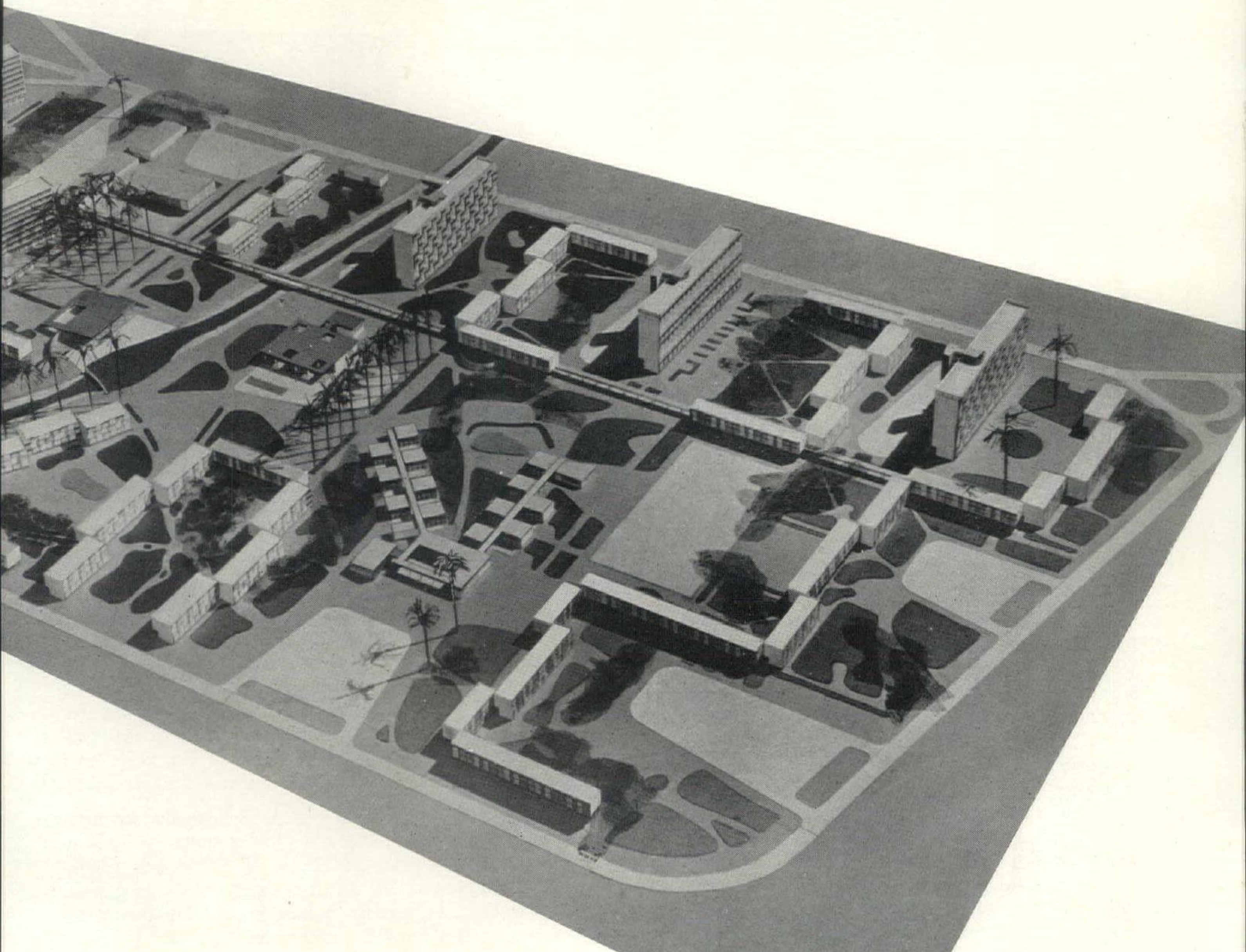
FIRST STAGE OF CONSTRUCTION

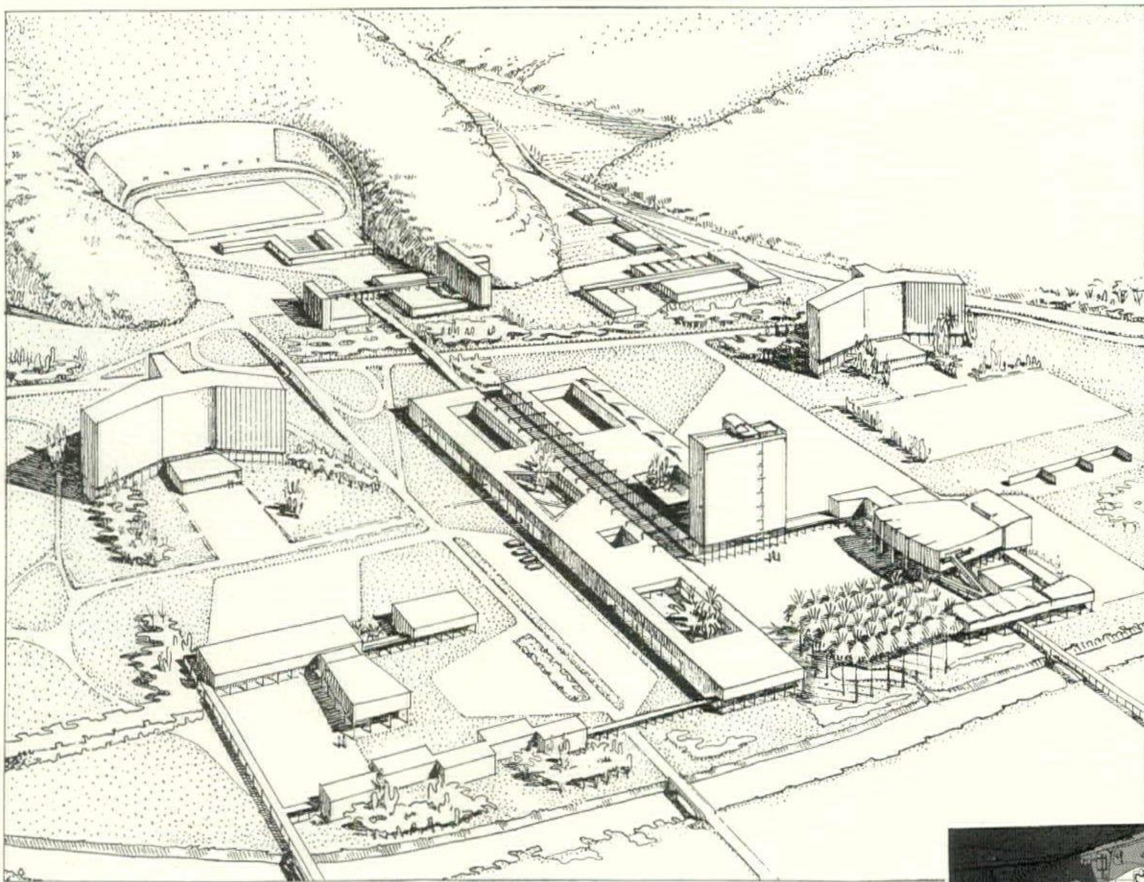
WILL BE A COMPLETE NEIGHBORHOOD

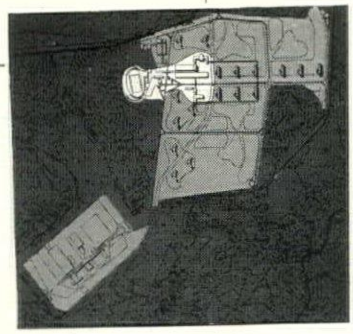
First neighborhoods to be constructed will be the two in the center of the ultimate city, shown at left. The photographs indicate the southerly one of these two units, studied more fully in a diagrammatic model.

Of the 6200 people living in this quarter of the city, some 2400 will be housed in dormitory buildings, 1200 in eight-story apartments arranged near the city's principal interior street, and about 2600 in three-story apartment blocks freely disposed within the neighborhood. Each of these living units will have its own parking space and will be near the neighborhood community facilities.

The elementary school is convenient to all family apartments and adjoins a large playground area. The community building is on another side of the playground. Neighborhood shops are conveniently located with road access for deliveries. The bachelor dormitories are close enough at hand to make use of community facilities in the civic center and yet are near the highway which leads to the factory. Thus bachelor activities will least interfere with the daily life of the families in the neighborhood.







THE CIVIC CENTER

DESIGNED AROUND A TOWN SQUARE AND A PROMENADE

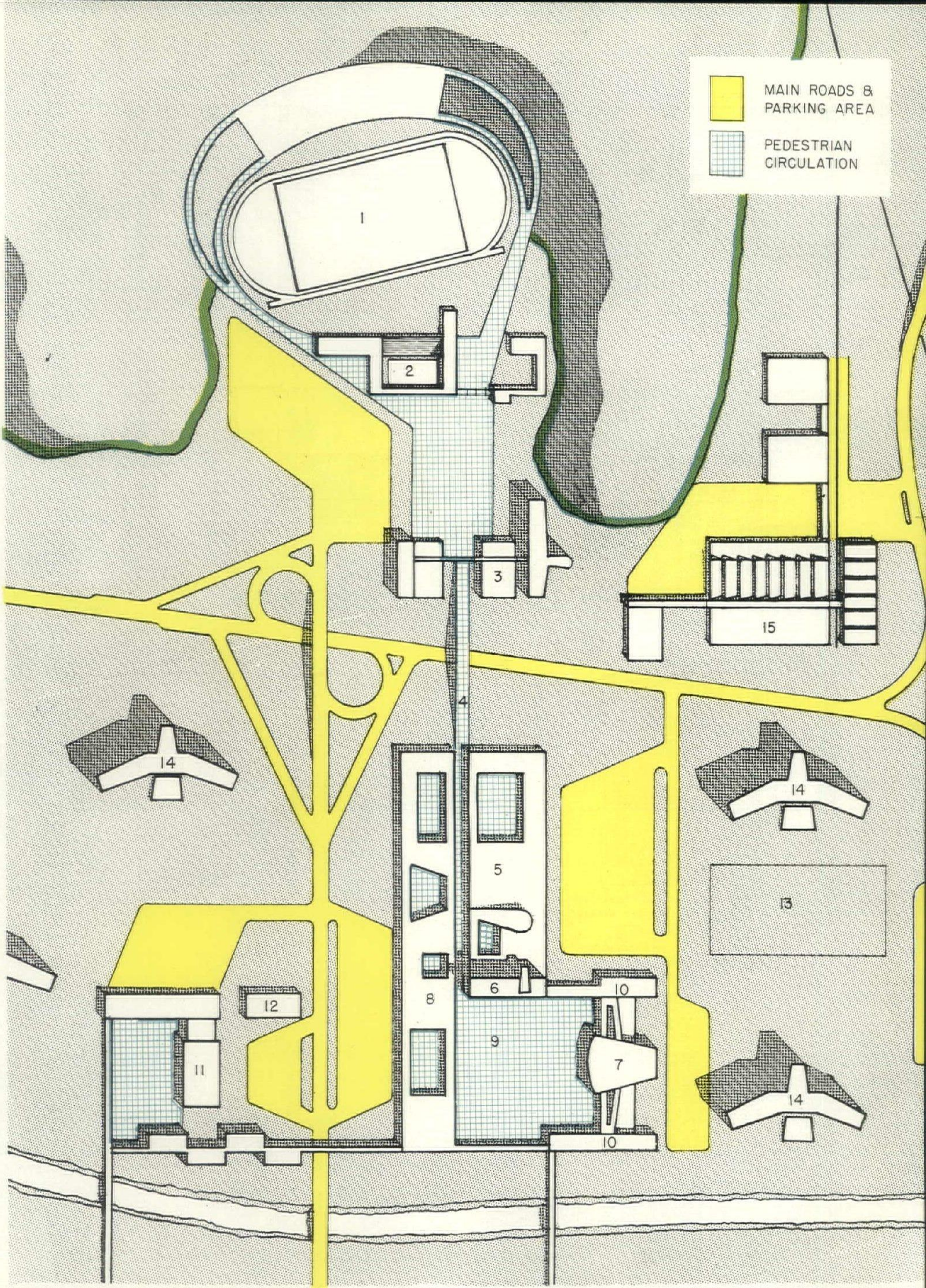
The civic center of the new city features a "praca," or town square, and an element more familiar in Brasil than here—the "corso," or "passeio," a promenade which caters to the natural desire to parade, to meet, to see and be seen. Three main divisions of the civic center have been defined: the administration, amusement, and commercial section; the cultural section; the sports section.

The administration, amusement, and commercial section is built around the town square and along the promenade. Here are a shopping center, a hotel, a moving picture theater, and a central restaurant and cafes. Coffee houses are under the moving picture theater which is built on stilts and connected with the praca by two ramps. On the other side of the main highway, reached by a pedestrian overpass, is the cultural center. Principal buildings here are a technical school with its workshop, exhibition halls, and a library. Beyond the cultural center is the sports area, with a stadium and its auxiliary structures designed to serve people from surrounding regions as well as the city's population. The church is on the hillside between the first two neighborhoods.

Pedestrian circulation is segregated from all vehicular traffic. Roads and parking lots feed the civic center from the sides but do not cross the praca or the corso.

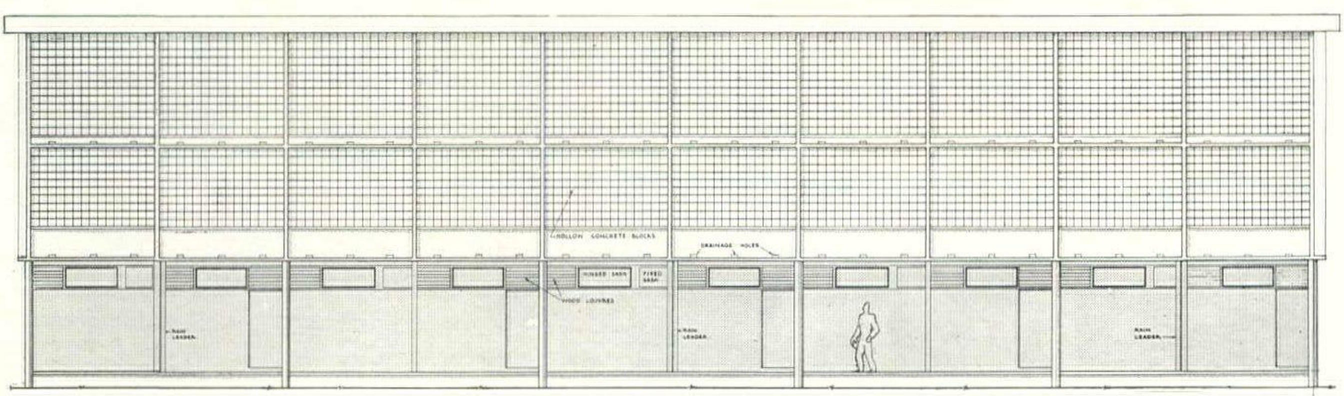
The shopping, restaurant, and cafe facilities are under a continuous slab on posts, a sort of extended parasol, which starts near the canal and extends around the corso and the praca past landscaped patios and pleasant fountains. The designers point out an antecedent to this in the Arab bazar, where shoppers are protected from the sun and a free architectural arrangement is possible under the "parasol." The corso itself has been so scaled that it can be covered by awnings.

The visualization above has been developed from general layouts and the site plan, together with estimated building cubages based on the needs of the total population of 25,000. It is expected that the final designs for the various buildings will be made by several leading Brasilian architects.

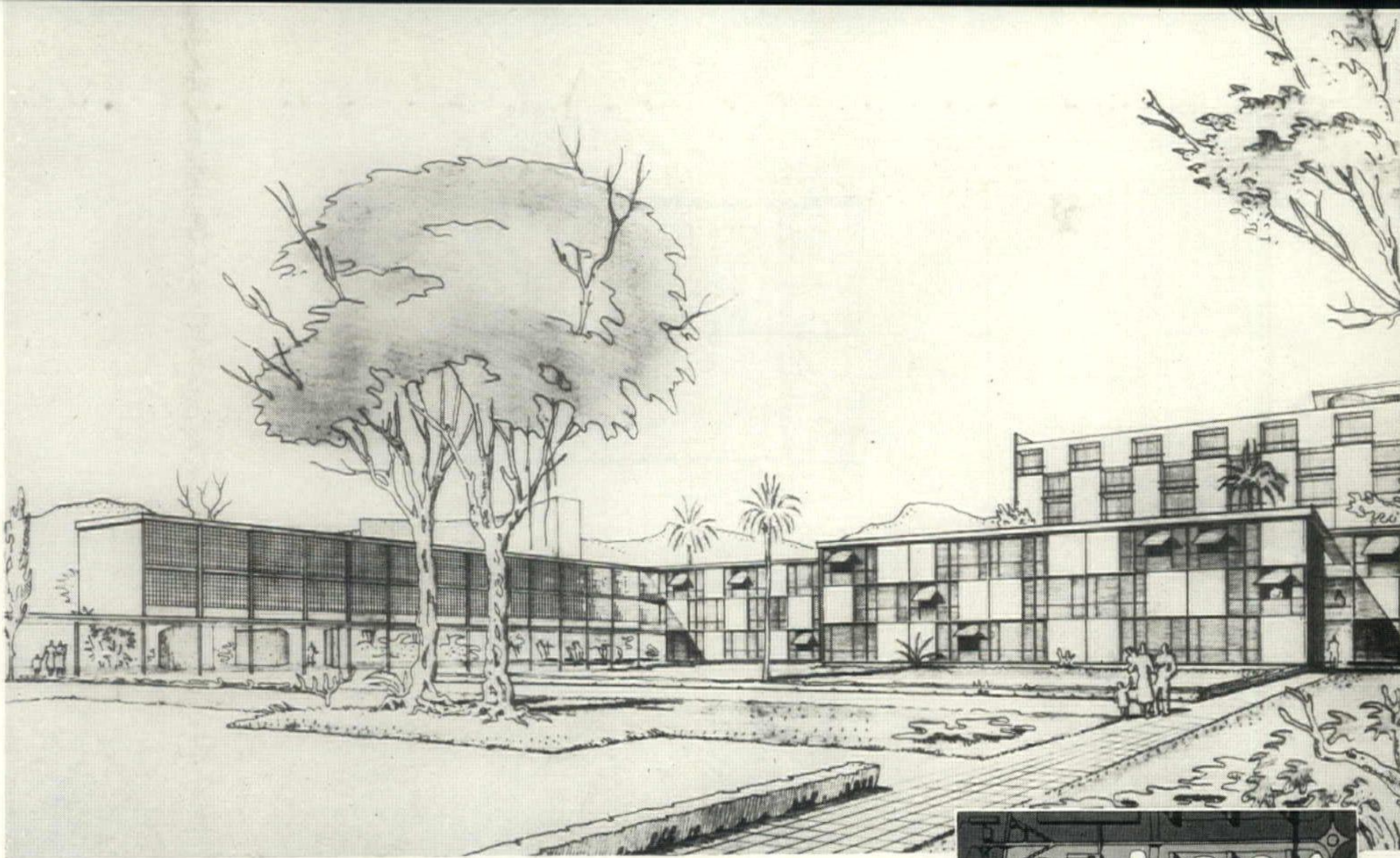


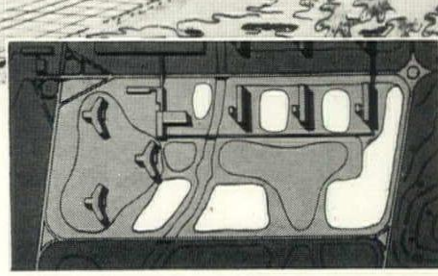
1 STADIUM
2 SWIMMING POOL
3 TECHNICAL SCHOOL
4 "CORSO"
5 CENTRAL RESTAURANT
6 HOTEL
7 THEATER-MOVIE
8 SHOPPING & BUSINESS CENTER
9 "PRAÇA"
10 MUNICIPAL OFFICE BUILDING
11 CLUB
12 DISPENSARY
13 PLAY FIELD
14 DORMITORY
15 KITCHEN FACTORY

FRONT ELEVATION. Three of many facade patterns possible by alternating and reversing one typical apartment plan. Living rooms have louvred pivoting wall; bedrooms a single window on this elevation.



REAR ELEVATION. Outside corridors are protected by pierced masonry units.

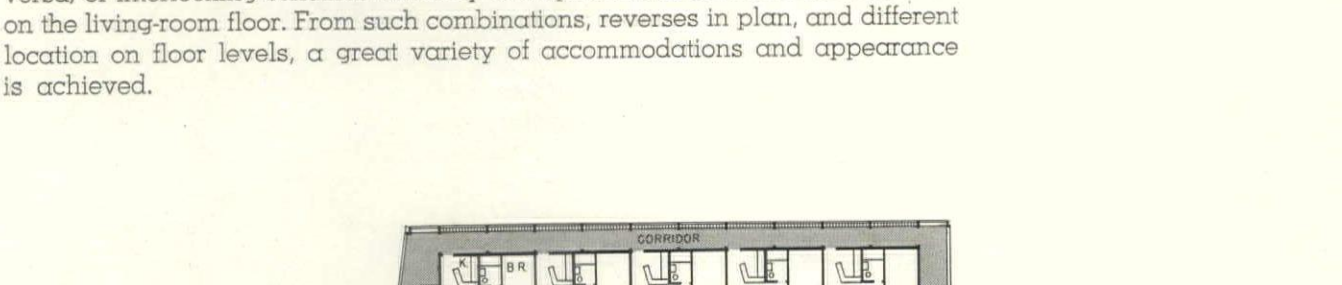




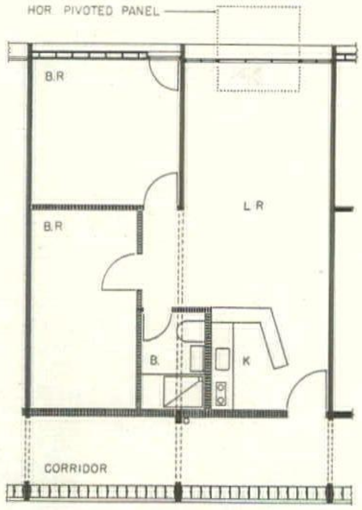
THREE-STORY APARTMENT BUILDING

ASTONISHING VARIETY FROM FEW BASIC ELEMENTS

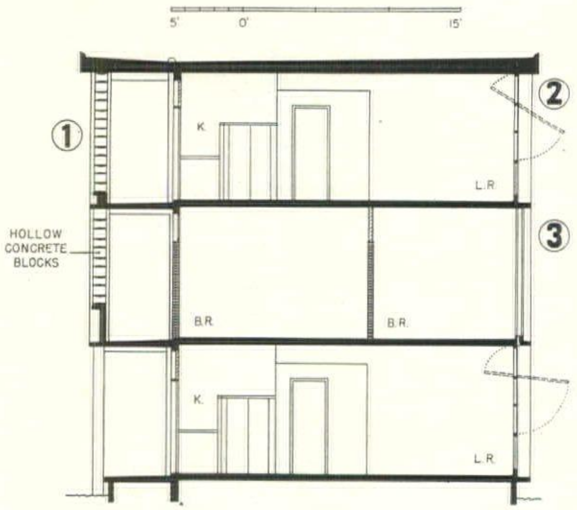
The standard wall systems for all apartment buildings are discussed on the following spread. Familiarity with these makes the various facade elements readily recognizable as living rooms, bedrooms, or corridors. There are numerous types of three-story buildings. Some are entirely made up of simplex apartments. Others have duplex units above simplex apartments (and vice versa) or interlocking schemes whereby a simplex fits in between two duplexes on the living-room floor. From such combinations, reverses in plan, and different location on floor levels, a great variety of accommodations and appearance is achieved.



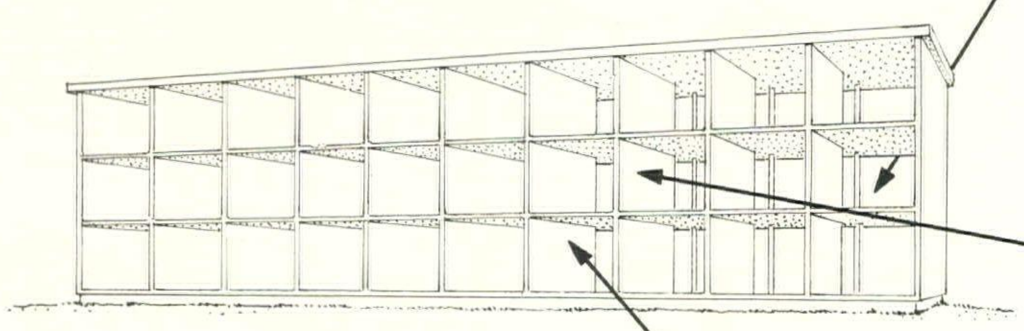
PLAN OF TYPICAL APARTMENT GROUPING.



TYPICAL SINGLE APARTMENT. Repeats, reverses, and alternates to provide variety.



TYPICAL CROSS SECTION. Based on simple structural frame shown below.



3 SPECIAL WALL SYSTEMS

PROVIDE PROTECTION AND VENTILATION

A simple honeycomb concrete structure is the basic construction system used for all apartment buildings—the eight-story unit which follows as well as the three-story type pictured on the preceding two pages. The same forms can be used throughout, as only the thickness of the walls will vary.

The aim is to obtain maximum variety of combination using the fewest possible standard elements. The pleasing play of light and shadow which patterns the facades results from three wall systems specially devised for corridors, bedrooms, and living quarters, respectively. They are inexpensive solutions to the problems raised by strong sunlight, driving rains, and the need for through ventilation.

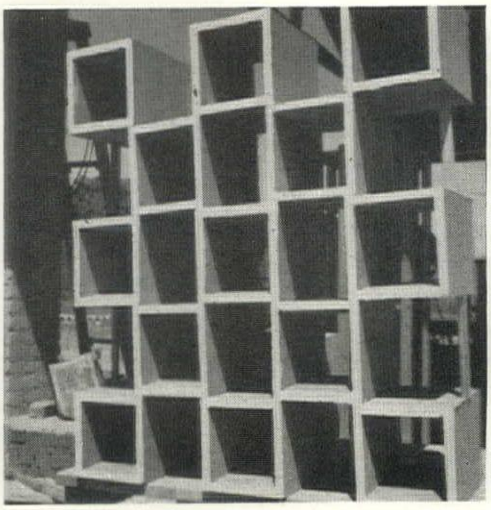
No buildings are more than one apartment deep, and the corridor runs along an outside wall. Since the customary "brise de soleil" was deemed too expensive, the pierced concrete screen construction (Type 1) was developed for corridor walls. Living rooms, the architects felt, should be as open as weather permits. Hence they designed a pivoting wall section (Type 2) large enough to act as door, window, or awning, depending on its position. Bedrooms must remain cool, so the ventilated cavity-type "double membrane" wall was developed, to be built of precast concrete units (Type 3).

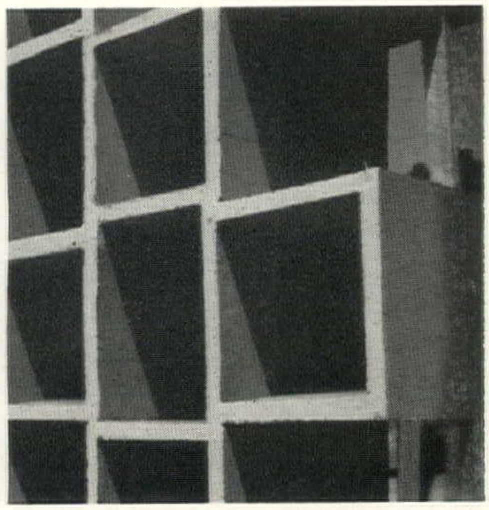
All precast concrete parts are vibrated and can be rapidly demolded, making it possible for each mold to produce at least sixty units a day.

1

SUN-BAFFLE

To protect corridors against excessive sun and driving rain the precast box here pictured is laid up as a masonry unit. About a foot deep with an opening eight inches by eight inches, it makes possible an open light passageway, with doors and windows to the apartments fully protected. Manufacture and erection can be simply accomplished by local workers.

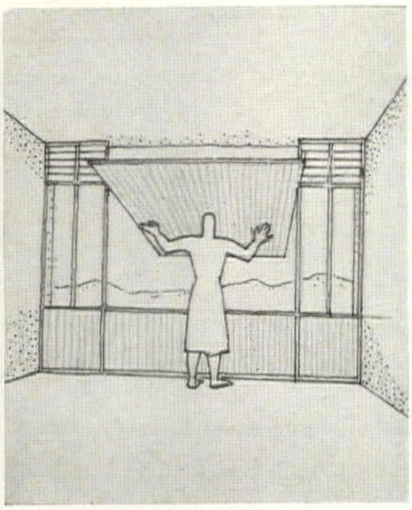


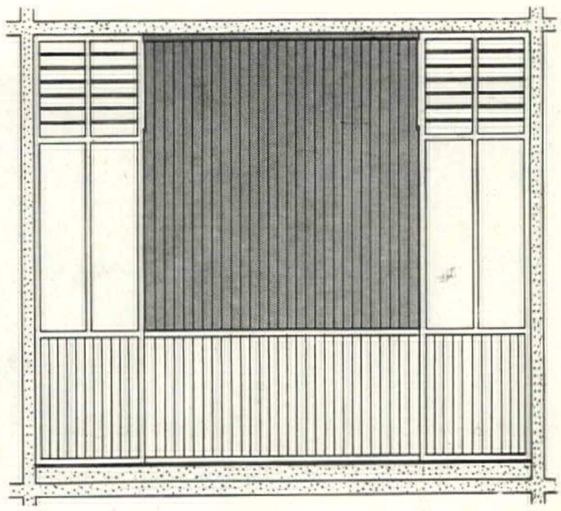


2

PIVOTING WALL SECTION

This pivoting counter-weighted panel will serve many functions at the end of the living room. When it is fully open, it lies in a horizontal position above head-height and acts as an awning. Partly open, it provides sun protection while allowing breezes to circulate at top and bottom. In particularly bad weather, it can be completely closed and then functions as a wall. Construction is a light wood frame with tongue and groove slats. Fixed glass panels at the sides provide light at all times.

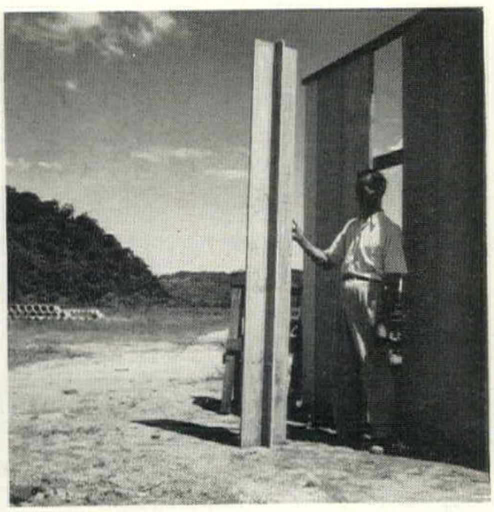


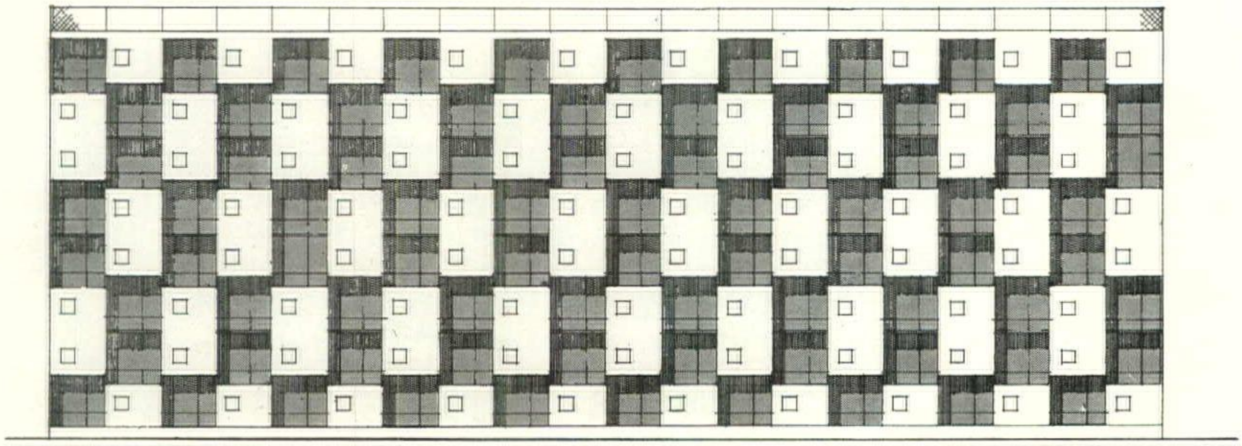


3

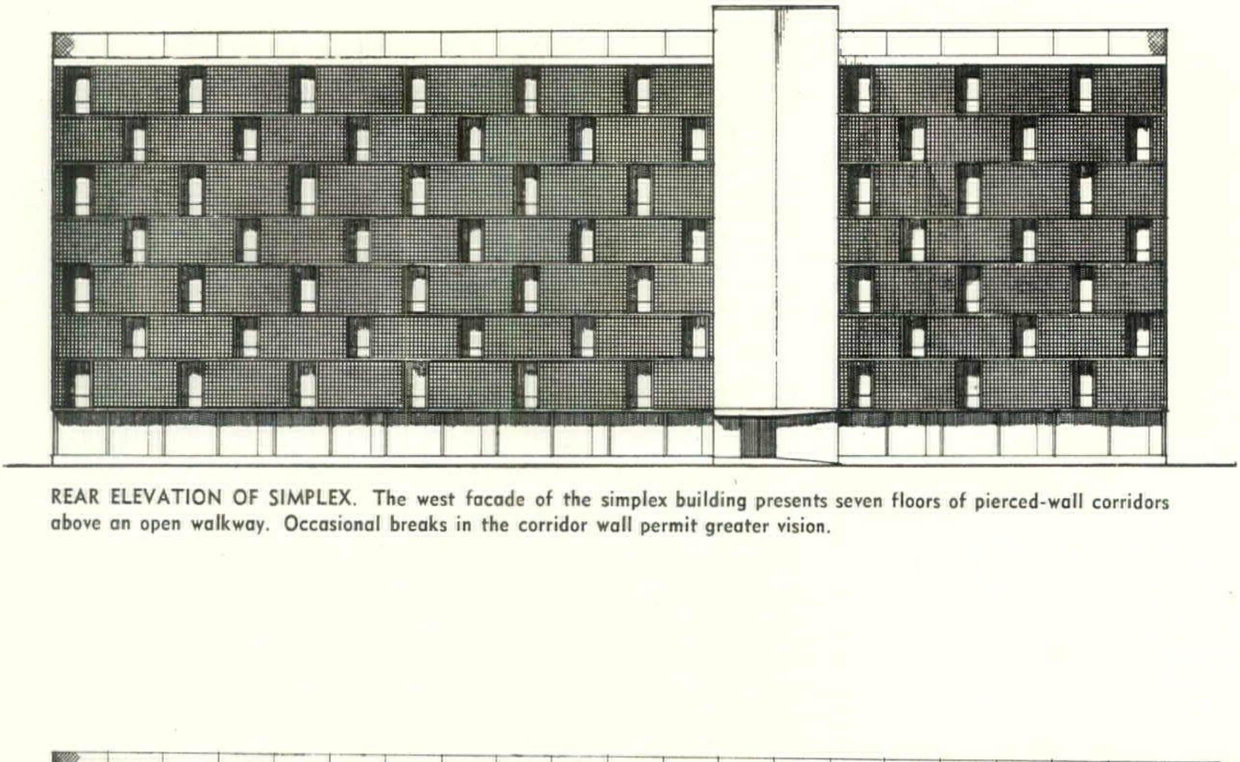
DOUBLE MEMBRANE WALL

Photographs show the precast concrete units which will form a ventilated cavity wall at bedrooms. Air is free to circulate between the inner and outer wythes. Units are full-story height, cast in a T-section for greater stability of the thin membrane. The flange, or wall face, is 14 inches wide, and an inch thick. As in the case of the sun-baffle above, local labor can easily manufacture the simple unit on the site. Windows can be simply set in a precast concrete box frame.

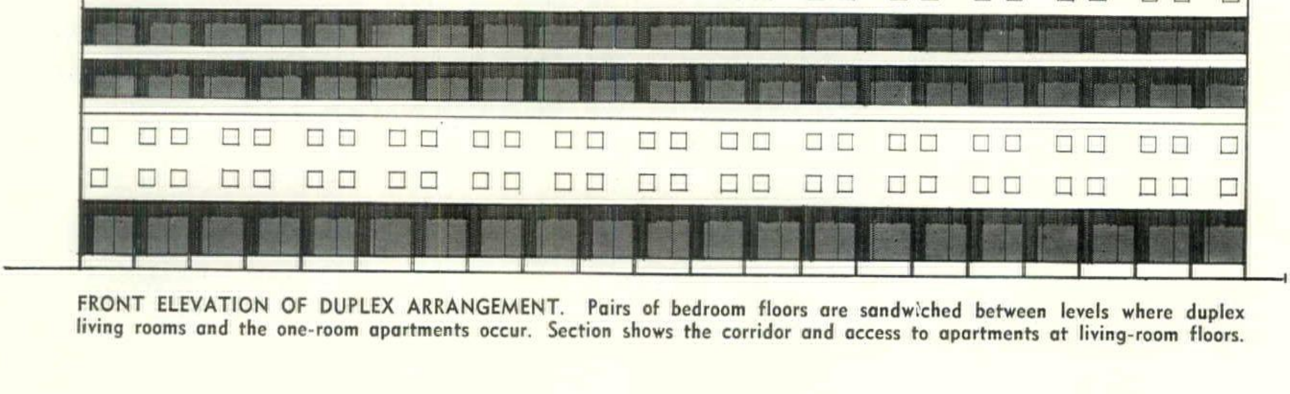


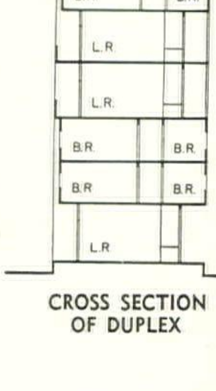


FRONT ELEVATION OF SIMPLEX ARRANGEMENT. As in the case of the three-story buildings, various patterns are made possible by reversing a typical two-bedroom apartment plan.



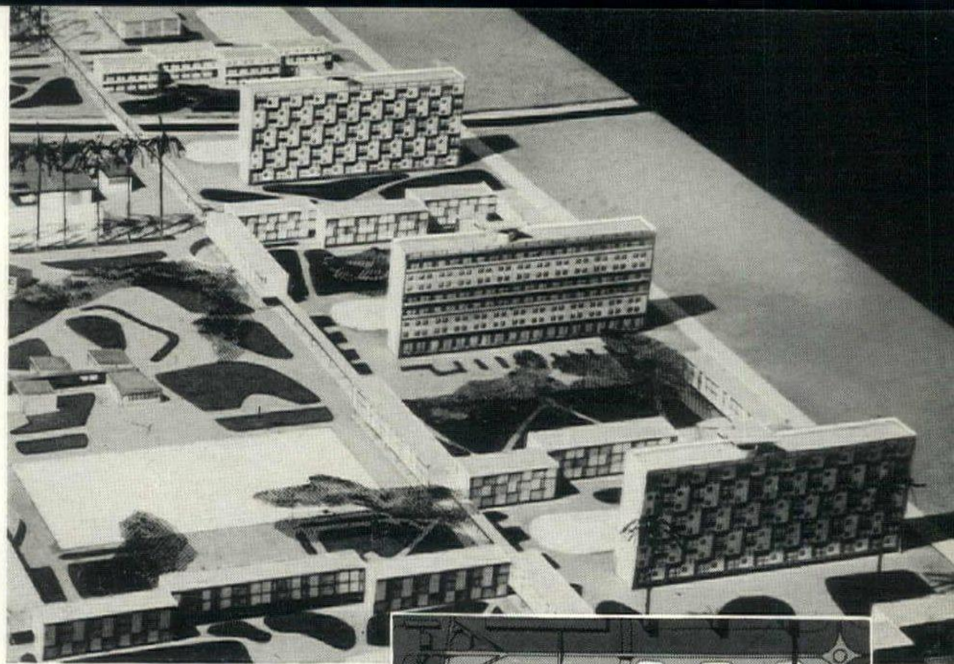
REAR ELEVATION OF SIMPLEX. The west facade of the simplex building presents seven floors of pierced-wall corridors above an open walkway. Occasional breaks in the corridor wall permit greater vision.

