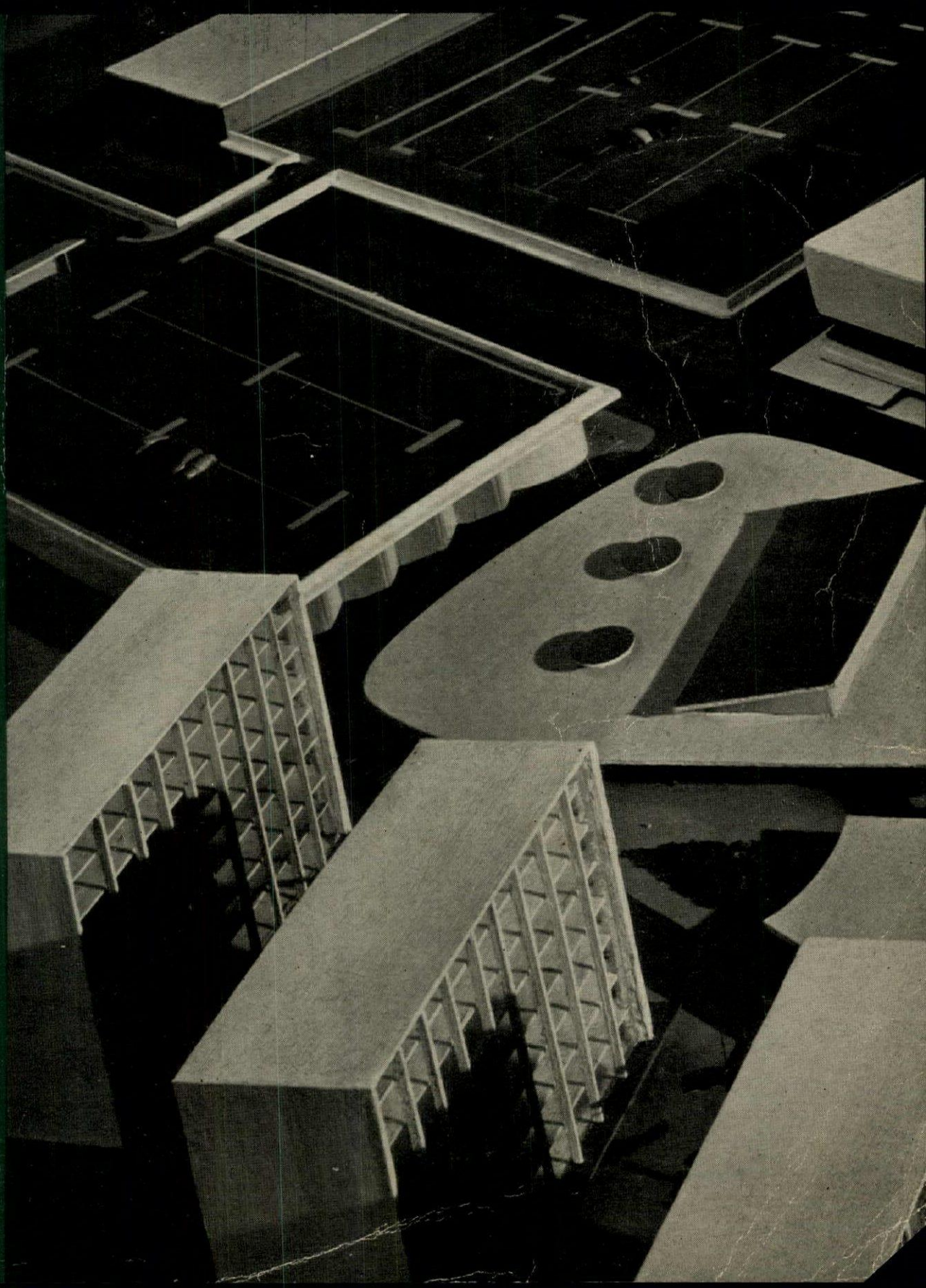


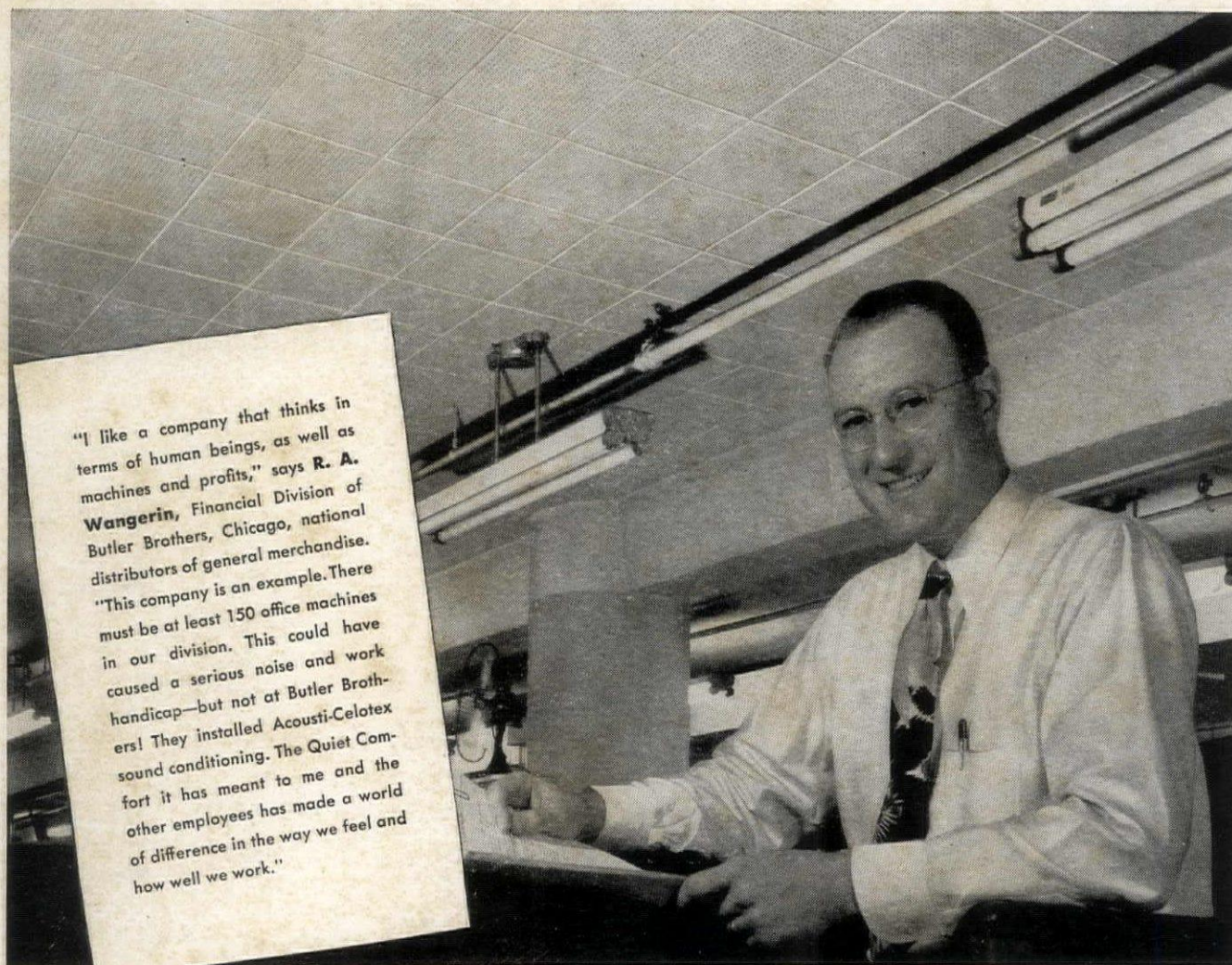
The Architectural

FORUM

Magazine of Building



November 1946



"I like a company that thinks in terms of human beings, as well as machines and profits," says **R. A. Wangerin**, Financial Division of Butler Brothers, Chicago, national distributors of general merchandise. "This company is an example. There must be at least 150 office machines in our division. This could have caused a serious noise and work handicap—but not at Butler Brothers! They installed Acousti-Celotex sound conditioning. The Quiet Comfort it has meant to me and the other employees has made a world of difference in the way we feel and how well we work."

Men at work... *more Efficiently* —thanks to Quiet Comfort

IT'S MORE than smart employee-relations to sound condition. It's good business. Because "There is both practical and experimental evidence," states the *Manual of Industrial Hygiene*, "that noise has been responsible for impaired hearing, fatigue, neuroses, increased blood pressure and decreased working and mental efficiencies."