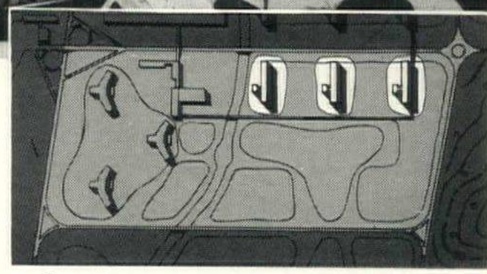


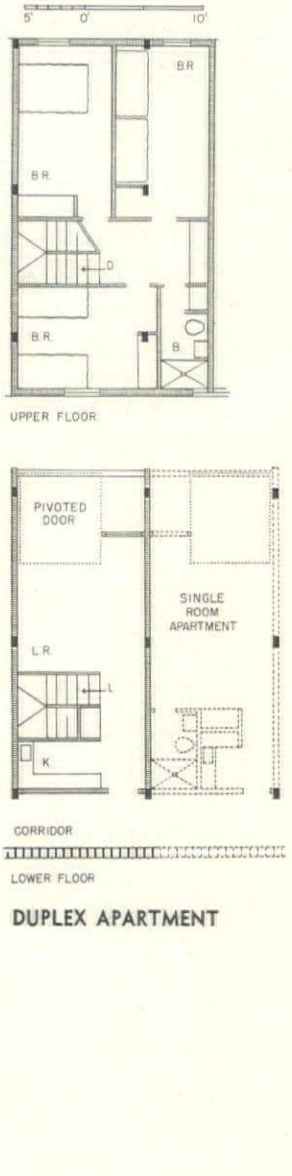


FRONT ELEVATION OF DUPLEX ARRANGEMENT. Pairs of bedroom floors are sandwiched between levels where duplex living rooms and the one-room apartments occur. Section shows the corridor and access to apartments at living-room floors.

CROSS SECTION OF DUPLEX





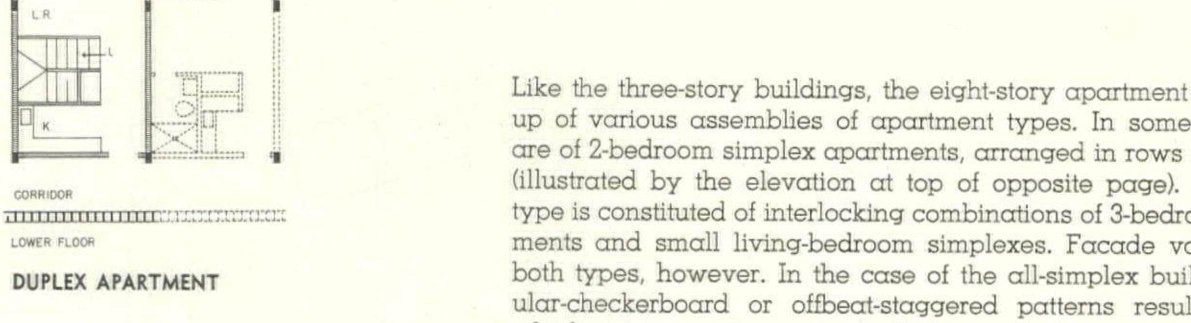


DUPLEX APARTMENT

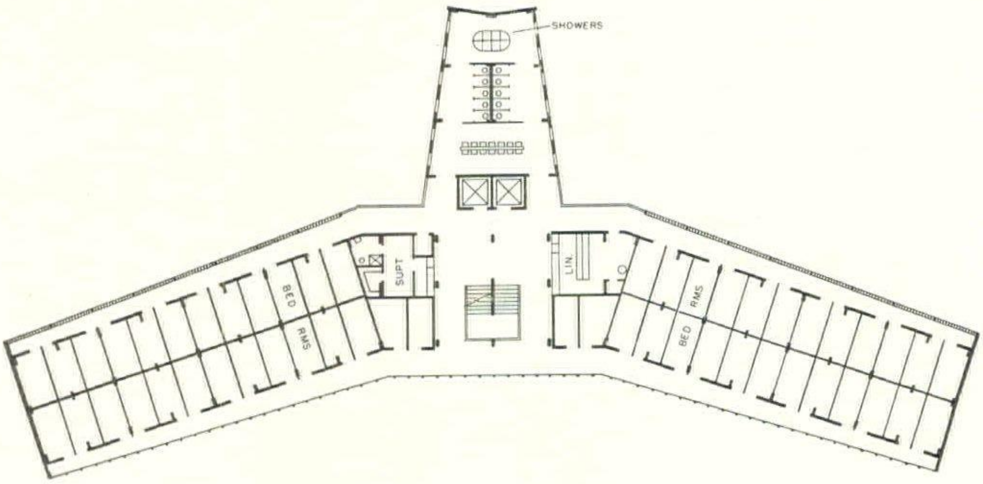
EIGHT-STORY APARTMENT BUILDING

TWO BASIC TYPES, WITH VARIATIONS

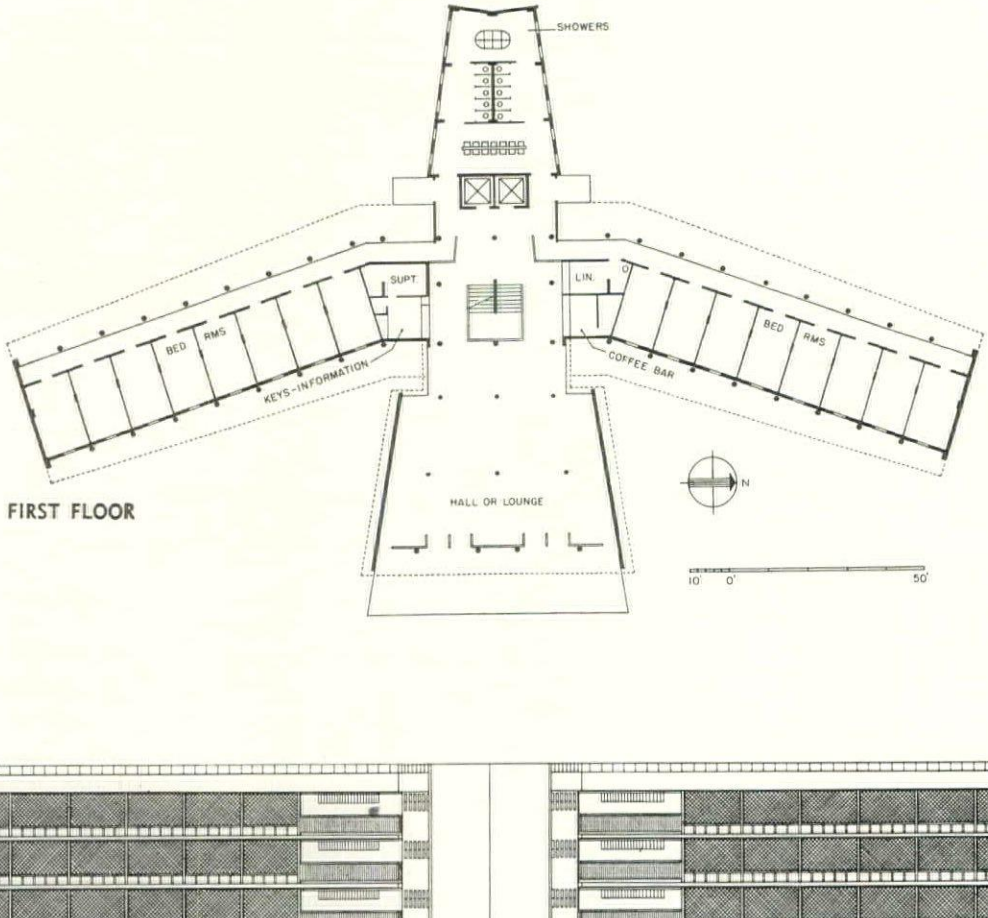
Like the three-story buildings, the eight-story apartment blocks are made up of various assemblies of apartment types. In some, entire buildings are of 2-bedroom simplex apartments, arranged in rows on all eight floors (illustrated by the elevation at top of opposite page). The other major type is constituted of interlocking combinations of 3-bedroom duplex apartments and small living-bedroom simplexes. Facade variations occur in both types, however. In the case of the all-simplex buildings, either regular-checkerboard or offbeat-staggered patterns result, depending on whether or not unit-apartment plans are used in reverse. In the buildings where duplexes are combined with one-room apartments, different ordering of floor levels produces design variety. In some of these buildings, bedroom floors of duplex units occur conventionally above living-room floors; in others, this arrangement is reversed, and living floors come above bedrooms. Bottom elevation, facing page, shows the design result where both of these schemes are used in a single building. Eight-story units are served by elevators in freestanding shafts connected by bridges to entrance corridor levels.



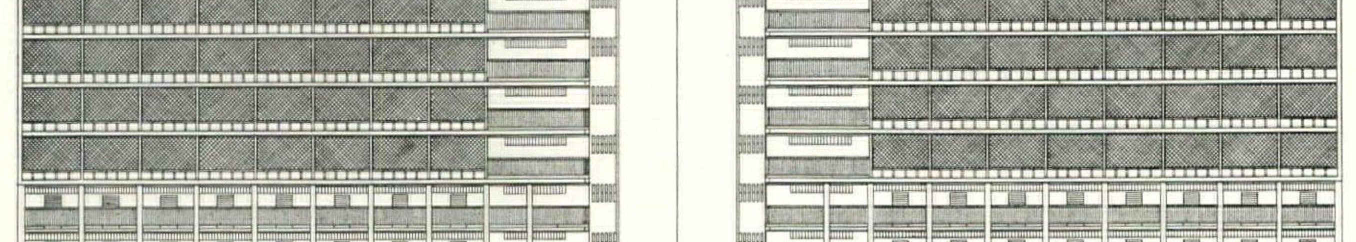
DUPLEX PLAN



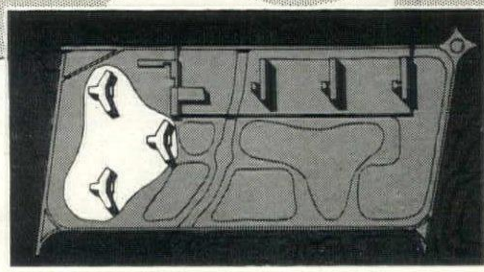
TYPICAL FLOOR

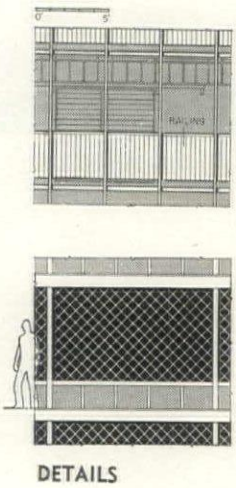


FIRST FLOOR

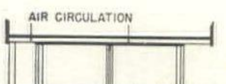


REAR ELEVATION





DETAILS



SECTION THROUGH BUILDING

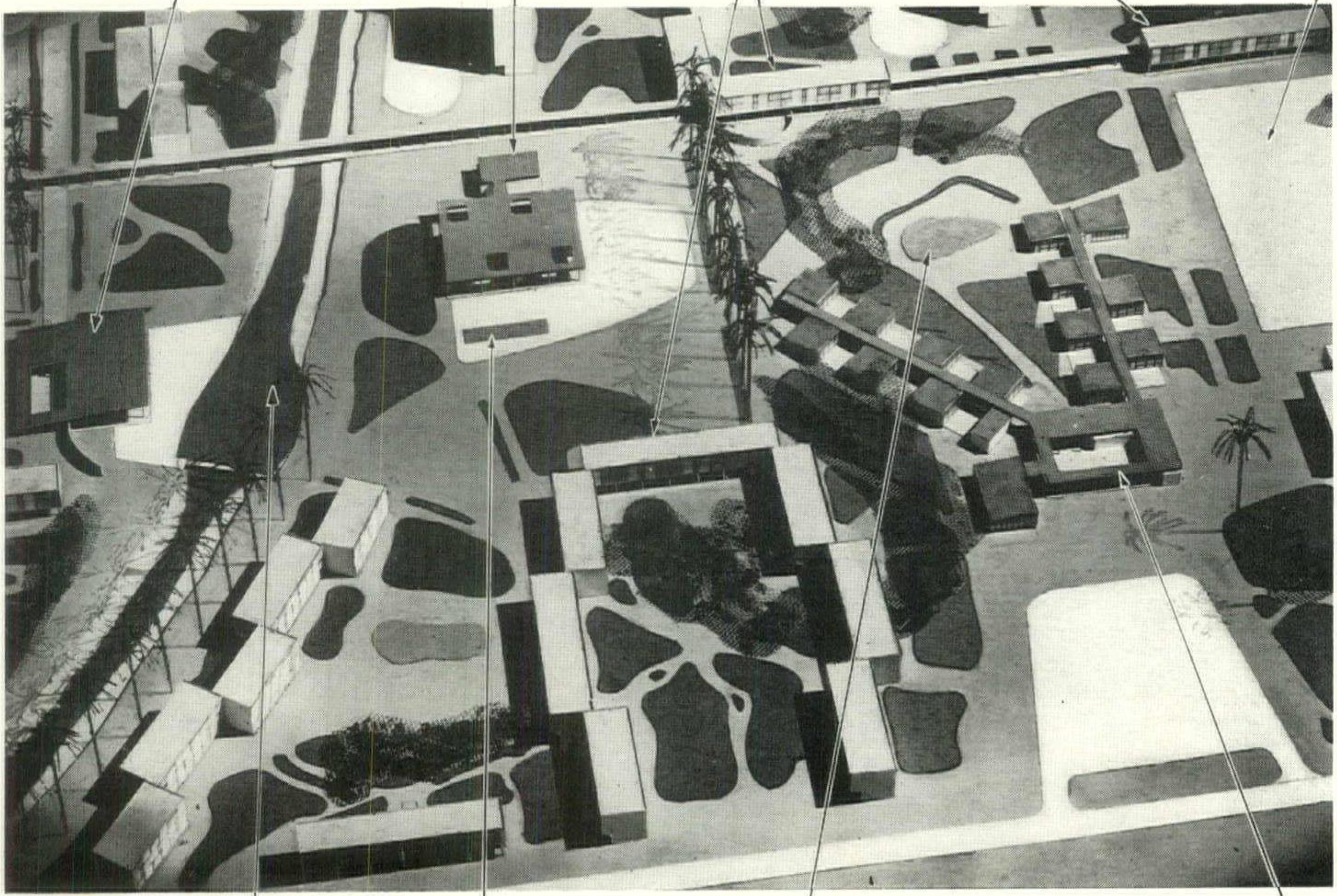
DORMITORY BUILDINGS

FOR UNMARRIED MEN

Located on the western side of the city are the nine-story dormitories for bachelors. In the first neighborhood there will be three such buildings, each housing 801 men. This location places the buildings across the canal from the family dwellings, allows separate playground space for grownups, and ranges them close to the civic center, where it is assumed that bachelors will spend much of their spare time.

On the first two floors the bedrooms, with five men in a room, are reached by a corridor in the rear of the building. Above the second floor, the dormitory wings are protected on both east and west by cantilevered balconies which also serve as passages for access to the various bedrooms. On these upper floors the rooms have one, two, or three occupants. The balcony rails are of precast concrete, secured and tied together from the third floor level to the roof parapet by vertical tubular rail supports. Fixed glass and ventilators above entrances provide ventilation and light. Sliding, louvered wood doors open to the corridor-balconies, while the central halls are left open to allow full circulation of air.

A wing in the center of the building at the rear contains all of the washrooms, with showers, lavatories, and toilets.



EDUCATION AND RECREATION AREAS

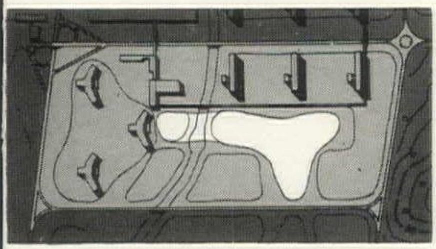
FORM THE NUCLEUS OF THE NEIGHBORHOOD

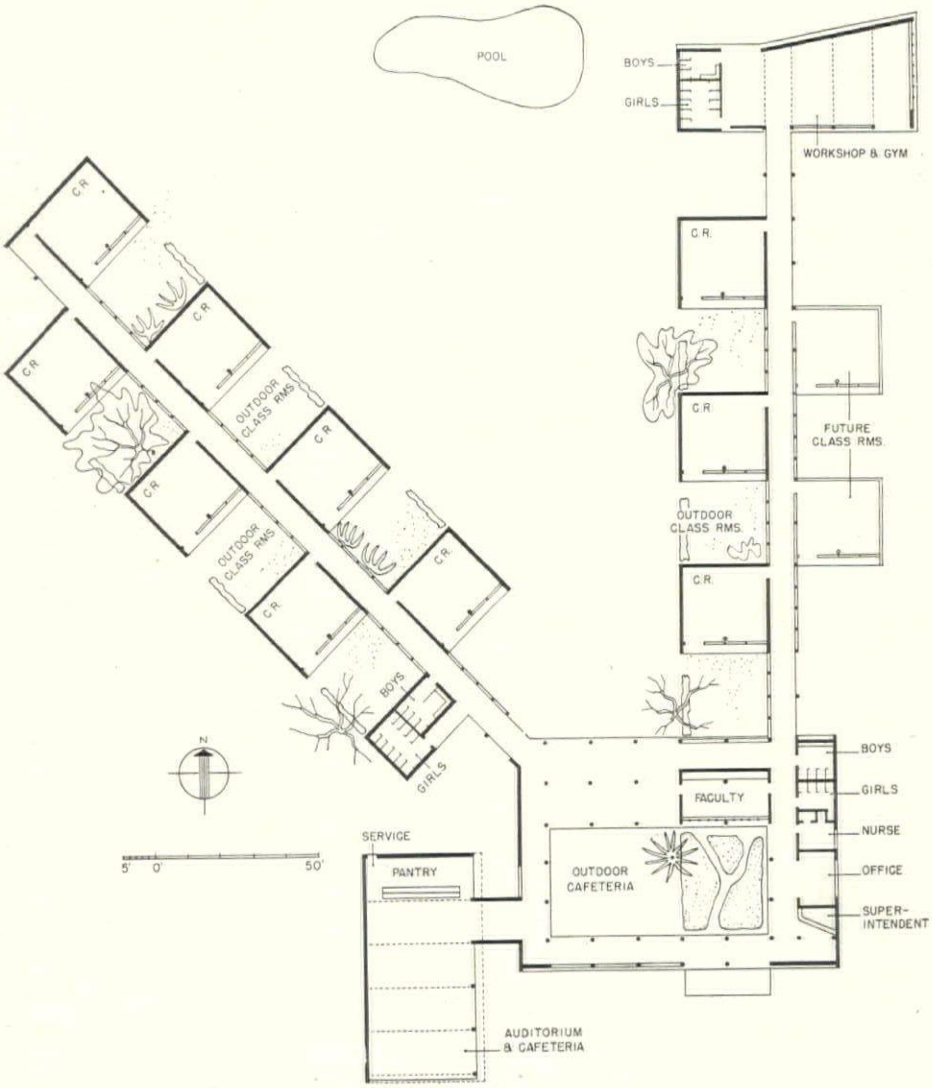
Neighborhood centers, planned for family living, are developed around a children's section and an adults' area.

Included in the children's services are several 30-crib creches for babies under two years old, a kindergarten (another will be built if it appears to be needed), an elementary school, a dispensary with a prenatal clinic, and a lactorium for milk pasteurization. In addition there are play areas and swimming pools.

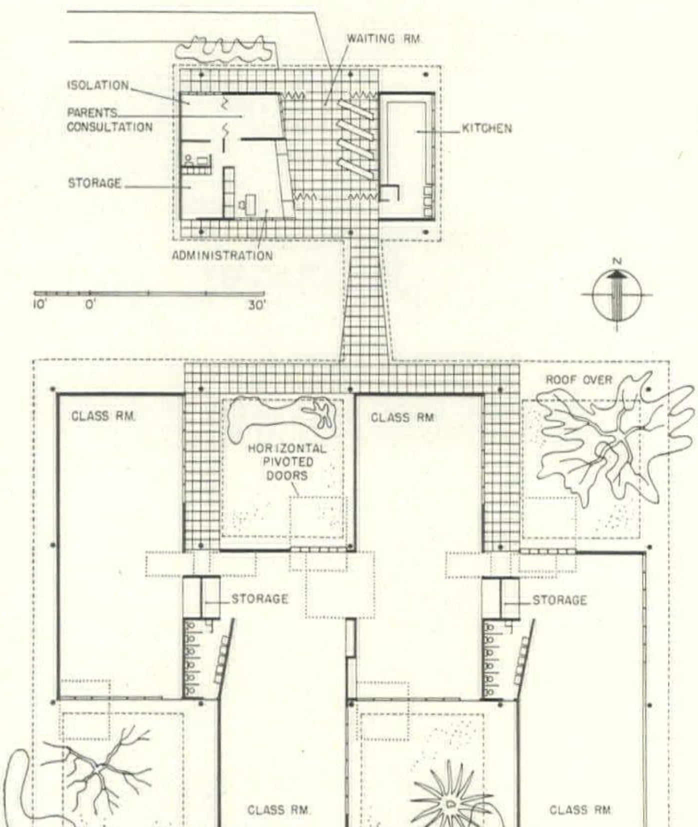
In the adult section the canal is widened to form a large swimming pool, near which is built a sun-shed for the bathers. The community club is housed in a building which, until the civic center is completed, will also contain a restaurant, kitchen, bakery, and local milk plant. Eventually the space these services occupy will be available for meeting rooms, playrooms, and adult classrooms.

On the periphery of this community nucleus will be other services, such as the dispensary, laundries, repair shops, grocery stores, bicycle parking space, management offices, etc. Reached easily from any of the apartment buildings, protected from any traffic, here is the core of community life.





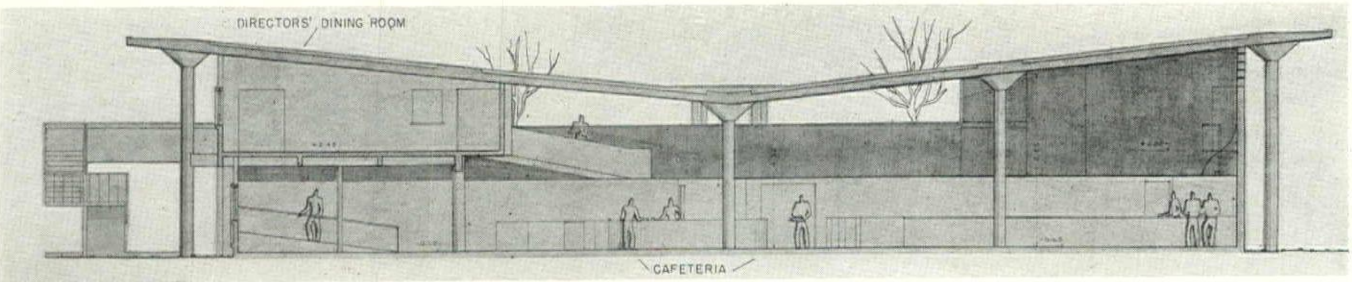
ELEMENTARY SCHOOL. Each classroom opens to its own outdoor study space.



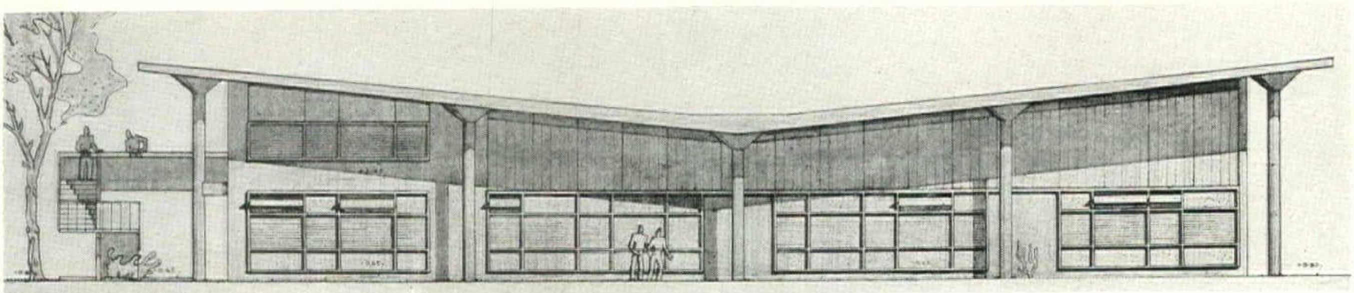
KINDERGARTEN. Classrooms are staggered to form patios, for outdoor play and colorful planting.

THE SCHOOL is organized around an administration and control unit from which branch out corridors leading to individual classrooms and their patios. Advantages of this scheme are that the full plan can be built in stages, study and play areas are pleasantly interrelated, and classroom noise is naturally baffled. Walls open out (operating like garage doors) from classrooms to patios.

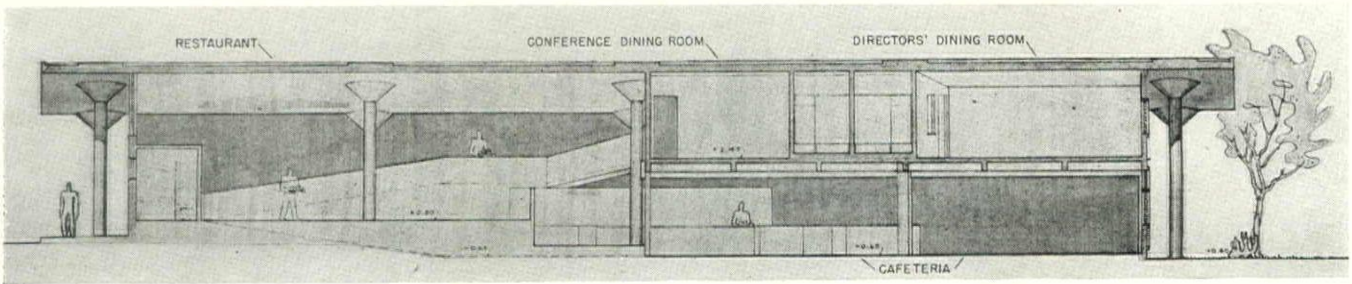
THE KINDERGARTEN has four classrooms, each for 30 children, opening to individual outside play areas. A covered walk surrounds the building and extends to the service and administration wing. Food will be prepared in a small kitchen and delivered by carts to the playrooms. A system of concrete vaults makes possible cross ventilation in the center of the building. Access from the inner to the outer play space is by means of counterbalanced, pivoted glazed wall sections.



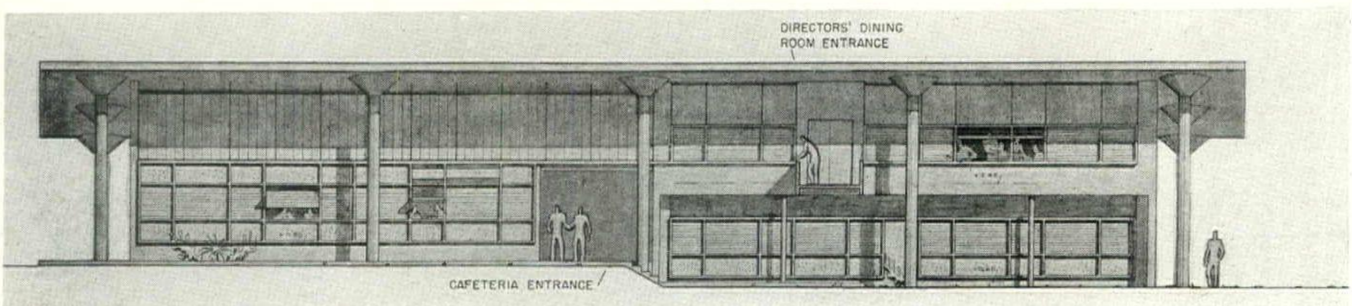
CROSS SECTION



SOUTHEAST ELEVATION



CROSS SECTION



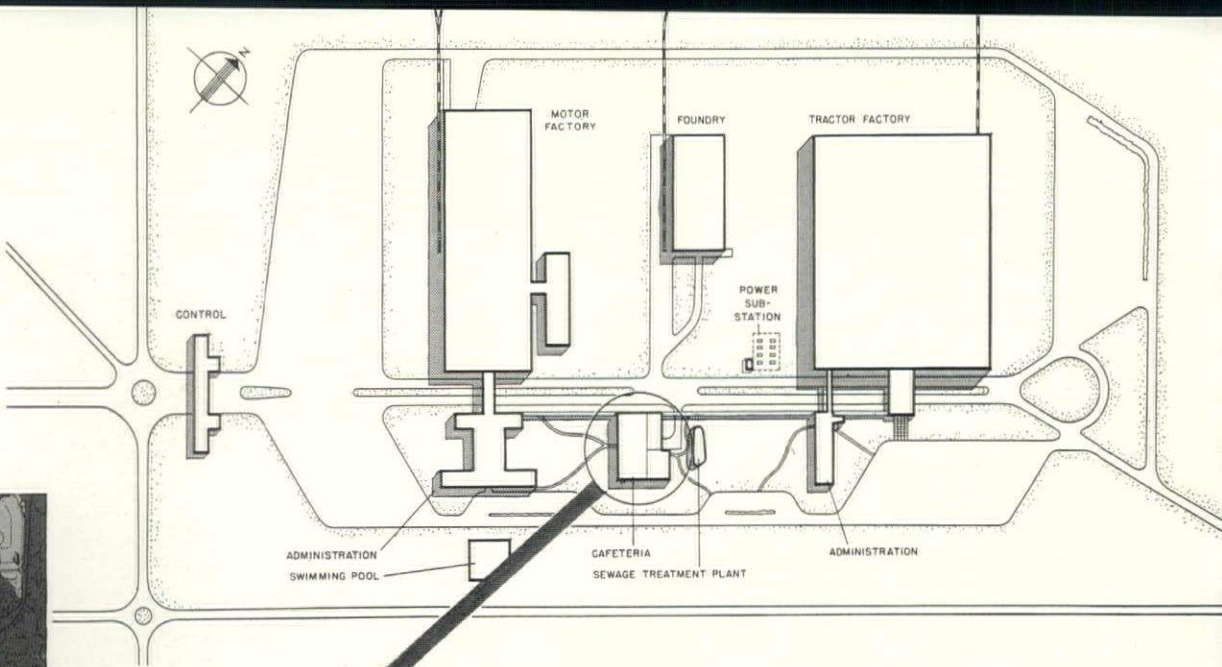
SOUTHWEST ELEVATION

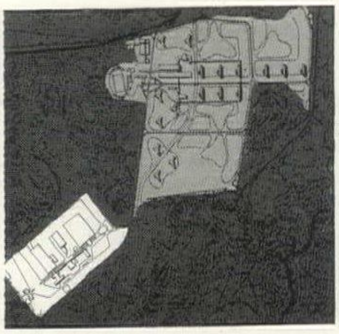
CAFETERIA IN THE INDUSTRIAL AREA

SERVES SEVERAL FACTORIES EFFICIENTLY

Designed to seat 650, the cafeteria for factory workers provides two serving lines leading into two main dining areas. Though the lines approach from different directions, the food preparation space supplies them efficiently, and traffic in and out is well controlled. Storage and basic preparation spaces are small, since a central "food factory" will supply partially processed foods to all local cafeterias.

The roof is a 2-way concrete slab on posts rising from a central low point to help carry off warm air and food odors. This construction permits walls to be opened where orientation is favorable. Sun screening is provided by concrete blocks and pivoting shutters, and fixed louvers allow continuous cross ventilation.

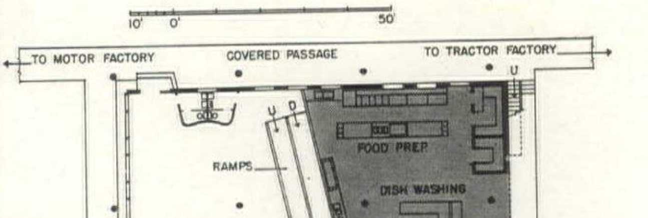




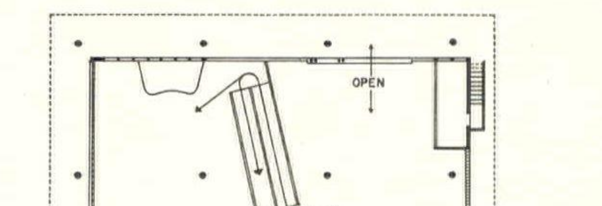
THE INDUSTRIAL AREA

HAS BEEN CONSOLIDATED, ENLARGED

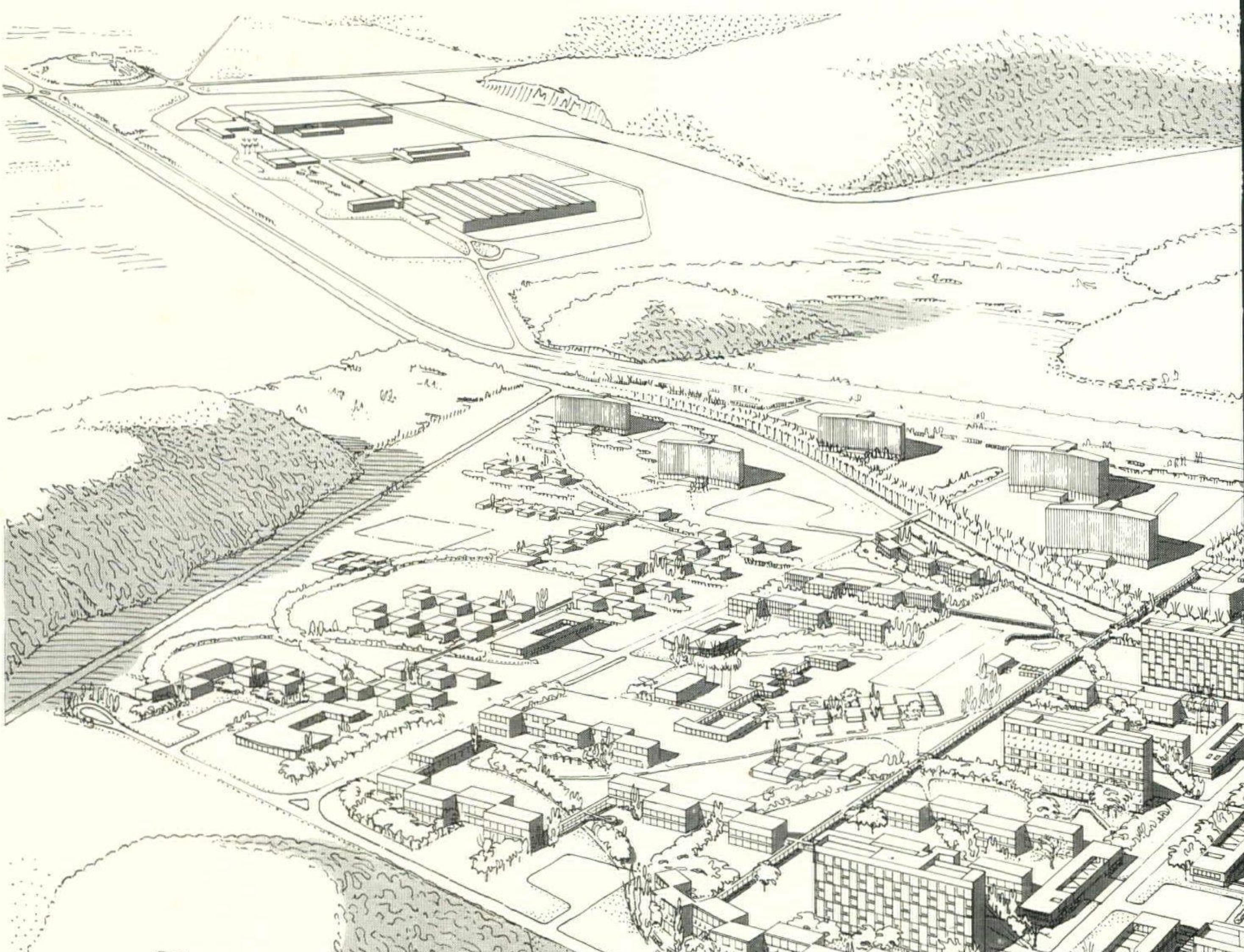
The industrial zone of the city has been planned to achieve the same architectural unity evident elsewhere. A control building straddles the entrance road, which then continues through the area between the factories and their administration units, passing under bridged connections. The administrative pavilions are tied together by a covered passageway, and between them lies the cafeteria (see plans below).



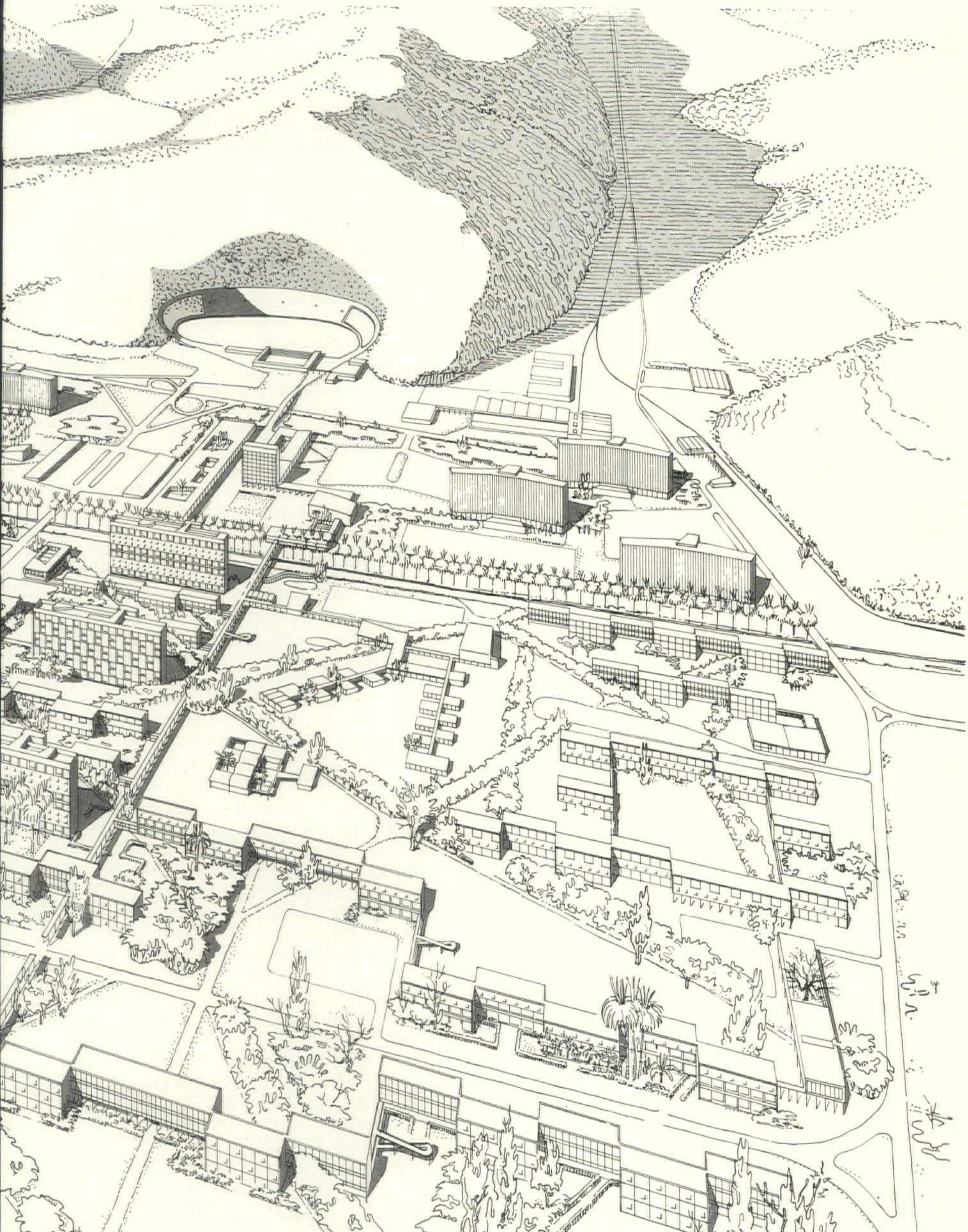
FIRST FLOOR. Food preparation, service, and dishwashing have been efficiently organized.



SECOND FLOOR. Directors' dining room occupies best corner. Space is separated for luncheon conferences.



RELATED and carefully studied buildings make the neighborhood. . . . . **INTEGRATED** neighborhoods make the city. . .



CORRELATED city, industry, transportation, and site make the region.

A CITY MEASURED BY ITS PEOPLE

The master plan for the Cidade dos Motores is, of course, primarily designed for the fullest satisfaction of the physical and spiritual need of its population. Experiences in scientific planning are utilized in the town plan. The master plan is not merely a predetermined pattern: it charts the course of the development of the city for a period of about ten years, and it follows the program of industrialization and agriculture for the region. The city will grow neighborhood by neighborhood; experiences gained in one will influence the design of the next. The master plan is flexible enough to absorb unforeseeable changes. It is, at the same time, a defined framework into which the increasing population will be organically and integrally fitted.

Since man is the measure of all things, let us take a family of four, consisting of father, mother, and two children, and see how their lives can evolve within the twenty-four hour life cycle.*

The man probably works in the factory and lives with his family in one of the apartments. He may walk under a protected passageway, which shields him from the sun, to the nearest bus station (an average of 200 feet from his home) and arrive at the factory within a few minutes; or he may take his bicycle from the shed provided in the apartment group and bicycle along the river front, protected by shade trees, reaching his destination within an average of seven minutes.

During lunch hour he may return home but, more likely, he will remain at the factory where a large cafeteria serves a well balanced meal.

His wife will probably take her baby, under two, to a nursery near her apartment. Here scientifically prepared food is available and care and advice can be obtained. During pregnacy she can obtain prenatal care and other medical advice in her own neighborhood dispensary.

Her other child may go to kindergarten or the near-by elementary school. She can reach all these places unhindered by traffic and at most times protected by covered passageways which in this climate are of vital importance. The kindergartens and schools are planned with the advantages that modern experience affords, and with play areas and landscaped patios to aid the spiritual and mental development of the children. Health services are available near home, incorporating recent findings of medical science.