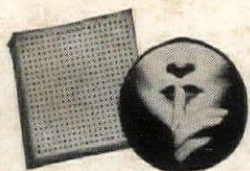
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The Architectural

FORUM

MAGAZINE OF BUILDING

NOVEMBER 1946



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Cover Photo: (Flushing Shopping Center) Ben Schnall

CHOICE OF TENANTS CHOICE OF OWNERS

...Servel stays silent, lasts longer

You'll make a hit with both tenants and owners when you specify Servel Gas Refrigerators for the new apartment houses you design or build. Tenants are enthusiastic about Servel because it never makes a sound, never annoys. As 2,000,000 families know, the Gas Refrigerator offers perfect food protection...plus the most modern refrigeration conveniences.

What's more, apartment house owners profit from Servel's lasting dependability. Year in and year out, this modern refrigeration keeps giving the same efficient service it did when new. Operating and maintenance costs remain low.

These unmatched advantages explain why Servel Gas Refrigerators have been the pop-

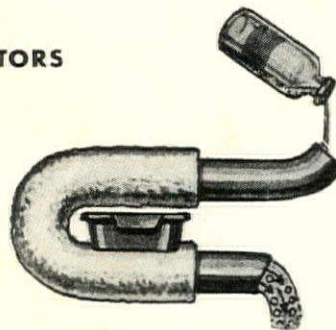
ular choice for years in outstanding multiple dwelling developments. Typical is their pre-war installation in New York's Castle Village and London Terrace, as well as in Washington's modern Alban Towers Apartments. And today, as a result of Servel's top-flight war-time performance, the demand is greater than ever. Thousands of families, who put up with noisy, troublesome refrigerators during the war years, have decided their next refrigerator will be a silent, long-lasting dependable Servel.

Plan now to provide outlets for Servel Gas Refrigerators in your current designs and construction work. For complete information on this famous refrigerator, consult Sweet's Catalog. Or write today to Servel, Inc., Evansville 20, Indiana.

HERE'S WHY SERVEL IS DIFFERENT

Servel stands out with both tenants and owners because it is the *only* refrigerator that offers permanent silence and lasting dependability. These advantages are the result of a basically different method of operation. Here is a simple explanation of the big difference that makes Servel outstanding.

ALL REFRIGERATORS COOL BY EVAPORATION



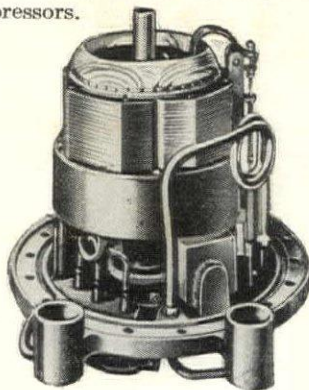
When a continuous stream of ammonia or other refrigerating liquid and a continuous stream of air are poured through a bent metal tube, evaporation takes place inside the tube. This cools the outside of the tube and causes refrigeration. The evaporated ammonia goes off in vapor gas. Since in a practical refrigerator the supply of refrigerant is limited, it must be recovered and used again.



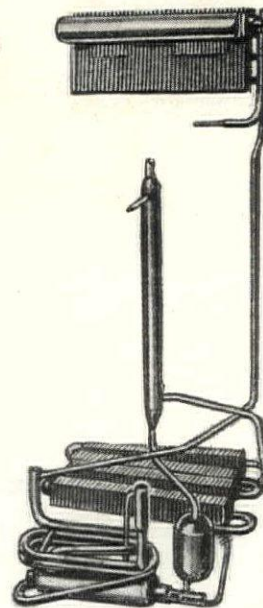
BUT SERVEL CHANGES VAPOR BACK TO LIQUID WITHOUT MOVING PARTS


HERE'S THE DIFFERENCE

In an electric refrigerator, the vapor is compressed back into a liquid by use of machinery. This machinery consists of a motor, valves, pumps and compressors.



In the Gas Refrigerator, the vapor is changed back into a liquid by first being passed through water. The water absorbs the ammonia. The mixture is then boiled by means of a tiny gas flame. The ammonia is driven off in the form of hot ammonia vapor. Cooled by passing through pipes, it condenses again into liquid ammonia. Not a single moving part is needed.





Looking Forward... a Tremendous Market

It cannot be done now of course. Neither materials nor labor are plentiful!

But hundreds of thousands of homes have one or more rooms with *cracked* plaster . . . embarrassing and dangerous. The time is coming when they *must* be repaired.

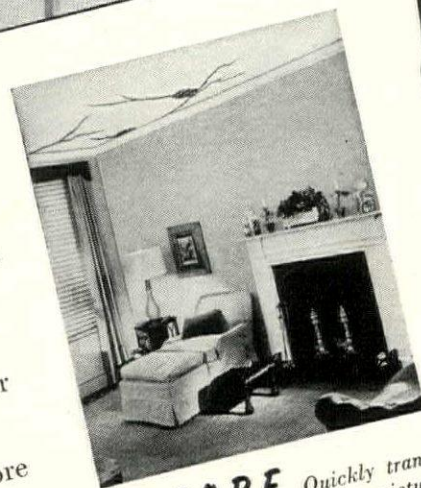
Upson Panels provide a tested answer. Upson Panels of lasting CRACKPROOF beauty have been successfully used to re-cover ugly cracked plaster in thousands of homes.

It is easy and quick to apply Upson Panels of lasting beauty over the old plaster. The entire job is finished in a day or two. No waiting for plaster to dry. No muss—no fuss—no penetrating dust to seep all through the house.

As with all good products, Upson Panels are not yet in full supply. But it will pay you and your customers to wait a little longer. An Upsonized ceiling is permanent—beautiful—forever CRACKPROOF!

THE UPSON COMPANY • LOCKPORT, N. Y.

Upson Products Are Easily Identified by the Famous Blue-Center



BEFORE Quickly transformed. Notice in the larger picture how Upson Panels give new beauty to the ugly cracked plaster shown above.

UPSON



PACEMAKER IN CRACKPROOF PANELS

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BUILDING MONTH. In Socialist England, in authoritarian Russia, in the new Fourth Republic of France, it was all the same—governments were failing to house the veterans. And last month in the U. S. many a sober-minded citizen was ready to say that the schizophrenic Veterans Emergency Housing Program—half industry, half government—would not work here either. Six months ago when Congress belatedly gave the President the Patman Act, the President gave the country a huge housing goal and turned the program over to his mighty-armed Expediter to boss. Wilson Wyatt, young, dynamic, optimistic, called on Building to repeat its war performance, to forget “normalcy.” He asked for a two-year housing crusade. But as the months wore by it became painfully evident that the time for crusading was past; everybody was more ready than Mr. Wyatt to call the war over. Not even the veterans organizations, were ardent in their support.

Every anticipated trouble and a good many unanticipated ones beset the program. Materials were short and stayed so. Prices were high and went higher. Markets turned black and got blacker. Land prices skyrocketed. Prefabricators always lacked something to keep production lines moving. Controls piled on top of controls. Only red tape was in long supply. Sure, a lot of houses had been started—perhaps as many as one million units, including temporaries, this year. But a good many fewer would be finished—possibly four hundred thousand. The outlook was dolorous.

Wyatt's Worries. On October 19th Wilson Wyatt had more to chew on than his first decontrolled steak. For a man as smart and as sensitive to the public mood as Wyatt, the breakdown of OPA must have seemed a body blow to his program. Not many would believe that building controls could stay much longer. Rent control seemed slated for early modification, though not outright abandonment. And although both the President and the Housing Expediter underlined the Administration's determination to keep Building under leash, it would become increasingly hard to hold down prices of building materials and labor in the face of rising prices all across the board.

Mr. Wyatt was far from ready to call it quits and proved it by persuading the President to invoke his emergency powers to take the tariff off lumber imports. At the same time, he dipped into his premium payment pot to offer a \$20-a-keg bonus on nails, which had been selling in the black market at the price of blue-chip stocks. Wyatt also moved to speed guarantee contracts and development loans to prefabricators. Well-founded rumor had it that such airplane titans as Consolidated-Vultee and Douglas soon would get Government blessing.

Building's Mood. Whatever Wilson Wyatt's plans, Building believed that most of his program was doomed. True or false, this belief was the most potent fact in the whole complex situation. Whether the Administration would sponsor a decent burial before the end of the year, or leave the body to the mercy of the new Congress was worth talking about. Builders who are convinced they will be able to realize full value on their houses are going to be reluctant to complete and sell them under current ceilings. Suppliers were not likely to make a strenuous effort to move materials in a ris-

ing market. Over the stretch, what happened to meat would happen to Building.