When the family is reunited at night, near-by neighborhood clubs and swimming pools provide recreation. Dinner may be served at home or taken in the neighborhood restaurants, where carefully prepared diversified menus are part of the nutrition program. An evening walk in the Latin manner is made sociable and agreeable by the civic center, passeio, praca, moving picture theater, and coffee houses. Here the social life of the whole town takes place, where one meets, can see and be seen. Because of the heat of the tropical sun, walking distances from one part of the town to another are held to less than a quarter of a mile.

On Sundays family life evolves according to the Brasilian pattern. Especially in the early evening hours when the sun begins to set, young men and women go strolling arm in arm, listen to concerts played on the praca, and walk along the palm-lined corso and the river-front promenade. During the day football matches are played in the neighborhood sport fields and there may be swimming tournaments or national and regional football games in the stadium.

Most modern cities lack a civic nucleus such as existed in the past. The old pracas and passeios in Latin America were built so that the whole community could partake in gatherings and festivities. These were laid out according to the town planning charter of Philip II of Spain (1573). Many Latin American towns still have a clearly-defined civic center where people can gather together as they used to on the old village greens of New England, but the Cidade dos Motores will be the first modernly-planned city that maintains this good traditional feature, bringing it into relationship with present day life.

Our town plan aims, as far as any such plan can, at creating a physical and spiritual background against which the modern Brasilian way of life may be carried on, with ever greater health, happiness, and efficiency.

Paul Lester Wiener

José Luis Sert

* The town planner should also establish the relationship between places of dwelling, work, and recreation in such a way that the daily cycle of activities going on in these various districts may occur with the greatest economy of time. This is a constant factor determined by the rotation of the earth on its axis. (*The Town-Planning Chart*, Fourth Congress of C.I.A.M.—International Congress for Modern Architecture—Athens, 1933)

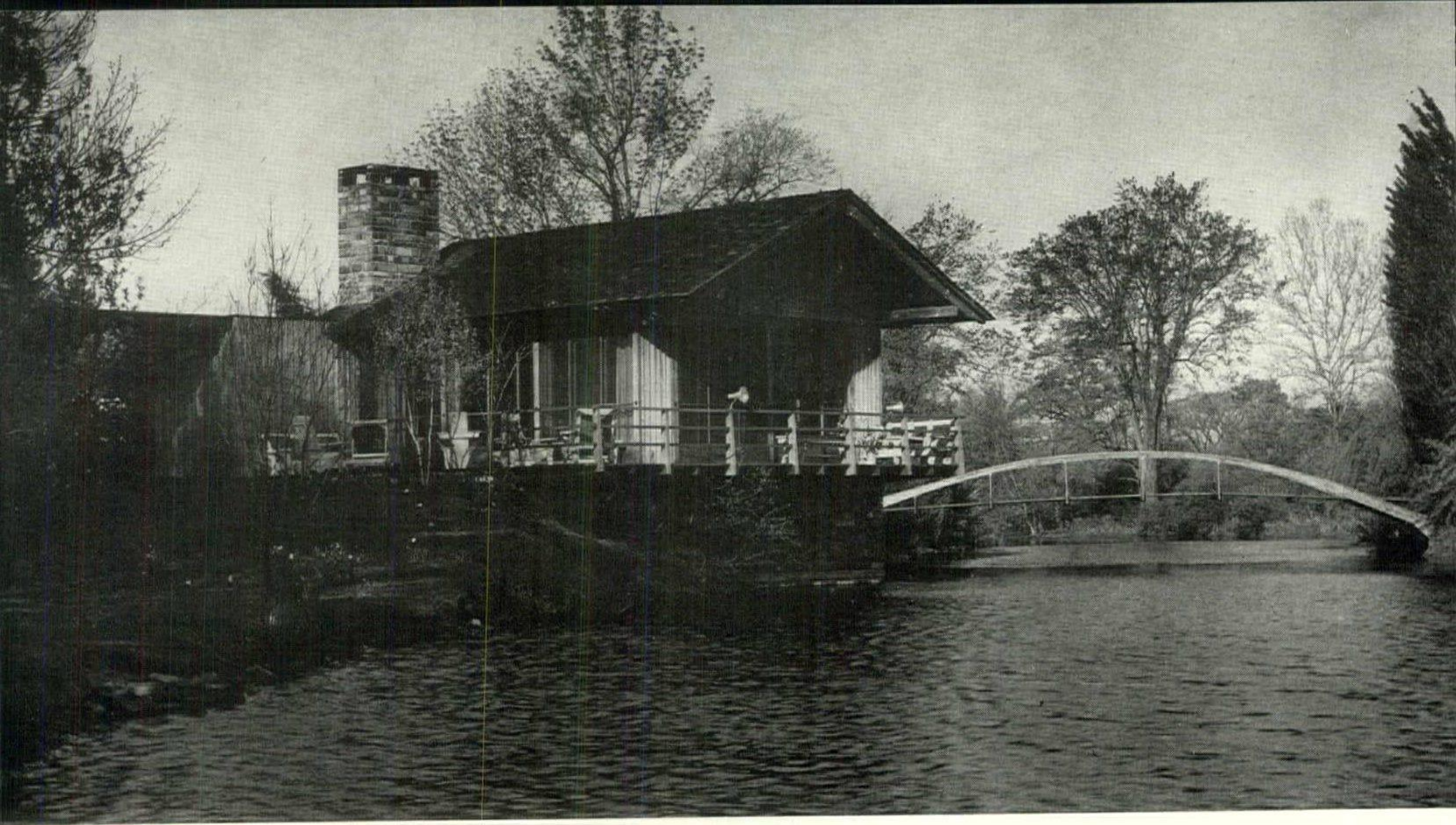
Photos by P. A. Dearborn

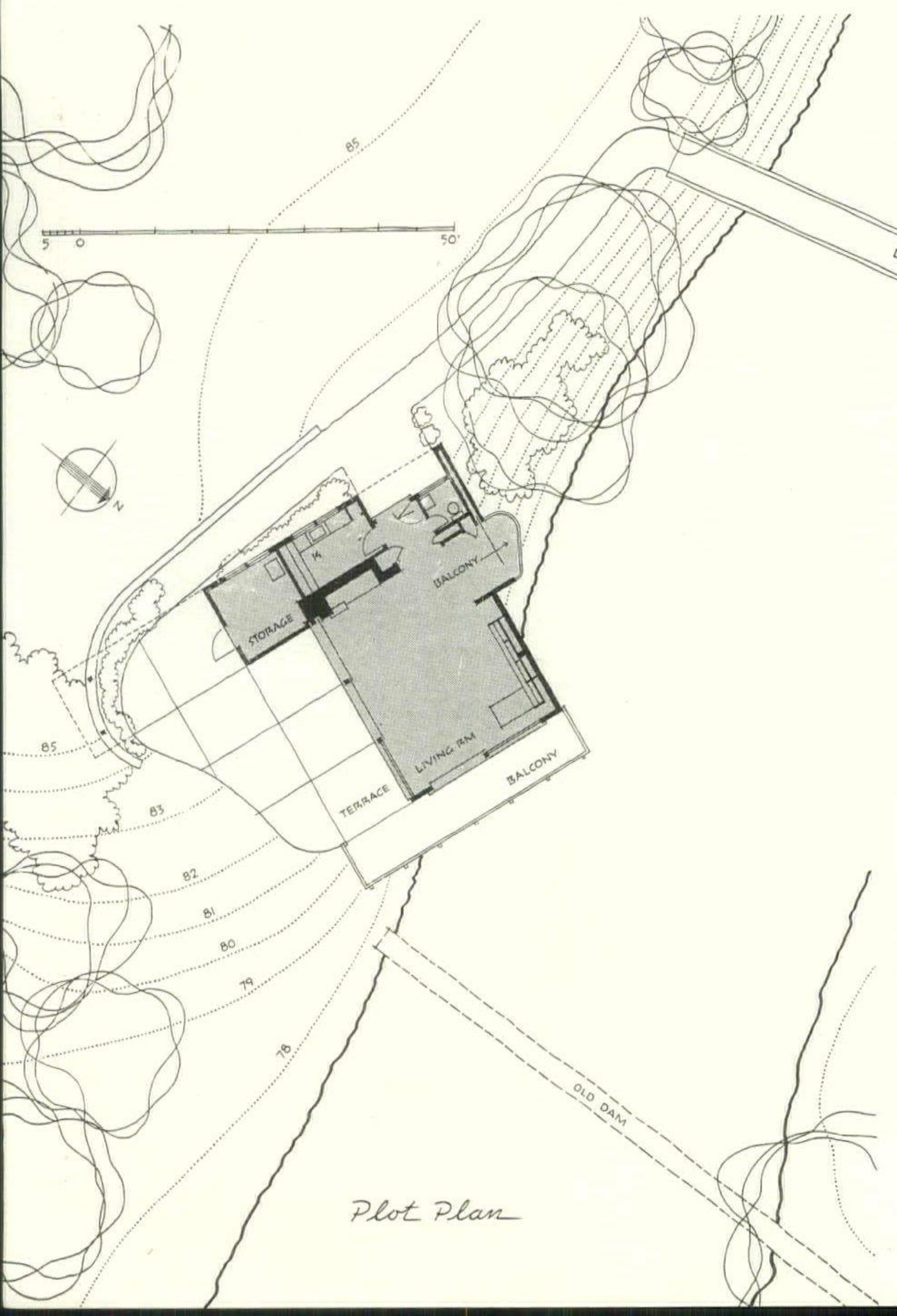
"BROOKHOUSE," NEAR PRINCETON, NEW JERSEY

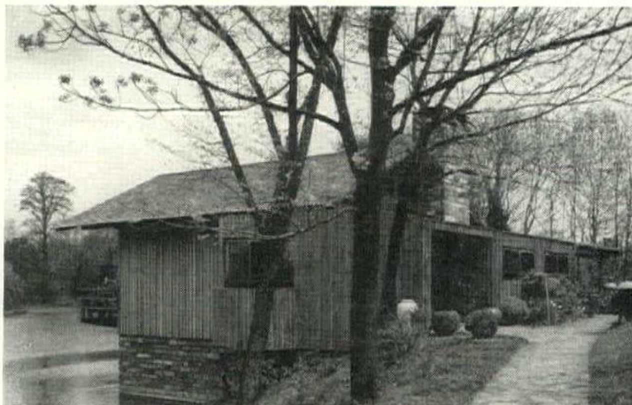
KENNETH KASSLER
Architect

DANIEL U. KILEY
Landscape Design

Planned primarily as a study or retreat—some 300 yards from the owner's home—this imaginative little structure is also used for entertaining and dining. In a day when mundane functional considerations usually take top priority (and frequently consume the entire budget), it is a delight to focus on a building that was planned for pure pleasure. It is also illuminating to see what pleasant architecture results—in the hands of a skillful designer.







APPROACH from bridge.

LANDSCAPE PLAN
by Daniel Urban Kiley.

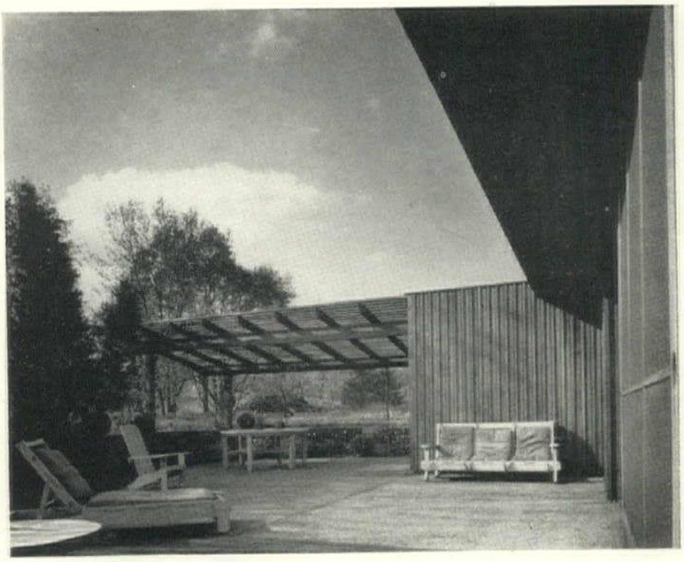
"BROOKHOUSE," NEAR PRINCETON, N. J.

KENNETH KASSLER, Architect

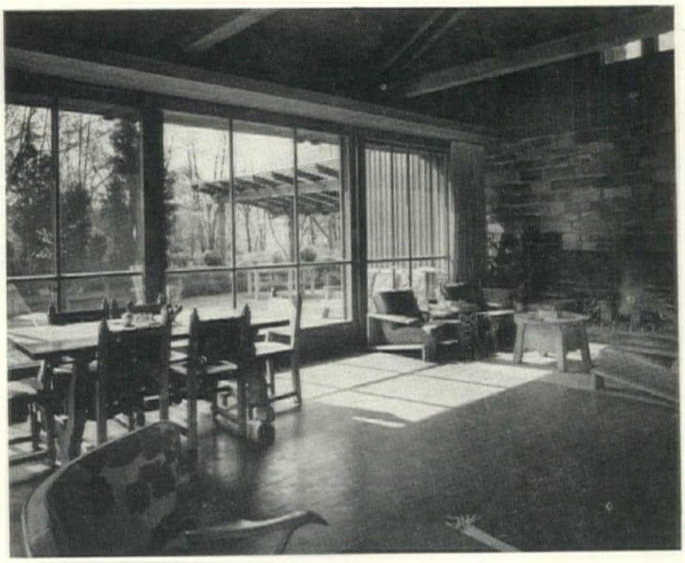
Built on the site of an old icehouse overlooking the ice pond on the owner's farm, the house is oriented for protection against late afternoon summer sun and the most agreeable view.

The whole parti is based on the relation of the house to the pond and the desire to obtain as much openness as possible. The main room and adjacent terrace are large enough to accommodate a sizable number of guests. Kitchen and storage facilities are purposely limited in size, since their use is only occasional.

The structure is of local quarry stone and frame. Exterior wood finish is of natural rough sawn battens over boarding. Roofing is of wood shingles. Terraces are of exposed aggregate concrete.



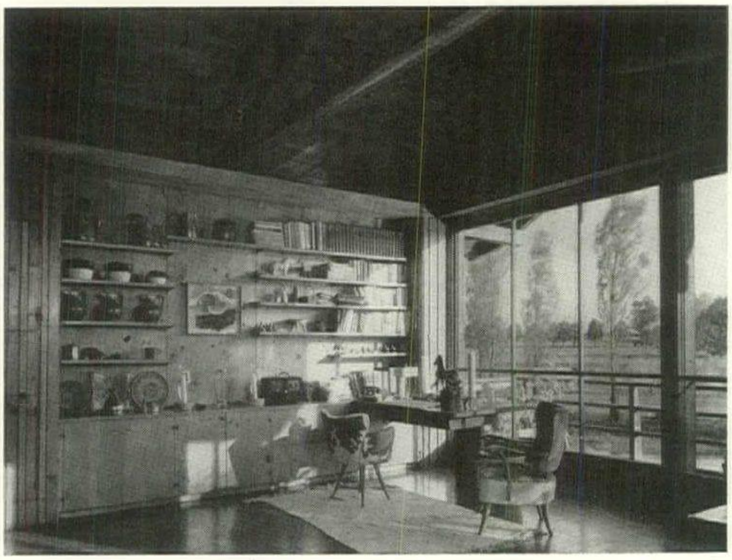
THE SHELTERED LOUNGING TERRACE.



VIEW FROM LIVING ROOM looking out to terrace.

TERRACE END of house.

SLIDING WALLS provide maximum openness.

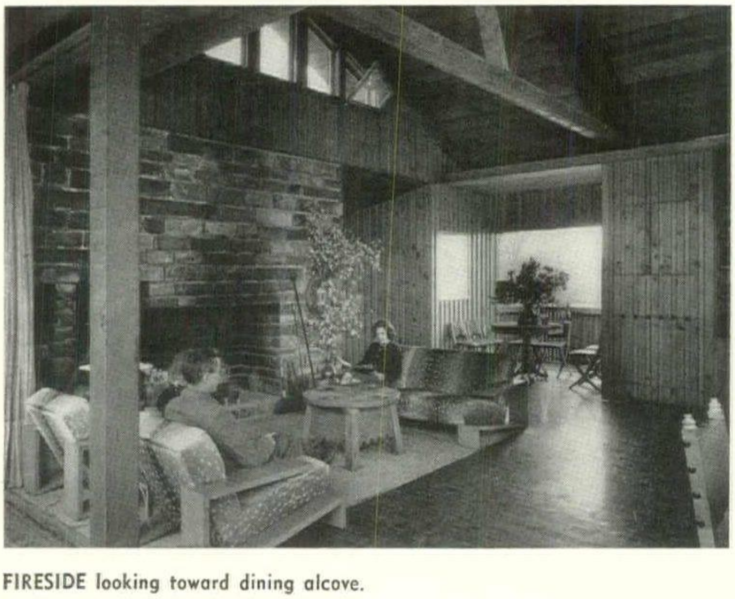


STUDY CORNER alongside shelves and cupboards.

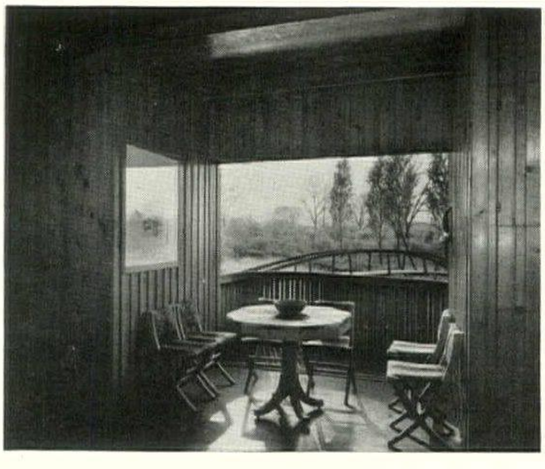
"BROOKHOUSE," NEAR PRINCETON, N. J.

KENNETH KASSLER, Architect

Throughout the house, interior surfaces are of either wood or stone; no plaster is used. Roof trussing is of fir; walls of the main room are finished in knotty pine, lacquered and waxed; flooring is pine end-grain block. The dining bay opens onto a small balcony so placed that it commands a view of the wooden arch suspension footbridge spanning the stream just above the house site.



FIRESIDE looking toward dining alcove.



DINING BAY; bridge beyond.

(Details on following page)

P. A. Dearborn

WOODEN ARCH FOOTBRIDGE

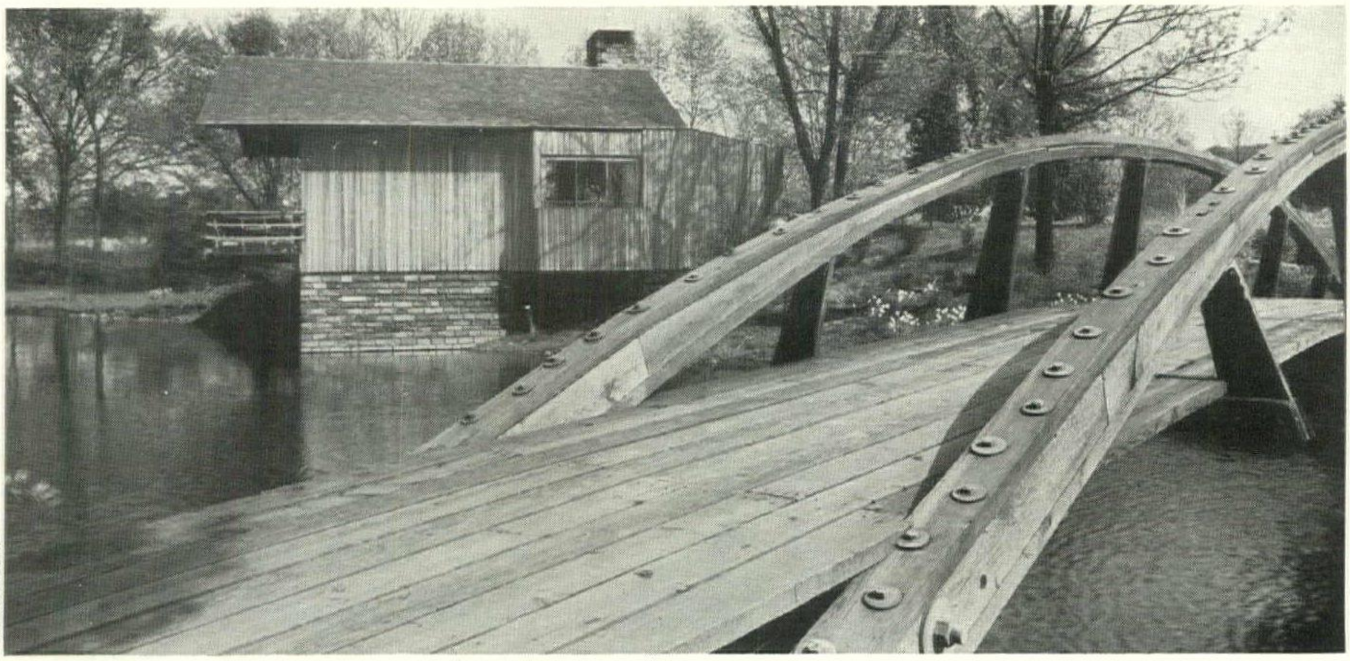
NEAR PRINCETON, N. J.

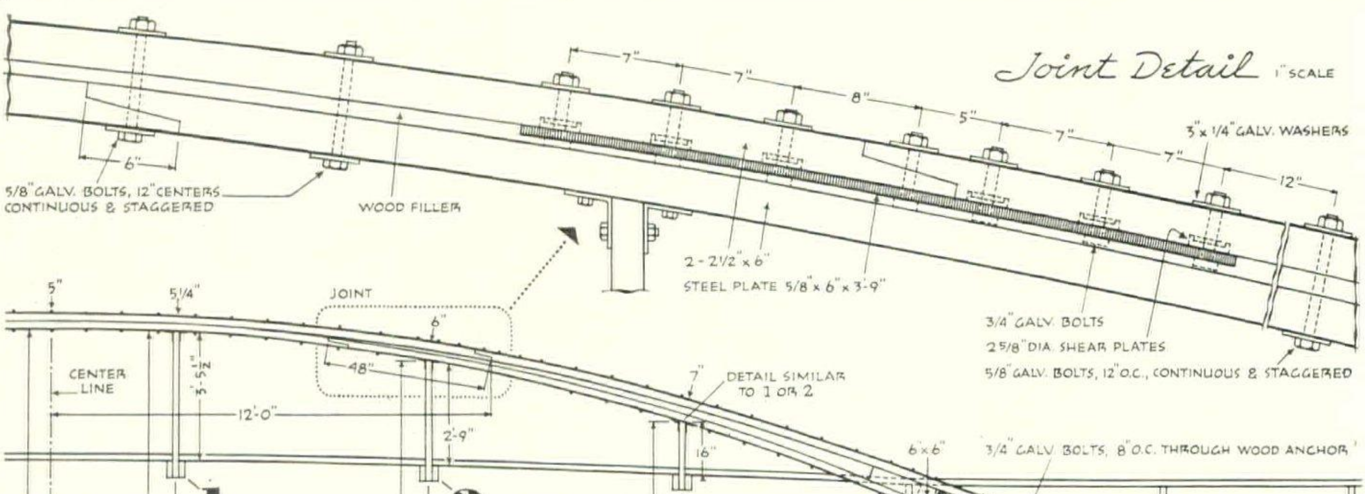
KENNETH KASSLER, Architect

KRAEMER LUKS, Consulting Engineer

This footbridge connects the main house and gardens (located some 300 feet back on the right bank of the stream) with the "Brookhouse" shown in the preceding pages. Over page are construction details of the bridge, which is an outstanding example of coordinated architectural and engineering design. Use of the minimum of materials in precise relationships here produces an esthetically satisfying result. The arches are built up; at joints, top members, which are in tension, are secured to steel plates; bottom members, in compression, hold their position without such mechanical fastening. The wood suspension members which support the footway are splayed outward so that stresses are applied to resist any tendency to splitting at the joint (see stress diagram). Comparable considerations governed design of sway bracing and of arch side-filler pieces which tie the arches to the concrete abutments. All lumber is zinc chromated under pressure.

(Photo on preceding page)





WOODEN ARCH FOOTBRIDGE

PRINCETON, N. J.

KENNETH KASSLER, Architect

KRAEMER LUKS, Consulting Engineer

(Details on following page)

Chicago Architectural Photographing Co.

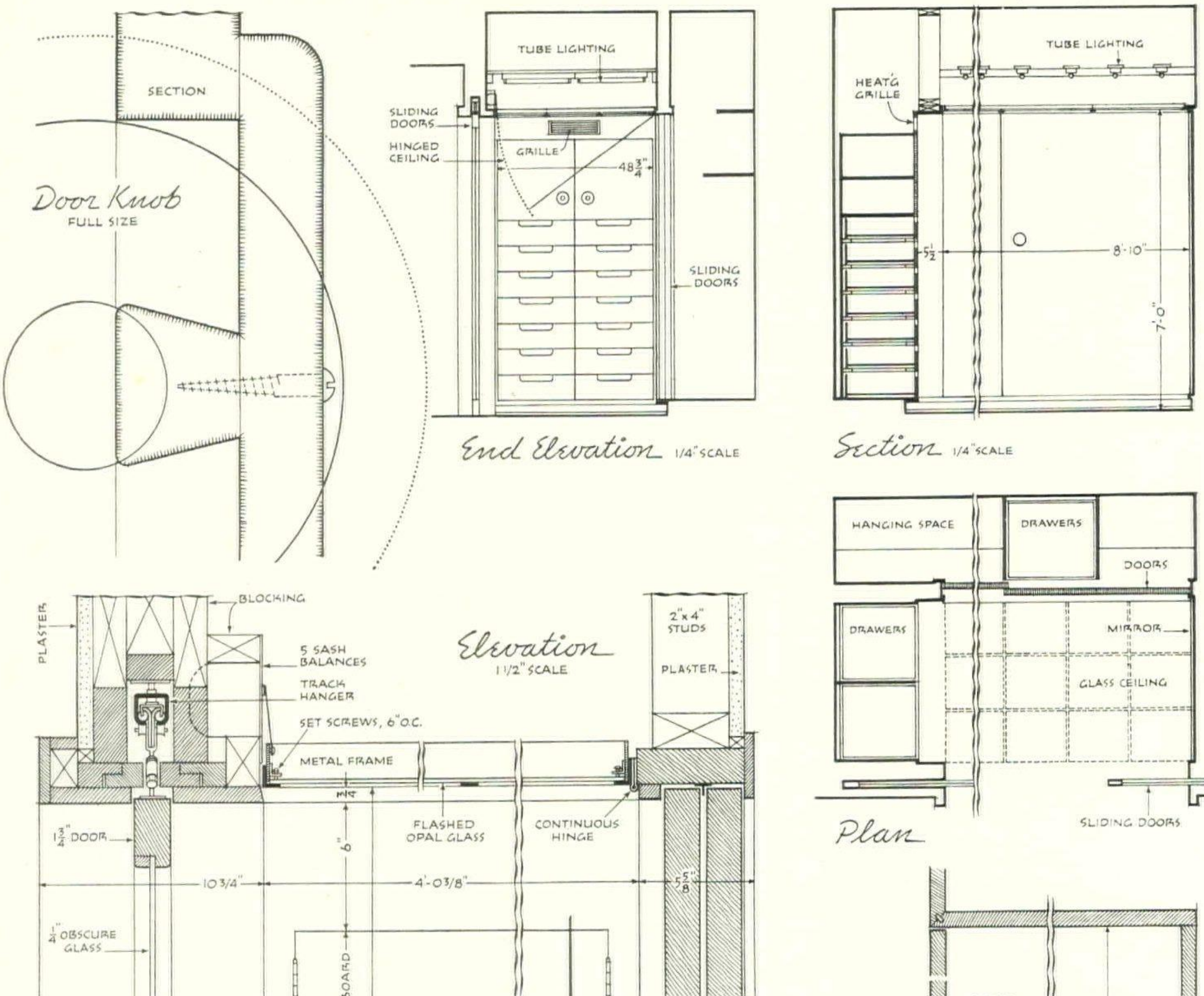
DRESSING ALCOVE IN MASTER BEDROOM

CHICAGO, ILL.

McSTAY JACKSON CO.
Designers

An end of the master bedroom has been set off for dressing space by the use of sliding opaque glass doors which are suspended from track hangers. The ceiling acts as a lighting source, since flashed opal glass panels are suspended below fluorescent fixtures. At one end of the dressing space a drawer unit has cupboards above, while on the long wall sliding doors (on floor tracks) conceal hanging space and additional drawers. No applied hardware is needed, as cupboard and cabinet doors are fitted with recessed wood pulls and drawers have hand slots.

(Photo on preceding page)



DRESSING ALCOVE IN MASTER BEDROOM

CHICAGO, ILL.

McSTAY JACKSON CO.
Designers

WATERPROOFING AND DAMPPROOFING

PART II

Part I of this article, which dealt with waterproofing, appeared in the August 1946 issue.

CORRECTION: In Part I, page 84, Aug. 1946, Table "Thickness & Reinforcing of Slab," steel stress should read 16,000 psi.

By BEN JOHN SMALL

DAMPPROOFING

Dampproofing is a process wherein an impermeable barrier is created to withstand moisture (dampness). Generally three methods are employed:

I —Surface Coating Method
II —Face Joint Method
III—Flashing Method

★ ★ ★

I—SURFACE COATING METHOD is a system of dampproofing with film coatings. Materials frequently used:

1. **Colorless Type:**
   - (a) Paraffin, tung oil, and mineral spirits
   - (b) Aluminum stearate and mineral spirits
   - (c) Linseed oil, turpentine, and paint drier
   - (d) Molten paraffin
   - (e) Chlorinated rubber and benzene
   - (f) Organic oil and gum varnishes
   - (g) Proprietary solutions and emulsions

   Advantages:
   - (a) Where transparency is a necessity, and after determining that moisture is penetrating through masonry, and after correction of structural defects

   Disadvantages:
   - (a) Cannot fill holes in masonry
   - (b) Cannot correct structural defects
   - (c) Effectiveness lasts for limited period of time
2. **Resin-Emulsion Paint Type:**
   - (a) Civil Aeronautics Administration Spec. CAA-577
   - (b) U. S. Navy Spec. 52P75
3. **Oil-Base Paint Type:**
   - (a) Fed. Spec. TT-P-24
4. **Synthetic Rubber-Base Paint Type**
5. **Magnesium Oxychloride Paint Type**
6. **Cement-Water Paint Type:**
   - (a) Fed. Spec. TT-P-21
   - (b) Proprietary mixtures (mostly powders)
7. **Cement-Water Paint and Sand (Grout Coat) Type:**

   Usually used as first coats on coarse surface masonry
8. **Bituminous Coatings Type:**
   - (a) Hot asphalt (primer: Fed. Spec. SS-A-701 or U. S. Army Spec. 3-116 or ASTM 41, and hot asphalt: Fed. Spec. SS-A-666, Type III, Class A or U. S. Navy Spec. AW or ASTM 450, Type B)
   - (b) Hot coal tar (creosote oil primer: Fed. Spec. TT-W-561a, and coal tar pitch: Fed. Spec. R-P-381, Type II or ASTM 450, Type B)
   - (c) Water-gas tar. Usually, four thin coats
   - (d) Asphalt roof coating (Fed. Spec. SS-R-451 or U. S. Army Spec. 81-6B). For use over primer
   - (e) Prepared bituminous paint
9. **Cementitious Brush-Coating Type:**
   - (a) Portland cement and sand wash coat. (Use white Portland cement where appearance and brightness are required.)
   - (b) Iron powder and sal ammoniac
   - (c) Portland cement, iron powder, and sal ammoniac

★ ★ ★

II—FACE JOINT METHOD is a system of dampproofing by (1) repointing and tooling joints and (2) grouting, or filling cracks in or between joints and adjacent masonry units. Materials frequently used:

1. **Repointing:**
   - (a) Mortar, same as originally used
   - (b) One part Portland cement, three parts lime putty, 12 parts sand
   - (c) One part Portland cement, one part slaked lime putty, 4 parts sand
2. **Grouting:**
   - (a) Portland cement and fine sand
   - (b) High-early-strength cement, flint, and sand
   - (c) Portland cement and flint
   - (d) Wax (paraffin and tung oil)
   - (e) Proprietary mixtures

★ ★ ★

III—FLASHING METHOD is a system of dampproofing by diverting water from vulnerable parts of a wall to the exterior. Materials frequently used:

1. **Metals:**

   Lead, zinc, aluminum, monel metal, tin (terne) plate, galvanized iron, copper (plain and corrugated), copper-bearing galvanized steel
2. **Coated Metals:**

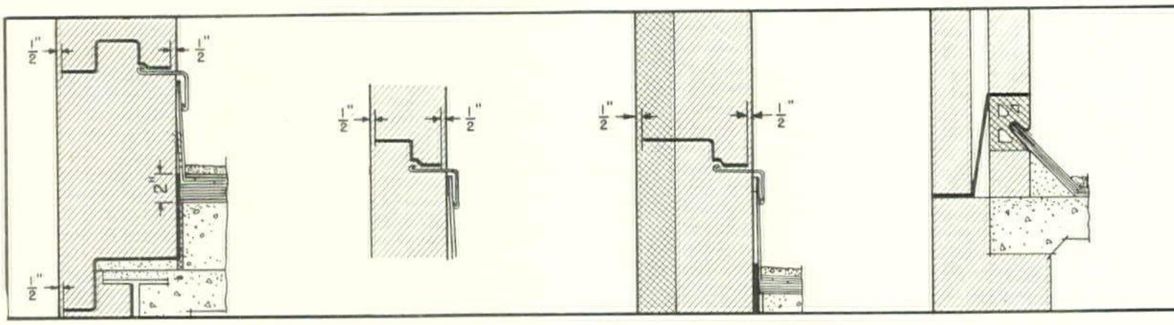
   Lead-coated copper, fabric-coated copper, asphalt-coated copper, bitumen-saturated wire mesh, asphalt-saturated-cotton over wire mesh
3. **Miscellaneous:**

   Kraft paper, saturated canvas, roofing felts and cap sheets, copper-coated fabric, asphalt-saturated cotton, impregnated and non-impregnated fabrics laid in mastic

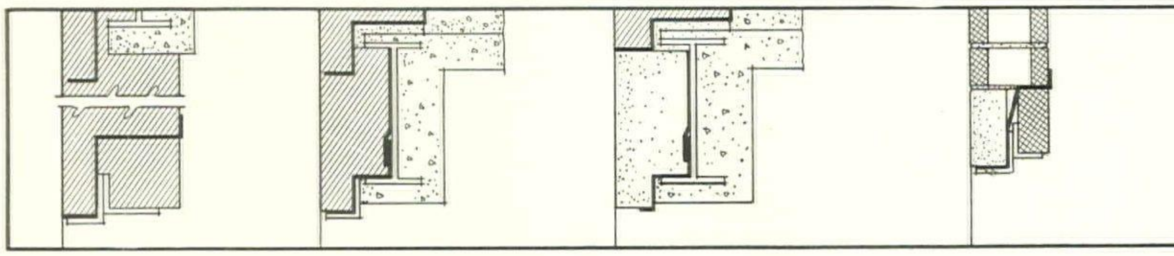
4. **Principles of Flashing Design:** Investigate material for:
   - (a) Corrosion resistance of metallic flashings with regard to atmospheric conditions and contacting masonry and mortars
   - (b) Solubility of bituminous materials insofar as staining of masonry is concerned
   - (c) Resistance to perforation and pliability without fracture for required contours
   - (d) Effectiveness of bond with adjacent materials

5. **Design:**
   - (a) Locate flashing at all vulnerable points; direct water to exterior (through mortar or weep-holes)
   - (b) Stabilize copings above through-wall flashings
   - (c) Provide sufficient number of clear weep-holes in cavity and non-cavity walls
   - (d) Avoid intricate flashing design.

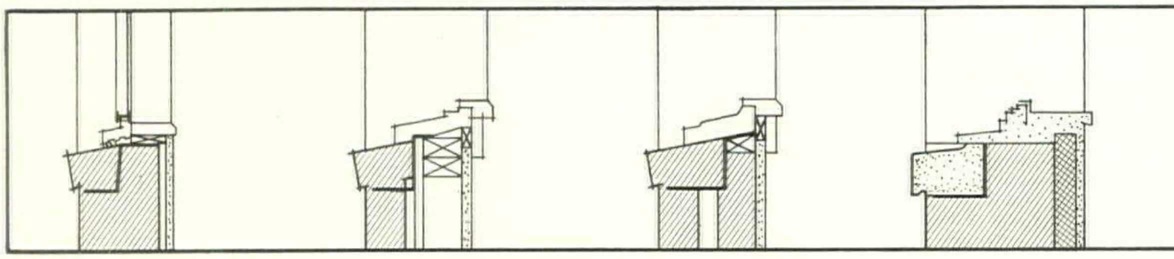
FLASHING DETAILS



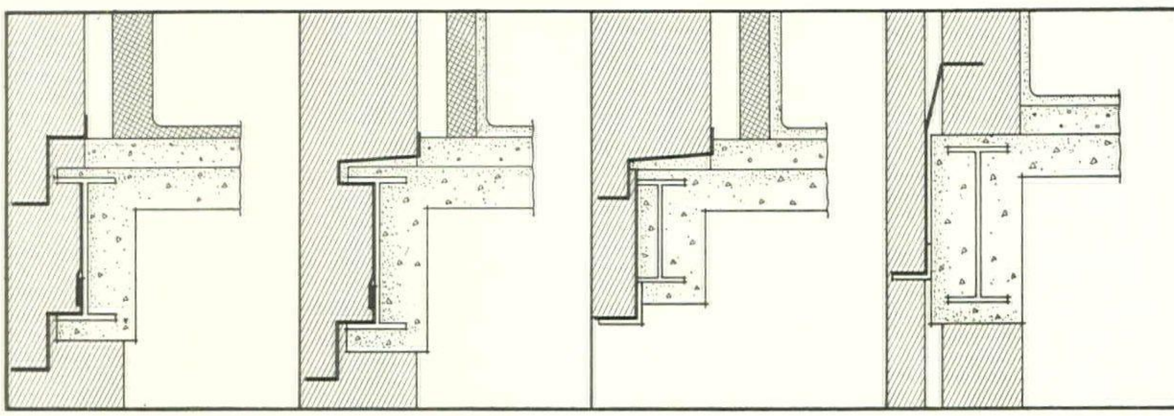
PARAPETS



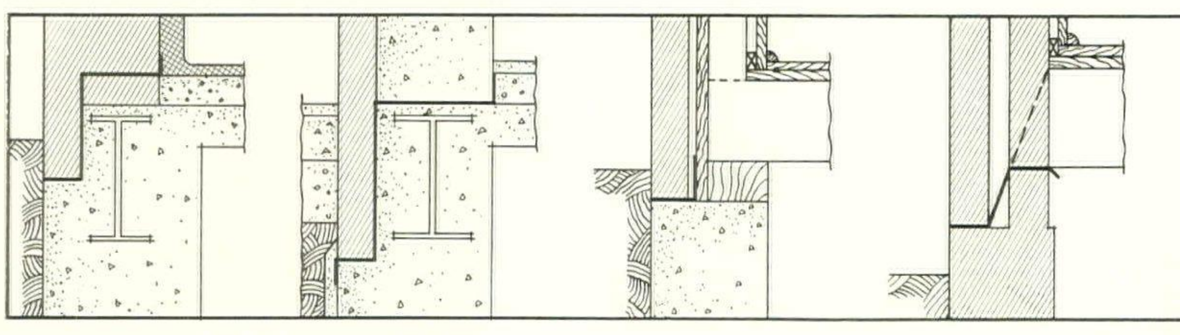
HEADS



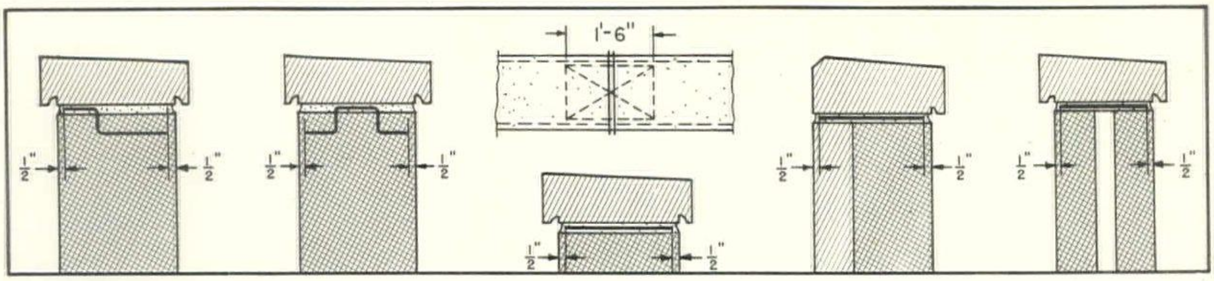
SILLS



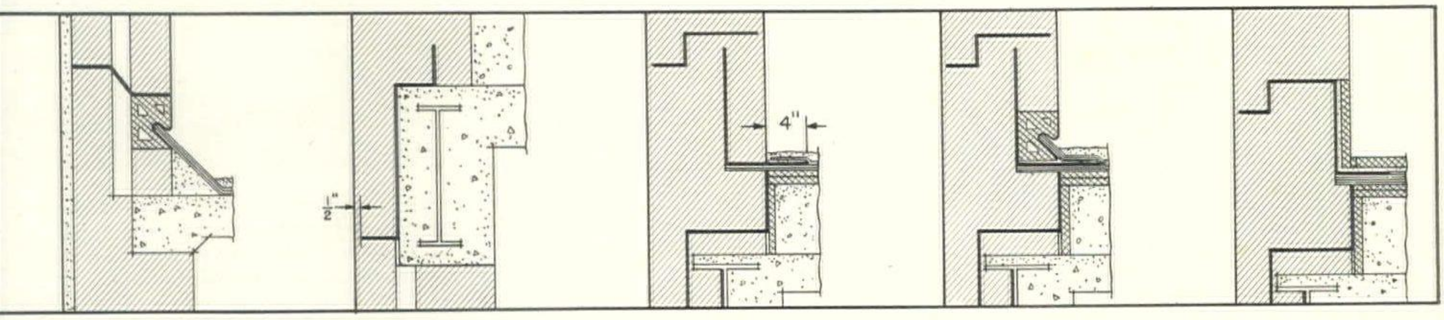
SPANDRELS

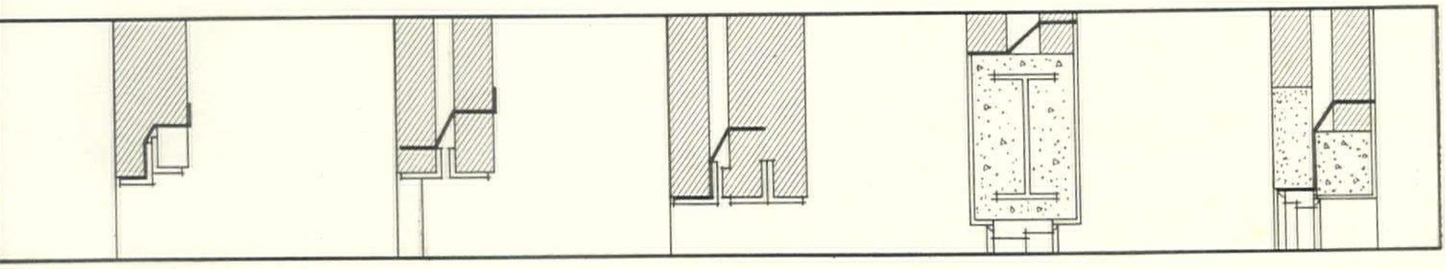


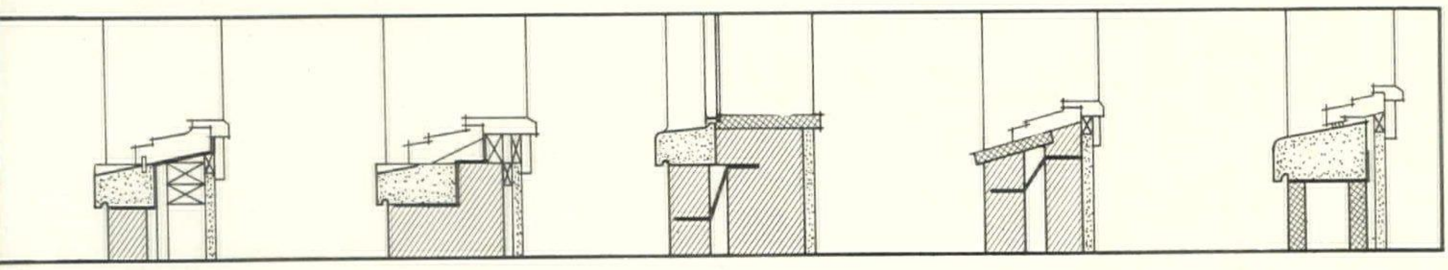
FOUNDATIONS

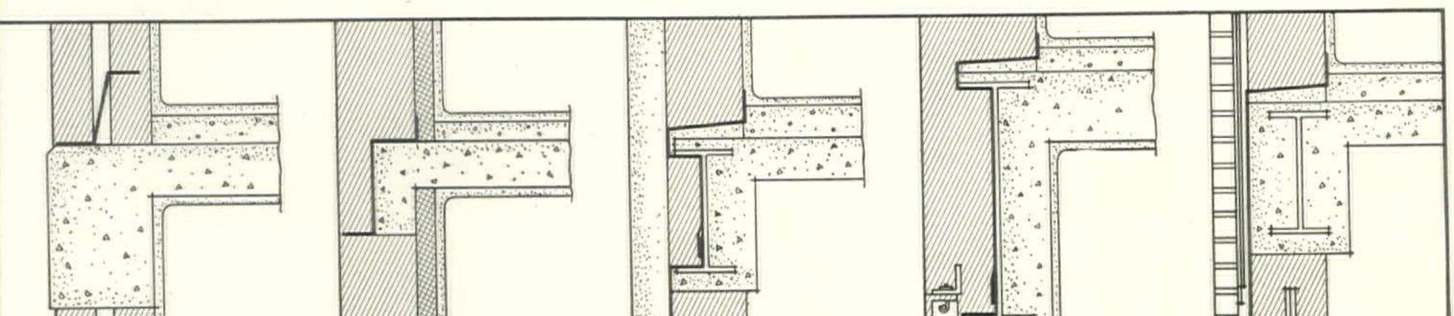


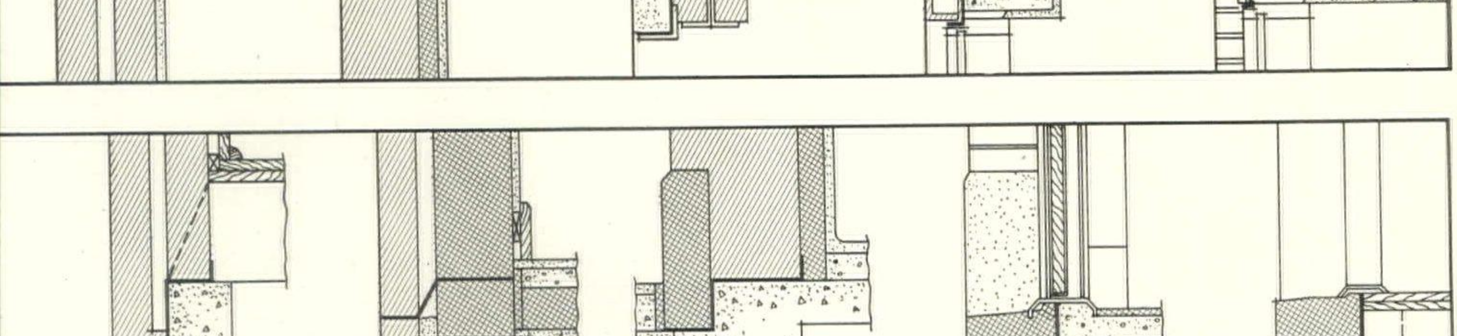
COPINGS

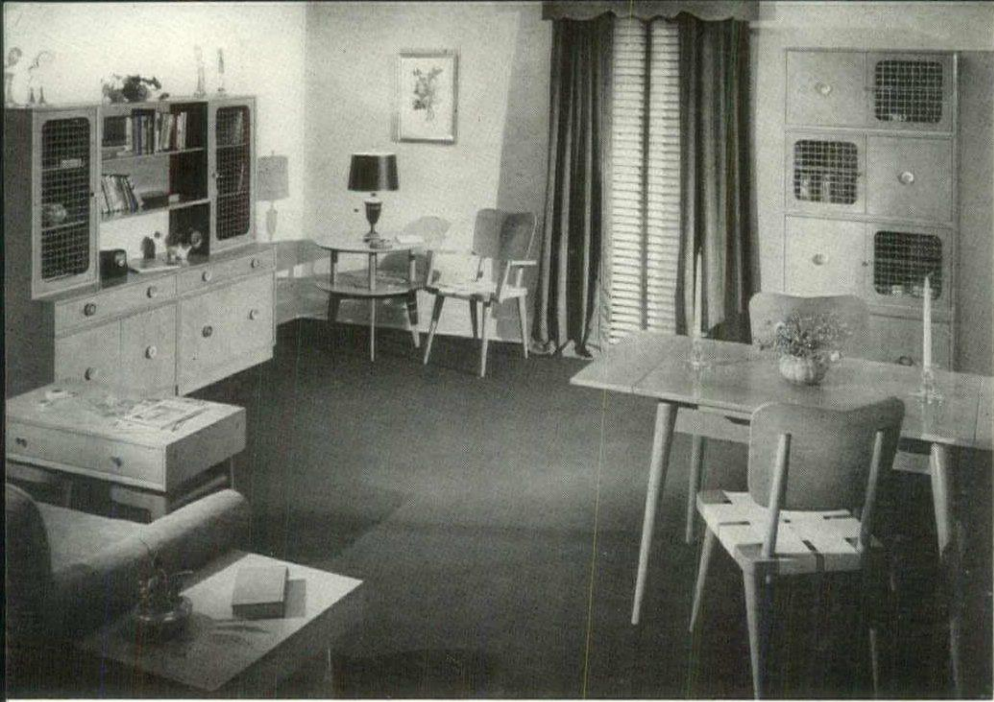


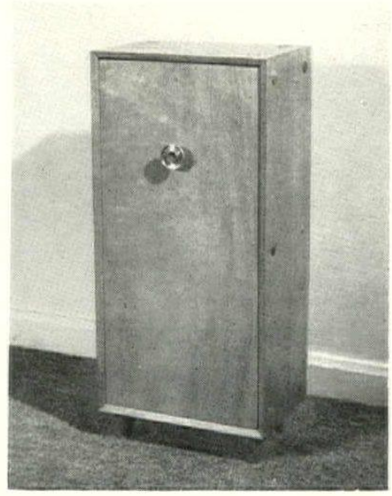








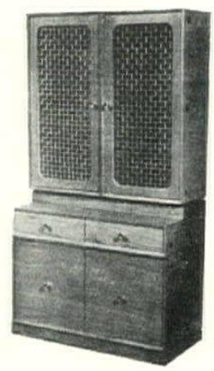




BASIC CASE and four other standard units combine in endless variety. Photo, left, also shows Sanders' chairs, etc., designed to harmonize with Module furniture.

MODULE FURNITURE

A new type of unit furniture based upon a six-inch module, designed by Morris Sanders and manufactured by The Mengel Co., offers the designer storage pieces conceived on an architectural basis.



Late in July, the Mengel Co., possibly best known to architects as plywood and door manufacturers, held the first public showing of Mengel Module Furniture. Before that, Morris Sanders had spent nine years perfecting, simplifying, and finding a commercial sponsor for his brainchild, which consists of a series of standardized, assemblable, interchangeable storage pieces. Five units are in production, with more to be added to the line if demand warrants; the initial five may be assembled in almost endless variety. Ingenious as the furniture and its assemblies are, it remains utterly simple—a result of the exhaustive study which went into its design.

The basic unit is 18"x18"x36", consists of four sides and a back, and may be used horizontally as well as vertically. All four sides contain bolt holes in which can be inserted the simple metal "Module Connectors" that secure adjacent units in an assembly. Into the same holes may be inserted drawer slides or aluminum-channel shelf brackets, etc. Units may be fitted with solid or grilled doors, with sliding plate glass doors, with shelves or drawers, with one of three types of standard bases, or with wood spacers used, for instance, to separate top units of a two-tiered chest from the base. Other sizes now in production are 12"x18"x36"; 12"x24"x36"; 18"x18"x18"; and a flat unit, 6"x18"x36", useful both as a drawer case and as a small table top. Additional auxiliary parts include specially designed metal-dowel hinges, table legs, etc. Assembly of the most complex piece can be accomplished by the average housewife; the screw-slots in the bolt heads are so designed that a 25-cent piece works them more easily than the conventional screwdriver. The bolt holes may also be used for wiring radios or lights; when not in use, the holes are filled with removable plastic plugs that provide an appearance distantly reminiscent of Early American pegged cabinet work.

But Module furniture is far removed in conception from such handicrafted forebears. It owes something to the sectional bookcase of the early 1900's and other predecessors; however, it is designed for mass production using contemporary materials and techniques. Although its price—it is on sale in department stores, at first in New York, later in most cities—is upper medium, probably it will eventually be produced in a different wood at lower prices. The present material is mahogany-surfaced, resin-bonded plywood, with strong, machine-milled, specially mitered joints at case corners, and with an integral, permanent, synthetic-resin finish that preserves the light caramel color of natural mahogany. Drawers are of molded plywood, with integral sides and bottom and rounded interior corners, easy to keep clean.

The furniture itself is a strong incentive to individual experimentation. It can be used as free-standing pieces, as storage walls, or built-in; even the standard handles and drawer pulls can easily be replaced with hardware to suit individual tastes.

ELECTRIC RADIANT HEAT

By L. N. ROBERSON, President, L. N. Roberson Co., Seattle, Washington

We have wondered for years about the possibility of heating houses economically and well with electricity. PROGRESSIVE ARCHITECTURE here presents the first description published in the United States of an electrically powered radiant panel system, economical at least where electric rates are reasonable, with individual room controls, requiring no central heating plant. A discussion of the system appears also in this month's issue of HEATING AND VENTILATING.

—THE EDITORS

A Swedish electrical engineer, noticing the snow melting above an overloaded power cable, wondered if he could use a similar system to start his vegetables early and eventually developed a lead-covered cable for that purpose. When the Farm Electrification Department of the Puget Sound Power & Light Company heard of the cable about twenty years ago, they imported some and, after experimenting with it, induced the General Electric Company to manufacture a similar lead-covered, soil-heating cable, which was soon being used for a number of applications other than its intended purpose. To meet some of the new requirements, another cable, insulated with plastic of high water, acid, and alkali resistance, and smaller (approx. ⅛ in.) in diameter, was developed by the L. N. Roberson Company. The Roberson cable, called "Heatsum," has high electrical strength and the ability to withstand continuous temperatures of 167F.

In 1940 the author explored the possibilities of using electric heat in the plaster, only to find that it had been done in England since about 1907. However, little design data were available and dire predictions as to results were received from all quarters. Professor Lionel H. Pries, of the School of Architecture of the University of Washington, offered one of the few bits of encouragement, based on personal observations of hot water radiant heat installations in this country and abroad. The Puget Sound Power & Light Company also cooperated by providing test meters for segregating the load. It soon became apparent that electric radiant heat was entirely practical with the electric rate prevailing in this area and a number of installations were made.

There are now over 150 installations using "Heatsum" cable for electric radiant house heating. The Federal Housing Authority has been approving loans on houses so heated for about five years. Insurance companies have been willing to insure all the houses so heated. The Underwriters' Laboratories say that, inasmuch as electric radiant heating does not become a complete system until it is installed, its safety is a matter for local inspection authorities. Some state and city codes are so worded that legislative action may be required before installations can be made, while other inspection authorities are very cooperative.

Features of the system that have excited favorable professional comment include: *absence of a central heating plant, freedom of design afforded by the elimination of duct work or piping, and individual room control.* Other factors, common to most types of radiant heating, are: cleanliness; the appearance of newness in houses so heated even after five or six years of occupancy without redecorating; and, in ceiling panel systems, a temperature differential between floor and ceiling of only 2 to 3F.

MATERIALS, SYSTEM DESIGN, CONTROLS

A Roberson electric radiant heating system consists of standardized lengths of "Heatsum" cable secured in intimate contact with wall, ceiling, or floor surfacing materials, connected through ordinary junction boxes to a power source, with each panel or group of panels controlled by a simple room thermostat and wall switch. Lengths of cable (or heating elements) are available in 250, 500, 1500, and 3000 watt capacities.

Design procedure is based on conventional convection heating using an air thermostat to meet individual requirements, usually a temperature between 58 and 72F. Examination of the comfort zone for radiant heating shows that, as the air temperature approaches 70F in the average well designed room, the heating panel temperature also approaches 70F if it is of correct size. As the outdoor temperature drops the increased radiation loss causes a demand for more heat, resulting in increased panel temperature.

This makes a much simpler condition to control than to maintain an air temperature of 64F and a panel temperature sufficient to balance outside conditions, particularly when outdoor temperatures rise slightly above the inside air temperature, a condition which would call for heat when no heat would be supplied by the panel if it were controlled by air temperature alone. While there are controls now on the market for meeting conditions of this type, their installation cost would be increased considerably when used with electric radiant heat where each room is individually controlled.

When considerable moisture has to be

Photos by K. S. Brown

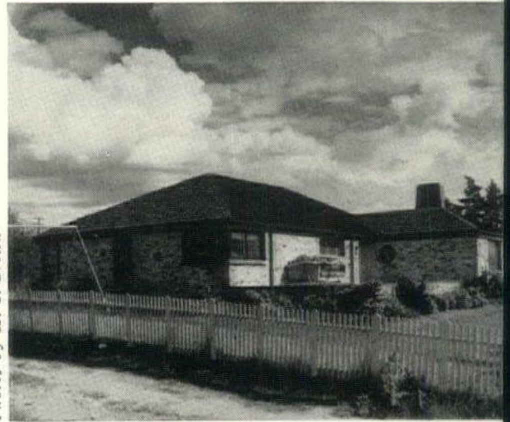


FIG. 1—Denny Grindall Residence, Seattle, Washington; electric radiant heated since 1941.

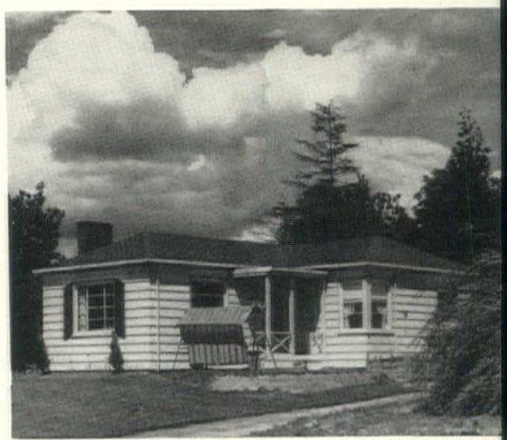


FIG. 2—Francis Hoover Residence, Seattle, Washington; electric radiant heated since 1943.

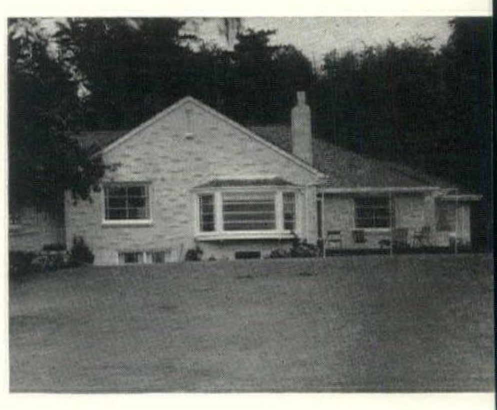
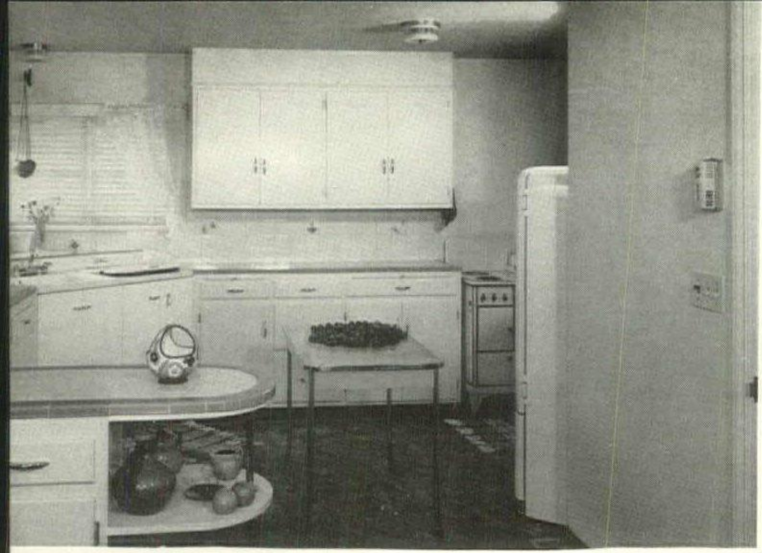
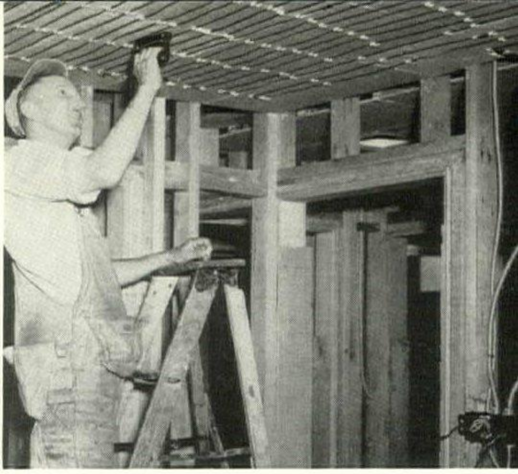
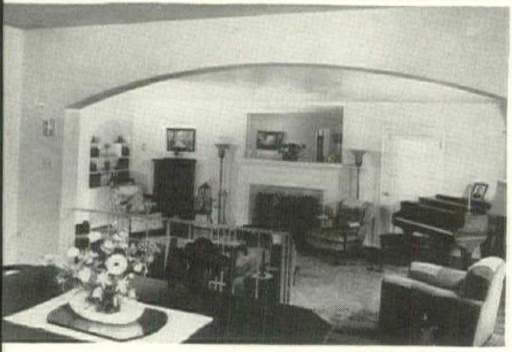


FIG. 3—R. B. Newbern Residence, Seattle, Washington; electric radiant heated since 1941. House designed by the owner, a mechanical engineer; general contractor, J. L. Grandey; electrical contractor, Hartzell Electric Co.







FIGS. 4 and 5—Top, dinette and kitchen, Newbern house; dark switch controls heating. Rooms had not been redecorated in 4 years when this photo was taken; note fresh appearance. Same is true of adjoining dining and living rooms (bottom photo, same house) which have independent thermostats and switches for controlling each room independently.

removed from the plaster and temporary circulating heaters are used to aid drying, the body feels increased warmth from the radiant heat as soon as the circulating heaters are *dis*connected, even though there may be an actual drop in air temperature of several degrees. This is true because body-heat loss is greater with convection than with radiant heat. To prevent such losses one should try to avoid cross drafts which introduce excessive air circulation. On the other hand, it has been possible successfully to heat rooms or porches open to the weather on two or three sides, so that the occupants may enjoy them even during cool days and evenings. See Fig. 13, which shows such a room heated by a panel in the ceiling —which is quite high (approximately 18 ft at the ridge). A floor panel would have been equally satisfactory.

Adjacent rooms, even though not separated, are individually controlled to compensate for temperature variations due to solar and other heat sources, because radiant heat does not flow from room to room in the same manner as convection heat. Electric ranges, toasters, mangles, lights, and even electric refrigerators emit heat which adds materially to the total heat available; this auxiliary heat may be used to advantage depending on how quickly the individual room thermostat responds to compensate for the additional heat in a particular room, whether from one or

TABLE NO. 1 COST AND CONSUMPTION DATA ON ELECTRICAL HOUSE HEATING EQUIPMENT*

House	No. Rooms	Cu ft Air Space	Connected Heating Load (KW)	KW Consump. 1945	Total Annual Bill 1945	Annual KW per cu ft	Annual Cost per cu ft	Construction
1.	6	16,750	12.	30,510	$253.49	1.82	$.015	Brick Veneer
2.	5	6,400	10.5	26,460	245.78	4.07	.038	Frame
3.	6	7,750	9.2	12,740	144.20	1.65	.019	Frame
4.	5	6,000	9.0	16,500	157.19	2.75	.026	Frame
5.	5	6,800	7.5	20,080	170.04	2.95	.025	Frame
6.	5	6,450	9.0	16,000	160.65	2.48	.025	Brick Veneer on tile
7.	5	7,800	7.5	15,258	121.44	1.95	.016	Frame
8.	8	22,800	15.5	24,168	226.46	1.06	.01	Brick Veneer
9.	5	6,150	13.5	19,062	191.35	3.10	.031	Frame (also 2 HP pump)
10.	6	9,280	10.5	29,768	246.49	3.21	.027	Frame
11.	5	8,000	9.5	14,318	144.55	1.79	.018	Frame
12.	4	9,950	18.3	22,180	228.54	2.24	.024	Frame
13.	7	19,500	19.5	30,557	249.41	1.65	.013	8″ Brick furred & Plastered
Average						2.36	.022	

REMARKS:

All houses have ceilings insulated with 3 to 3½ inches of noncombustible fill type insulation. Houses 7 and 12 also have walls insulated.

House 8 has three baths. House 12 has two baths.

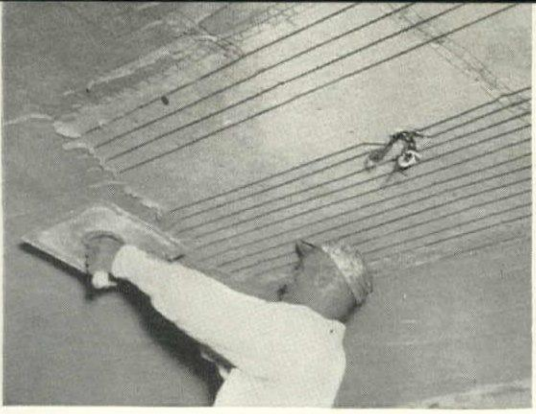
House 12 has 32% glass walls.

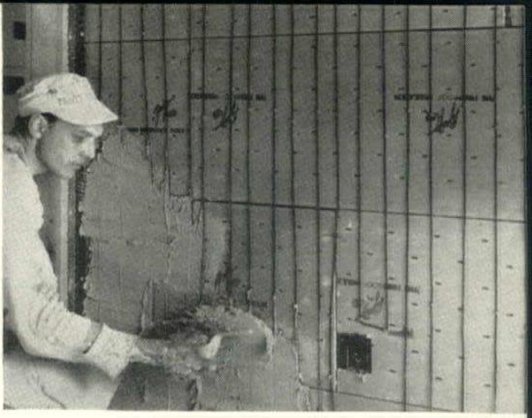
House 9 consumption and cost figures include a 2 HP pump.

* Cost and consumption figures include electricity consumed for *all* purposes, including lighting, cooking, water heating, etc. All of the houses were heated by radiant heat from "Heatsum" cables installed in the ceiling or floor.

The houses listed in this table are on various rate schedules and for that reason the kilowatt hour consumption is a better index as to performance than is cost.

The rates varied from .7 of a cent to 1 cent per kilowatt hour on the final step. Most of the homes were on the final rate step after using approximately $5.00 worth of electricity.





FIGS. 6, 7, 8, 9—Heating elements must be installed over non-metallic plaster base when imbedded in plaster. Fig. 6 (far left) shows elements ending several inches from the wall to permit reinforcing the corner with metal lath, which must not touch element. Fig. 7 (left center): no reinforcing over lath joints, plaster applied parallel to element runs. Fig. 8 (right center) shows two common errors: elements run across metal joint-reinforcing, which should have been omitted; and two elements should not terminate in a single box—yet this installation remains satisfactory after 6 years' service and 2500-volt test. Fig. 9 (right): elements installed in a wall.

from a combination of several heat sources. Fig. 5 shows adjacent rooms, separately controlled, with the thermostat in each room visible. Data available from actual homes heated with "Heatsum" cable show roughly half the power consumed is used primarily for purposes other than heat, although the final result from the major part of this miscellaneous power consumption is usable heat.

HOUSE DESIGN CONSIDERATIONS

Fruit and flowers mature rapidly and so should be kept from under direct radiation. We also try to make ceiling heating surfaces as large as possible in order to keep the radiating surface temperature low, because high temperatures from overhead panels may cause discomfort, particularly to light-complexioned people. Houses with concrete floors show effects of condensation in "sweating" of the floor around the edges of rugs and carpets on the bare concrete when only the ceiling, walls, or both, are the source of heat. This may be remedied by placing the element in the slab when concrete floors are used.

A concrete floor requires approximately four hours to come up to temperature, drops 10F overnight when turned off, and requires about a week to drop back to normal temperature of soil below it. Plaster ceilings and walls reach a comfortable temperature in approximately 30 minutes from a cold start, although it may be several hours before the heat shuts off for the first time. After the plaster has a sufficient heat charge the element is rarely "on" more than one-third of the time. Moreover, the highest demand recorded in a 6-year period was 34% of the connected load. Tests conducted in the winter of 1945 on the author's residence (Fig. 10), by Washington State College in conjunction with the Puget Sound Power & Light Co., showed that the power consumed per room when the heat was turned off upon retiring and turned on again in the morning was the same as when left on continuously.

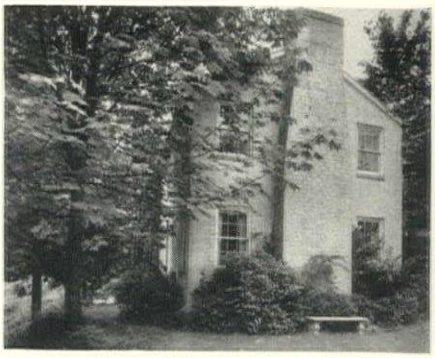
Double glazing apparently causes no greater heat saving than single glass in electric radiant heated homes. Present data actually show a lower power consumption for single glass, although more information, secured under controlled conditions, is required on this subject. Apparently double glazing reflects a greater part of the solar heat than single glazing. Brick veneer homes show a greater over-all heat economy than frame houses, while a calculation of comparative heat losses through walls would indicate the reverse!

There is less than 3F differential from floor to ceiling with electric radiant heat even with a 20- to 22-ft ceiling, and with the heat in the ceiling. Cold "shadows" remain under tables and desks when the angle from the extreme sources of ceiling heat is less than 45° off the vertical. In such cases, part of the heat should come from a wall or floor panel. If the wall is exposed, insulate with incombustible fill or bats.

INSTALLATION OF THE CABLE

Ceilings, walls. Where attics are accessible, "Heatsum" cable may be attached to the top of the plaster lath or plaster board from the attic side by insulated staples; or by loops of asbestos cord attached to the plaster board with a stapling machine; or with patching plaster. It may also be similarly secured to the surface to be plastered. When plastered in, the cable acts as a reinforcing over the plasterboard joints. No other metallic reinforcing should be used at any point where it will have to be crossed by the cable; this condition will cause a hum in the wire when the heating element is "on."

Plastering. When the element is plastered in, a standard brown coat is placed over it and allowed to dry at least three days before heat is applied through the embedded cables to finish drying. The plasterer should apply the brown coat parallel to the elements. For this reason, wall elements are run vertically. The brown coat should be thoroughly dry before applying finish coats. If the surface is sand-finished, heat may be turned on in three or four days, or as soon as the surface appears dry. Turning it on sooner may cause a water mark at each run of element which will show through water-mix paints. Putty coats should set for seven or eight days before applying heat, in order to prevent checking as the putty sets.



FIGS. 10, 11, 12—Top photo shows the author's house in Seattle; electric radiant heated since 1940. Center, two houses, part of a 29-house Seattle project for which Stuart and Durham are architects; all houses to be electric radiant heated. Bottom, another Stuart and Durham house, similarly heated.

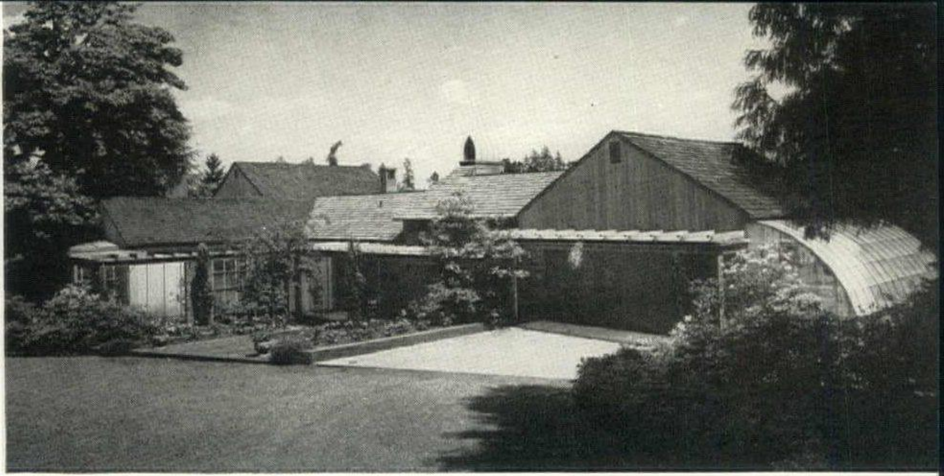
TABLE NO. 2 ONE YEAR'S MONTHLY BILLS — HOUSE NO. 12

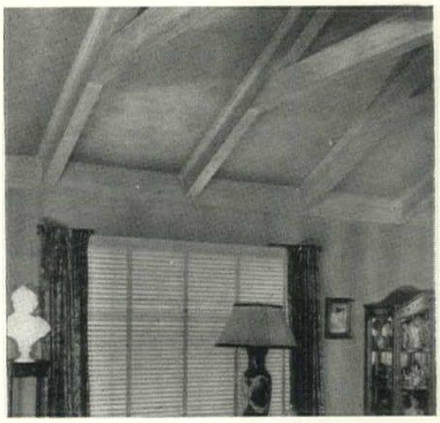
Month	KWH Used	Amount Billed	Non-Heating		Heating	
			KWH	Cost	KWH	Cost
January	2610	$ 26.27	414	$ 6.43	2196	$ 19.84
February	2890	29.07	962	10.28	1928	18.79
March	2430	24.47	888	9.75	1542	14.72
April	1620	16.37	632	8.00	988	8.37
May	1220	12.37	682	8.30	538	4.07
June	800	9.15	558	7.45	242	1.70
July	620	7.89	588	7.65	32	.24
August	660	8.17	580	7.60	80	.57
September	860	9.57	636	8.00	224	1.57
October	1360	13.77	798	9.15	562	4.62
November	2980	29.97	818	9.25	2162	20.72
December	4130	41.47	914	9.95	3216	31.52
Totals	**22180**	**$228.54**	**8470**	**$101.81**	**13710**	**$126.73**

TABLE NO. 3 TYPICAL DESIGN CALCULATION FOR A CEILING PANEL HEATED ROOM

						Btu/deg. F
1. Ceiling area in sq ft	(256)	X	"U" factor for plaster board and plaster plus 3⅝" vermiculite insulation	(.07)	Equals	18
2. Floor area in sq ft	(256)	X	"U" factor for hardwood floor over fir sub-floor	(.34)	Equals	87
3. Window area in sq ft	(37)	X	"U" factor for glass	(1.13)	Equals	42
4. Net exposed wall area in sq ft	(169)	X	"U" factor for brick veneer, 1" wood sheathing, ½" rigid insulation, ½" plaster	(.20)	Equals	47
5. Cubic contents	(2048)	X	Hourly air changes *(1)* by infiltration, 1 wall exposed *(Btu/degree/cu ft of air)*	(.018)	Equals	37
TOTAL Nos. 2 to 5						**213**
A. No. 1 *(above)*	(18)	X	Maximum ceiling temp. minus minimum outside design temp.	(84 - 10)	Equals	1,332 Btu
B. Total of Nos. 2 to 5 *(above)*	(213)	X	Surface temp. of room side of exposed surfaces minus outside design temp.	(50)	Equals	10,650 Btu
TOTAL Items A. and B.						**11,982 Btu**
C. Correction factor for heat gain from lights, space occupied by furniture, etc.		X	Total Btu divided by Btu/kwhr		Equals	Maximum heating load
(.8)		X	$\frac{11,982}{3,413}$		Equals	2.8 kw Maximum design demand
CHECK:* $\frac{(1\frac{1}{2})\ (2048)}{1,000}$			Equals 3.07 kw			Use 3 kw element

* As room has over 2,000 cu ft of contents, 1½ watts per cu ft is used. Had the room had under 2,000 cu ft, 2 watts per cu ft would have been used.





FIGS. 13, 14, 15—C. R. A. Pearce Residence, Seattle; Paul Kirk, architect for remodeling in 1940. Original unit heated by hot water radiators; dinette, kitchen, bath, by hot water radiant panels; living room, dining room, outdoor living room by electric radiant heat. In dinette, hot water panels were replaced with electric ceiling panels after 5 years. Entire heating is to become electric radiant according to present plans. Left-hand photo shows electric radiant heated outdoor living room (see text); bottom photo, indoor living room heated by electric panels in ceiling, which is approximately 20 ft high at ridge.

Finishes. So far we have found no finish—water paint, paint, or paper—which is adversely affected by this method of heating, except that the finish stays clean for a long time with electric radiant heat. We have found that a dark area will appear on an uninsulated portion of a ceiling after a few months. Hence, care should be exercised in placing insulation to make sure that it covers the entire ceiling area, and even laps over any adjacent unheated area if necessary.

Floors. Magnesite flooring may be poured over the "Heatsum" element in much the same manner as plaster. The scratch coat is usually poured first with considerable sawdust added. The element is then stapled to the scratch coat and covered with the finish coat. In concrete floors, the cable should be evenly spaced in parallel lines over the area to be heated, and laid approximately one inch below the finished surface. Leads may be brought from the concrete to a terminal box in conduit providing the leads are insulated from each other by loom, glass or asbestos sleeving, or other suitable means. Not more than the two leads of one circuit may be enclosed in one conduit. A two-hole rubber cork may be used as a stopper in the concrete end of conduit.

Thermostat location. The thermostat is located 5 ft above the floor, in the room it controls. Where practical, it is placed over the switch controlling the circuit and on an inside wall that does *not* contain a heating element. Presence of a heating element in the wall adjacent to the thermostat causes erratic temperature control.

DESIGN CALCULATIONS

We try to obtain a "U" factor for insulated ceilings between .005 and .007 (this is usually obtained with 3½ or 4 in. of incombustible insulation), and an exposed wall and floor factor of approximately .25. For concrete floor slabs on the ground we use .19 providing suitable insulation is used between the slab and the footings or exposed walls. (Otherwise we increase the factor to .30.) We assume a soil temperature of 50F. These slab assumptions are empirical, based on the theory that sandy soil in this area acts as floor insulation as well as a means of heat storage; performance of actual installations indicates that these factors are adequate. For concrete walls and other types of construction, we use the factors shown in the ASHVE "Guide."

When the "U" factors are approximately as outlined, and the minimum design temperature outside 0°F or above, a quick check of the load required may be made by allowing 1½ watts per cu ft for large rooms (over 2,000 cu ft) and 2 watts per cu ft for rooms under 2,000 cu ft of space to be heated. Of the heating elements available, one should use the size larger than the total wattage required per room. Where more than one element is required, use of two or more of the same size simplifies control. Each room is figured as a separate unit. The Roberson Company maintains an engineering department to assist in design and installation. A nominal charge is made for this service when drawings are prepared.

SUMMARY

1. Electric radiant heat is economically practical on electric rates of one cent per kilowatt hour. When higher rates prevail, one must consider whether added convenience and other desirable features warrant the additional operating cost.

2. No heating plant or fuel storage space is required.

3. Individual room control is simply accomplished.

4. Conventional plaster is entirely satisfactory; conventional finishes may be used.

5. Maintenance is extremely low; practically the only replacement is on toggle switches. Four element breaks have occurred in 150 installations. About 30 minutes is required to locate and repair such a break and it is only necessary to open up a small hole, approximately 1½ in. long by ¾ in. wide.

6. Heat calculations for electric radiant heating are the same as for other forms of radiant heating although we use some shortcuts.

7. Electric radiant heating provides the same all-pervading warmth and cleanliness as other radiant heating systems.

FIG. 16—Portable electric radiant heating screen plugs into suitable outlet, affords heat enough for small bedroom or bath. Screen is also available in larger sizes—3 or 4 panels, has thermostatic controls, is manufactured by Electric Radiant Heat Co., Seattle, Washington.

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.*

Affixing Means

1-52. *Nailock Steel Channels*, Sanymetal Products Co., Inc. Reviewed August.

Air Treatment

1-53. *Strato-Liminator*, illus. consumer folder (5x4½) and data sheet; ceiling-mounted fan with circular directional vanes for recirculating room air. Wilster, Inc.

18-31. *Worthington Equipment for Refrigeration and Air Conditioning (Bulletin WP-1099-B48)*, Worthington Pump & Machinery Corp. Reviewed August.

1-51. *Young Heating, Cooling, Air Conditioning Equipment*, Young Radiator Co. Reviewed August.

Awnings

1-54. *Aluminum Awnings Are Something Between You and the Sun*, illus. folder (6x9) on roll-up aluminum awnings for store fronts. Aluminum Awnings Co.

Communication Systems

3-65. *Amplified Intercommunication Systems, AIA File 31-i (TL-36)*, 16-p. illus. technical folder; specifications; "Teletalk" systems for industrial, institutional, business installations. Webster Electric Co.

Controls

3-64. *Penn Automatic Controls for Heating Service (Bulletin 1508-K)*, Penn Electric Switch Co. Reviewed August.

Doors

★ **4-57.** *Berry Aluminum Overhead Type Garage Doors*, 4-p. illus. folder. 60-lb all-aluminum garage door (residential); specifications; installation instructions. Berry Door Co.

4-55. *Kennatrack, AIA File 27-A*, Jay G. McKenna, Inc. Reviewed August.