What Wyatt will be able to salvage from all this is still in question. Priorities and rent controls would be the last to go and included with these probably would be a continued distinction between non-residential and residential building, with a check-rein on the more obvious type of commercial construction. Beyond this is anybody's guess. In fighting a losing battle, Wyatt has earned the respect of his opponents. He has tried hard, talked straight, and if the program has not hit all of its goals, at least the Expediter has done as well as any general who had to fight and win on twelve fronts at the same time.

WASHINGTON

POLITICAL SCRAPPLE

Housing was election's prime issue.

“It's all politics,” said the man-in-the-street. In the most political of the 12 months of 1946 the conviction was strong that public action was vote-bait and that housing for veterans was the most effective bait of all. Sometimes the suspicion was justified; sometimes the charge “Politics!” was a reverse twist on the same game.

Typical of pre-election season was the “revelation” by Senator Owen Brewster, (R), of Maine, of a “long-suppressed” report of the Senate War Investigating Committee. Released by the GOP National Committee, the report took NHA over the coals for “continued and appalling waste of manpower, materials and public funds” during the construction of war housing. “Politics!” shouted the Democrats. Just as typical was the announcement that the Government was ready to remove inflation curbs on federal construction. Some \$600 million was suddenly marked for public works before the end of next June, completely reversing the hold-back order of August. “Political slush fund!” charged the Republicans.

The sophisticated pointed out that policy and politics were allied terms; lifting of price controls was a “political gesture”; it was also a major governmental choice in a period of deep economic changes. The fate of the Veterans' Housing program was a political—and a human stake.

On local election fronts, housing was probably the No. 1 political night-stick

In New York, junior Senator James M. Mead charged Governor Dewey with blocking housing by expenditures of "the veterans' trust fund" on non-essential highway projects, added that the Governor had dissuaded city authorities from accepting Federal housing aid "in an arrogant desire to claim credit to himself". Finally 71 veterans spent a night of earnest trespass in the State legislative chamber, passed a resolution demanding that Dewey call a special session of the legislature, concluded their day in Albany with the resolution to support Mead. Replied Dewey: the State of New York's \$35 million emergency housing program was "the most comprehensive in the nation". In nearby New Jersey fellow-Republican Governor Edge announced that he would back a record \$106 million housing program, proposed a ban on commercial construction and considered a proposal for a year's moratorium on evictions, causing the State Chamber of Commerce to wail "New Dealism."

In Illinois, Governor Green charged that Democrats of his State had introduced "spurious" bills to spend 46 millions in state funds for vet-housing at the last session. "This," he said, "was done not to build houses, but to build votes." The Chicago Daily Tribune agreed with the governor but had its own way of linking votes and shelter. It headlined: "If you want houses, vote Republican."

VET LOAN PILE-UP

G. I. lending program swells; will get bigger.

GI Home Loan applications stacked up like the chips of a win-all gambler. About 14,000 loans a week were being asked by vets, a potential amounting to over a quarter of a billion dollars monthly. Veterans' loans represented the biggest home-financing program in U. S. history. Within the 10-year life of the program such a stake might win the U. S. the astounding total of 10 million new homes. Alternatively,

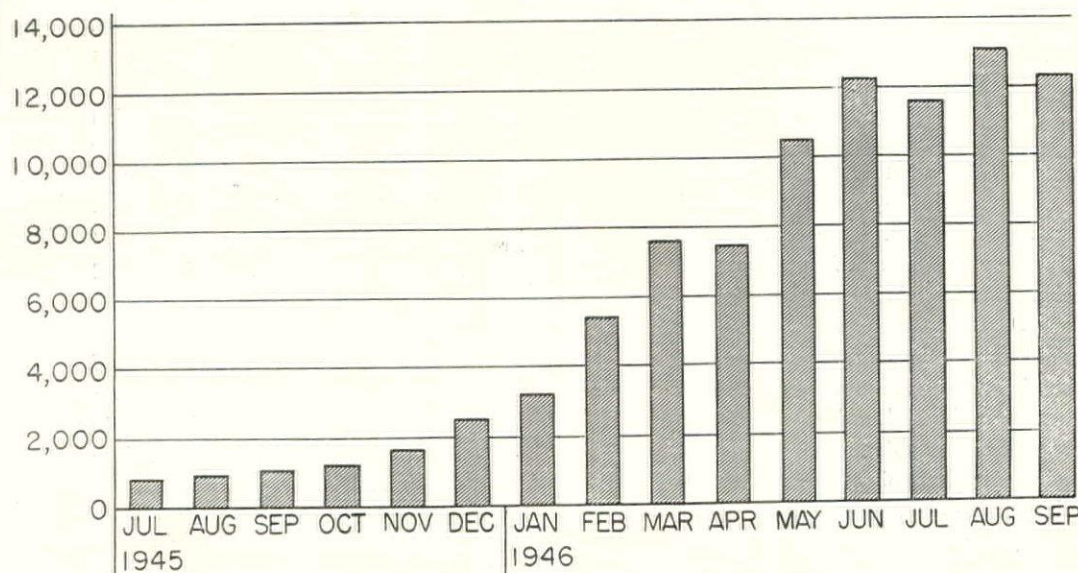
the risks were enormous if a depression brought a reversal in the economic status of home-buyers—a wave of foreclosures might ensue which would level many thousands of best-laid plans.

The Loan Guarantee Service of the Veterans Administration was ready with its first summary totals of home loan statistics. The report: 303,353 loans (worth \$737 million) had been made on houses valued at \$1.6 billion. Applications were flooding in; more than half of the total applications made so far have been received in the last six months; the tempo of VA lending was now running in excess of \$50 million a week on loans actually closed and disbursed.

Government agencies and lending institutions acknowledged that the total program might pile up a whale of mortgage total by the end of its decade of operation. With savings declining sharply, many lenders wondered how they could continue such a rate of disbursement. RFC had promised to backstop banks by buying VA loans; now the eleven Home Loan Banks announced they would provide a similar secondary market for member savings and loan institutions. About half of the outstanding loans guaranteed under the VA program have been made by savings and loan institutions. Prediction by Governor Harold Lee of the FHLB was that they would handle a volume of \$7 billion worth of such loans this year and next. With new ability to lend gained through the Home Loan Bank System they might crowd the mortgage bankers to a corner of the field.

VA, meanwhile, sweated over a problem that admitted of no easy solution. Law required that GI home loans be underwritten only at "reasonable values." Amendments to the original GI Bill enjoined the agency to go along with current costs. The situation, said one VA official, was a little like trying to ride two horses going in opposite directions. Costs, as anyone could see, were headed away from all standards of "reasonable."

AVERAGE WEEKLY VOLUME OF G. I. HOME LOAN APPLICATIONS



COMMERCE DEPARTMENT SHOW in Commerce Building lobby featured new materials for home construction. Above, with Johns-Manville house-model, Construction Division head, J. L. Haynes.

COMMERCE UNDER HARRIMAN

Construction division offers help to industry.

Too many government cooks, builders believed, made for a lot of spoiled broth, but one new hand was welcome—the Construction Division of the Department of Commerce. With the replacement of Secretary Wallace by business favorite Averill Harriman, the Commerce Department got a new lease on popularity. Building looked with fresh cordiality upon Commerce's function as research and statistical coordinator, gave warm attention to the plans of J. L. Haynes, Construction Division head.

Haynes announced a series of studies of keen interest to the construction field: an economic analysis of park-and-shop centers; a complete summary of solutions for blighted communities; a broad program of materials-use research; a continuous check-list of modern standards of construction. Early last month, he staged a building materials exhibit in the lobby of the Commerce Building (see cut) demonstrating the Division's desire to help industry.

Washington felt that Congress would be more generous with a Harriman-administered Commerce Department than it had been with Wallace. Cited as an instance of the legislature's distrust was the fact that Congress failed to approve the Census of Distribution last year, even though business organizations wanted it. The census would probably have been granted without hesitation to a man of Harriman's known sympathies.

LOBBY HOBBY

Registration law makes lobbying a taxable profession.

In Washington there was an out-of-season interest in the Congressional Reorganization Act, one of the late Congress' bequests to its successor. Reason: a minor clause in the law (which streamlines legislative procedures and raises the pay of Congressmen) orders lobbyists to register with the clerk of the House and the secretary of the

Senate giving full account of expenditures, salaries and membership.

Real estate and building trade groups unhappily studied the prospect. Not only might they be required to "step up and be branded" but, by intimations from the Bureau of Internal Revenue, they stood a good chance of losing the privileges of tax exemption on membership dues. Treasury officials have given warning that special-interest pressure groups will lose status as non-profit educational organizations.