4-58. *Truscon Straight Slide Steel Hangar Doors (C-30)*, 24-p. catalog. Descriptions, illustrations, specifications, for manually or motor operated straight slide doors and tail doors. Truscon Steel Co.

Drafting Room Equipment

4-56. *What's Your Postwar Problem?* Charles Bruning Co., Inc. Reviewed August.

4-59. *Pomeroy Stereograph Drawing Machine*, 4-p. folder on device for making perspectives mechanically. Instructions for use, drawings. Pomeroy Stereograph Co., Inc.

4-60. *The New Universal Boardmaster*, 8-p. illus. pamphlet explaining operation of drafting device convertible to changing requirements. Universal Drafting Machine Co.

Electrical Equipment

5-31. *Hanger Outlets and Floor Boxes (No. 72), AIA File 31-C-72*, Frank Adam Electric Co. Reviewed August.

5-32. *Electrical Modernization Guide*, General Electric Co. Reviewed August.

5-33. *Four Degrees of Home Electrification (B-3774)*, Westinghouse Electric Corp., Better Homes Dept. Reviewed August.

Fireplace Equipment

6-66. *Your Fireplace*, Majestic Co. (25 cents per copy—make check or money order payable to Majestic Co.) Reviewed August.

Flooring

"Idea" portfolios on store modernization, based on trade association recommendations. Armstrong Cork Company:

6-69. *Ideas for the Retail Confectioner Who Wants A Shop That Attracts Customers.*

6-70. *Store Planning Ideas for the Appliance Dealer Who Wants to Build a Successful Business.*

6-71. *Maximent*, 4-p. illus. folder describing advantages of Maximent, an aggregate and cement mix (dry-packed) for finishing concrete floors. Specifications. Maximent Corp.

6-72. *Industrial Flooring and Marine Decking*, 6-p. illus. pamphlet explaining types, applications, and characteristics of "Millerite" heavy-duty synthetic resin flooring with abrasive surfacing. Miller Marine Decking, Inc.

6-68. *Norton Floors (1935)*, Norton Co. Reviewed August.

Gypsum and Gypsum Products

7-52. *Architectural Specifications, AIA File 37-A*, U. S. Gypsum Co. Reviewed August.

Hardware

8-120. *Door Holding Devices & Builders' Hardware Specialties for Distinctive Buildings, AIA File 27B*, 1941 catalog of doorholders, shock absorbers, bumpers, stops, latches, pulls, door silencers, mutes. Operation descriptions, specifications, installation template drawings. Glynn-Johnson Corp.

8-121. *Lockwood Finishing Hardware, Simplified Specifications*, 20-p. illus. guide for selection of locks and hardware for 6 building types: apartments, hospitals, hotels, institutions, residences, schools. Specifications. Lockwood Hardware Mfg. Co.

8-122. *Schlage Luster Sealed Aluminum Locks (Form 364)*, illus. consumer folder on a push-button, knob-keyed lock with "alumilited" finish. Detail drawing. Schlage Lock Co.

Heating and Heating Equipment

8-103. *Quikheter Convection and Radiant Heat (73), AIA File 31-K-3*, Frank Adam Electric Co. Reviewed August.

8-104. *Aldrich Heat-Pak Oil-Fired Boilers (BB4512-10)*, Aldrich Co. Reviewed August.

8-105. *Quick Heat Oil Furnaces for Automatic Heating*, 6-p. illus. folder on an automatic oil furnace unit with pressure fan, for small homes. American Stove Co.

8-106. *New Units of Complete Norge-Heat Line*, 2-p. illus. folder on oil-burning winter air conditioners, furnaces, hot water heaters. Borg-Warner Corp., Norge-Heat Div.

8-124. *Radiant Heating the Smart Modern Way With Radiant Baseboards (Form 859B)*, 4-p. illus. folder; hollow cast-iron baseboards for hot water, 2-pipe steam, or vacuum heating systems. Burnham Boiler Corp.

8-109. *Century Oil Burner, Model L*, Century Engineering Corp. Reviewed August.

8-108. *Electrol, A Complete Unit for the Small Home (Form 578)*, Electrol Incorporated. Reviewed August.

★ **8-125.** *Electromode Electric Home Furnace*, illus. 2-p. sheet on electric central heating unit for warm air systems for small homes, offices, plants. Electromode Corp.

8-126. *Herco Residential Oil Burner*, illus. pamphlet (6¼x6¾); oil-burning unit for houses. Herco Oil Burner Corp.

8-113. *Iron Fireman Model V Oil Burner (1145)*, 2-p. illus. looseleaf folder on an oil burner unit (luminous vortex flame principle). Dimensions, controls, specifications. Iron Fireman Mfg. Co.

8-127. *Petro Automatic Boilers (Form 7)*, 4-p. illus. folder on 2 sizes of oil burners for average houses; E.D.R. ratings. Petroleum Heat and Power Co.

8-114. *No Basement Necessary with the Quaker Hi-Boy (611)*, Quaker Mfg. Co. Reviewed August.

8-115. *Rexoil Fuel Saving Oil Burner (641)*, Reif-Rexoil, Inc. Reviewed August.

8-128. *Mammoth Certified Vertical Steel Tubular Heaters (216C)*, 4-p. illus. bulletin on gravity and forced warm air units for commercial and industrial buildings, auditoriums, schools, churches. Specifications. Stainless & Steel Products Co.

8-129. *Triplex Products That Assure Hot Water at Its Best (Bulletin 246)*, 16-p. illus. booklet. Hot-water heating system with accessories: circulators, flow control valves, distributors, expansion tanks, air eliminators, control units, sump pumps, etc. Triplex Heating Specialty Co.

Hospital Equipment

Laundry layouts for hospitals of varying sizes; plans; water, steam, power, and equipment requirements; recommendations. American Laundry Machinery Company:

8-131. *Typical Laundry Layout for 25-Bed General Hospital.*

8-132. *Typical Laundry Layout for 50-Bed General Hospital.*

8-133. *Typical Laundry Layout for 100-Bed General Hospital.*

8-134. *Typical Laundry Layout for 150-Bed General Hospital.*

8-135. *Typical Laundry Layout for 200-Bed General Hospital.*

★ **8-130.** *Sterilizers, Operating Lights, Infant Incubators, Laboratory Apparatus for Every Hospital*, looseleaf portfolio of data including size standardization of sterilizers; price lists. Wilmot Castle Co.

MANUFACTURERS' LITERATURE

PROGRESSIVE ARCHITECTURE—Pencil Points, 330 West 42nd Street, New York 18, N. Y.
I should like a copy of each piece of Manufacturers' Literature listed.

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

No. ________ No. ________ No. ________ No. ________
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Insect Control

9-51. *Automatic Fly Control by Electricity*, 4-p. folder on electric fly screens for door and window openings. Detjen Corp.

Insulation

9-52. *PC Foamglas Core Wall Insulation (G4633)*, 12-pp. Information on Foamglas block, methods of installing. Detail drawings; data on fitting wall ties. Table of heat transmission types; specifications. Pittsburgh Corning Corp.

9-50. *Application Data Sheets Balsam-Wool Sealed Insulation, AIA37.* Wood Conversion Co. Reviewed August.

Kitchen Equipment

11-10. *It's Fun To Plan Your Own Kitchen with Curtis Cabinets*, Curtis Companies, Inc. Reviewed August.

11-11. *Murphy Cabranette Kitchens (Bulletin 4146)*, 4 pp., illus. On kitchenettes for building in and on cabinet-housed units. Dwyer Products Corp.

4 specification sheets on 4 types of electric ranges for houses. From General Electric Company:

11-12. *The Studio (AP1-46A8).*

11-13. *The Leader (CT1-46).*

11-14. *The Airliner (CD3-46).*

11-15. *The Stratoliner (DD2-46).*

11-20. *How To Make Your Kitchen Dream Come True (3083)*, 20-p. illus. consumer booklet on white-enameled steel kitchen units (cabinet sinks, floor and wall cabinets). Mullins Mfg. Corp.

Lighting and Lighting Equipment

12-73. *A Most Illuminating 50 Years*, Edward F. Caldwell & Co., Inc. Reviewed August.

From General Electric Co. Reviewed August:

12-74. *The New Circline Mazda Fluorescent Lamp (CL45).*

12-75. *High-Voltage Single-Lamp and Tulamp Ballasts (Supp. 2 to GEA-3293F).*

12-76. *Single-Lamp Ballasts (Supp. 3 to GEA-3293F).*

12-77. *Bulletin 31 (on circline lampholder).*

12-78. *Castle Lights (Cat. 45)*, 56 pp., illus. Hospital operating room lighting: construction and installation details, specifications; special and general surgery lights, portable and cone lamps. Wilmot Castle Co.

Load Transportation

12-79. *Lamson Conveyors, Pneumatic Tubes, Trayveyors (Form 146)*, 4-p. illus. folder on materials-handling conveyors and pneumatic dispatch tubes of industrial and commercial use; restaurants, hotels, hospitals, etc. Lamson Corp.

Partitions

16-110. *The Gold Bond 2-Inch Solid Partition System, AIA File 20-B-11*, National Gypsum Co. Reviewed August.

Piping Equipment

16-112. *The Threading of Wrought Iron Pipe (P.O. 6270)*, 20 pp., illus. Bulletin to "better acquaint the men who thread Byers Genuine Wrought Iron Pipe with the theory of threading and types of threading equipment in general use." A. M. Byers Co.

Plastics

16-113. Plastics Primer, 16-p. reprint on properties, fabrication, uses of Styron, Ethocel, Saran plastics. Dow Chemical Co.

Plumbing Equipment

8-107. *Automatic Hot Water!* Coleman Co., Inc. Reviewed August.

16-114. *Pressure Flow Charts.* Folder presenting 8 pressure flow charts for determining correct pipe sizes; based on tables from the University of Wisconsin. Five selection tables for finding correct size of sealed air chambers for static pressure requirement. Wade Mfg. Co.

16-111. *Handbook on Proper Sizing and Selection of Grease Interceptors (Form 44-87)*, J. A. Zurn Mfg. Co. (Price $1.00—make check or money order payable to J. A. Zurn Mfg. Co.) Reviewed August.

Refrigeration, Industrial

18-35. *Overhead Blower Units for Low Temperature Cooling (Cat. 110)*, Rempe Co. Reviewed August.

18-30. *Worthington Centrifugal Refrigeration (Bulletin C-1100-B14)*, Worthington Pump and Machinery Corp. Reviewed August.

18-31. *Worthington Equipment for Refrigeration and Air Conditioning (Bulletin WP-1099-B48)*, Worthington Pump and Machinery Corp. Reviewed August.

Roofing

18-36. *Flintkote (BK-216)*, 22-p. illus. catalog on asphalt-base roofing products; shingles, sidings, roll and cold process roofings, etc. Data on accessory products, built-up roofing materials, coatings, insulating wool, insulation board products, wallboard, hard board. Flintkote Co., Inc.

Skylights

19-61. *American Skylights (4e/1)*, American 3-Way Luxfer Prism Co. Reviewed August.

Stairs

19-62. *Free Footsteps from Fear with Wooster Safety Treads*, 16-p. illus. catalog on safety treads, nosings, thresholds, window sills, curb bars, elevator sills. Uses, specifications, repair installations. Wooster Products, Inc.

Steel Joists

19-63. *Steel Joist Construction*, Steel Joist Institute. Reviewed August.

Storage Equipment

19-56. *America's Checking Habits Are Being Changed*, 2-p. illus. reprint of an article on the "history" of locker checking equipment for travelers. American Locker Co., Inc.

Television

20-27. *The Truth About Color Television*, 31-p. manual (8x5) discussing fully time and research needed before color television is perfected. Allen B. Du Mont Laboratories, Inc.

Trims

20-28. *Beautify and Protect with Loxit Metal Mouldings and Accessories*, 30-p. illus. catalog (4x9) on metal moldings for: flat or oval tops; wallboard slip-in shapes; kick and push plates; edgings, divider bars, cap strips, coves, carpet strips, nosings, thresholds, grilles. Loxit Moulding Co.

Valves

Two 2-p. illus. folders describing corrosion-resistant, austenitic alloy valves for industrial piping. Alloy Steel Products Co.:

22-16. *Stainless Steel Aloyco Valves, Technical Bulletin 2.*

22-17. *Aloyco Stainless Steel Corrosion Resistant Valves.*

. . . THERE **MUST** BE A REASON!

WHAT ABOUT AQUELLA?

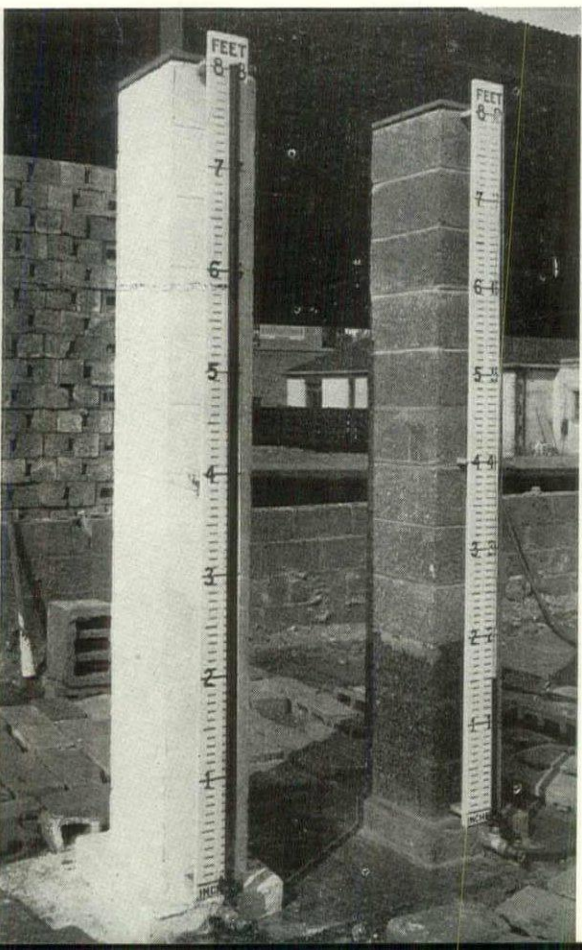
Of course we've followed the conflicting reports on Aquella waterproofing materials. There must be many among our subscribers as baffled as we were; therefore we publish the following, which is based on facts made available to us principally by William S. Elliott, Chief, Materials Section, Dept. Public Works, New York City. Other individuals have corroborated his statements.

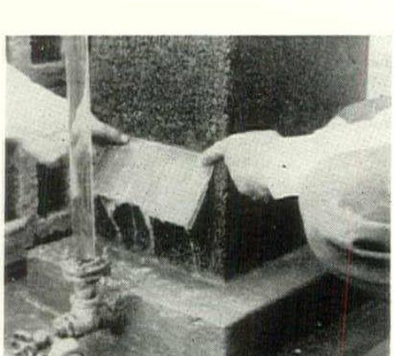
Aquella was originated in France, to dampproof structures in the Maginot Line. When used there, it developed to have the ability to waterproof concrete underground, even when subject to considerable hydrostatic pressure. It was brought to this country and submitted to the National Bureau of Standards, where the claims made for it were substantiated. The New York City Board of Standards and Appeals approved its use in city work. Then, early in July 1945, Kurt Steele (pseudonym of an author of popularized technical articles; in private life, a professor of philosophy at Columbia University) found out about Aquella and started a controversy whose end he did not live to see—he died early in 1946.

Steele bought a house in Connecticut that had a leaky cellar. A local lumber dealer persuaded him to try Aquella. Steele bought $39.50 worth, and he and his wife and daughter applied two coats to the inside faces of his cellar walls. Before the application, the walls had leaked like the proverbial sieve; almost immediately after, a torrential rain storm burst, but the cellar stayed dry. Steele, intrigued, dug into the material's background, found the report of the N. Y. C. Board of Standards and Appeals, and in it found quoted the NBS report dated 8 December 1942, whose concluding sentence read: "The contents of this report are confidential and are not to be used for advertising, publication, or sales promotion." On the basis of these two reports plus his own experience and testimony from others, Steele wrote an article, "At Last—Dry Cellars," for the December 1945 "*Forbes*" magazine. The article was condensed under the title, "Water, Stay Away From My Wall," in the January 1946 "*Readers' Digest*."

The two magazines, the N. Y. Board of Standards and Appeals, and NBS were flooded with inquiries. Aquella's competitors—who are almost numberless; it is a highly competitive field—of course protested at the publication of the "confidential" NBS report in popular magazines. On December 29, 1945, the National Bureau of Standards wrote a strong letter of condemnation to the publishers concerned, and for a time also sent this letter to all who inquired about Aquella. Later, NBS withdrew this first letter and substituted a second, generally milder; but meanwhile competitors seized on the hasty initial action, circulating thousands of copies of the first letter. Nevertheless Aquella's sales grew. The Federal Trade Commission proposed a campaign to limit the use of the word "waterproof" in advertising, picking Aquella as an example, but the campaign lagged and is now dormant. Quite recently the Secretary of Commerce has withdrawn all condemnatory correspondence, standing by the original report. And even more recently, the test chambers shown above were designed, constructed, and used in testing Aquella. Mr. Elliott, whom we mentioned in the beginning, observed the tests closely.

Construction of the test chambers is comparable to general practice. Aquella was applied to one with no particular skill, the treated chamber did not leak, and the results are being widely disseminated. Why did the National Bureau of Standards label its report "confidential" in the first place? If a building product proves as satisfactory as this seems, shouldn't the profession have full opportunity to learn all about it?





Hollow, highly porous cinder concrete block columns used in recent tests of Aquella waterproofing, built, and Aquella applied to one, with common labor. Treated column (white) held 8 ft of water (approx. 500 lb per sq ft——almost 50 times as severe as NBS' 10-lb test) while untreated column could not be filled above 18¾" because water seeped out at 2 gal per min.

SELF-HEATING GLAZING

From the Pittsburgh Plate Glass Co. comes a war-born product which, though not yet adapted to buildings, should eventually be of the greatest importance. In brief, it is glass whose surface can be electrically heated to dispel condensation. Developed for glazing for airplanes traveling at high altitudes, it is made possible by solving a problem hitherto considered impossible: the finding of a transparent substance (trade name: "Nesa") which will conduct electricity and can be applied to the surface of sheet glass. Used in safety glass, Nesa is applied to the inner face of the outer lamination, next to the vinyl plastic inter-layer; the glass outer layer protects against contact with electrical current. At opposite edges of the sheet are applied bus bars of silver paste which, fired, become metallic silver to which conductors can be soldered. For planes, 3½ watts per sq ft glass area are used, supplying approximately 1740 Btu per sq ft; on a 14" x 33" windshield this requires 293 volts where resistivity is 125 ohms per sq in. Nesa hasn't yet been fully tested for permanence although it appears to last indefinitely under very disadvantageous conditions. Can you see what such a product may eventually do for extensive glass areas in building? Heat loss through glass, condensation, air conditioning problems—we find it hard to wait for the perfection of a product which should end these nuisances.

INSULATION DATA-2

Data in this Building Products Facts sheet are intended for use with the formulae in the article, "Theory and Basic Principles of Insulation," which appeared in the August 1946 issue of PROGRESSIVE ARCHITECTURE. Tables 1, 2, and 3 were published in the Building Products Facts pages of that issue.

TABLE 4. COEFFICIENTS OF TRANSMISSION (U) OF MASONRY WALLS

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference temperature between the air on the two sides, and are based on a wind velocity of 15 mph.

TYPE OF MASONRY		THICKNESS OF MASONRY	INTERIOR FINISH (PLUS INSULATION WHERE INDICATED)									WALL NUMBER
			Plain walls — No Interior Finish	Plaster (1/2") on walls	Metal Lath and Plaster[f] — furred	Gypsum Board (3/8") Decorated — furred	Gypsum Lath (3/8") Plastered[g] — furred	Insulating Board (1/2") Plain or Decorated — furred	Insulating Board Lath (1/2") Plastered[g] — furred	Insulating Board Lath (1") Plastered[g] — furred	Gypsum Lath[g] Plastered Plus 1" Blanket Insulation — furred[h]	
			A	B	C	D	E	F	G	H	I	
SOLID BRICK[a]		8"	0.50	0.46	0.32	0.31	0.30	0.22	0.22	0.16	0.14	67
		12"	0.35	0.34	0.25	0.25	0.24	0.19	0.19	0.14	0.13	68
		16"	0.28	0.27	0.21	0.21	0.20	0.17	0.16	0.13	0.12	69
HOLLOW[b] TILE (stucco exterior finish)		8"	0.40	0.37	0.27	0.27	0.26	0.20	0.20	0.15	0.13	70
		10"	0.39	0.37	0.27	0.27	0.26	0.20	0.19	0.15	0.13	71
		12"	0.30	0.29	0.22	0.22	0.21	0.17	0.17	0.13	0.12	72
		16"	0.25	0.24	0.19	0.19	0.19	0.16	0.15	0.12	0.11	73
STONE[c]		8"	0.70	0.64	0.39	0.38	0.36	0.26	0.25	0.18	0.16	74
		12"	0.57	0.53	0.35	0.34	0.33	0.24	0.23	0.17	0.15	75
		16"	0.49	0.45	0.32	0.31	0.30	0.22	0.22	0.16	0.14	76
		24"	0.37	0.35	0.26	0.26	0.25	0.20	0.19	0.15	0.13	77
POURED CONCRETE[d]		6"	0.79	0.71	0.42	0.41	0.39	0.27	0.26	0.19	0.16	78
		8"	0.70	0.64	0.39	0.38	0.36	0.26	0.25	0.18	0.16	79
		10"	0.63	0.58	0.37	0.36	0.34	0.25	0.24	0.18	0.15	80
		12"	0.58	0.53	0.35	0.34	0.33	0.24	0.23	0.17	0.15	81
HOLLOW CONCRETE BLOCKS	Gravel Aggregate	8"	0.56	0.52	0.34	0.34	0.32	0.24	0.19	0.17	0.15	82
		12"	0.50	0.46	0.32	0.31	0.30	0.22	0.22	0.16	0.14	83
	Cinder Aggregate	8"	0.41	0.39	0.28	0.28	0.27	0.21	0.20	0.15	0.13	84
		12"	0.38	0.36	0.26	0.26	0.25	0.20	0.19	0.15	0.13	85
	Light Weight Aggregate	8"	0.36	0.34	0.26	0.25	0.24	0.19	0.19	0.15	0.13	86
		12"	0.34	0.33	0.25	0.24	0.24	0.19	0.18	0.14	0.13	87

[a] Based on 4" hard brick and remainder common brick.
[b] The 8" and 10" tile figures are based on two cells in the direction of heat flow. The 12" tile is based on three cells in the direction of heat flow. The 16" tile consists of one 10" and one 6" tile each having two cells in the direction of heat flow.
[c] Limestone or standstone.
[d] These figures may be used with sufficient accuracy for concrete walls with stucco exterior finish.
[e] Expanded slag, burned clay, or pumice.
[f] Thickness of plaster assumed 3/4".
[g] Thickness of plaster assumed 1/2".
[h] Based on 2" furring strips; one air space. The figures in this column may also be used for wood or metal lath.

TABLE 5. COEFFICIENTS OF TRANSMISSION (U) OF BRICK AND STONE VENEER MASONRY WALLS

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides, and are based on a wind velocity of 15 mph.

FACING	BACKING	INTERIOR FINISH (PLUS INSULATION WHERE INDICATED)									WALL No.
		Plain walls — No Interior Finish	Plaster (1/2") on walls	Metal Lath and Plaster[e] — furred	Gypsum Board (3/8") Decorated — furred	Gypsum Lath (3/8") Plastered[f] — furred	Insulating Board (1/2") Plain or Decorated — furred	Insulating Board Lath (1/2") plastered[f] — furred	Insulating Board Lath (1") Plastered[f] — furred	Gypsum Lath Plastered[f] plus 1" Blanket Insulation — furred[g]	
		A	B	C	D	E	F	G	H	I	
4" BRICK VENEER[a]	6" Hollow Tile[b]	0.35	0.34	0.25	0.25	0.24	0.19	0.18	0.14	0.13	88
	8" Hollow Tile[b]	0.34	0.32	0.25	0.24	0.23	0.19	0.18	0.14	0.13	89
	6" Concrete	0.59	0.54	0.35	0.35	0.33	0.24	0.23	0.17	0.15	90
	8" Concrete	0.54	0.50	0.33	0.33	0.31	0.23	0.23	0.17	0.15	91
	8" Concrete Blocks[c] (Gravel Aggregate)	0.44	0.41	0.29	0.29	0.28	0.21	0.21	0.16	0.14	92
	8" Concrete Blocks[c] (Cinder Aggregate)	0.34	0.33	0.25	0.24	0.24	0.19	0.18	0.14	0.13	93
	8" Concrete Blocks[c] (Light Weight Aggregate)[d]	0.31	0.29	0.23	0.23	0.22	0.18	0.17	0.14	0.12	94
4" CUT STONE VENEER[a]	6" Hollow Tile[b]	0.37	0.35	0.26	0.26	0.25	0.19	0.19	0.15	0.13	95
	8" Hollow Tile[b]	0.36	0.34	0.25	0.25	0.24	0.19	0.19	0.15	0.13	96
	6" Concrete	0.63	0.58	0.37	0.36	0.34	0.25	0.24	0.18	0.15	97
	8" Concrete	0.57	0.53	0.34	0.34	0.33	0.24	0.23	0.17	0.15	98
	8" Concrete Blocks[c] (Gravel Aggregate)	0.47	0.44	0.30	0.30	0.29	0.22	0.21	0.16	0.14	99
	8" Concrete Blocks[c] (Cinder Aggregate)	0.36	0.34	0.25	0.25	0.24	0.19	0.19	0.15	0.13	100
	8" Concrete Blocks[c] (Light Weight Aggregate)[d]	0.32	0.30	0.23	0.23	0.22	0.18	0.18	0.14	0.12	101

[a] Calculations based on 1/2" cement mortar between backing and facing except in the case of the concrete backing which is assumed to be poured in place.
[b] The hollow tile figures are based on two air cells in the direction of heat flow.
[c] Hollow concrete blocks.
[d] Expanded slag, burned clay, or pumice.
[e] Thickness of plaster assumed 3/4".
[f] Thickness of plaster assumed 1/2".
[g] Based on 2" furring strips; one air space. The figures in this column may also be used for wood or metal lath.

TABLE 6. COEFFICIENTS OF TRANSMISSION (U) OF FRAME PARTITIONS OR INTERIOR WALLS[a]

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides, and are based on still air (no wind) conditions on both sides.

INTERIOR FINISH	SINGLE PARTITION (Finish on one side only of studs)	DOUBLE PARTITION (Finish on both sides of studs)		PARTITION NUMBER
		No insulation between studs	1" Blanket between studs One air space.	
	A	B	C	
Metal Lath and Plaster[b]	0.69	0.39	0.16	1
Gypsum Board (3/8") Decorated	0.67	0.37	0.16	2
Wood Lath and Plaster	0.62	0.34	0.15	3
Gypsum Lath (3/8") Plastered[c]	0.61	0.34	0.15	4
Plywood (3/8") Plain or Decorated	0.59	0.33	0.15	5
Insulating Board (1/2") Plain or Decorated	0.36	0.19	0.11	6
Insulating Board Lath (1/2") Plastered[c]	0.35	0.18	0.11	7
Insulating Board Lath (1") Plastered[c]	0.19	0.12	0.082	8

[a] Coefficients not weighted; effect of studding neglected.
[b] Plaster assumed 3/4" thick.
[c] Plaster assumed 1/2" thick.
[d] For partitions with other insulations between studs refer to Table 3, using values in Column *B* of this table in left-hand column of Table 3. EXAMPLE: What is the coefficient of transmission (*U*) of a partition consisting of gypsum lath and plaster on both sides of studs with 2" blanket between studs? SOLUTION: According to above table, this partition with no insulation between studs (No. 4*B*) has a coefficient of 0.34. Referring to Table 3, a wall having a coefficient of 0.34 with no insulation between studs, will have a coefficient of 0.097 with 2" of blanket insulation between studs (No. 56*B*).

TABLE 7. COEFFICIENTS OF TRANSMISSION (U) OF MASONRY PARTITIONS

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides, and are based on still air (no wind) conditions on both sides.

TYPE OF PARTITION		Thickness of Masonry	TYPE OF FINISH			PARTITION NUMBER
			No Finish (Plain walls)	Plaster one side	Plaster Both sides[a]	
			A	B	C	
Hollow Clay Tile		3"	0.50	0.47	0.43	9
		4"	0.45	0.42	0.40	10
Hollow Gypsum Tile		3"	0.35	0.33	0.32	11
		4"	0.29	0.28	0.27	12
Hollow Concrete Tile or Blocks	Cinder Aggregate	3"	0.50	0.47	0.43	13
		4"	0.45	0.42	0.40	14
	Light Weight Aggregate[b]	3"	0.41	0.39	0.37	15
		4"	0.36	0.34	0.32	16
Common Brick		4"	0.50	0.46	0.43	17

[a] 2" solid plaster partition, U = 0.53.
[b] Expanded slag, burned clay, or pumice.

TABLE 8. COEFFICIENTS OF TRANSMISSION (U) OF FRAME CEILINGS & FLOORS

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides and are based on still air (no wind) conditions on both sides.

TYPE OF CEILING	INSULATION BETWEEN, OR ON TOP OF, JOISTS (No flooring above)								WITH FLOORING[g] (on top of ceiling joists)		NUMBER
	None	Insulating Board on top of joists		Blanket or bat insulation[f] between joists[a]			Vermiculite between joists[a]		Single wood floor[b]	Double wood floor[c]	
		1/2"	1"	1"	2"	3"	2"	4"			
	A	B	C	D	E	F	G	H	I	J	
No Ceiling		0.37	0.24						0.45	0.34	1
Metal Lath and Plaster[d]	0.69	0.26	0.19	0.19	0.12	0.093	0.18	0.11	0.30	0.25	2
Gypsum Board (3/8") Plain or Decorated	0.67	0.26	0.18	0.19	0.12	0.092	0.18	0.10	0.30	0.24	3
Wood Lath and Plaster	0.62	0.25	0.18	0.19	0.12	0.092	0.17	0.10	0.29	0.24	4
Gypsum Lath (3/8") Plastered[e]	0.61	0.25	0.18	0.19	0.12	0.092	0.17	0.10	0.28	0.24	5
Plywood (3/8") Plain or Decorated	0.59	0.24	0.18	0.19	0.12	0.09	0.17	0.10	0.28	0.23	6
Insulating Board (1/2") Plain or Decorated	0.37	0.19	0.15	0.16	0.11	0.082	0.15	0.092	0.22[h]	0.19[h]	7
Insulating Board Lath (1/2") Plastered	0.35	0.19	0.15	0.15	0.10	0.081	0.14	0.091	0.21	0.18	8
Insulating Board Lath (1") Plastered	0.23	0.15	0.12	0.12	0.089	0.072	0.12	0.080	0.16	0.14	9

[a] Coefficients corrected for framing.
[b] 25/32" yellow pine or fir.
[c] 25/32" pine or fir sub-flooring plus 13/16" hardwood finish flooring.
[d] Plaster assumed 3/4" thick.
[e] Plaster assumed 1/2" thick.
[f] Based on insulation in contact with ceiling and consequently no air space between.
[g] For coefficients for constructions in Columns *I* and *J* (except No. 1) with insulation between joists, refer to Table 3. EXAMPLE: The coefficient for No. 3-*J* of Table 8 is 0.24. With 2" blanket between joists, the coefficient will be 0.094. (See Table 3.) (Column *D* of Table 3 applicable only for 3 5/8" joists.)
[h] For 25/32" insulating board sheathing applied to the under side of the joists, the coefficient for *single* wood floor (Column *I*) is 0.18 and for *double* wood floor (Column *J*) is 0.16. For coefficients with insulation between joists, see Table 3.

TABLE 10. COEFFICIENTS OF TRANSMISSION (U) OF CONCRETE FLOORS ON GROUND WITH VARIOUS TYPES OF FINISH FLOORING

U = 0.10[a] Btu per hour per square foot per degree Fahrenheit temperature difference between the ground and the air over the floor.

[a] A coefficient of 0.10 is recommended for all types of concrete floors on the ground, with or without insulation. For basement walls below grade, use the same average coefficient (0.10). The heat resistance in this case is due principally to the dirt of indeterminate thickness under the floor or outside the wall.

TABLE 9. COEFFICIENTS OF TRANSMISSION (U) OF CONCRETE FLOORS & CEILINGS

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides and are based on still air (no wind) conditions on both sides.

TYPE OF CEILING	THICKNESS OF CONCRETE[g] (inches)	TYPE OF FLOORING: No Flooring (Concrete bare) A	Tile[a] or Terazzo Flooring on Concrete B	Battleship[b] Linoleum Directly on Concrete C	Parquet[c] Flooring in Mastic on Concrete D	Double Wood Floor on Sleepers[d] E	NUMBER
No Ceiling	3	0.69	0.65	0.45	0.45	0.25	1
	6	0.59	0.56	0.41	0.41	0.23	2
	10	0.50	0.48	0.36	0.36	0.22	3
½" Plaster Applied to Underside of Concrete	3	0.62	0.59	0.43	0.43	0.24	4
	6	0.54	0.52	0.39	0.39	0.22	5
	10	0.46	0.44	0.34	0.34	0.21	6
Metal Lath and Plaster[e] Suspended or Furred	3	0.38	0.37	0.30	0.30	0.19	7
	6	0.35	0.34	0.28	0.28	0.18	8
	10	0.32	0.31	0.26	0.26	0.17	9
Gypsum Board (⅜") and Plaster[f] — Suspended or Furred	3	0.36	0.35	0.28	0.28	0.19	10
	6	0.33	0.32	0.27	0.27	0.18	11
	10	0.30	0.29	0.24	0.24	0.17	12
Insulating Board Lath ½" and Plaster[f] — Suspended or Furred	3	0.25	0.24	0.21	0.21	0.15	13
	6	0.23	0.23	0.20	0.20	0.15	14
	10	0.22	0.21	0.19	0.19	0.14	15

[a] Thickness of tile assumed to be 1"
[b] The figures in Column *C* may be used with sufficient accuracy for concrete floors covered with carpet.
[c] Thickness of wood assumed to be 13/16"; thickness of mastic, ⅛", (k = 4.5).
[d] Based on 25/32" yellow pine or fir sub-flooring and 13/16" hardwood finish flooring with an air space between sub-floor and concrete.
[e] Thickness of plaster assumed to be ¾".
[f] Thickness of plaster assumed to be ½".
[g] For other thicknesses of concrete, interpolate.

TABLE 11. COEFFICIENTS OF TRANSMISSION (U) OF FLAT ROOFS COVERED WITH BUILT-UP ROOFING: NO CEILINGS — UNDER SIDE OF ROOF EXPOSED

(See Table 12 for flat roofs with ceilings)

These coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides, and are based on an outside wind velocity of 15 mph.

TYPE OF ROOF DECK	THICKNESS OF ROOF DECK	NO INSULATION A	Insulating Board ½" B	Insulating Board 1" C	Insulating Board 1½" D	Insulating Board 2" E	Corkboard 1" F	Corkboard 1½" G	Corkboard 2" H	NUMBER
Flat Metal Roof Deck[a]		0.94	0.39	0.24	0.18	0.14	0.23	0.17	0.13	1
Precast Cement Tile	1⅝"	0.84	0.37	0.24	0.18	0.14	0.22	0.16	0.13	2
Concrete	2"	0.82	0.37	0.24	0.17	0.14	0.22	0.16	0.13	3
	4"	0.72	0.34	0.23	0.17	0.13	0.21	0.16	0.12	4
	6"	0.65	0.33	0.22	0.16	0.13	0.21	0.15	0.12	5
Gypsum and Wood Fiber[b] on ⅜" Gypsum Board	2⅜"	0.40	0.25	0.18	0.14	0.12	0.17	0.13	0.11	6
	3⅜"	0.32	0.22	0.16	0.13	0.11	0.15	0.12	0.10	7
Wood[c]	1"	0.49	0.28	0.20	0.15	0.12	0.19	0.14	0.12	8
	1½"	0.37	0.24	0.18	0.14	0.11	0.17	0.13	0.11	9
	2"	0.32	0.22	0.16	0.13	0.11	0.16	0.12	0.10	10
	3"	0.23	0.17	0.14	0.11	0.096	0.13	0.11	0.091	11

Insulation on top of roof deck (covered with built-up roofing); thickness of board shown above.

[a] Coefficient of transmission of bare corrugated iron (no roofing) is 1.50 Btu per hour per square foot of projected area per degree Fahrenheit difference in temperature, based on an outside wind velocity of 15 mph.
[b] 87½% gypsum, 12½% wood fiber. Thickness indicated includes ⅜" gypsum board.
[c] Nominal thicknesses specified—actual thicknesses used in calculations.

TABLE 12. COEFFICIENTS OF TRANSMISSION (U) OF FLAT ROOFS COVERED WITH BUILT-UP ROOFING: WITH LATH & PLASTER CEILINGS[a]

(See Table 11 for flat roofs with no ceilings)

These coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides, and are based on an outside wind velocity of 15 mph.

TYPE OF ROOF DECK	THICKNESS OF ROOF DECK	NO INSULATION A	Insulating Board ½" B	Insulating Board 1" C	Insulating Board 1½" D	Insulating Board 2" E	Corkboard 1" F	Corkboard 1½" G	Corkboard 2" H	NUMBER
Flat Metal Roof Deck		0.46	0.27	0.19	0.15	0.12	0.18	0.14	0.11	12
Precast Cement Tile	1⅝"	0.43	0.26	0.19	0.15	0.12	0.18	0.14	0.11	13
Concrete	2"	0.42	0.26	0.19	0.15	0.12	0.18	0.14	0.11	14
	4"	0.40	0.25	0.18	0.14	0.12	0.17	0.13	0.11	15
	6"	0.37	0.24	0.18	0.14	0.11	0.17	0.13	0.11	16
Gypsum and Wood Fiber[b] on ⅜" Gypsum Board	2⅜"	0.27	0.19	0.15	0.12	0.10	0.14	0.12	0.097	17
	3⅜"	0.23	0.17	0.14	0.11	0.097	0.13	0.11	0.091	18
Wood[c]	1"	0.32	0.21	0.16	0.13	0.11	0.15	0.12	0.10	19
	1½"	0.26	0.19	0.15	0.12	0.10	0.14	0.11	0.095	20
	2"	0.24	0.17	0.14	0.11	0.097	0.13	0.11	0.092	21
	3"	0.18	0.14	0.12	0.10	0.087	0.11	0.096	0.082	22

Insulation on top of roof deck (covered with built-up roofing); thickness of board shown above.

[a] Calculations based on metal lath and plaster ceilings, but coefficients may be used with sufficient accuracy for gypsum lath or wood lath and plaster ceilings. It is assumed that there is an air space between the underside of the roof deck and the upperside of the ceiling.
[b] 87½% gypsum, 12½% wood fiber. Thickness indicated includes ⅜" gypsum board.
[c] Nominal thicknesses specified—actual thicknesses used in calculations.

NOTES ON TABLE 14

The values in Table 14 apply principally to hip and double hip roofs with unheated attics. In the case of gable and gambrel (Dutch Colonial) roofs having end wall surfaces, the values in Table 14 can be used with reasonable accuracy if the end wall area is considered as part of the roof area. Thus in arriving at the combined roof and ceiling coefficient for a pitched roof with insulating board applied to the under side of the rafters, the board must also be applied to the end wall surfaces in order for the values in Table 14 to be approximately applicable.

The coefficients in Table 14 are based on ⅓ pitch roofs for which the value of *n*, or the ratio of the roof area to the ceiling area, is 1.2. Since these combined roof and ceiling coefficients are based on the ceiling area, small variations in the pitch do not greatly alter the coefficient. An increase in pitch above the ⅓ used for calculating the values would increase the combined coefficient, and vice versa.

TABLE 13. COEFFICIENTS OF TRANSMISSION (U) OF PITCHED ROOFS[a]

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature between the air on the two sides and are based on a wind velocity of 15 mph.

TYPE OF CEILING* (Applied directly to Roof Rafters)	WOOD SHINGLES (On 1x4 wood strips[c] Spaced 2" apart) — Insulation between rafters: None A	Blanket or Bat 1" B	2" C[e]	3" D[e]	ASPHALT SHINGLES OR ROLL ROOFING (On solid wood sheathing)[c]: None E	Blanket or Bat 1" F	2" G[e]	3" H[e]	SLATE OR TILE[b] (On solid wood sheathing)[c]: None I	Blanket or Bat 1" J	2" K[e]	3" L[e]	NUMBER
No Ceiling applied to Rafters	0.48[f]	0.15	0.11	0.083	0.53[f]	0.15	0.11	0.085	0.55[f]	0.16	0.11	0.085	1
Metal Lath and Plaster[d]	0.31	0.14	0.10	0.082	0.33	0.15	0.10	0.083	0.34	0.15	0.11	0.083	2
Gypsum Board (⅜") Decorated	0.31	0.14	0.10	0.082	0.32	0.15	0.10	0.082	0.34	0.15	0.11	0.083	3
Wood Lath and Plaster	0.30	0.14	0.10	0.080	0.31	0.14	0.10	0.082	0.32	0.15	0.10	0.082	4
Gypsum Lath (⅜") Plastered	0.29	0.14	0.10	0.080	0.31	0.14	0.10	0.082	0.32	0.15	0.10	0.082	5
Plywood (⅜") Plain or Decorated	0.29	0.14	0.10	0.080	0.30	0.14	0.10	0.080	0.31	0.14	0.10	0.082	6
Insulating Board (½") Plain or Decorated	0.22	0.12	0.090	0.073	0.23	0.12	0.093	0.074	0.24	0.13	0.094	0.076	7
Insulating Board Lath (½") Plastered	0.22	0.12	0.090	0.073	0.22	0.12	0.090	0.073	0.23	0.12	0.093	0.074	8
Insulating Board Lath (1") Plastered	0.16	0.10	0.077	0.065	0.17	0.10	0.077	0.065	0.17	0.10	0.080	0.066	9

Blanket or Bat thickness shown above.