Capitol Hill experts were far from sure which organizations and individuals belonged on the register of lobbyists. No one knew, for instance, if Washington representatives of business firms were obliged to acknowledge efforts to get the ear of hometown Congressmen or to nudge favorite Senators into approving a favorite bill. If they did register, ought they put down their entire salaries and expense accounts or some fraction corresponding to the time spent in cloakroom button-holing? There was the expectation that before the 80th Congress was many weeks old some witness would be asked whether he had filed a statement of employment as a paid persuader of the legislature. One place where the question was bound to come up was the housing program investigation sought by Senator Homer Ferguson (R., Mich.).

Building-interests spokesmen were readying their answers. By general acknowledgment, the national associations of builders, real estate men and materials producers made up one of the most influential groups in Washington, but no one had ever made public a summary of the money and manpower expended.

Like any successful combination of strong interests, the real estate lobby had caught critical tar whenever it scored. During recent months it had been credited (and castigated) for effecting the defeat of the W-E-T bill and the pruning of the original Patman housing measure. President Truman lefthandedly complimented: "It appears that the National Association of Real Estate Boards has more influence with Congress than the President of the United States."

Most observers felt, however, that lobby registration implied no moral embarrassment. Many states require lobbyists to register as such, sometimes to pay fees. And partisans on all sides of most big issues have learned the lobby technique: CIO auto workers have already sent in registration forms. Lobbying seemed securely established as a part of democracy's many-cogged mechanism. Whatever the lobby-listing statute accomplished, it probably would not alter the traditional role of what the late Senator Caraway once tagged "The Third House." At month's end, however, at least one building organization determined to stay clear of the whole deal: the Producers' Council announced that it would not register; would suspend all of its identifiable "lobbying".

Mortgage Bankers in Cincinnati

Photos: Kohling, Lehker & Toy



SPEAKERS before the Mortgage Bankers Association annual convention included FHA Commissioner Raymond Foley and former Ohio Governor John Bricker. Seen in banquet pose at left: standing; Guy T. O. Hollyday, Paul J. Vollmar, C. P. Kennedy, John C. Thompson; seated: Bricker, Byron V. Kanaley, James W. Collins and O. M. Corwin. In lobby confab: left to right, R. O. Deming, Jr., Stanley H. Trezevant, Harry C. Peiker, L. E. Mahan, G. Calvert Bowie and G. H. Galbreath.



NEW MBA PRESIDENT was Guy T. O. Hollyday of Baltimore, seen at left, shaking hands with retiring president Byron V. Kanaley. In inter-session groups, left to right, below: Henry Beach, Phil Kleas, Lindell Peterson, R. S. Beachey, Ennis E. Murrey, Hiram S. Cody and Frank J. Mills.



Housing Officials in Cleveland

Photos: Albert J. Willinger



NAHO SESSIONS included speeches by Wilson Wyatt, General Omar Bradley, Senator Robert Taft. At left, E. W. Blum, executive director, Houston Housing Authority, Wyatt, NAHO President Frank B. Wenrich. At speakers rostrum, above, l. to r., Vincent Murphy, Mayor of Newark; Gilbert Harrison, national vice-president, American Veterans Committee; Ernest J. Bohn, Cleveland Metropolitan Housing Authority; Lee Johnson, executive vice-president, National Public Housing Conference.

HOSPITAL FORECAST: Government-sponsored boom ahead

Not even a hospital bed was refuge from the housing crisis—hospitals were stuffing in patients like herrings in a barrel, waiting lists were growing. Last month the Commission on Hospital Care of the American Hospital Association wound up a two-year study with the declaration that 195,000 more beds were immediately necessary.

The prescribed increase was fully 40 per cent over the country's present hospital capacity; its cost would be about \$1.8 billion. Yet the Commission's calculations did not take into account the large number of hospitals due for replacement or remodeling or the grim boom in hospital demand to be created as 20 million ex-servicemen grow older and more ailing.

To meet the need for veteran hospitalization, the federal government was ready with a \$600 million fund voted by Congress late in the last session. Within two years the Veterans Administration would establish a system of general, neuropsychiatric, tuberculosis and domiciliary hospitals. For the general population, Washington aid would produce a \$1.125 billion program of building through grants-in-aid to public and voluntary institutions. Together, these two programs would create the greatest wave of hospital building in history. Unquestionably, also, they would transform the organization of hospital care, initiate an integration of medical facilities that doctors had dreamed of for decades, evolve new forms of hospital design.

Last month the curtain on this new hospital age went up. Preliminary plans and specifications were approved for the first of the VA's network of 89 new hospitals. The President signed the Hospital Survey and Construction Act, initiating \$3 million worth of state surveys of civilian hospital need.

VA's program will pull up the hospital bed-count by 62,400. Size, however, is not its only sensational aspect. Important break with past VA building tradition is government's resolution to lean on private architectural talent for the design of each job. Private planning proficiency has entered into the over-all thinking behind VA's program. Corps of Engineers experts, in consultation with outside architects, York & Sawyer and Robert & Co., composed a standard set of functional requirements for the principle building types. Each of these sets of specifications assert that VA does not intend to "standardize any particular type of architectural design or prototype building, but to standardize components of particular facilities contained within envelope of building: nursing units, clinics, kitchens, etc."

As plans continue to be approved, students of design will get the rarest of out-of-classroom demonstrations—a set of individual answers to standardized prob-

lems, carried into the construction stage. After completion they will be comparable as to actual efficiency. First two designs, by Skidmore, Owings & Merrill and by Eggers & Higgins and Green & James (see pictures) contrast sharply. Now on drafting boards are projects by 43 other firms, among them Kelly & Gruzen, York & Sawyer, Schmidt, Garden & Erikson, Giffels & Vallet, Gill & Bianculli, Kenneth Franzheim and Naramore, Bain, Brady & Johanson. All but eight contracts have been awarded during the last three months, but by the end of the year most will be ready for construction starts.

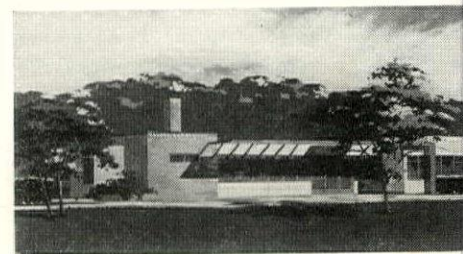
More significant than the VA program for the future pattern of hospital building may be the U. S. Public Health Service-administered Hospital Survey and Construction Act, which authorizes the appropriation of \$375 million in federal funds to go one-third of the way toward financing civilian hospitals and health centers. Congress has also thrown in an additional \$3 million to pay the states for surveys of their hospital needs: to date, 20 states have completed such surveys, 20 others have initiated surveys, and the remaining eight plan to do so.

These surveys finished, the USPHS will approve programs of construction through the office of the Surgeon General and the Federal Hospital Council, a non-governmental advisory group. One such program was already complete last month: the Michigan Hospital Study Committee recommended that the state reduce the number of hospitals from 292 to 118, build new, larger, properly located institutions, double the number of existing beds. This and all other state programs drafted in application for federal grants-in-aid must receive approval through the Surgeon General and the advisory Federal Hospital Council. Allotments to individual states will be apportioned by population and per capita income and will not exceed one-third of the cost of any project.

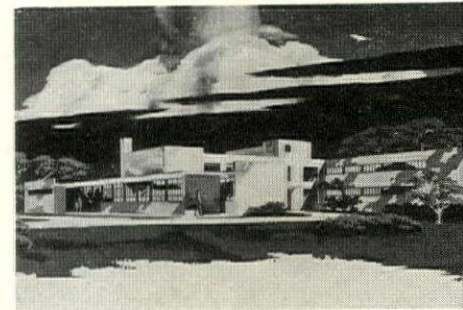
By next February, USPHS will have readied a program of standards for integrated hospital planning and for individual buildings. In charge of this key work, the Hospital Facilities Technical Unit, headed by architect-engineer Marshall Shaffer, has already completed an elaborate preparation of prototype plans. Basic to the Section's thinking has been the conception of hospital service "in echelon"—a front-line-to-headquarters organization of the whole scheme of hospital care ranging from the rural health center equipped and staffed for obstetrics and emergency surgery, through the larger rural hospital, the district hospital and, at the hub of regional service, the large base hospital containing facilities for teaching, research and consultation. While USPHS will not enjoin exact hospital designs upon states and in-

stitutions receiving federal funds, its concepts will influence all work submitted for approval. Tremendously significant, therefore, are its studies both of regional hospital patterns and of individual building forms, now being made available to designing firms and hospital authorities.

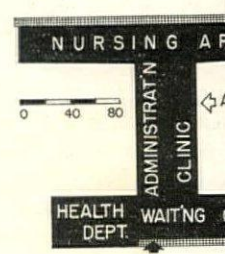
Such programs as these are only the beginning of government's greatly enlarged role in the development of hospital service. They will not by any means meet the long-term need which government analysts say would amount to a \$3.9 billion addition to the existing hospital plant. In the past, hospitals have been built chiefly where voluntary money was available and, as a consequence, 40 per cent of American counties have no hospital facility at all. Only government aid to an even greater degree will provide the sort of coverage which reaches unprejudicedly into rural and urban, low-income and high-income areas.



RURAL HEALTH CENTER is first and smallest unit in medical chain. Primarily for public health services, it will offer both medical care and limited hospitalization.

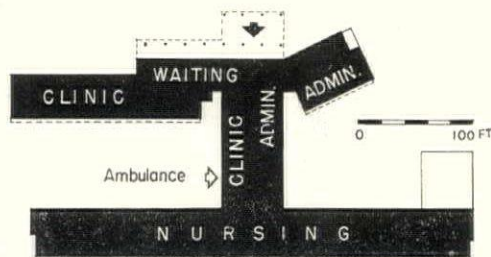
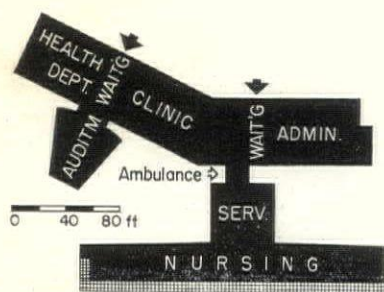
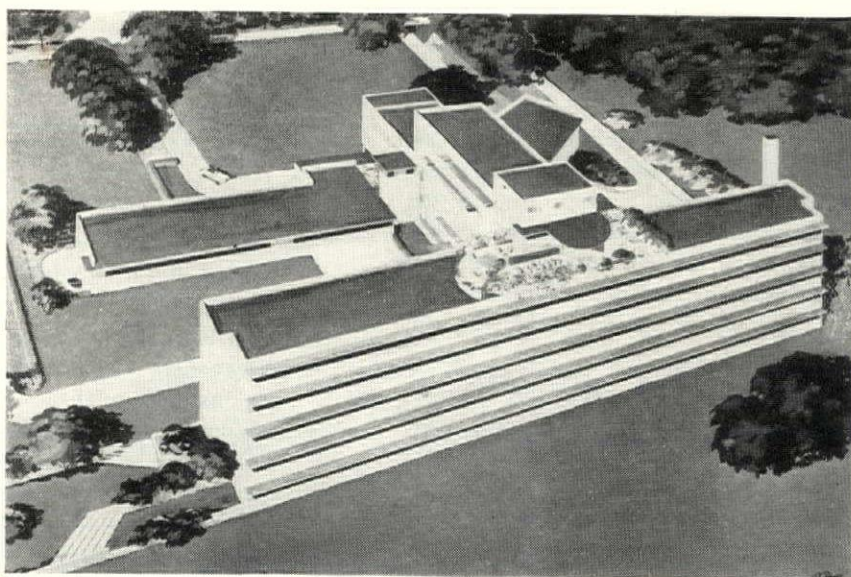
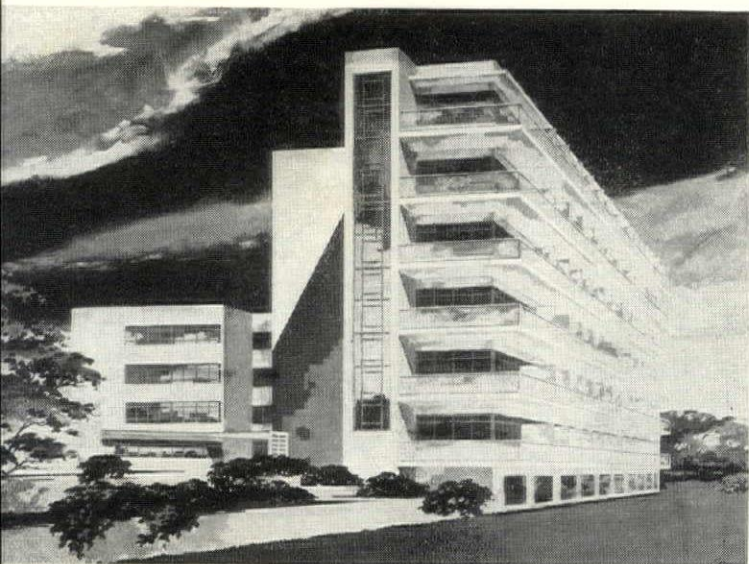


50-BED HOSPITAL suggested as the second element in coordinated hospital service plan is minimum size for adequate care and supervision, but incorporates public health facilities.



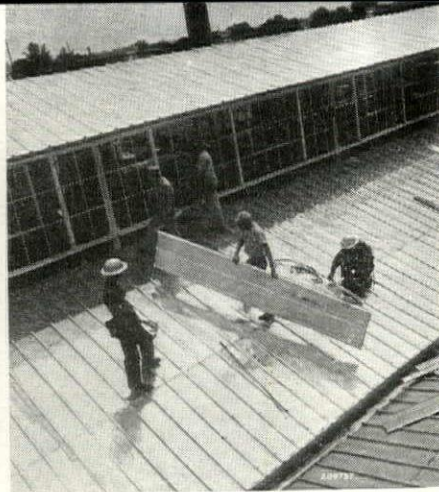


FIRST APPROVED VA DESIGNS are for 1,000-bed hospitals at Albany and Buffalo (above), and Brooklyn (left). Eggers & Higgins and Green & James planned identical buildings for Albany and Buffalo, employing well-tested cruciform plan with centralized control of services. Skidmore, Owings & Merrill met same specifications with strikingly different plan (left) for location overlooking lower New York bay. All patients have view of harbor. Plan segregates nursing units in sixteen-story wing. A central service and elevator unit connects nursing wing to five-story treatment and clinical wing, three-story special recreation block. Unusual entrance scheme separates pedestrian from auto arrivals.



U. S. PUBLIC HEALTH SERVICE STUDIES analyze hospital types into parts of coordinated regional scheme. Understanding of functional requirements produces such forms as 150-bed hospital above, intermediate in the scale ranging from rural health center to hospital for the large urban district. Public Health service standards and point of view will have great influence when agency administers new hospital construction law.

200-BED HOSPITAL for an urban district would possess complete diagnosis and treatment facilities, include educational provisions for internes and nurses, and outpatient clinic department, provide consultation and specialists' services to smaller institutions. District hospital would, in turn, connect with larger base hospital or medical center with advanced research and teaching, consultation and diagnostic services.



ALUMINUM ROOFING by Reynolds landmarks farm buildings. Sheeting, rolled from airplane scrap, is in galvanized-steel price range. V-crimp style roofing (at right) provides good bearing surface.

ALUMINUM BUILDING LINE

Reynolds helps fill gap between production and demand.

Reynolds Metals, which had a prefabricated house design and a prefabricated strip kitchen still up its sleeve (FORUM, March, April '46), was ready with the magic words—"for immediate delivery." It was announced that Reynolds plants were turning a million pounds of aluminum a day into a basic assortment of pre-cut roofing and siding items. While the new materials made no designer turn handsprings, they had the amazing virtue of being here, now, and in quantity, to replace scarce wood and asphalt products.

Reynolds' building line consisted of: aluminum clapboard siding provided with an interlocking flange, aluminum shingles, "snap-seal"-type, weatherboard, corrugated and V-crimp roofing and siding materials and all roof-trim accessories. They possessed advantages of weather-resistance and lightness, and high heat-reflecting qualities (outwards in summer, inwards in winter). Made primarily from secondary scrap, they were low enough in price to compete with sheet steel.

But, in selling aluminum products directly to the home market, Reynolds would probably run into one annoying snag—aluminum's susceptibility to corrosion due to "galvanic action" when in contact with steel or copper. Architects and builders would know the necessity of using zinc-coated nails or rubber washers at all connecting points, but a farmer, roofing over his barn, would unhesitatingly tack aluminum sheeting with steel nails.

By introducing aluminum building components, Reynolds had beaten No. 1 ingot-producer Alcoa into the house-materials market. Reynolds carries more products to stages of advanced fabrication than does its big rival, which currently delivers sheet to carload-or-more industrial customers. Though Alcoa also advertises crimp and corrugated roof sheathing, it is taking no new orders before 1948.