[a] Coefficients corrected for framing.
[b] Figures in Columns *I*, *J*, *K*, and *L* may be used with sufficient accuracy for RIGID ASBESTOS SHINGLES on wood sheathing. Layer of slater's felt neglected.
[c] Sheathing and wood strips assumed 25/32" thick.
[d] Plaster assumed ¾" thick.
[e] Plaster assumed ½" thick.
[f] No air space included in 1-*A*, 1-*E*, or 1-*I*; all other coefficients based on one air space.
* Ceilings as indicated in first column applied directly to underside of roof rafters and parallel with roof.

TABLE 14. COEFFICIENTS OF TRANSMISSION (U) OF PITCHED ROOFS[a] PLUS HORIZONTAL CEILINGS — COEFFICIENTS BASED ON CEILING SURFACE[b]

Coefficients are expressed in Btu per hour per square foot of ceiling area per degree Fahrenheit difference in temperature between the air on the two sides, and are based on a wind velocity of 15 mph.

CEILING COEFFICIENT[f] (From Table 8)	WOOD SHINGLES ON WOOD STRIPS[d]: No Roof Insulation (Rafters Exposed) (U_r = 0.48) A	½" Insulating Board on Under side of Rafters (U_r = 0.22) B	1" Insulating Board on Under side of Rafters (U_r = 0.16) C	ASPHALT SHINGLES[c] OR ROLL ROOFING ON WOOD SHEATHING[e]: No Roof Insulation (Rafters Exposed) (U_r = 0.53) D	½" Insulating Board on Under side of Rafters (U_r = 0.23) E	1" Insulating Board on Under side of Rafters (U_r = 0.17) F	NUMBER
0.10	0.085	0.073	0.066	0.087	0.074	0.067	19
0.11	0.093	0.078	0.07	0.094	0.079	0.071	20
0.12	0.099	0.082	0.074	0.10	0.083	0.075	21
0.13	0.10	0.087	0.077	0.11	0.088	0.079	22
0.14	0.11	0.092	0.080	0.11	0.093	0.083	23
0.15	0.12	0.096	0.084	0.12	0.097	0.086	24
0.16	0.12	0.10	0.087	0.13	0.10	0.089	25
0.17	0.13	0.10	0.090	0.13	0.10	0.092	26
0.18	0.13	0.11	0.093	0.14	0.11	0.095	27
0.19	0.14	0.11	0.096	0.15	0.11	0.098	28
0.20	0.15	0.11	0.098	0.15	0.12	0.10	29
0.21	0.15	0.12	0.10	0.16	0.12	0.10	30
0.22	0.16	0.12	0.10	0.17	0.12	0.11	31
0.23	0.17	0.12	0.10	0.17	0.12	0.11	32
0.24	0.17	0.13	0.11	0.18	0.12	0.11	33
0.25	0.17	0.13	0.11	0.18	0.13	0.11	34
0.26	0.18	0.13	0.11	0.19	0.13	0.11	35
0.27	0.18	0.13	0.11	0.19	0.13	0.12	36
0.28	0.19	0.14	0.11	0.19	0.14	0.12	37
0.29	0.19	0.14	0.12	0.20	0.14	0.12	38
0.30	0.20	0.14	0.12	0.20	0.14	0.12	39
0.34	0.21	0.15	0.12	0.22	0.15	0.13	40
0.35	0.21	0.15	0.12	0.22	0.15	0.13	41
0.36	0.22	0.15	0.12	0.23	0.15	0.13	42
0.37	0.22	0.15	0.13	0.23	0.16	0.13	43
0.45	0.25	0.17	0.13	0.26	0.17	0.14	44
0.59	0.29	0.18	0.14	0.30	0.19	0.15	45
0.61	0.29	0.18	0.14	0.31	0.19	0.15	46
0.62	0.30	0.18	0.15	0.31	0.19	0.15	47
0.67	0.31	0.19	0.15	0.33	0.20	0.16	48
0.69	0.31	0.19	0.15	0.33	0.20	0.16	49

[a] Calculations based on ⅓ pitch roof (n = 1.2) using the following formula:

$$U = \frac{U_r \times U_{ce}}{U_r + \frac{U_{ce}}{n}}$$

U = combined coefficient to be used with ceiling area
U_r = coefficient of transmission of the roof
U_{ce} = coefficient of transmission of the ceiling
n = the ratio of the area of the roof to the area of the ceiling

[b] Use ceiling area (not roof area) with these coefficients.
[c] Coefficients in Columns *D*, *E*, and *F* may be used with sufficient accuracy for tile, slate, and rigid asbestos shingles on wood sheathing.
[d] Based on 1 x 4 inch strips spaced 2 inches apart.
[e] Sheathing assumed 25/32" thick.
[f] Values of *Uce* to be used in this column may be selected from Table 8.

TABLE 15. COEFFICIENTS OF TRANSMISSION (U) OF DOORS[a] AND WINDOWS[c]

Coefficients are expressed in Btu per hour per square foot per degree Fahrenheit difference in temperature and are based on a wind velocity of 15 mph.

NOMINAL THICKNESS Inches	ACTUAL THICKNESS Inches	U EXPOSED DOORS	WITH GLASS STORM DOOR[b]
1	25/32	0.69	0.42
1 ¼	1 1/16	0.59	0.38
1 ½	1 5/16	0.52	0.35
1 ¾	1 3/8	0.51	0.35
2	1 5/8	0.46	0.32
2 ½	2 1/8	0.38	0.28
3	2 5/8	0.33	0.25

[a] See American Society of Heating and Ventilating Engineers Guide 1946.
[b] These values may be used with sufficient accuracy for wood storm doors. Neglect storm doors if loose and use values for exposed doors.
[c] The coefficients for windows are as follows (See Heating, Ventilating and Air Conditioning by Harding and Willard, revised edition, 1932):
Single .... 1.13 Double .... 0.45 Triple 0.28


903 TRUE BLUE
924 CRIMSON RED
936 DARK GREY
931 PURPLE
901 INDIGO BLUE
921 VERMILION RED
935 BLACK
912 APPLE GREEN
946 DARK BROWN
917 YELLOW ORANGE
926 CARMINE RED
909 GRASS GREEN
950 GOLD
944 TERRA COTTA
949 SILVER
943 BURNT OCHRE
932 VIOLET
905 AQUAMARINE
938 WHITE
910 EMERALD GREEN
945 SIENNA BROWN
942 YELLOW OCHRE
930 MAGENTA
916 CANARY YELLOW
937 LIGHT GREY
902 ULTRAMARINE
922 SCARLET RED
908 DARK GREEN
918 ORANGE
923 SCARLET LAKE
925 CRIMSON LAKE
911 OLIVE GREEN
904 LIGHT BLUE
939 FLESH
929 PINK
915 LEMON YELLOW
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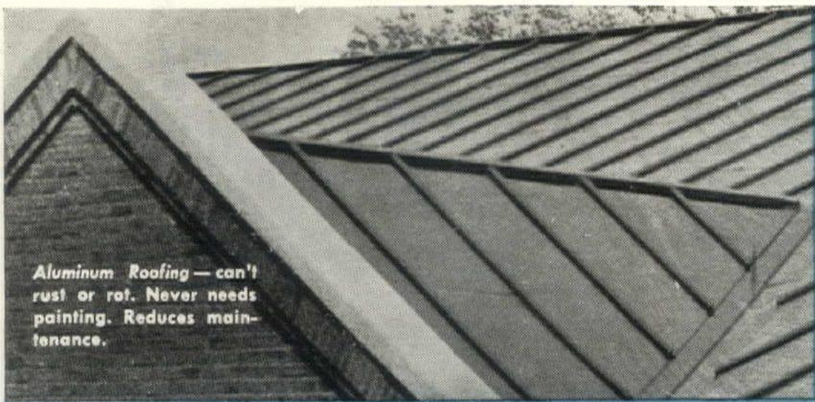

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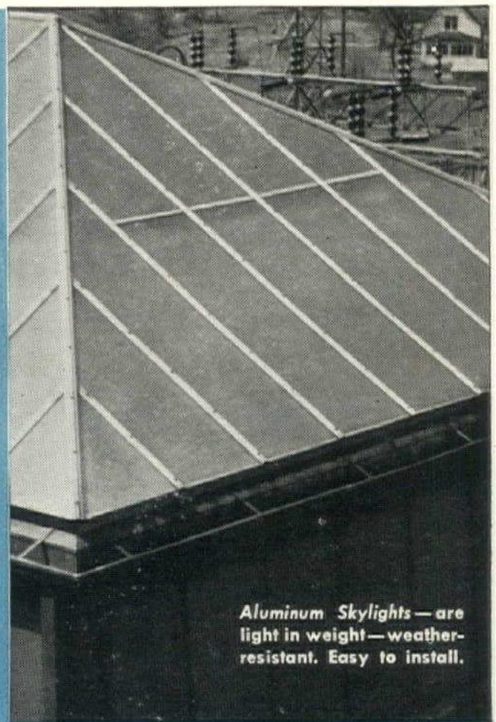

Aluminum Skylights — are light in weight — weather-resistant. Easy to install.

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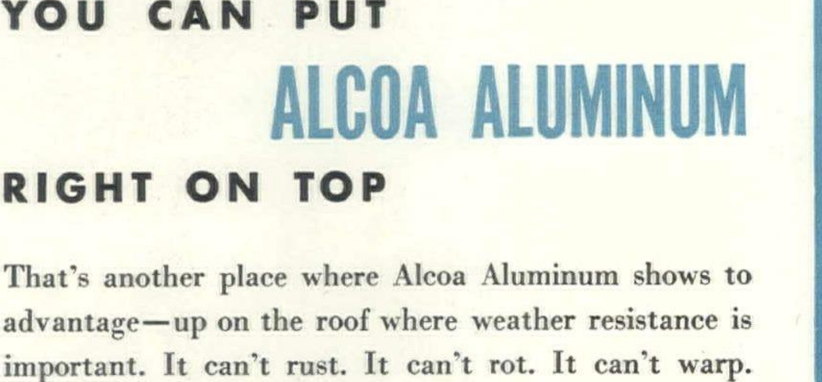

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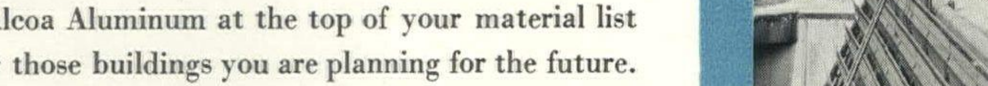

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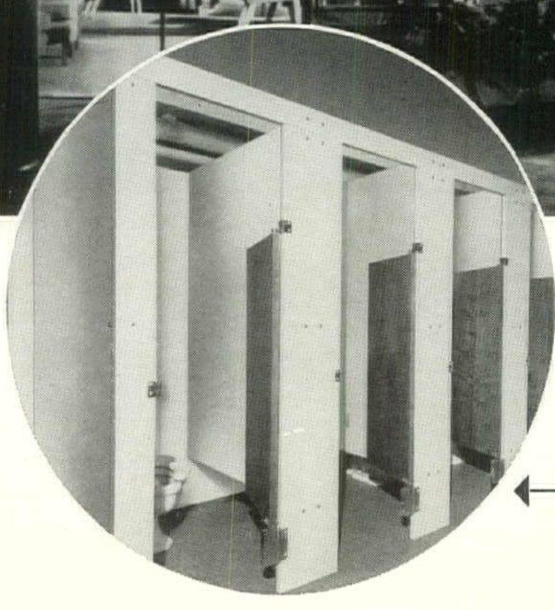
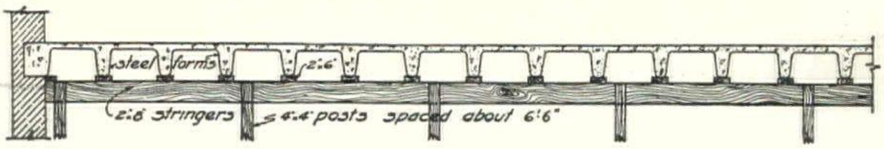


America has produced no better material for toilet room walls, stiles and partitions than Carrara Structural Glass. Its practical qualities of permanence, easy cleaning and strength are as noteworthy as its polished beauty. Carrara is available in 10 attractive colors. Here is a dormitory toilet room, done in Carrara Glass, at Allegheny College, Meadville, Pa. Architect: Jens Frederick Larson.



Ceco Engineers in 23 Offices are always ready to help you in the preparation of designs and estimates. They can help you cut costs and save time. Feel free to call on Ceco for service on your jobs. The above drawing illustrates one type of open wood centering recommended by Ceco.

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Meyer Steelform construction is economical for store and office buildings, residences, apartments, hotels, schools, hospitals, garages and manufacturing buildings—in fact, all structures with lighter loads and longer spans.

A nation-wide independent survey indicates that architects, contractors and engineers prefer concrete joist construction two-to-one for the following reasons:

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3. Provides rigid, strong, permanent, sound-proof buildings
4. Assures fire-resistive construction

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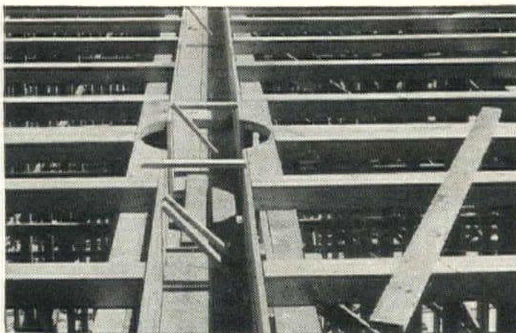
Meyer Steelform construction is the most economical of all methods of forming concrete joists because the joists and thin slab between them are formed with cores of *removable* steelforms supported on a skeleton centering. Once the concrete has set, the steelforms are removed and re-used many times, thus permitting a nominal rental charge for each use. Meyer Steelforms are handled on a rental basis only, leased to contractors and owners for specific jobs.



Simple open-wood centering makes Meyer Steelform construction economical and fast. The centering may be re-used from floor to floor. This eliminates extra lumber and saves time.

Here is a Ceco job illustrating precision formed joists. Note the constant width and accurate alignment from one end of the building to the other. Ceco workmen know how to eliminate concrete leakage and insure proper execution of the structural design.

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REVIEWS

FOUR CITIES OF AMERICA

By William Smull

Prairie City, The Story of an American Community. Angie Debo. Alfred A. Knopf, 501 Madison Ave., New York, N. Y., 1944. 245 pp., illus. $3.00

Rochester, The Water-Power City, 1812-1854. Blake McKelvey. Harvard University Press, 38 Quincy St., Cambridge 38, Mass., 1945. 383 pp., illus. $4.00

Philadelphia, Holy Experiment. Struthers Burt. Doubleday, Doran & Co., Inc., Garden City, N. Y., 1945. 396 pp., illus. $3.75

San Antonio, City in the Sun. Green Peyton. McGraw-Hill Publishing Co., Inc., 330 W. 42 St., New York 18, N. Y., 1946. 292 pp., illus. $3.00

Local pride frequently assigns a unique personality to each community; there is bustling New York, brawny Pittsburgh, or booming Los Angeles. Although these four books apparently are dedicated to the principle that each city is different from all others, the truth is that Green Peyton's San Antonio appears very much like Struthers Burt's Philadelphia; while Blake McKelvey's erudite tale of Rochester's growth is almost background reading for Angie Debo's biography of an imaginative Prairie City. People and their cities, one must conclude, are fairly alike all over.

The thousands of miles and scores of years which separated these cities could not submerge the repetitious tale of rugged individualism, wasteful as planless expansion and boosting, extreme provincialism, recurrent bigotry, sudden generosity, and pervading nostalgia for the imagined past. The importance of regional, national, and even world events upon each city's development helped create this uniformity, a uniformity completely unnoticed by the authors. In Burt's book of anecdotes, the revolutionary upheavals which were prevalent from Maine to Georgia during the late 18th century become exclusively Philadelphian; Rochester, as McKelvey presents it, almost alone suffered from the mob rule and reaction which affected the nation during and after the Jacksonian era; the common American brew of Puritanism and libertinism, of bigotry and democracy, of immorality and righteous prohibition, of hell-raising and stolid boring appears uniquely San Antonian in Peyton's book! Faults like these are to be expected in such books, for their authors confess strong prejudices in their introductions.

The most interesting of the four books —and certainly the most valuable as a story and as a sociological study—is Angie Debo's *Prairie City*. Not any actual community, Prairie City is a composite Oklahoma town which began as a crossroads settlement in the run of 1889. It grew, prospered, swelled, boomed, burst, and contracted through fifty hectic years. Today it has but a few score farmer and merchant families living in and about a country town. The amount of effort was tremendous to wrest the present small settlement (named "city" when only one frame structure had been erected) from undeveloped land. In default of intelligent forethought, three generations spent millions of dollars and phenomenal effort. Only the boundless wealth which they tapped by one-crop farming and oil

(Continued on page 106)

REVIEWS

(Continued from page 104)

wells made possible the recorded rise in living standards.

Miss Debo's story, based upon historical research, follows the settling families and the later strains. The illustrations are photographs and pictures of actual communities in the same area of Oklahoma. She assimilated her material so well that Prairie City seems to live.

The book about Rochester is a source from which might be written a Prairie City type of story. In fact, Miss Debo probably accumulated as much material as Mr. McKelvey presents here; yet by selecting what was interesting and pertinent and then by casting it all as a story, she produced a more unified and engrossing volume. Rochester's history of settlement and growth, based upon water power and geographical position in the fertile Genesee valley, is potentially fascinating; McKelvey's book will remain essentially a student's reference for the 1812-1854 period it covers.

Prairie City and Rochester present almost parallel pictures of pioneering—the northern city blessed by earlier arrival, better geography, and more diffused resources. Both were products of unregulated self-interest. The uncertain results were hardly commensurate with the tremendous efforts expended by individuals, together with government aid, land grants, and subsidies. The motives of self-interest rather than natural co-operation led each man to exploit self, neighbor, and nature. In both books there is a strong, albeit unconscious, argument for democratic planning.

Although Green Peyton was not born in San Antonio and although Struthers Burt has deserted Philadelphia for Wyoming, both writers out-rave themselves in describing those respective communities. Their cities are each uniquely impulsive, reserved; swaggering, modest; self-conscious, uninhibited; progressive, reactionary; provincial, large; generous, stingy. When they must mention a few of their beloved towns' more unsavory aspects, these authors seem almost to regard these with local pride, loving them all the more for their faults.

Few books demonstrate better than these the irrational emotional ties which cities hold on men. Professional anti-urbanists like Louis Bromfield never will comprehend the spiritual appeal of urban life. Yet this great reservoir of sentiment and training in close, co-operative living, when properly channelized by education, should provide the emotional support which urbanism is seeking today. Philadelphia is not the unique and wonderful city of Burt's book, nor is San Antonio quite the fabulous prodigy Peyton describes; it is a tribute to these cities, however, that these are among the images they create in the minds of two discerning, able, and amusing writers.

GUIDE TO PUBLISHED WORK

COMMERCIAL

Office Buildings

American Discount Co., Atlanta, Ga.—BURGE & STEVENS, ARCHITECTS AND ENGINEERS. A modern 2-story office building designed simply, with ease of access, good light conditions, etc., stressed, rather than pomposity of architecture. Photos, floor plans. (Jul. Progressive Architecture, p. 42)

Offices

Claustrophobia Conquered by Unorthodox Design—ALVIN LUSTIG, DESIGNER. Working space and privacy, where desired, created for 25 people in less than 1,600 sq. ft. of this publications office. Photos, sketches, floor plans. (Jun. Interiors, p. 60)

Before & After, Hegarty-Hyland Co., Calif.—ALYNE WHALEN, DESIGNER. A large buying firm sees fit to improve appearances and remodel, increasing working space and business thereby. Photos. (Jun. Interiors, p. 70)

Redesigned Advertising Offices, J. Walter Thompson Co., New York City—WILLIAM LESCAZE, ARCHITECT. A "must" stairway between the two large floors of this company facilitates activities in these handsome offices. Photos. (Jun. Interiors, p. 74)

That Same Old Bogey, Limited Space, New York City—BERTELL, INC., DESIGNERS. A design and development organization designs and develops its own offices to overcome the handicap of cramped quarters. Photos. (Jun. Interiors, p. 80)

Work and Play Space for Publishers, Reynal & Hitchcock, New York City—JEDD STOWE REISNER, ARCHITECT; ARTEK-PASCOE, DESIGNERS. Corner-office partitions can be removed to form one large room, handy "for the parties so much a part of publishing." Photos. (Jun. Interiors, p. 82)

Architects Raymond and Rado Add a Name, New York City—RAYMOND, VARKER & RADO, DESIGNERS. A well known firm adds an industrial design department and a new wing to their offices. Photos. (Jun. Interiors, p. 84)

Corporation Executive's Office, New York City—MORRIS LAPIDUS, ARCHITECT. An extraordinarily versatile desk-board meeting table helps to transpose this modern office into a meeting room quickly and effectively. Photos, sketch. (Jul. Progressive Architecture, p. 46)

Offices for Eversharp, Inc., New York City—JULIAN VON DER LANCKEN; RAYMOND LOEWY ASSOC., ARCHITECTS. A triple-use plan worked out within standard office building space. Photos, sketch, floor plans. (Jul. Progressive Architecture, p. 57)

Shops

Pietro Belluschi Designs a Shoe Store—PIETRO BELLUSCHI, ARCHITECT. Glass and a carefully laid out interior were used in exploiting the open-front plan in this design. (Jul. Architect and Engineer, p. 19)

Shop Front, Portland, Ore.—PIETRO BELLUSCHI, ARCHITECT. Wood is a major material in this remodeling job, where a three-dimensional scheme was developed that makes window-shopping an almost automatic act. Photos, sketch. (Jul. Progressive Architecture, p. 45)

Gallen Kamp's Shoe Store, Los Angeles, Calif.—GRUEN AND KRUMMECK, DESIGNERS. An interesting solution to the familiar problem of organizing effective display and sales units and company offices within a rather awkward existing building, boasting a particularly novel open-front scheme that is truly "open." Photos, sketches, floor plans. (Jul. Progressive Architecture, p. 48)

Showrooms

A Showroom in Milan—G. PILANTI, ARCHITECT. Last-minute changes transform a bookshop into a showroom for drawings. Photos, floor plans. (May Domus, p. 30)

Showroom in the Garment Center, New York City—VINICIO PALADINI, DESIGNER. An impressive showroom achieved in a dark, narrow space. Photos. (Jun. Interiors, p. 86)

COMPETITIONS

W.T.A. Competition for Holiday Centres. Presentation of the winning designs in the competition for "a simple type of holiday centre for coast and country which will attract families." Elevations, plot and floor plans. (The Architects' Journal for Jun. 20, p. 467)

The Pimlico Housing Scheme Competition. The chief problem in this scheme was to secure the average high density of 200 persons to an acre, with all necessary facilities, and still give as many of the apartment residents as possible a view of the river at the site. Prizewinning schemes, floor plans. (Jul. The National House Builder and The Building Digest, p. 21)

EDUCATION

Auditoriums

The School Auditorium. Survey of the problems involved in planning and designing school auditoriums, including articles on the use of the auditorium in a community school program; factors which determine the size of an auditorium; auditorium-gymnasium for a small school; auditorium stage for a school building; lighting the auditorium and stage; planning the auditorium for audio-visual education. Photos, sketches, cross sections, floor plans. (Jun. The School Executive, p. 33)

Colleges

Technical College, Birkenhead—WILLINK & DOD, ARCHITECTS. Model photo, elevations, floor plans. (Jun. Architectural Design and Construction, p. 160)

Schools

Five Schools—RICHARD SHEPPARD, J. SHUFFLEBOTHAM & HILTON WRIGHT, ARCHITECTS. Three schemes are shown where the existing hall has been retained and new wings added, while the other two are entirely new buildings built on the sites of existing schools. Model photo, renderings, sketches, floor plans. (Jun. Architectural Design and Construction, p. 155)

Parochial School in California Mission Style, St. Charles Elementary School, No. Hollywood, Calif.—LAWRENCE D. VIOLE, CIVIL ENGINEER. A square, 2-story building of reinforced concrete designed in the same style as the existing church rectory and convent which adjoin it. Renderings, floor plans. (Jul. The Nation's Schools, p. 34)

Expansion the Keynote of this Building Program, West View High School, West View, Pittsburgh, Pa.—SORBER AND HOONE, ARCHITECTS. Straight clean lines and much glass block characterize this school building, enlarged once and preparing now for further additions. Photos, floor plans. (Jul. The Nation's Schools, p. 36)

Shops

The School Shop for General Education: Building Types Study. Discussion of the industrial arts work centers, including articles on the types of industrial education and planning of the industrial arts shops. Photos. (Jul. Architectural Record, p. 91)

Industrial Arts Laboratory, Burris School, Muncie, Ind.—HERBERT F. SMENNER, ARCHITECT. To relate all the arts and have students acquainted with all of them, an openness of plan has been provided the students, with options of routes that lead past all the variety of work offered for instruction, while getting from one part of the shop to another. Photos, floor plans. (Jul. Architectural Record, p. 100)

Suggested Arrangement by Texas State Board for Vocational Education; Hugh Morson High School, Raleigh, N. C.—WILLIAM H. DEITRICK, ARCHITECT; **Bethlehem Central School, Delmar, N. Y.; Rhinebeck Central School, N. Y.**—MOORE & HUTCHINS, ARCHITECTS; **New York State Suggested Plans.** Various solutions to industrial workshop design. Photos, elevations, floor plans. (Jul. Architectural Record, p. 103)

Shops and Laboratories. A survey of the space and equipment necessary and desirable for various school shops and laboratories, including the social studies, speech arts, functional and fine arts, and science workshop-laboratories, with interpretative solutions to these needs by architect George Doczi. Drawings, floor plans. (Jul. The School Executive, p. 41)

ENTERTAINMENT

Radio Studios

Radio Station KRSC, Seattle, Wash.—DONALD DWIGHT WILLIAMS, ARCHITECT. An independent radio station in a modern building of its own that is functional, and achieves a dignity in its simple conception. Photos, floor plans. (Jul. Progressive Architecture, p. 53)

HEALTH

Hospitals

Elements of the General Hospital, Pt. II—HOSPITAL FACILITIES SECTION, U.S. P.H.S. Second in a series of plans of various hospital units, here including the nursing, service, and outpatients departments for 50-, 100-, and 200-bed hospitals. Extensive floor plans. (Jul. Architectural Record, p. 76)

London's Hospitals Going Up—J. FRASER MILNE, ASSOC. EDITOR, "THE HOSPITAL," LONDON. Brief review of the present condition of London's hospitals, plans for rebuilding and expansion, and the special factors affecting London planning. Photos, floor plans. (Jul. The Modern Hospital, p. 56)

Sanatoriums

The Building is Part of the Treatment, Sunnyslope Sanatorium, Ottumwa, Iowa—DANE D. MORGAN, ARCHITECT. The patients' wings of this modern tuberculosis sanatorium are all 1-story, facilitating supervision and establishing the close relationship to the outdoors which is important to the patients. Renderings, floor plans. (Jul. The Modern Hospital, p. 46)

HOUSING

Apartments

Low-Cost Apartments, Calif.—ANDERSON & SIMONDS, ARCHITECTS. Non-essentials were eliminated in this small, modern, multi-family group, the architects believing that the total cost can be lowered by reduction at the item level. Photos, plot and floor plans. (Jul. The Architectural Forum, p. 124)

Housing Projects

Development of the St. Pancras Way Site, St. Pancras—GRAHAM DAWBARN, ARCHITECT. This scheme provides for 190 1- to 5-room apartments, with the houses mainly 6-story in height, designed around a surfaced and enclosed playground. Renderings, plot and floor plans. (Jun. Architectural Design and Construction, p. 147)

Shackewell Housing Scheme, Hackney—FREDERICK GIBBERD, ARCHITECT. Some of the latest theories of housing layout have been applied to this interesting scheme, ensuring that whatever the age or size of the family, it has the right kind of dwelling; and also that there is every type of family in the community. Model photo, plot plan. (Jun. Architectural Design and Construction, p. 149)

Housing Development at Church St., St. Marylebone—STANLEY HALL & EASTON AND ROBERTSON, ARCHITECTS. Most characteristic feature of this project is the north and south layout of the individual buildings so as to give east and west light-

(Continued on page 110)

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GUIDE

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ing to the rooms. Perspective, site and floor plans. (Jun. Architectural Design and Construction, p. 150)

L.C.C. Woodberry Down Housing Site. A proposed 8-story block of flats. Model photo, floor plans. (Jun. Architectural Design and Construction, p. 151)

L.C.C. Houses at Loughton. The houses for this new housing estate are of the standard types recently adopted by the Council. Typical house plans. (Jun. Architectural Design and Construction, p. 152)

Becher St. Development, Kensington—EDWARD ARMSTRONG AND BRIAN O'RORKE, ARCHITECTS. A high amenity standard in terms of layout and equipment is to be provided in this development of houses, 3-story, and 8-story apartment houses. (Jun. Architectural Design and Construction, p. 153)

Terrace Houses for a Site in Highgate—WALTER SEGAL AND SEGAL, ARCHITECTS. An English solution to some of the common problems met in designing attached houses. Perspective, site and floor plans. (Jun. Architectural Design and Construction, p. 154)

Expansible Row House, New York—GEORGE NEMENY, ARCHITECT. An inexpensive unit designed for a shallow block arrangement, based on a new version of the row house, in which an ultimate 3-bedroom, 2-bathroom house can be evolved from the initial 1-story unit. Perspectives, elevations, site and floor plans. (Jul. The Architectural Forum, p. 106)

Developer's Houses, Place & Co., South Bend, Ind.—IVAR O. WANDELL, ARCHITECT. Shop and site fabrication, combined with many other cost-cutting techniques, make these 180 well engineered units more serviceable than the average developer's projects. Photos, floor plans. (Jul. The Architectural Forum, p. 142)

Domestic Architecture at the Royal Academy. Review of some of the better designs of housing projects at a recent exhibition. Renderings, elevations. (Jun. The National House Builder and The Building Digest, p. 22)

Residences

One Answer to the Veteran Housing Problem. The Wingfoot Home, manufactured by a subsidiary of Goodyear Tire and Rubber Co., an assembled, 2-bedroom house to sell at the factory for under $2,500, delivered complete with bathroom and kitchen fixtures, built-in beds, bureaus, closets, mirrors, and cabinets. Photos. (Jun. Architect and Engineer, p. 10)

Intermountain All Metal Home, Denver, Colo.—CONVERTIBLE HOMES, INC., BUILDERS. An all-metal, pre-cut, 2-bedroom housing unit, complete with plumbing fixtures, heating units, and electrical equipment, to sell at less than $4,000, produced as another possible solution to the small house scarcity problem. Photo. (Jun. Architect and Engineer, p. 26)

Soviet Housing in the 4th Five-Year Plan—SOLOLAV, MYERSON, MASLIKH, ALEXANDROV, ARCHITECTS. Some representative designs appearing in a recent exhibition of standard house projects in Moscow. Model photos, plot plan. (Jun. Architectural Design and Construction, p. 166)

Home for Easy Housekeeping—SILAS NELSEN, ARCHITECT. A **Better Homes and Gardens'** Five Star Plan, 2-story, 3 bedrooms, in the traditional vein. Model photos, floor plans. (Jul. Better Homes and Gardens, p. 25)

All On a 50-Foot Lot, W. Los Angeles, Calif.—EDLA MUIR, ARCHITECT. A steeply pitched roof was used to give this small 2-story house a "bedded-down" look, in keeping with its neighbors. Photos, floor plans. (Jul. Better Homes and Gardens, p. 30)

New House, Sioux Falls, S. Dak.—HAROLD SPITZNAGEL, ARCHITECT. Coverage of the architect's own home, completed since the end of the war, presented as a source of practical new ideas for the home planner. Photos, floor plans. (Jul. Better Homes and Gardens, p. 34)

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GUIDE

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Cape Cod in California—JOHN PAUL JONES, BUILDER-ARCHITECT. Some new ideas added to a traditionally East Coast design. Photos. (Jul. Better Homes and Gardens, p. 40)

"Riverbend," Ontario, Canada—ALLWARD AND GOUINLOCK, ARCHITECTS. French provincial, with steeply pitched roof and rugged stone walls, in a home for a spacious suburban site. Photos, floor plans. (Jul. Canadian Homes and Gardens, p. 24)

Prefabricated Houses for Japan—VITTORIO GANDOLFI, ARCHITECT. The influence of Japanese design upon modern Western architecture, and illustrative plans and data on current Japanese activities in prefabrication. Photos, sketches, elevations, floor plans. (May Domus, p. 3)

Peasant Dwellings—P. BOTTONI, G. MUCCHI, M. PUCCI, ARCHITECTS. Five identical cottages remodeled for agricultural workers on a large Italian estate, using furniture designed along modern lines and some built-in pieces. Photos, floor plans. (May Domus, p. 9)

Three American Houses With a Unit—HUGH STUBBINS, JR., HARWELL A. HARRIS, ALDEN B. DOW, ARCHITECTS. Three homes containing the Borg-Warner utility unit, from the series previously published by **The Architectural Forum**, "with problems technically (if not ecenomically) very interesting to us too at the present time." Model photos, floor plans. (May Domus, p. 19)

Week-End House Into Permanent Home, Calif.—HARRY GLADSTONE, DESIGNER. A derelict seaside vacation house remodeled into a year-round home: another solution to the housing shortage. Photos. (Jul. House Beautiful, p. 44)

Plan it This Summer, Build it Next Summer—BURTON ASHFORD BUGBEE, ARCHITECT. A summer house of simple design, well organized for maximum space and minimum upkeep. Photos, floor plans. (Jul. House Beautiful, p. 72)

Small House with Big House Performance, Tucson, Ariz.—CARL REISEN, ARCHITECT. A lot of room instead of a lot of rooms was the keynote in designing this small, modern, 1-story house. Photos, floor plans. (Jul. House Beautiful, p. 78)

Even a Small House Costs Money, Conn.—MRS. MICHAEL BLAKE, OWNER-DESIGNER. Photos, floor plans. (Jul. House Beautiful, p. 84)

House in Princeton, N. J.—RUDOLF MOCK, ARCHITECT. An example of "transitional" residential architecture, tending to the traditional on the exterior, while thoroughly contemporary in interior planning and amenity. Photos, floor plans. (Jul. Progressive Architecture, p. 60)

House in Oconomowoc, Wis.—GEORGE FRED KECK, WILLIAM KECK, ARCHITECTS. A rational, easy-to-maintain, 2-story scheme for a family with four children, simply planned, with an extremely open treatment. Photos, floor plans. (Jul. Progressive Architecture, p. 64)

The Colonel and His Lady Built a Home in 2 Weeks. A prefabricated house built in one of the canyons in the Los Angeles area, complete with patio, and finished on the outside with knotty pine. Photos. (Jul. The American Home, p. 20)

They Built a Guest House First . . . and Live In It!, Atlanta, Ga.—RICHARD L. AECK, ARCHITECT. A 25'x25' house to comfortably tide the artist-writer Menaboni couple over the war period until they could build a large main house and use the present one as a guest house. Photos, floor plans. (Jul. The American Home, p. 24)

Slum Clearance . . . Personal Version, Washington, D. C.—GROSVENOR CHAPMAN, OWNER-ARCHITECT. A successful example of what can be achieved in remodeling a 14-foot-wide dilapidated frame house. Photos, floor plans. (Jul. The American Home, p. 28)

3 Modern Young Men Lead a Modern Life in this "Swiss Chalet," Mount Kisco, N. Y.—WILLIAM LESCAZE, ARCHITECT. The home of Samuel Barber, Gian-Carlo Me-

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GUIDE

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notti, and Robert Horan, one of Lescaze's first designs in America, resembling a modern chalet set into the side of a mountain. Photos. (Jul. The American Home, p. 36)

Hook-On Slab Reinforced Concrete System—E. MAY, DESIGNER. A system of precast concrete slab construction devised by a Nairobi architect-town planner, the slabs to be used as external wall coverings to any type of building, provided the supporting structure is designed accordingly. Photos, construction details. (The Architects' Journal for Jun. 13, p. 453)

Expansible Bungalow, Tenn.—GILL & BIANCULLI, ARCHITECTS. A minimum structure designed for future expansion, incorporating a number of features which make for convenient living in its small but compact plan. Perspectives, floor plans. (Jul. The Architectural Forum, p. 116)

Sales-Rental Units, Calif.—MARIO CORBETT, ARCHITECT. Two small house groups, limited in space and cost, to be built by simple carpenter construction. Perspectives, site and floor plans. (Jul. The Architectural Forum, p. 122)

Low-Cost Houses, Michigan and Texas—ALDEN B. DOW, INC., ARCHITECTS. Avoidance of unusual materials or construction methods made for economies in these 2- and 3-bedroom variations on the low-cost theme. Photos, perspectives, floor plans. (Jul. The Architectural Forum, p. 128)

3 Owner-Built Houses—SAMUEL GLASER, ARCHITECT. Two prototype designs for more-than-minimum houses, distinguished from the usual "crackerbox" development house by informal plans, varying roof levels, liberal use of glass, and spacious living rooms and kitchens. Perspectives, floor plans. (Jul. The Architectural Forum, p. 134)

The New Houses: The Airey House—WM. AIREY & SON (LEEDS) LTD., BUILDERS. Both rural and urban houses are being built in England according to this system, the construction being of reinforced concrete frame with concrete panels, both containing some original devices. Photos, construction details. (Jun. The National House Builder and The Building Digest, p. 17)

MILITARY

Army Headquarters Building, Army Forces Middle Pacific Command, Fort Shafter, Oahu, T. H.—COLE McFARLAND, ARCHITECT. Constructed in 1944, this group of three buildings has had great effect on the architectural design of other military buildings in the islands since constructed. Photos, site and floor plans. (Jul. Architectural Record, p. 68)

PLANNING
City

Foreshore Development at Marblethorpe and Sutton-On-Sea, Lincs.—G. A. JELLICOE, ARCHITECT. Planning and development scheme to provide a holiday resort out of a 6-mile stretch of dune-lined, flat coast. Photos, site and floor plans. (Jun. Journal of the R.I.B.A., p. 316)

"Your Town" Exhibition at the R.I.B.A. Selected views of the Knutsford Replanning Scheme. Model photos, renderings. (Jun. Journal of the R.I.B.A., p. 324)

Worcester, Survey and Proposals—WALTER RITCHIE. A general description of the Worcester area, its economic potentialities, and the technique recommended for redevelopment. Sketches, maps, plot plans. (The Architects' Journal for Jun. 13, p. 449)

Stevange as a New Town. Brief discussion of one of the ten sites indicated in the Greater London Plan to be a nucleus for expansion to satellite town size, provisions being made for a population of 45,000 in about ten years. (Jun. The National House Builder and The Building Digest, p. 24)

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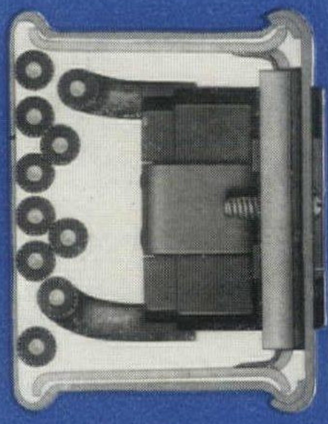

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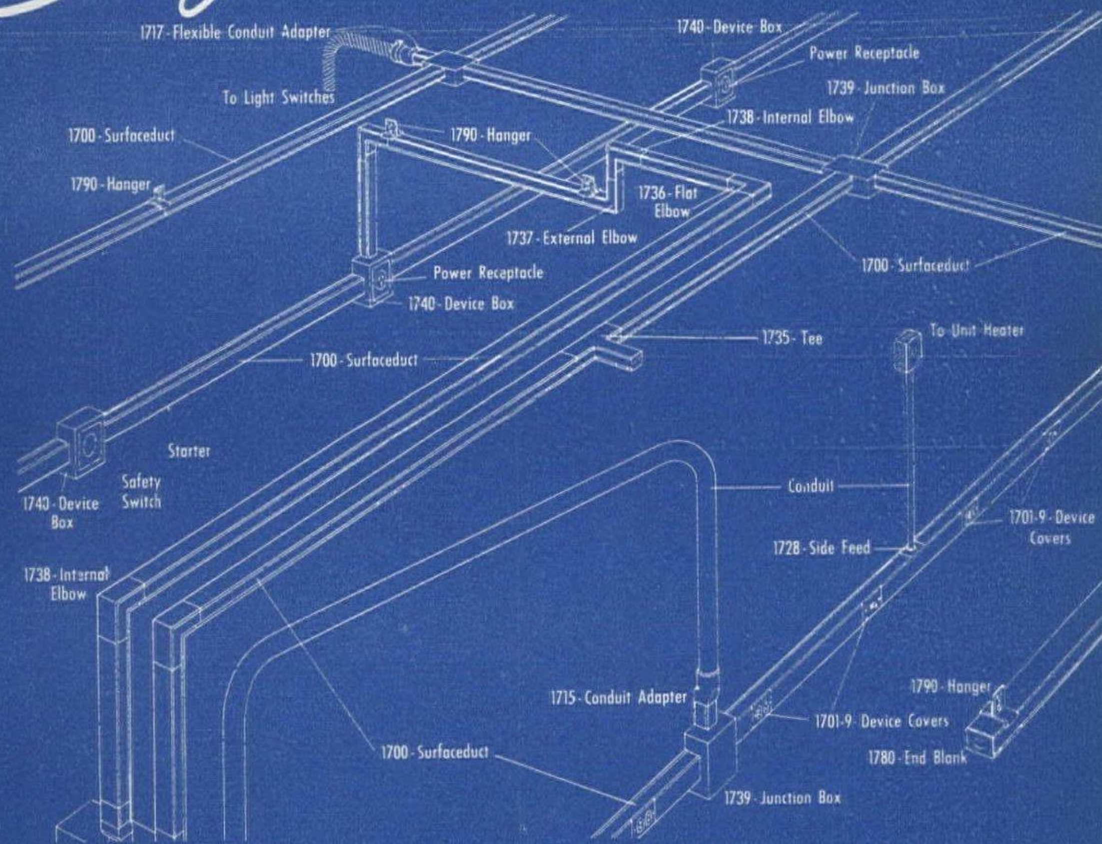
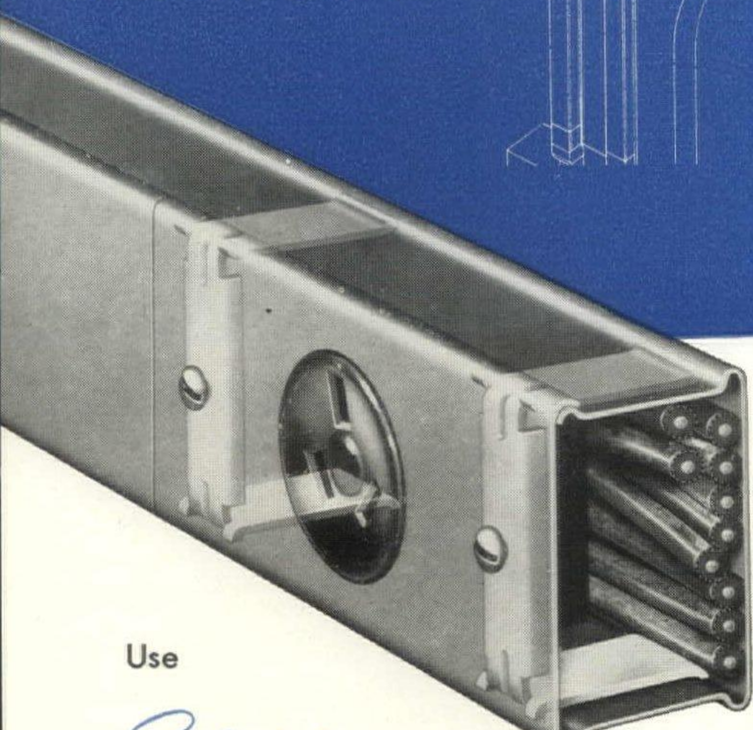


A Schematic Layout of Surfaceduct. Numbers preceding part designations are NE Catalog numbers.