Much of Reynolds competitive strength in the housing field will come from the McCook sheet mill at Chicago which was leased from the RFC this spring. The McCook mill has a capacity of 288 million

lbs. of aluminum sheet a year. Currently, Reynolds is producing 35 million lbs. a month, but the company has a whopping potential level of 60 million lbs., enough to cover NHA's total estimate of 1947 housebuilding needs.

PREFAB TOUCH AND GO

Government financing will spur program.

It was almost time to add up the figures for 1946's sorry prefab total. Even the scaled-down goal of 100,000 homes seemed fantastic now (originally the Emergency Housing Program had called for 250,000 prefab units). Wyatt, glancing over the short span till the year's end, hoped for 50,000.

Getting to the source of a major impediment, Wyatt enjoined RFC to make \$54 million worth of production loans to 11 prefabbers, bridging the reluctance of private bankers to underwrite new firms. Slated to get \$32 million, a 60 per cent slice: the Lustron Co. affiliate of Chicago Vitreous Enamel, which plans to build 30,000 enameled steel units next year. A smaller concern, the Clements Corp., Southport, Conn. may receive \$3 million.

But the prefab game of tag continued. Round and round the office of the Housing Expediter ran the emissaries of proven and unproven makers of factory houses. Round and round, after or before them, ran the guaranteed-contract negotiators of NHA.

At month's end, two contracts had been actually signed—with Homeola and Harman, representatives of the industry's antipodes. Homeola's effective production and distribution had won government sponsorship of its plywood bungalow. The Harman house, a new entrant in the field, sold good engineering and reliance on steel. A third contract was being sealed with American Fabricators, of Louisville, plywood prefabbers.

As other contracts waited, NHA busied itself with studying lists. There was, to begin with, a list of prefabricators whose products or models had received FHA approval. If all of these were suddenly to be provided with needed materials, told to produce at current capacity, what would we get? At a maximum, said NHA, 250,000 units a year.

Breaking down the list, NHA saw, or hoped it saw:

Steel houses: 19 companies with a future capacity of 120,000 units. Expected next year: 80-100,000 units.

Wood frame: 96 companies who turned out 69.3 per cent of all prefab shipments this year (14,631 units by Sept. 1). Expected next year: 60,000 houses.

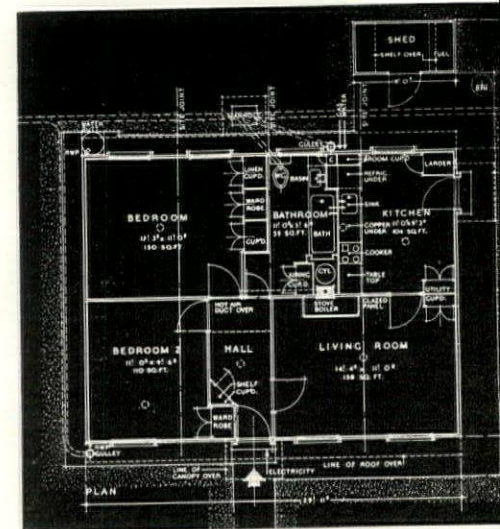
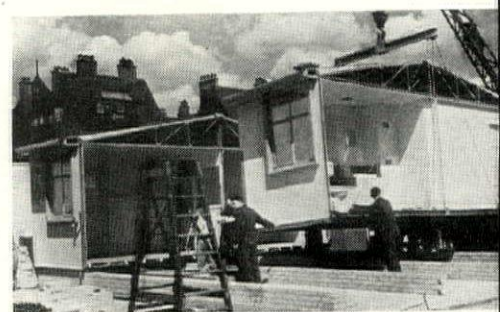
Stressed-skin plywood: 20 companies responsible for 2,375 units this year. Expected next year: 50-60,000 units.

Concrete: 7 companies expected to provide 228,000 dwellings next year.

Wyatt's faith in aluminum, the "natural" prefab metal, and in aircraft, the ready-made prefab industry, seemed ready to be justified last month. Almost every big plane manufacturer suddenly confided an interest in building houses. The aircraft business had shrunk from a wartime maximum of \$16.5 billion a year to \$1 billion. The void left in the big plants was not being filled by the manufacturer of shower stalls, caske shells, movie machines and buses.

Fifteen companies, with an estimated capacity to turn out 220,000 prefabs, were definitely working on house-production plans—Douglas, Consolidated-Vultee, Martin, Beech, Bell, Curtiss-Wright, Fairchild, McDonald, Taylor, Northrup, Lockheed, Boeing, United, North American, Glob and Goodyear. Of these, the first four were deepest in negotiations for government aid.

► Douglas was interested in making the aluminum Lincoln House (FORUM, June '46).



ENGLISH AIRCRAFT PLANTS have already converted to mass house-manufacture. Aluminum house, above, is assembled from prefab quarters, employs constant hot-water system which heats rooms, clothes-drying cupboard

► Consolidated was ready with a similar "sandwich-wall" model.

► Beech was trying to swing a satisfactory deal for the production of the Fuller Dynamaxion (FORUM, April, '46). (Fuller Houses, Inc., meanwhile, announced that it had suspended operations because of financial difficulties.)

► Martin was negotiating for production of the aluminum house devised by the Butler Manufacturing Co. of Kansas City. In contrast with the box-like "Lincoln House," Butler uses no insulating paper core, in general strikes a more conservative note.

NHA, counting some of these in, figures that the housing program for 1947 will require 397 million lbs. of aluminum, 343 million lbs. in sheets, 54 million in extrusions. The 91 million lbs. a month output of the aluminum industry could easily cover this estimate.

HUSTLING HOMEOLA

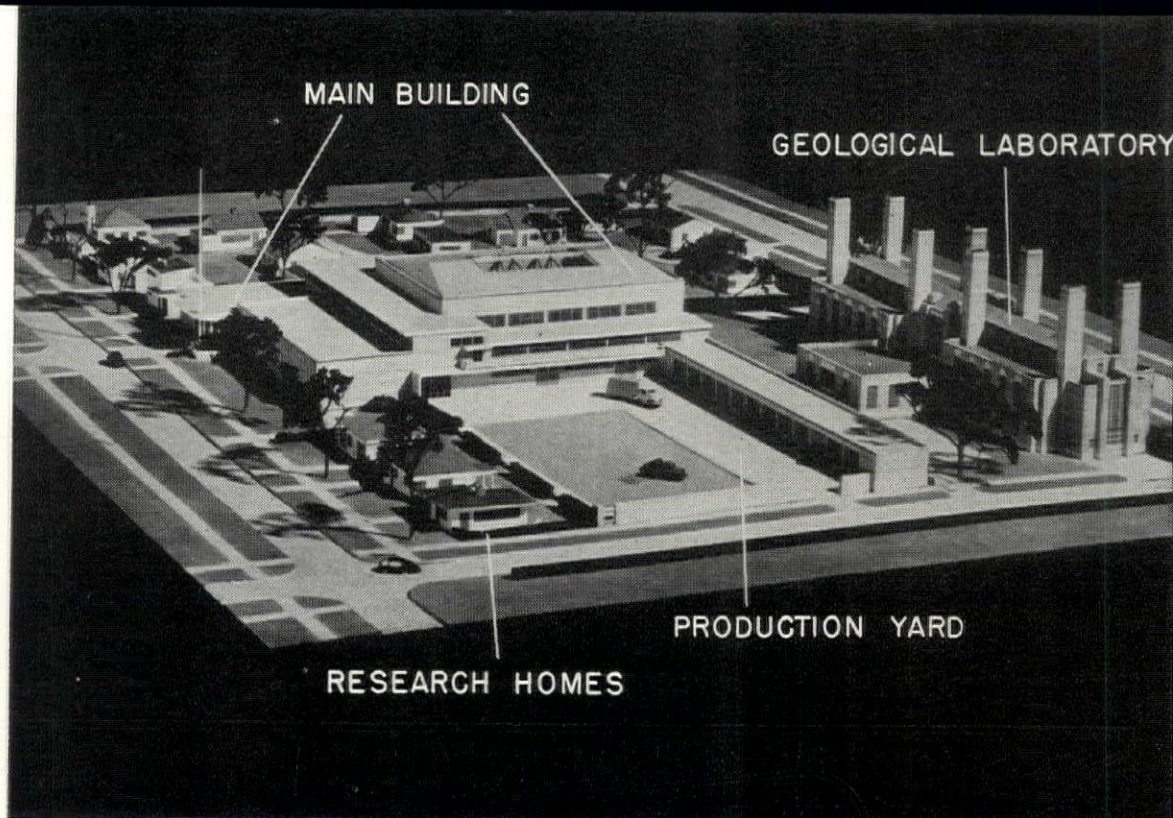
Willis distribution plan scores.

Jacques Willis, whose Homeola prefab was underwritten by a government contract early last month, sat in his plywood-lined office in downtown Chicago and said: "If I can get logs, I can make plywood. If I can get plywood, I can make houses." The first to get a helping hand from Washington, Willis was easily the least helpless prefabricator in America. He had substantial private interest in the plywood industry, a 400-dealer organization and a story-and-a-half plywood house which was coming off the production line at the rate of ten a day. Since last April, 736 of his houses had been fully erected.

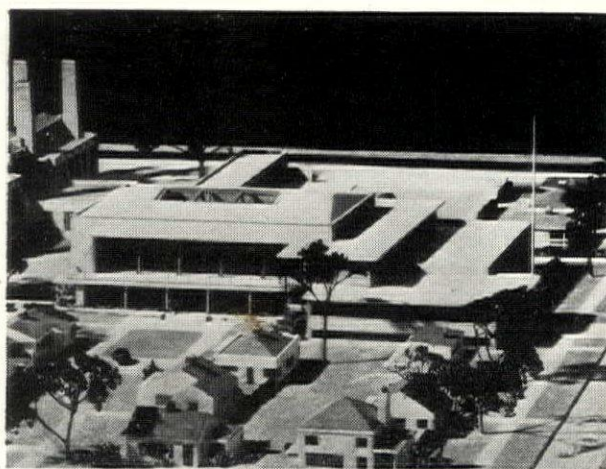
With government assuming the marketing risk involved in a 1,000 per cent expansion by next June, Willis announced he would contract for the output of two large West Coast wood processing plants, double the floor-space of the assembly plant in Chicago, intensify pressure all along the line, produce 19,400 houses by the end of 1947.

Willis' distribution start was probably the chief reason for its favor with Washington. Already functioning was a system many neophyte prefabricators might well copy: Homeolas reach local dealers in two simultaneous shipments, one from the mill-work plant, the other from the Chicago utilities assembly plant. Shipments are in units of five, an exact box-car load which moves at the lowest possible rate—e.g., \$174 to San Francisco, \$155 to Des Moines, \$210 to Baltimore.

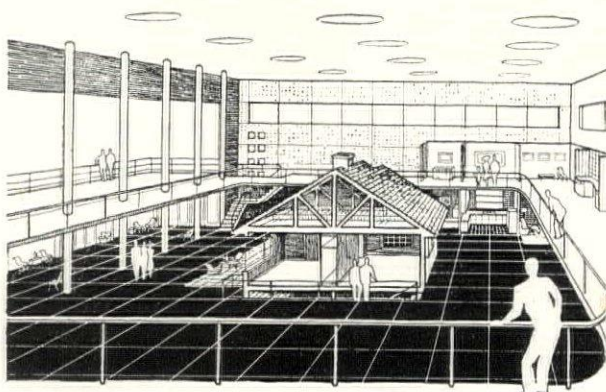
In exchange for the government market guarantee, Homeola agreed to a specified dollar profit, before taxes, on each unit it sells. But as a reward for successful economies in mass production, the government required the prefabricator to pass on only two-thirds of the savings to customers in the form of lower prices, retaining a third as an extra profit bonus.



UNIVERSITY OF ILLINOIS PLANS CAMPUS CENTER FOR INTEGRATED HOME RESEARCH

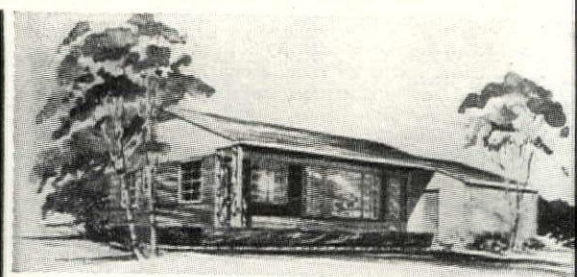
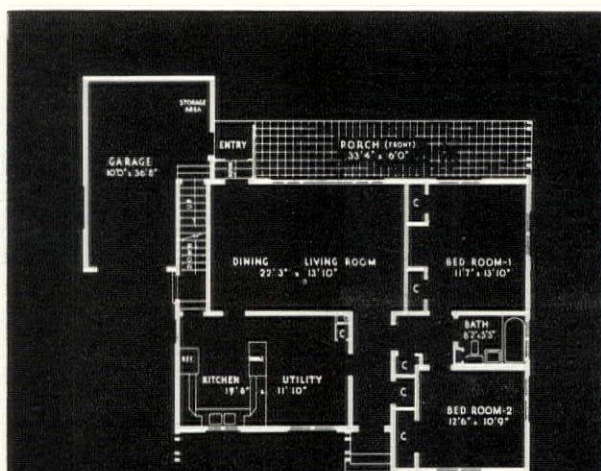


MAIN BUILDING AND DEMONSTRATION CENTER



INTERIOR TEST LABORATORY IN MAIN BUILDING

RESEARCH INTO HOME-PLANNING has long been a specialty of the University of Illinois Small Homes Council which publishes a widely-circulated series of pamphlet guides to good home design. New research center, now under construction, will consolidate theoretical, structural and practical approaches to housing, consist of elaborate main building for experiment and demonstrations, outdoor production-yard for site operation work and research house group designed for specific problem investigation. Research houses will be financed by private industrial organizations. Projects now under way involve collaboration with Bituminous Coal Research, Inc., Institute of Boiler and Radiator Manufacturers and Warm Air Heating and Air Conditioning Association (below). The Research Center will concentrate on improvements in the low-cost single-unit home, plans to supplement and coordinate current investigations by industry, provide a unique study opportunity for students of home-planning and technology.



EXPERIMENTAL HOUSE sponsored by National Warm Air Heating and Air Conditioning Association (above: plan, left) will furnish practical laboratory for testing heating equipment.