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GUIDE

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Community

I. M. Johnson Designs a Community—IRWIN M. JOHNSON, ARCHITECT. The Spanish theme will be used in restyling the 5-block business area of Niles, Calif., following the trend of postwar civic face-lifting throughout the country. Photos. (Jun. Architect and Engineer, p. 12)

Regional

Where to Build The Houses—DR. L. DUDLEY STAMP, C.B.E. The author takes up the question of national planning, to relate new housing in Britain more satisfactorily to other developments, primarily to the location of industry. Photos. (Jul. The National House Builder and The Building Digest, p. 17)

RELIGION

Churches

Protestant Church, Zurich—WERNER M. MOSER, ARCHITECT. A new church well planned to tie in with the old small church standing close by, designed with equal sound intensity for every one of its 1,069 seats. Photos, elevations, plot and floor plans. (Jun. The Architectural Review, p. 177)

A Prefabricated Church, Church of the Holy Apostles, London. A recently completed church, the first of its kind erected in the "Uni-Seco" system of construction. Photo, diagrams, method of construction. (Jul. The National House Builder and The Building Digest, p. 35)

TRANSPORTATION

Railroads

Dormitories for Railwaymen—LESTER C. TICHY, ARCHITECT. Dormitories built by the Pennsylvania Railroad at Enola and Harrisburg, Pa., providing sleeping and recreational accommodations for railroad employees away from home. Photos, construction details, plot and floor plans. (Jun. The Architectural Review, p. 164)

PERIODICALS NOTED IN THIS ISSUE:

ARCHITECT AND ENGINEER, 68 Post St., San Francisco 4, Calif.

ARCHITECTURAL DESIGN AND CONSTRUCTION, 26 Bloomsbury Way, London W.C.1, England

ARCHITECTURAL RECORD, 119 W. 40th St., New York, N. Y.

BETTER HOMES AND GARDENS, 420 Lexington Ave., New York, N. Y.

CANADIAN HOMES AND GARDENS, Montreal Centre 2, Dominion Square Bldg., Toronto 2, Canada

DOMUS, Via Monte di Pieta, 15, Milan, Italy

HOUSE BEAUTIFUL, 572 Madison Ave., New York 22, N. Y.

INTERIORS, 11 E. 44th St., New York 17, N. Y.

JOURNAL OF THE R.I.B.A., 66 Portland Place, London W.C.1, England

PROGRESSIVE ARCHITECTURE-PENCIL POINTS, 330 W. 42nd St., New York 18, N. Y.

THE AMERICAN HOME, 444 Madison Ave., New York, N. Y.

THE ARCHITECTS' JOURNAL, 13, Queen Anne's Gate, Westminster, S.W.1, England

THE ARCHITECTURAL FORUM, 350 Fifth Ave., New York 1, N. Y.

THE ARCHITECTURAL REVIEW, 13, Queen Anne's Gate, Westminster, S.W.1, England

THE MODERN HOSPITAL, 919 N. Michigan Ave, Chicago 11, Ill.

THE NATIONAL HOUSE BUILDER AND THE BUILDING DIGEST, 17 Stratford Place, London W.1, England

THE NATION'S SCHOOLS, 919 N. Michigan Ave., Chicago 11, Ill.

THE SCHOOL EXECUTIVE, 470 Fourth Ave., New York 16, N. Y.

NOTICES

BURKS AND ANDERSON, ARCHITECTS, of Little Rock, Ark., have announced the opening of new offices at 502 Wallace Bldg., Markham and Main Sts.

A new architectural office has been opened by HAROLD G. WILSON at 125 Coulter Ave., Ardmore, Pa.

WALTER DORWIN TEAGUE, industrial designer, announces the transfer of his West Coast offices to new quarters at 3142 Wilshire Blvd., Los Angeles, Calif.

MORRIS LAPIDUS has opened new architectural offices at 256 E. 49th St., New York, N. Y.

CLARENCE O. PETERSON and WENDELL R. SPACKMAN, architects, have noted a change of address to offices at 593 Market St., San Francisco, Calif.

HOLSMAN & HOLSMAN AND KLEKAMP, Architects, have announced the removal of their offices from 140 S. Dearborn St. to the entire 9th floor of the Dunham Bldg., 450 E. Ohio St., Chicago, Ill.

WHITNEY R. SMITH, Architect, has moved to 204 S. Los Robles, Pasadena, Calif.

JOHN Y. SLOAN, Architect—JOHN A. BEANE, WARREN H. THOMPSON, Consulting Engineers, announce the formation of a partnership and the removal of their offices from 296 Delaware Ave. to 755 Main St., Buffalo, N. Y.

ISAAC HELLERMAN, Consulting Engineer, has announced the reopening of his office for the practice of structural engineering at his new address, 1860 Broadway, New York, N. Y.

MOUKBIL K. TASH, Architect, announces the new location of his office at 165 Broadway, New York, N. Y.

EDWARD D. STONE has reopened his New York office for the practice of architecture. He is located at 50 E. 64th St., New York, N. Y.

SYLVESTER LEROY SMITH has announced the opening of his architectural offices at 250 N. 15th St., Philadelphia, Pa.

KENNETH B. CLARK and LAWRENCE A. ENERSEN have formed a partnership for the practice of architecture and site planning with offices at 1202 Sharp Bldg., Lincoln, Neb.

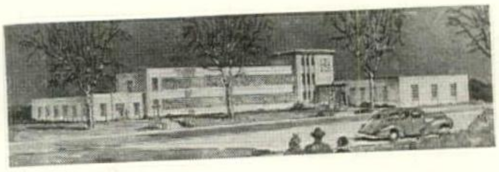
WARD SURVEY CO. has noted a change of address from 620 Market St., San Francisco, Calif., to Box 1382, Walnut Creek, Calif.

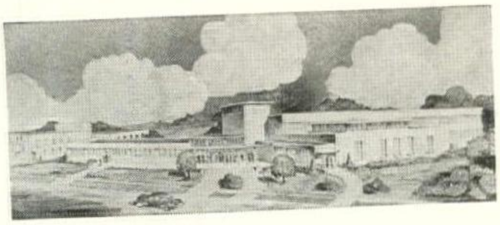
BODIN & LAMBERSON, Architects, have announced the removal of their offices at 44½ Marietta St. to 827 Forsyth Building, Atlanta, Ga.

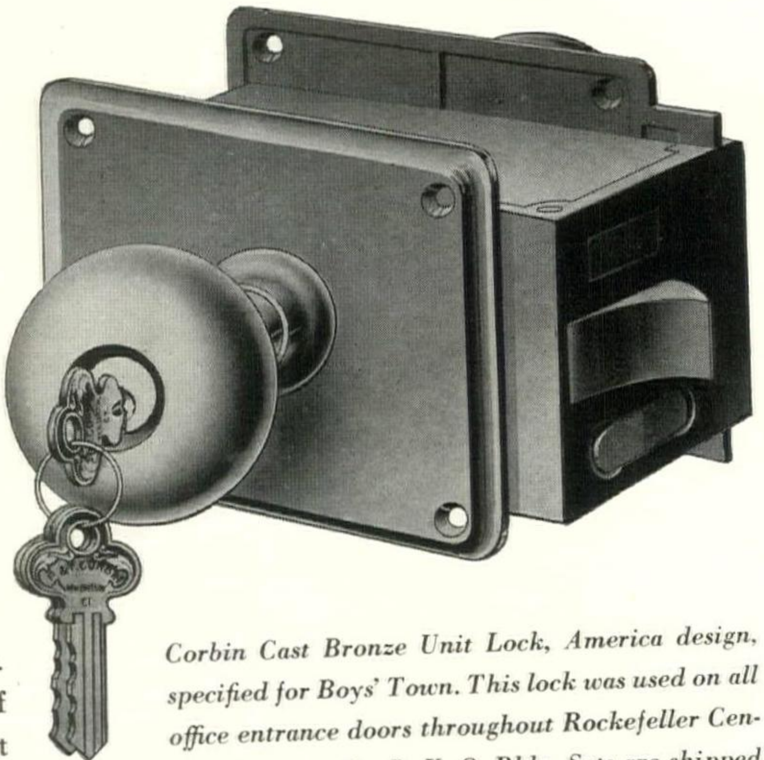
MAX M. SANDFIELD has re-opened his offices for the general practice of architecture and has moved from San Antonio, Texas, to 2815 McKinney Ave., Dallas 4, Texas.

HARBESON, HOUGH, LIVINGSTON & LARSON, Architects, announce their return to the Architects Building, 17th and Sansom Sts., Philadelphia, Pa.

Corbin Unit Locks chosen for Boys' Town building program







Teen-aged boys are rough on hardware. Leo A. Daly Company, Architects, of Omaha, Nebr. say . . . "it is very important that the hardware in Boys' Town buildings be very durable . . . capable of standing the hard wear it is bound to get. We feel that Corbin hardware meets this important requirement."

The ease of installation of the famous Corbin *Unit Lock* (Pat. No. 41,961) was another factor in the Architect's decision to specify Corbin hardware for the Trade School Building, The Administration Welfare Building, the High School, and the twenty-five residence units in the $3,000,000 building expansion program at Father Flanagan's nationally famed Boys' Town.

Since 1899, when Corbin Unit Locks were introduced, they have been specified by Architects for outstanding commercial, civic and other types of monumental buildings from coast-to-coast.

Corbin Cast Bronze Unit Lock, America design, specified for Boys' Town. This lock was used on all office entrance doors throughout Rockefeller Center, except on the R. K. O. Bldg. Sets are shipped assembled, as shown, eliminating the danger of missing parts. Adjustable to different thicknesses of doors. Frame is one solid piece, holding all the parts; no possibility of displacement.

CORBIN

P. & F. Corbin

DIVISION OF THE AMERICAN HARDWARE CORPORATION

NEW BRITAIN, CONNECTICUT

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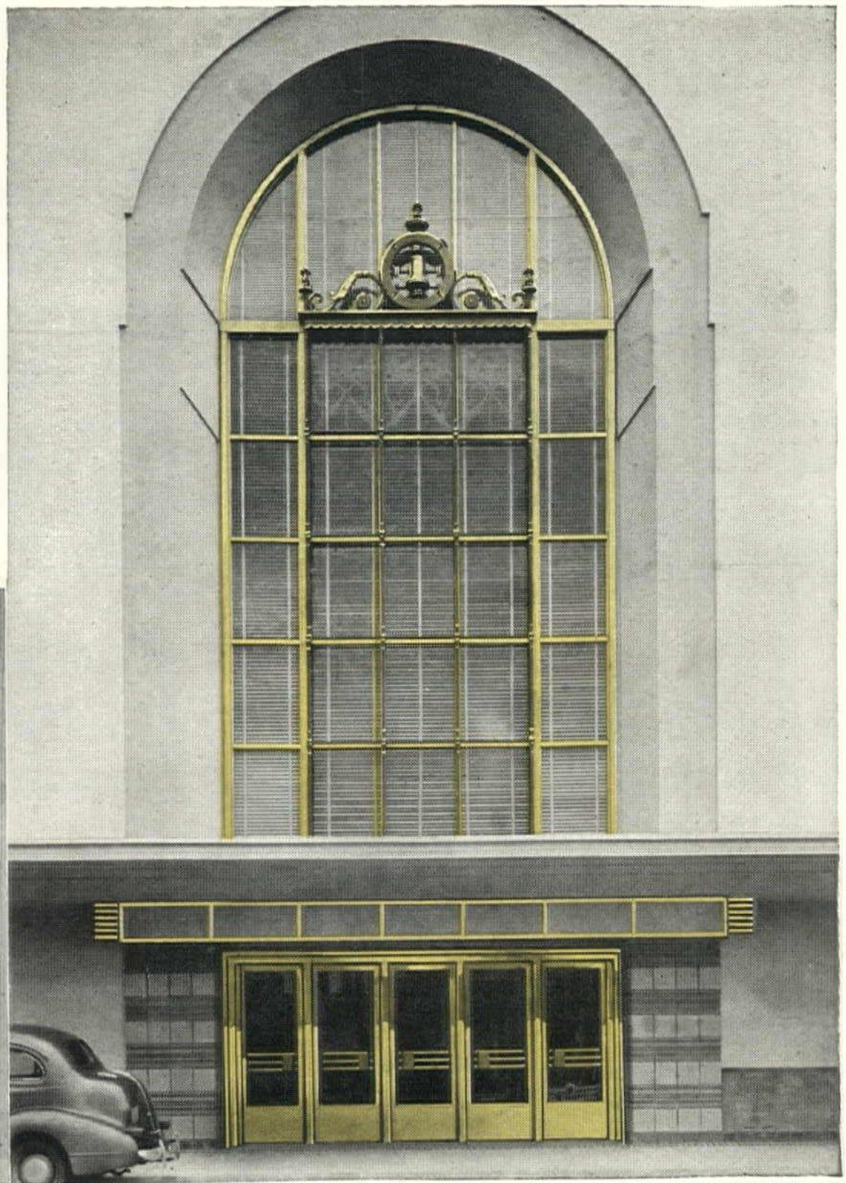

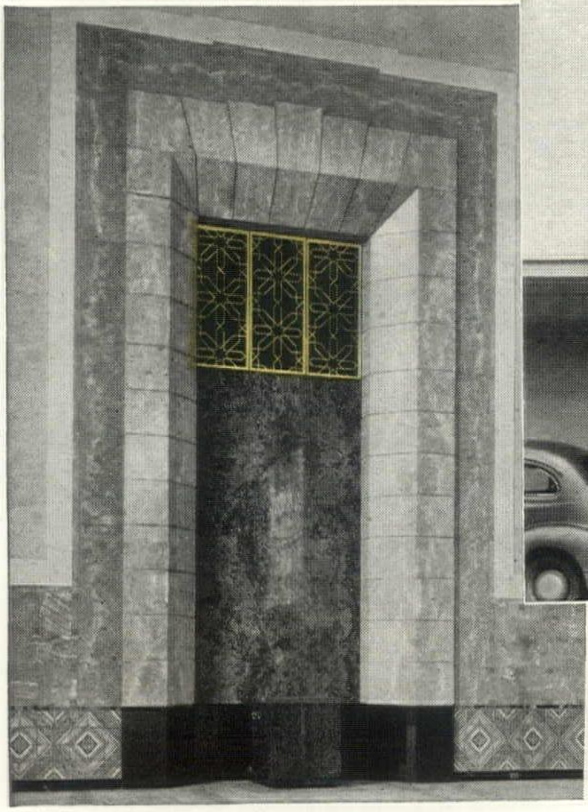

Anaconda Architectural Bronze fabricated by Herzog Iron Works, Inc., St. Paul, Minn. installed in main entrance and window (upper photo) and as ventilating grille (lower photo). Entrance shown is one of three, each requiring about 8,000 lb. of Anaconda Extruded Shapes and special Ingots for castings of matching color.

Los Angeles Terminal adds Beauty with BRONZE

BOTH EXTERIOR and interior architectural treatment of the Union Terminal at Los Angeles take full advantage of the warm dignity of bronze.

Stately windows and entrance doors are executed in this lustrous, durable metal . . . while inside of the main building bronze has been used extensively for ventilating grilles, chandeliers, name and sign plates, clock figures and all glass moulding.

Anaconda Architectural Bronze in all wrought forms has for many years been the choice of architects for ornamental work of every description. Readily adaptable to design and easy to maintain, its matchless color and beauty lastingly enhance the appearance of countless fine buildings from coast to coast.

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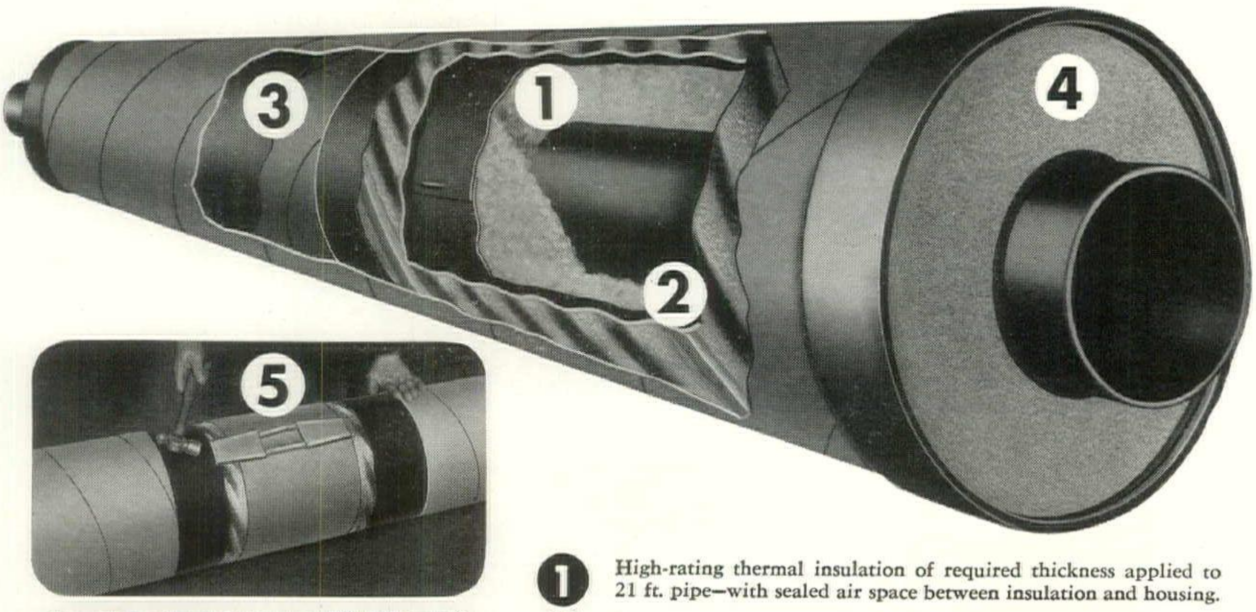
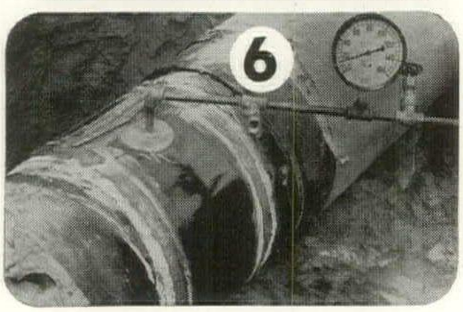
Only RIC-WIL STEAM CONDUIT *gives you ALL these advantages*





1. High-rating thermal insulation of required thickness applied to 21 ft. pipe—with sealed air space between insulation and housing.
2. Structurally strong, shock proof conduit housing seam-welded and hot-dip galvanized—permitting installation in shallow trenches.
3. Double coating of high melting-point asphalt, reinforced with felt wrapper—assuring long life and low maintenance.
4. Stuffing-box preseal rings on ends of conduit protect against water damage during construction—permitting installation regardless of weather or trench conditions.
5. Simplified connector speeds coupling of 21 ft. prefabricated sections in the field and facilitates making welded closures.
6. Full-welded conduit design and field-welded connections insure pressure-tight system. Air test may be applied before backfilling.

When specifying conduit for underground (or overhead) steam distribution lines insist on Ric-wiL to obtain these features for the most efficient, maintenance free, permanent system.

All-welded construction means a pressure-tight conduit capable of meeting air-pressure test. Conduit casing is 16-gage corrugated iron, seam-welded and hot-dip galvanized after welding. Simplified connector is readily welded to smooth conduit ends, held in place by drive clamps . . . *Ends of conduit are presealed* at the factory with a heavy pre-cast cylinder to protect insulation during storage on the job and installation—regardless of water conditions encountered . . . *Triple protection against the elements* is insured by Ric-wiL specifications for conduit covering. First, a thick coating of high melting-point asphalt is applied over casing. Second, asbestos felt is tension wrapped around conduit before asphalt is set. Third, another coating of asphalt is applied, which is finally protected by spirally wrapped heavy kraft shipping paper . . . *Installation is greatly simplified,* saving time and money on the job. Prefabricated 21 ft. sections, also prefabricated accessories—including expansion loops, elbow, tee-branch and anchor units, are furnished with ends fitted for easy coupling in the field. Because of the conduit's inherent strength, only 18" of ground cover is required, even under trucking roads, minimizing excavation and back-fill. Pipes can be turned in conduit so that all pipe welding is done on top. Installation interferes little or none with other construction.

If you have not yet used the full-welded Ric-wiL Prefabricated Insulated Pipe Units, specify them on your next job and be assured of the best. Descriptive Catalog on request.

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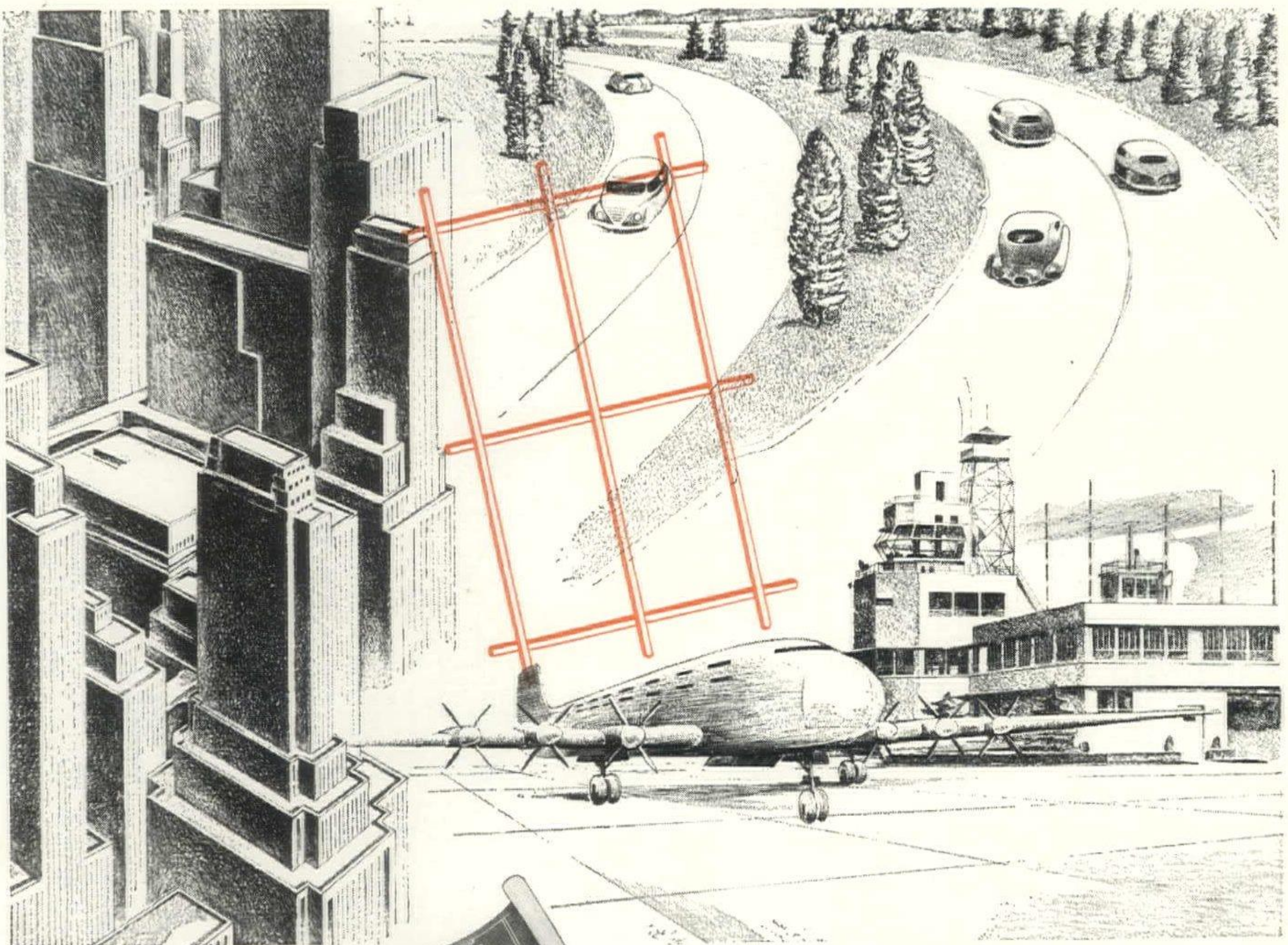

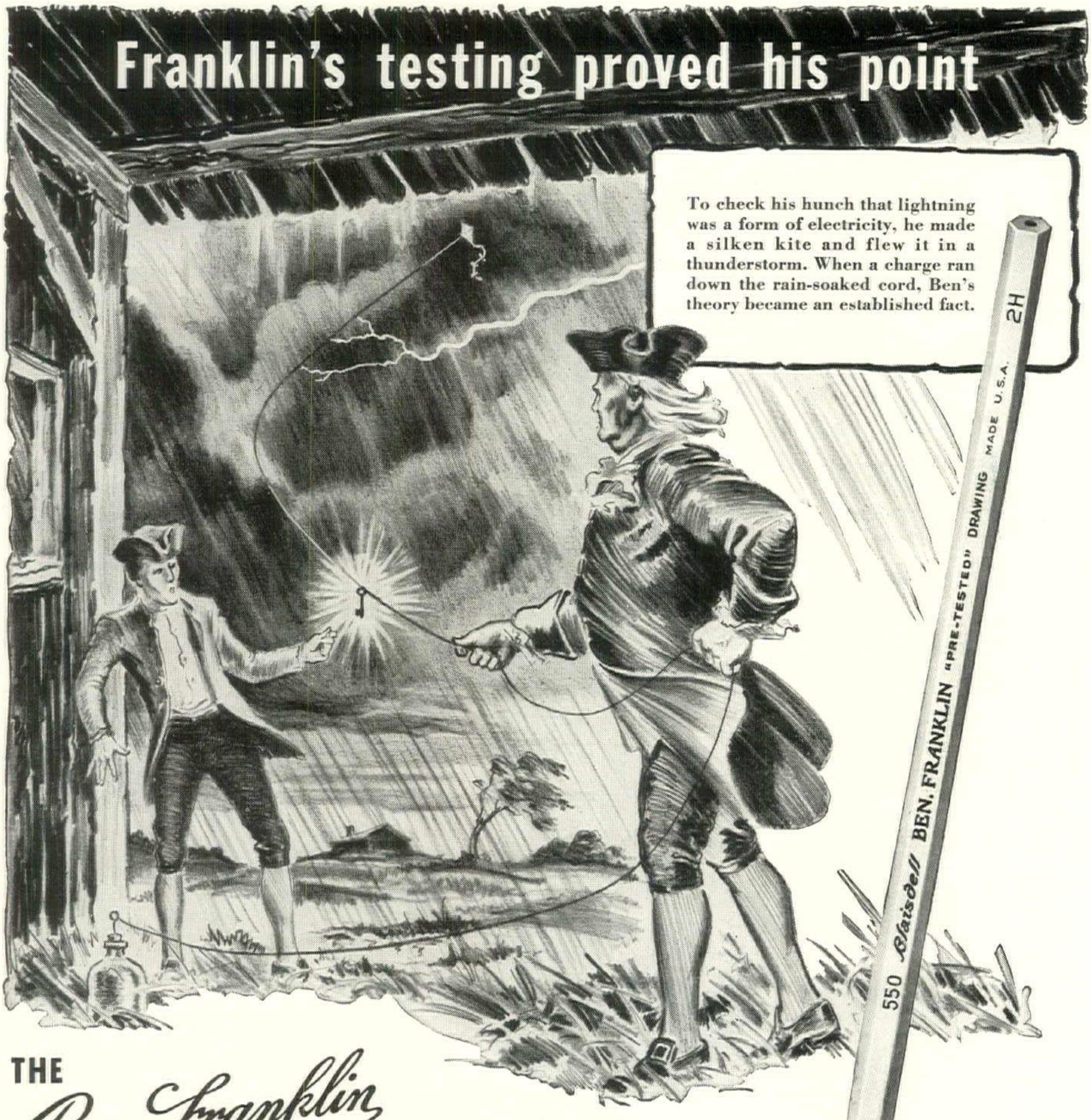

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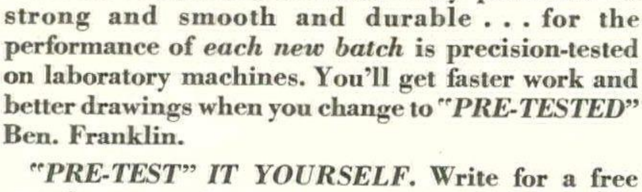
"PRE-TEST" IT YOURSELF. Write for a free sample, naming this magazine and the grade you wish.



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FITS ALL NEW CRANE FAUCETS
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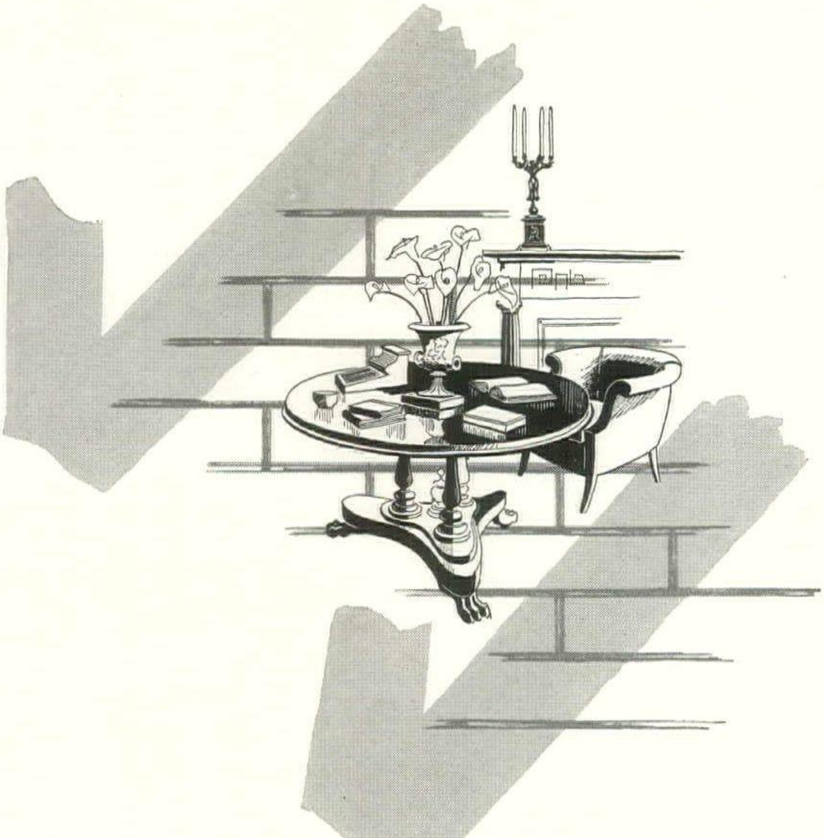

double check

leading architects this year voted House & Garden the best authority on building and architecture*... *leading decorators* this year voted House & Garden the best authority on interior decoration.*

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This proven acceptance by both top professional people and top families is a double guarantee of House & Garden's influence among people who count.

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*Survey made in May, 1946. Complete report available on request.

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The guide you'd pick would be a woods-hardened veteran. He'd know the trails and he'd know the game. You could count on him to make your trip a success.

Planning an air-conditioned building isn't sport, but it has its pitfalls. An experienced guide can help you avoid them. Carrier is the most experienced firm in the air-conditioning field. Carrier engineers have co-operated successfully with architects in every part of the world. Teaming up with architects and consulting engineers, they've air-conditioned famous hotels, leading hospitals, huge department stores and great public buildings. Carrier installations are noted for efficiency and economy.

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that inhibits many molds and bacteria growths. (Think what this means to sanitation and odors in kitchens, bakeries and locker rooms.)

that is static-draining, non-sparking, non-dusting, non-denting under ordinary point loads. (Think of mills and factories.)

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that comes in several colors and is monolithic —no joints. (Applied only 3/8" thick over concrete or good wood.)

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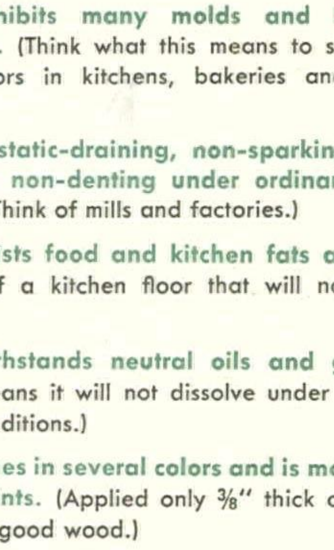

These claims for Hubbellite are conservative, but we realize they sound like an awful stretch, just stated baldly like this. We have records of tests from impartial scientists and also of actual installations. Will you write for literature on the particular feature of Hubbellite that interests you most? Or better—ask for the complete account. You never know when you'll get a call for any one or all of Hubbellite's qualities. Write

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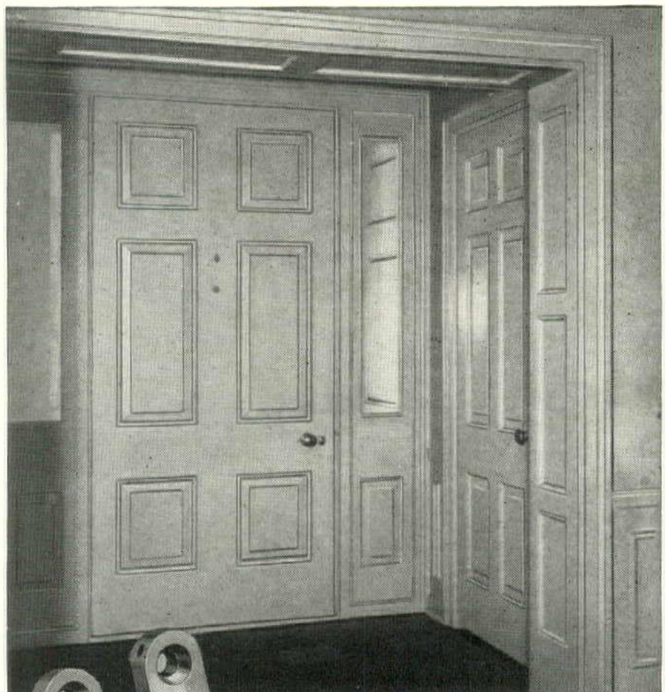
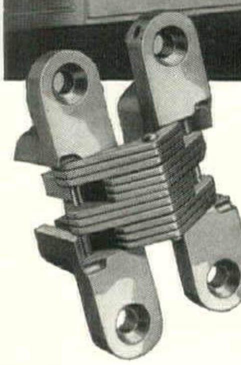
A Modern Home Needs a Modern Hinge





BUT JUST WHAT IS A "*Modern* HINGE"?

It's one, of course, that is completely hidden from view. A hinge is a utility—not a thing of beauty—and should be kept out of sight. That's the big, modern advantage of Soss Invisible Hinges. This hinge eliminates unsightly broken surfaces—surfaces marred by protruding butts and, naturally, it provides far greater opportunities for artistically designed doors, cupboards and secret panels. It contributes to streamlined interiors by permitting those flush surfaces that make the home of today so distinctly modern.

Write for the Soss "Blue-Print Catalogue." This catalogue gives full details for the many applications of this modern hinge. Sent free to you on request.

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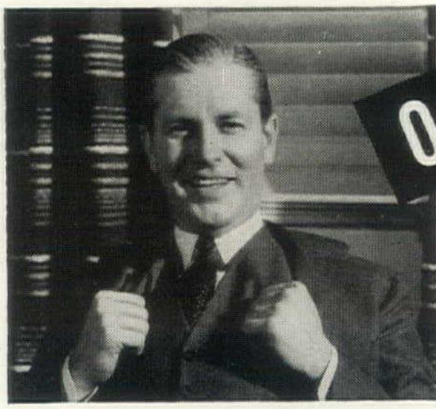
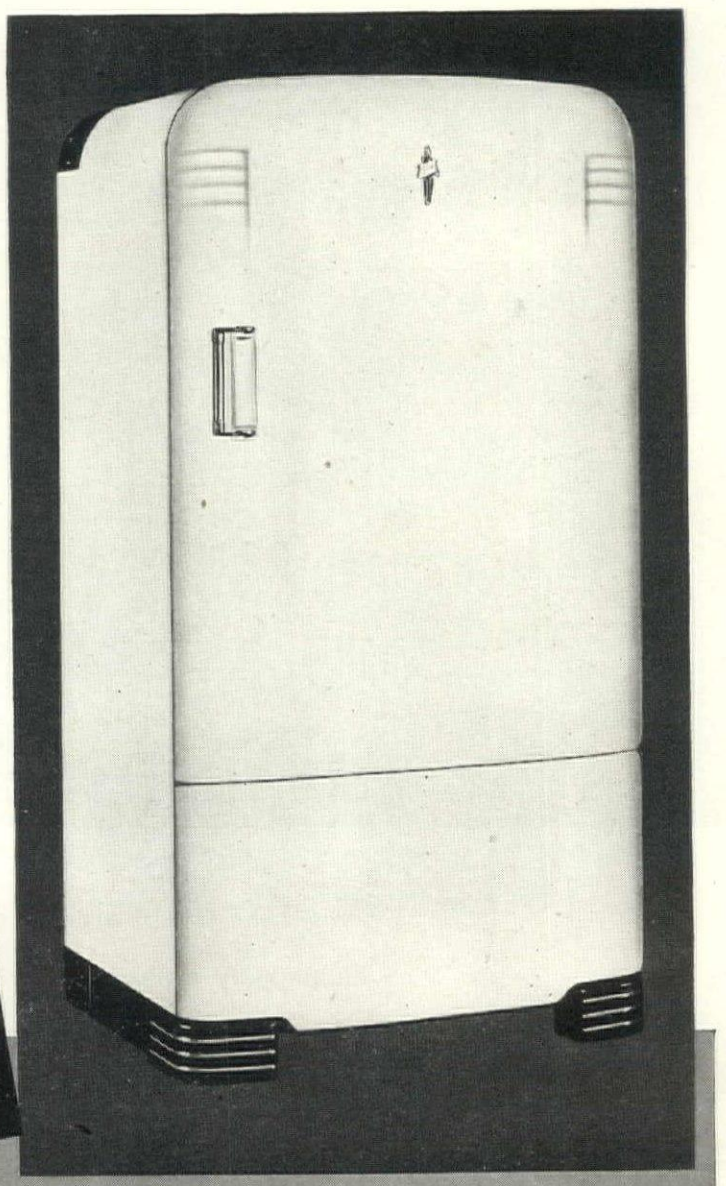
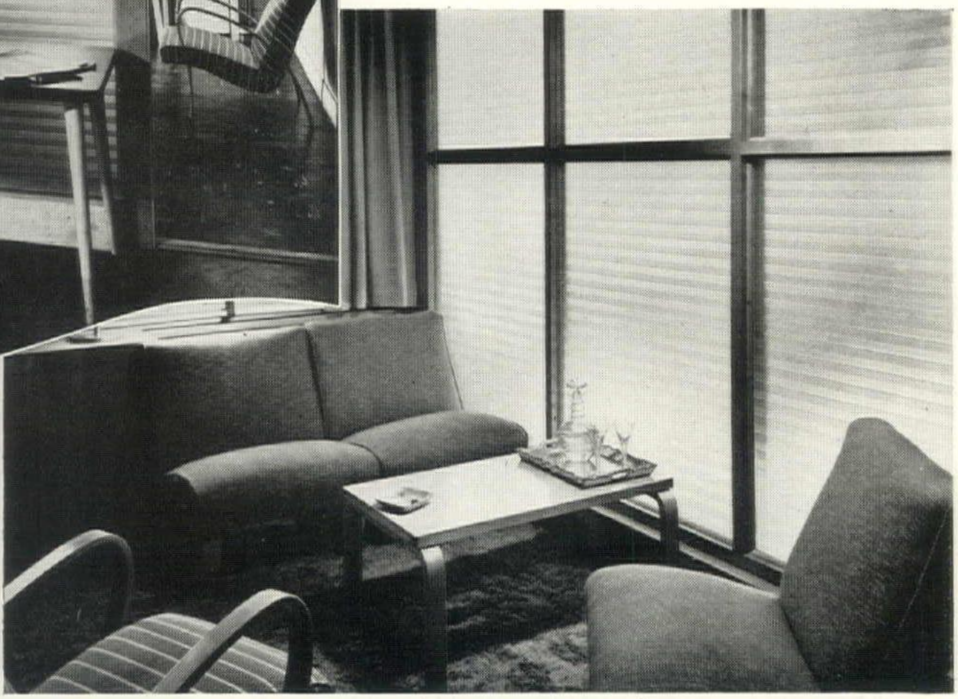
SOSS Invisible HINGES

The Hallmark OF TOMORROW'S HOME





Walls of *Louvrex Glass* overcome cramped space limits



Bertell, Inc., uses glass for more space and light in its New York offices.

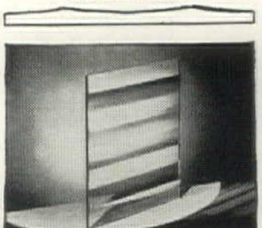
When a top-notch design firm redesigns its own offices for more space and more light by using glass—*that's news.*

Bertell, Inc., New York design and development firm, recently was confronted with severe space problems in reconverting wartime quarters to civilian work. Under the guidance of President Roy C. Bertell, the staff created a foyer, reception room, design department, storage space and executive offices in an extremely limited area.

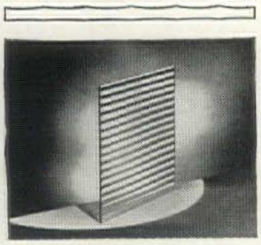
How was this accomplished? No small credit, according to Mr. Bertell, is due to the use of Blue Ridge *Satinol Louvrex*—a patterned glass which adds distinctive delineation and borrows light for otherwise dark areas. Louvrex is one of more than twenty patterns in the Blue Ridge Decorative Glass line. Most of these can be obtained in plain or Satinol finish, in both flat or bent shapes. Made in the Blue Ridge plant in Kingsport, Tennessee, these Decorative Glasses are sold by Libbey·Owens·Ford's glass distributors. Inquiries should be addressed to your nearest L·O·F District Sales Office or to Blue Ridge Sales Division, 9296 Nicholas Building, Toledo 3, Ohio.

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

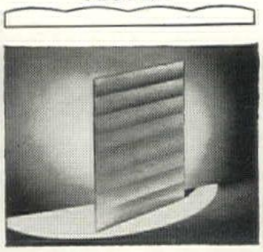
LOUVREX



LINEX



FLUTEX



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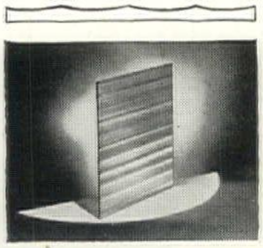
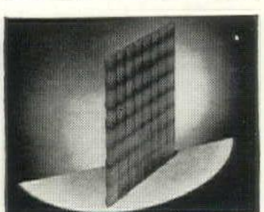


DOUBLEX



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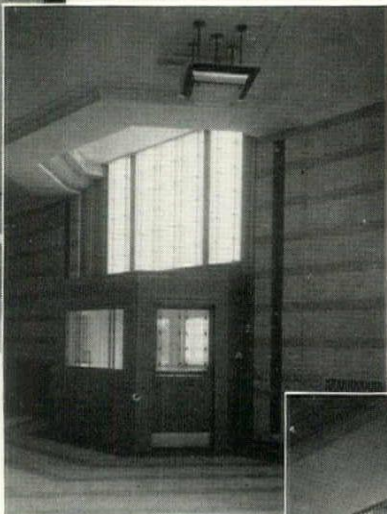
An opportunity to work with architects on hollow metal construction is welcomed by the specialized personnel at Jamestown Metal Corporation.



CANAL STREET STATION

Alan-Balsh-Mills—Consulting Architects
Louis A. Simon—Supervisory Architect
George F. Driscoll Company—General Contractor

Illustrations show exterior and interior views of unusual hollow metal vestibule units.

Versatility of the Jamestown Metal Corporation is further indicated by the louvered doors, radiator fronts, grilles, window trim, metal wainscot, metal counter screen, bulletin boards, and picture moulding furnished for this project.

ARMY E NAVY

Jamestown Metal Corporation

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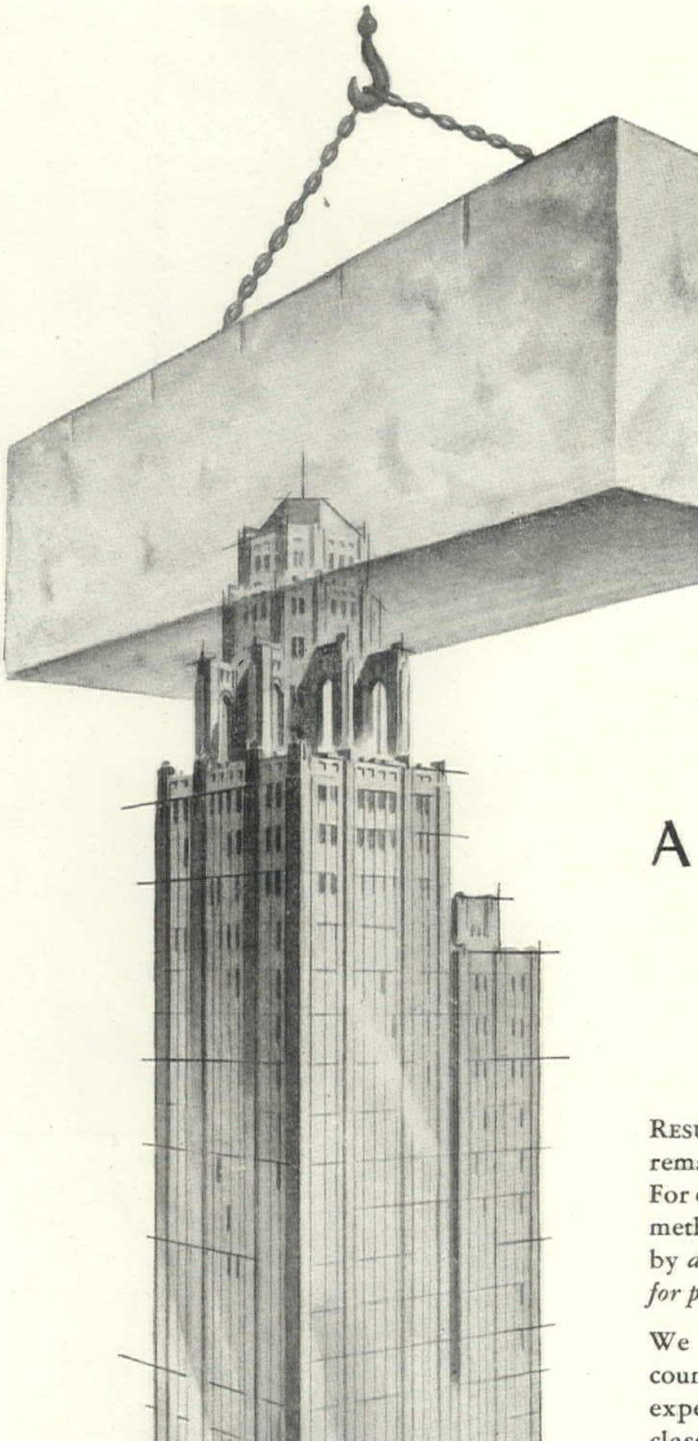

Architect's Gospel

"Which of you, intending to build a tower, sitteth not down first, and counteth the cost?"

—Luke, XIV, 28

RESULT: Beautiful Indiana Limestone, *always available,* remains America's most widely used building stone. For cost is kept low not only by newest machine quarry methods and suitability to machine finishes, but also by *delivery direct from our 21 member companies, ready for positioning.*

We invite you, through correspondence or personal counsel with our Technical Division, to tap a century's experience in every building application of every classic type of "The Nation's Building Stone" . . . at no cost or obligation.

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ARCHITECT'S PLANS AND SPECIFICATIONS ARE WELCOMED FOR COMPETITIVE COST ESTIMATES BY OUR 21 MEMBER COMPANIES

Quality fixtures like these cost no more than others

—and they're just right for today's small homes

Above: Companion Lavatory F 115 ST, Master Pembroke Bath P 2225 K, Compact Water Closet F 2045. Arco Radiator.

WHEN IT COMES to specifying plumbing fixtures for those new homes and modernization jobs, the surest way to please is to recommend American-Standard. No name is better known. No products enjoy greater public acceptance.

The recessed Master Pembroke Bath, Companion Lavatory and Compact Water Closet shown above are typical of the smart, modern styling you'll find throughout the complete line. Like all products bearing the familiar American-Standard Mark of Merit, they are distinguished by their superb craftsmanship, quality materials and sound construction.

With production and delivery conditions improving steadily, you're safe in specifying American-Standard bathroom fixtures, kitchen sinks and laundry trays. Your Plumbing Contractor welcomes an opportunity to figure with you. Fixtures for modernization can be bought on the Heating & Plumbing Finance Corporation convenient F.H.A. Time Payment Plan. **American Radiator & Standard Sanitary Corporation**, P. O. Box 1226, Pittsburgh 30, Pa.

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WIDE OPEN *for More* BUSINESS

..with a

MODERN *Brasco* STORE FRONT

WHEN you make the customer feel at home, the urge to buy becomes almost irresistible! That's what a "friendly front" does for the store, by permitting unobstructed vision of inviting displays *inside* as well as outside.

But beauty to attract the eye isn't all. These new, clear-type fronts are practical too, when complete Brasco Construction is utilized. Sturdy Brasco members are easily adaptable to the infinite demands of modern design, making installation speedy and effective. Exclusive patented features provide ample glass protection. Permanent, reinforced construction in heavy-gauged modern metals assures built-in beauty for lasting economy.

The Brasco line of unified members has been developed, engineered and perfected by over thirty years of experience. It takes the "guess" out of modern store front construction plans. Whatever your design, you can build it best with Brasco.

A Complete Line for Every Design

Brasco MODERN STORE FRONTS

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

National Distribution Assures Effective Installation

One minute did a permanent waterproofing job on this wall! Yes, it took only a minute for the architect to specify Medusa Waterproofed Portland Cement And, that's *all the time* it took, for this cement is mixed and placed exactly the same as regular cement no time wasting admixtures no costly, doubtful waterproofing surface coatings and no extra supervision.

HOW IT WATERPROOFS

Medusa Waterproofing is ground in with the cement during manufacture—is uniformly distributed and locked in the mass lines every pore of the concrete repels all water—is unaffected by time, heat or cold and guards against efflorescence and deterioration.

YOUR CHOICE OF WATERPROOFED WHITE OR GRAY

Specify Medusa Waterproofed Gray for all normal concrete construction and Waterproofed White when a white surface coat is desired. Waterproofed White stays white, for water carrying dirt and soot cannot penetrate to stain or disfigure the surface.

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Both Medusa Waterproofed Gray and White Portland Cements meet specifications set forth under A.S.T.M. standards they have been used successfully for 36 years all over the civilized world. An informative booklet, "How To Waterproof Concrete, Stucco and Masonry" is available to all architects. The coupon below brings your copy.

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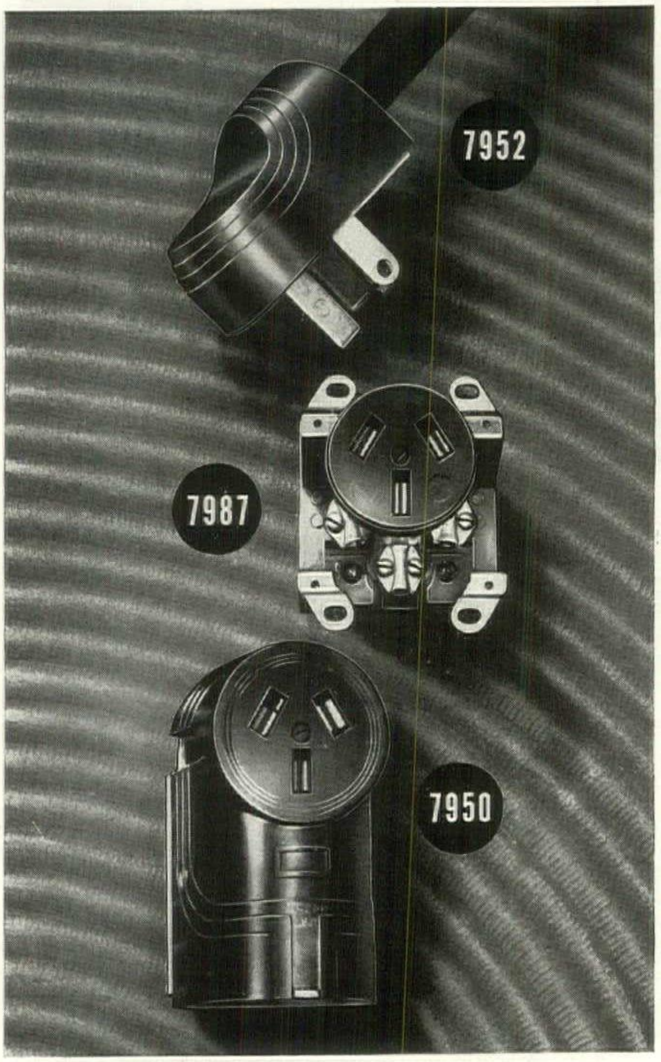
Also made by Medusa Products Co., of Canada, Ltd. Paris, Ontario

H&H THREE-WIRE 50 AMP., 250 V.

RANGE OUTLETS



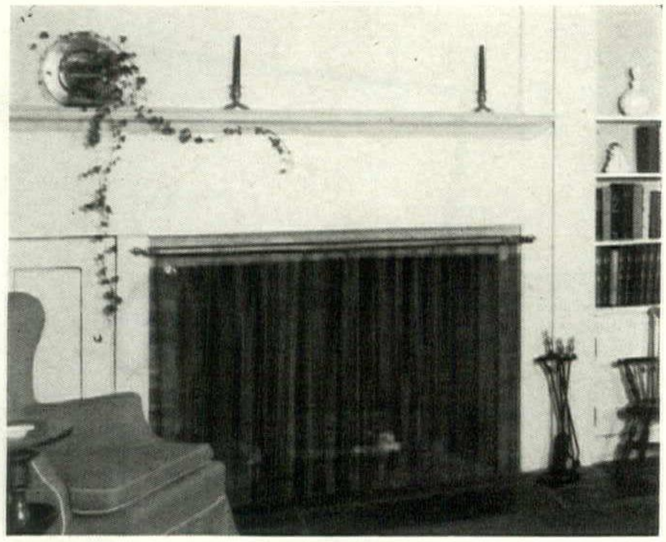
These quickly-wired Outlets and Caps have every improved feature for easy installation *and use.* Straight-in wiring with solderless connectors make fast work of range hook-ups. Cap and Receptacle combination make a neat, compact installation with attractive harmony of design.

Range Cap No. 7952 is of polished black Bakelite, designed to match the Receptacles. Range Outlet No. 7950 is surface type; polished black Bakelite. Also available in white Ivorylite: No. 7950-I. Range Outlet No. 7987 is flush type; polished black Bakelite. If wanted with .040" brush brass plate, specify No. 7990; with .060" plate, No. 7991.

HART & HEGEMAN DIVISION

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

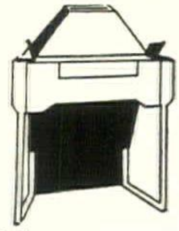
Here's the inside story . . .



BENNETT

Fresh-Aire

FIREPLACE UNIT



You Face New Problems

with the fireplace in the modern home

As you know, a fireplace when burning exhausts more than 200 cu. ft. of air per minute from the living quarters of a house. If tightly constructed, replacement air cannot enter from outdoors in sufficient quantity to supply the chimney draft. Result: partial vacuum, back-puffs, and smoke. If sufficient replacement air *can* enter, it lowers the average temperature of the entire house, cold drafts sweep the floor and automatic furnace controls are out of balance.

In sharp contrast, the *Bennett Fresh-Aire Fireplace Unit* draws replacement air from outdoors, through heating chambers, and circulates it into the living quarters—warm instead of cold. Result: no uneven temperatures, no interference with heat controls, and a net gain in evenly distributed warmth.

The benefits of this principle have been well proved in over 20 years experience and are especially important to you—in designing the modern, fully weather-stripped home with central heating.

There are four additional reasons why so many *Bennett Fresh-Aire Fireplace Units* are specified. 1—Thoroughly ventilates and "refreshes" the air. 2—Broad freedom to design the mantel . . . normal brick firebox sidewalls . . . no floor grilles. 3—Serves as a complete form for *smoke-free* internal proportions of throat dampers, smoke chamber and shelf, etc. 4—The small first cost is quickly offset by savings in construction and fuel.

For camps, summer and southern homes—places without furnace heating (also basement "playrooms") the *Bennett Warm-Aire Fireplace Unit* is recommended.

Flexscreen
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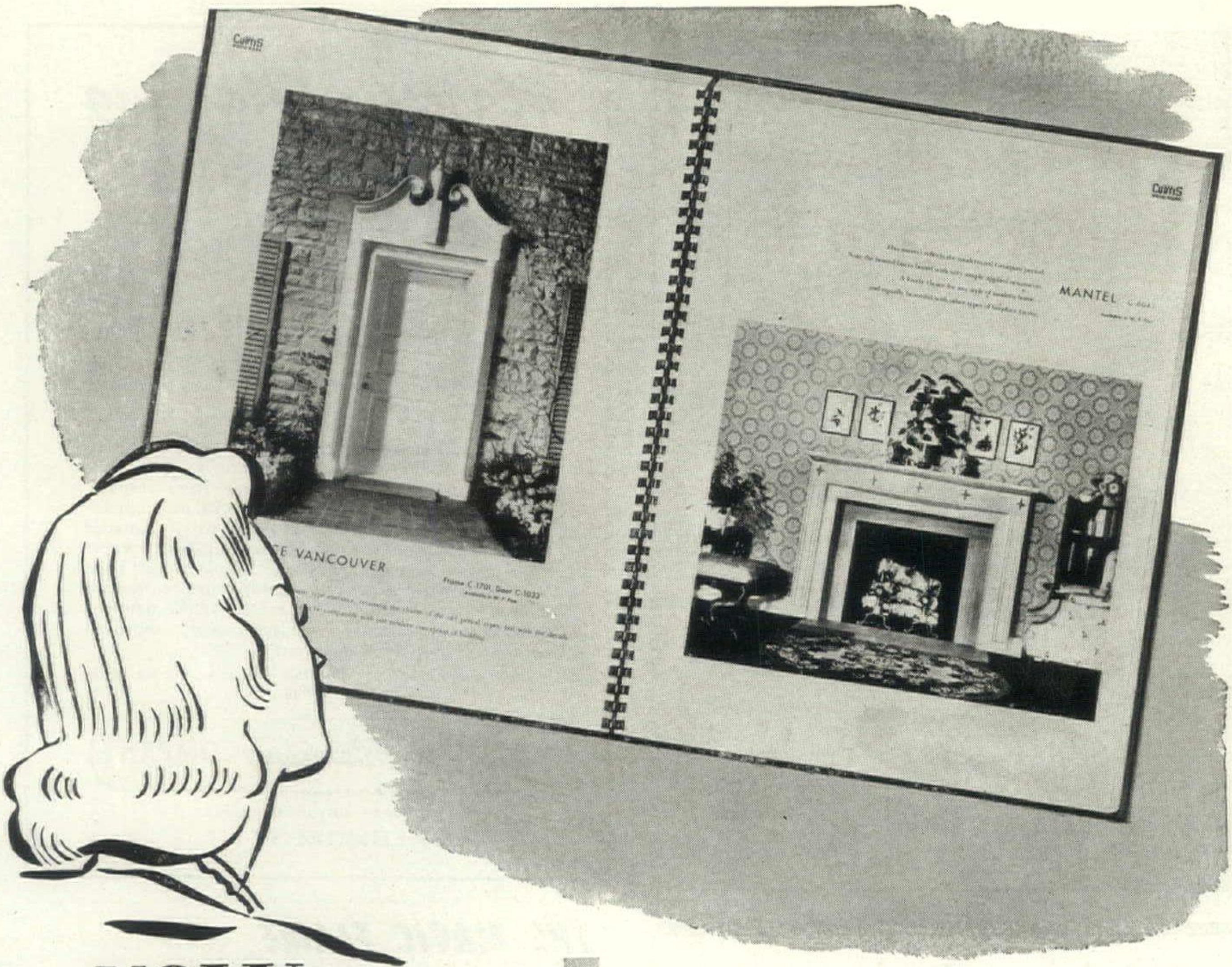

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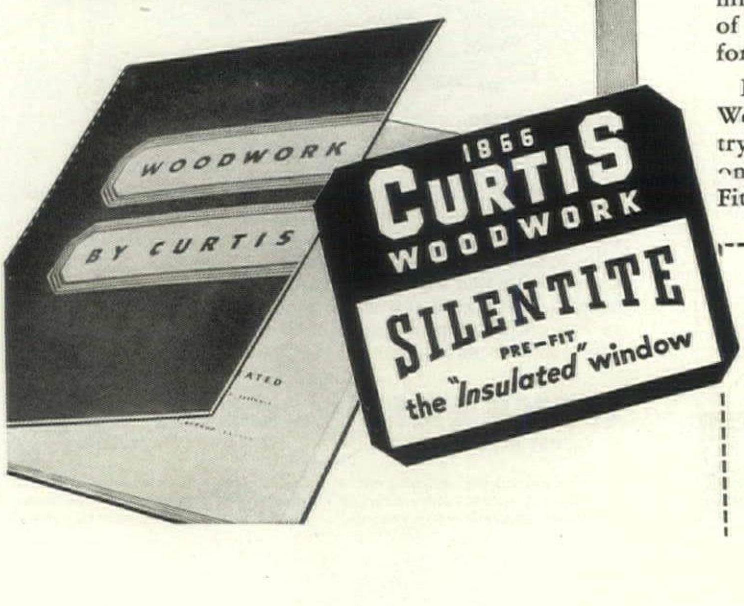

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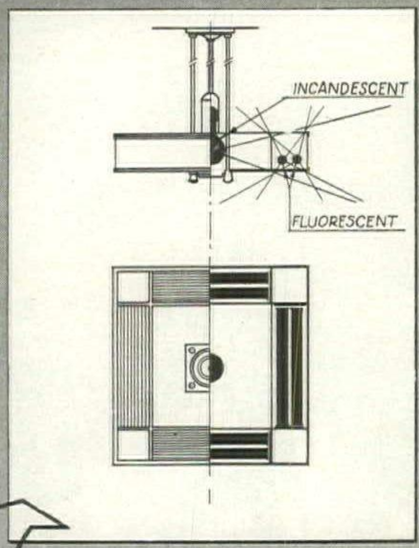

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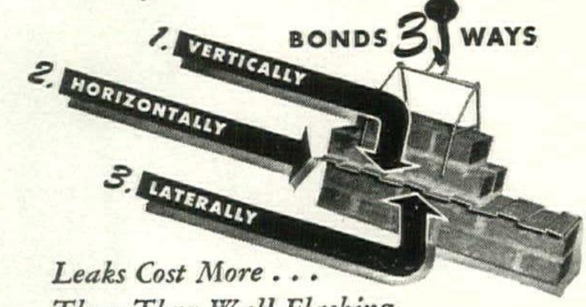

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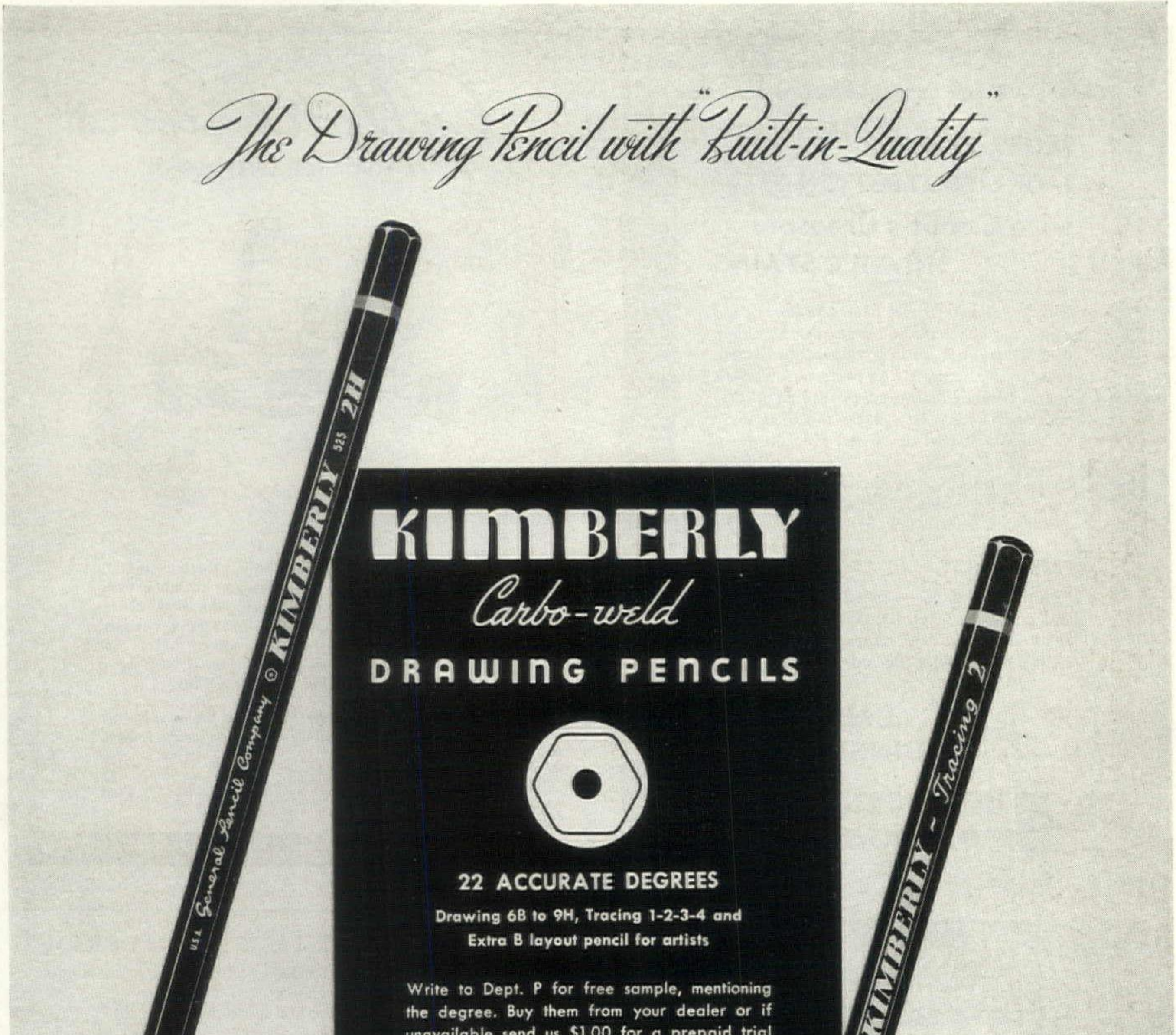

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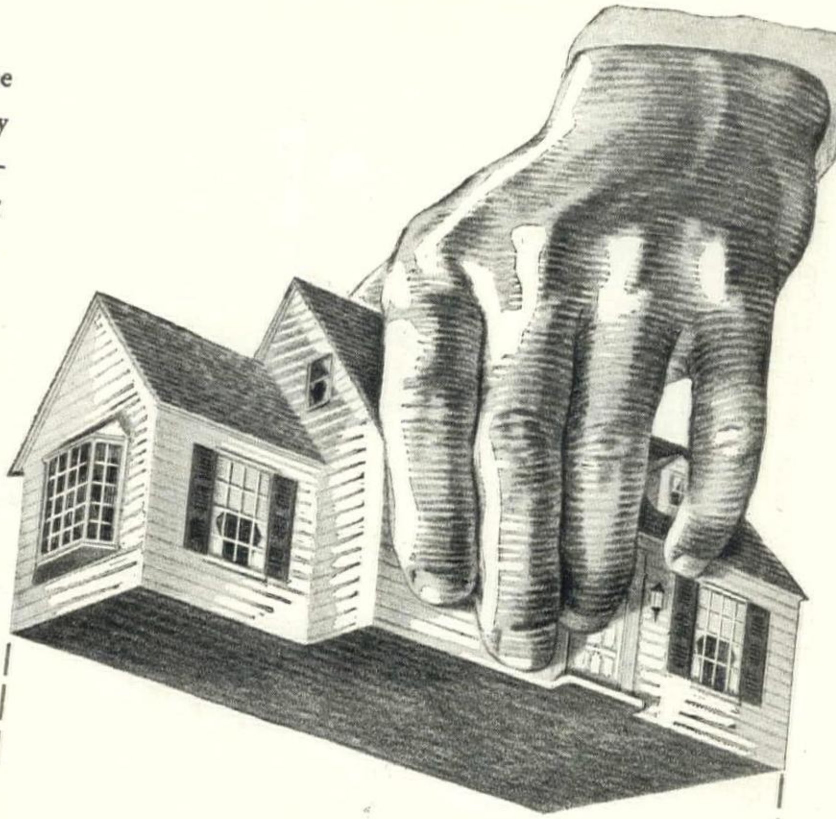

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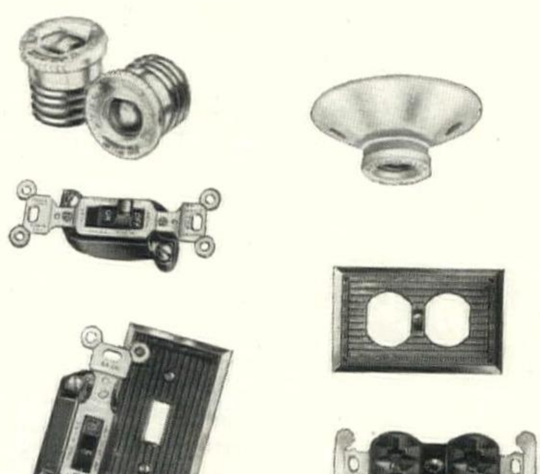

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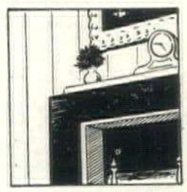

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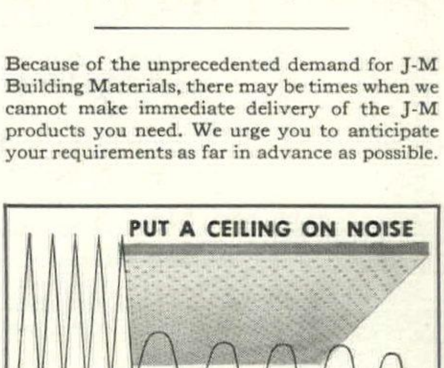

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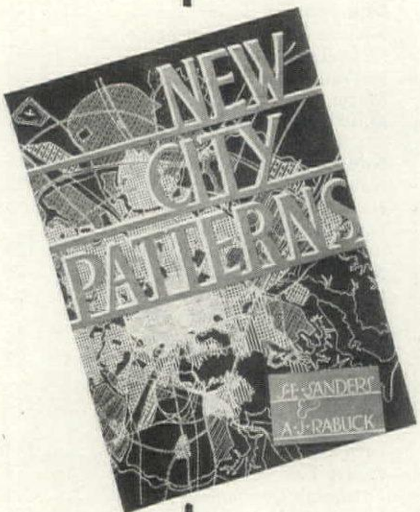

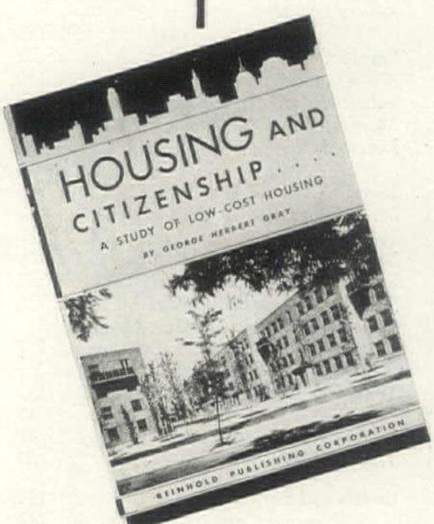

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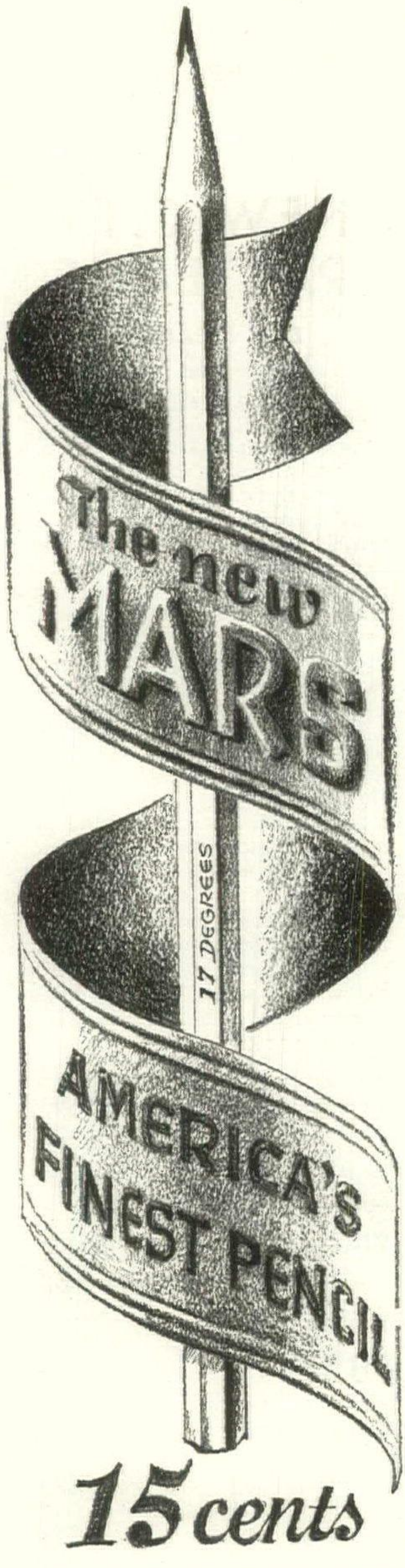

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OBSERVATIONS

A LOT OF ACTIVITY GOES ON IN THE EDITORIAL OFFICES THAT NEVER RESULTS IN PUBLISHED MATERIAL. Miscellaneous correspondence piles up, related to architectural matters, but not publishable for one reason or another. Sometimes it comes unsolicited, like the letter before me, condemning the qualified hospital architects' list, which ends with, "This is a personal letter, not to be published." Sometimes we instigate correspondence, through what may be an over-extended sense of duty to the profession we publish for.

•

FOR EXAMPLE, THE MOST RECENT OF THE POPULAR HOME MAGAZINES TO BEGIN A PLAN SERVICE SENT US A RELEASE ANNOUNCING ITS SCHEME. Six very fine architects were designing houses for that magazine, which would publish them and then sell plans and specifications—ten dollars for the first set and five dollars for each additional set. The home magazine felt it was not bypassing the architect because it would send each plan buyer, along with his merchandise, a letter which said, "you may wish to consult a local architect on adapting these plans. . . ."

Maybe it was none of our business. Maybe we were wrong, but we wrote to that magazine, in part, as follows, and sent copies to the six architects:

"Editor, Blank Magazine:

You are to be congratulated on the excellent selection of architects . . . This fact makes the bald announcement that the plans and specifications are for sale for ten bucks all the more astounding. You must know—surely all those swell architects do—that there are going to be some pretty ghastly simulations of your stock designs built in the wrong places all over the country. The very excellence of the designs will make it more impossible for a local builder to carry them out without proper supervision . . . I'm familiar with the argument that these are **better** *stock plans than your readers can buy from a local lumberyard, and are therefore a step forward . . . that they bring good architecture to the man who can afford to buy a house but has only ten dollars in his pocket to pay an architect . . . If this is so, then the various schemes for selling ten dollars' worth of architecture with* **some** *control—approval of the region and the site, insistence on architectural supervision, etc.—are surely better.*

Editor, Progressive Architecture"

THE REPLY WENT AS FOLLOWS:

"Editor, Progressive Architecture:

Having just completed a coast to coast trip . . . I am definitely convinced that **anything**—*and I say* **anything**—*that contributes to or tends to influence, even in small measure, better houses for the average family, both in design and construction, is a step in the right direction . . . I know each one of us is primarily concerned with his or her own problems, and prestige, but somewhere along the line the ultimate homeowner deserves some consideration . . . You know better than I do how very busy architects are at the present time and how few of them can afford or are willing to spend time designing the average small house . . . Don't you sincerely believe that the architectural profession, like doctors, has a social obligation to help provide a better environment for families of modest means?*

Editor, Blank Magazine"

•

ANYONE WANT TO ANSWER THAT LETTER? In the meantime, the six architects began reacting. Some of the correspondence follows:

"Editor, Progressive Architecture:

I can't quarrel with you. Anyway, it cost me more to design the house than the fee I got from the magazine.

Architect A"

"Editor, Progressive Architecture:

There is nothing I can do but agree wholeheartedly with you . . . the houses are never built in strict accordance with the plans, and are usually built by someone trying to save money on architects' fees . . . However, in countless towns and small cities there are no architects for these people. I can think of no other way for the profession to help . . . Perhaps it's better to give these people some exposure to decent design, even though they may not carry it out properly, than to have it completely inaccessible.

Architect B"

"Editor, Progressive Architecture:

The carbon of your letter came at a time when emotions in our office were already strong on the subject . . . Dear Doris Blake: We are being asked to give up our virtue (architectural) in the interest of better architecture for the subscribers to Blank Magazine. What we want you to tell us, Doris, is . . . should we? . . . If there is enough of a principle involved in withdrawing from the project and if you see that as the course which would do the profession and the residence building public the most good, we could be persuaded to do so . . . Please tell me what I should think. I place my little hand trustingly in yours.

Architect C"

•

WE REPLIED:

"Dear Architect C:

Isn't it a little late to consider withdrawing? If the preparation of stock plans for sale is wrong, it was wrong before I wrote Blank Magazine. Doris Blake doesn't feel, dear Constant Reader, that you have a moral right to back out now for that reason. May this be a lesson to you.

Editor, Progressive Architecture"

•

HE LAMENTED:

"Editor, Progressive Architecture:

If we are going to sin, it should at least be profitable or fun.

Architect C"

•

THEN WE GOT A COPY OF THE FOLLOWING LETTER:

"Editor, Blank Magazine:

We are concerned about our relations with Blank Magazine. As we review the correspondence it becomes evident that there has not been a meeting of minds . . . As the house now stands we are unwilling to have it published under our name. We could feel the design justified for one specific client . . . but we do not wish to sire this plan for publication and repeated reproduction . . . It is our wish to be relieved of further interest in this project.

Architect C"

•

WE WERE STARTLED INTO EJACULATING:

"Dear Architect C:

My God—the power of the press!

Editor, Progressive Architecture"

Thomas H Creighton