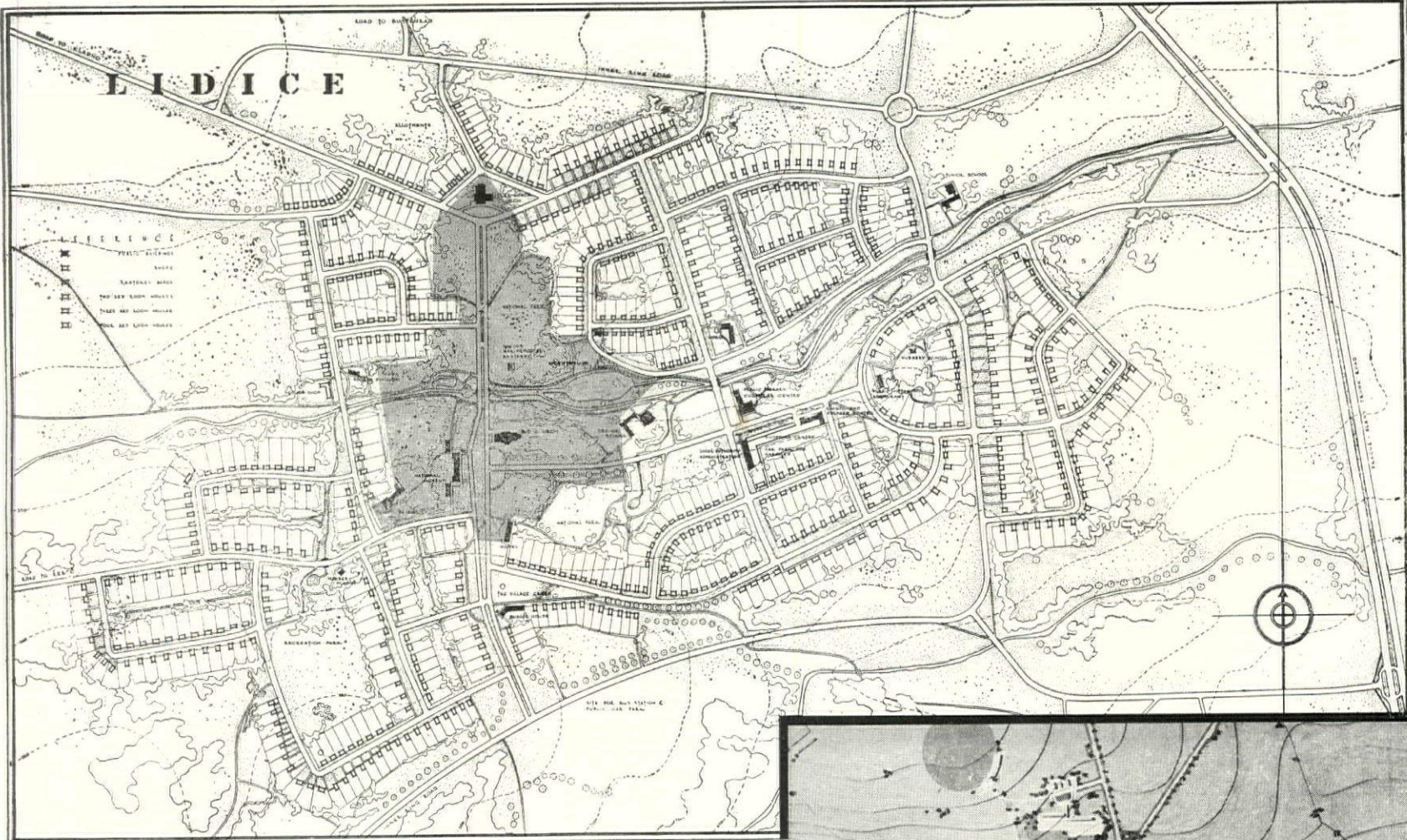
LIDICE reborn

Here, beyond a vanished road of lime-trees, rose one of the typical small villages of Central Europe. A turnip-shaped bell tower marked the five century-old church; around it clustered the homes and gardens of 1,200 human beings. They were woodworkers and farmers and miners—and their village was so modest a settlement that when the Germans made it into the barren plain at the right, only a few badly taken photographs remained to record its former aspect. In June 1942, in reprisal for the murder of Heydrich the Hangman, the Germans erased this village—Lidice—from their maps and murdered its entire male population; failed to erase it from the memory of millions.

Last month, in Prague, death by hanging was dealt the executioner of Lidice, S.S. Gen. Kurt Daluge. In Nuremberg, his masters were already dead. But Lidice had begun to live again. An international contest for a new Lidice plan had just been closed; best entrants would furnish the basis of the new city, scheduled for construction this spring. Two of these plans are reproduced here.

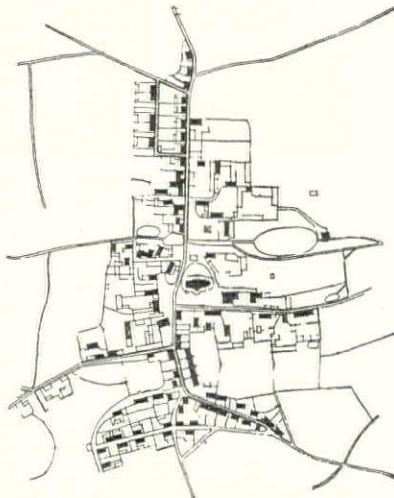


ONLY A CROSS MARKS SITE OF LIDICE, LEVELLED BY NAZIS



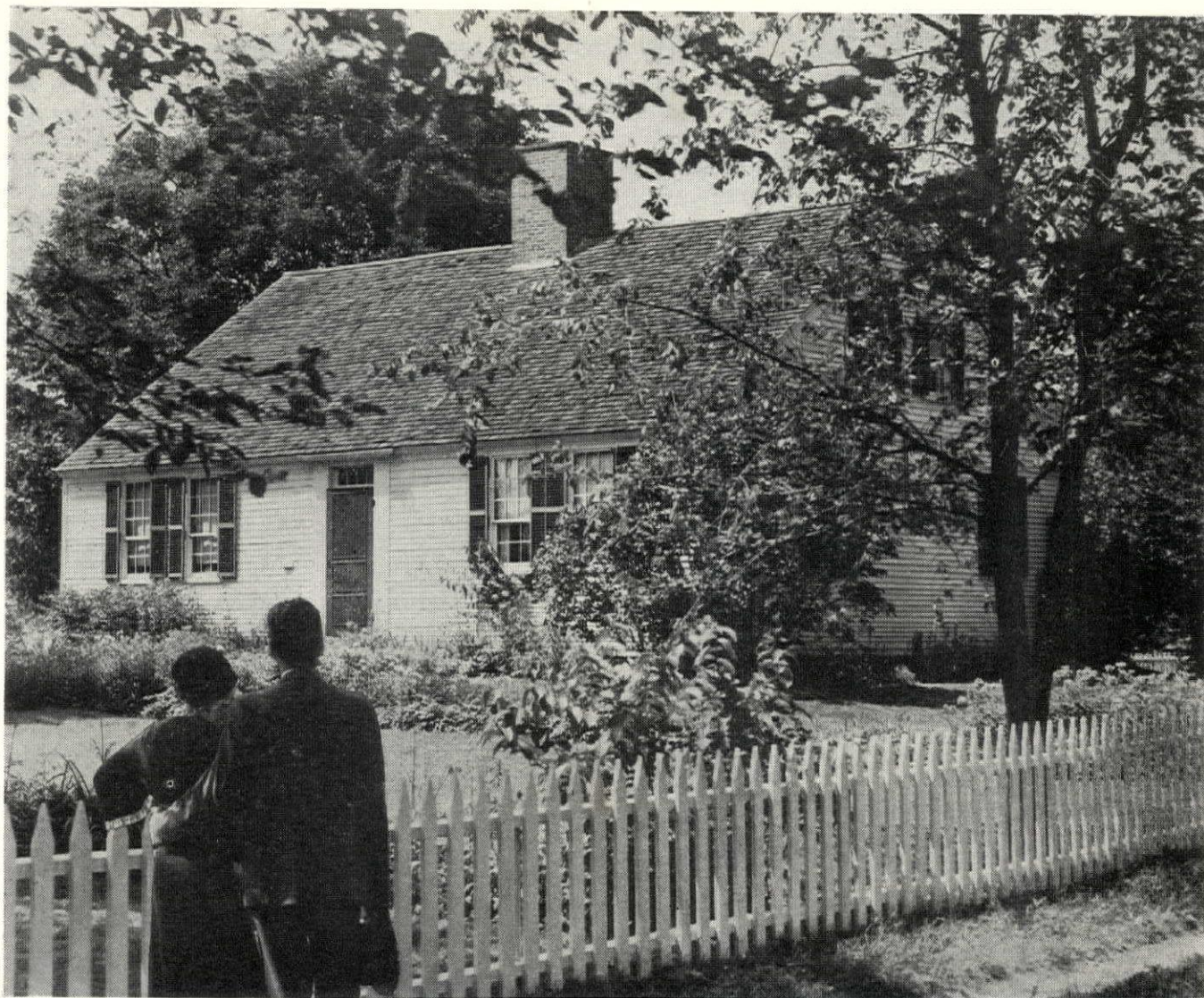
STERNBERG PLAN: PARK INCLUDES ORIGINAL TOWN AREA (SHADED)

CZECH ARCHITECTS Eugene Sternberg and Robert Podzemny have envisaged a town of gently curving streets, community facilities, good roads. The site of the destroyed Lidice (plan at right) is preserved as a memorial park by both planners. The church will be rebuilt on the site of old St. Martin's. Otherwise, the central region will be all garden—a garden city in reverse—surrounded by a belt of streets and houses. Both designs were commissioned by the war-time Czech government. Sternberg's was executed in the office of British City-Planner Lascelles Abercrombie; Podzemny's in cooperation with the Department of Architecture of Columbia University.



PODZEMNY PROVIDES MEMORIAL MONUMENT, CENTER, BOTTOM

News Continued on page 14.



"Be it ever so humble..."

Somehow you *know*, without being told, that the author of "Home, Sweet Home" was an American...

For the simple beauty of his song so exactly expresses the love which Americans have for *home*. An attitude, both strong and reverent, born in the cabins of pioneer ancestors and guarded zealously through generations that followed. From American hearthstones the spark of independence was fanned to quenchless flame, and a succession of great men and women emerged to carry its light abroad in the land.

To people who thus cherish the *ideal* of home, the expression of its *physical form* is no less important. So American homes have become

the wonder of the world! Here, the home of the Colonel's lady and Judy O'Grady differ in size, location and pretension, but seldom in facilities for necessity or convenience.

One development, perhaps more than any other, makes this possible... the invention and mass production of *steel pipe*.

Yes, *steel pipe makes it possible!* The conveyance of fresh, pure water from its source, however distant, to and through the home... for drinking, cooking, bathing, laundering, cleaning and sanitation. For providing conventional heating or the advantages of the newly developed *radiant* heat. For cooling in summer. For fire protection... for a hundred-and-one uses.

Durable, reliable, economical... *steel pipe* makes these comforts of home available to *all!* That's why 90% of all home piping is *steel piping*.

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

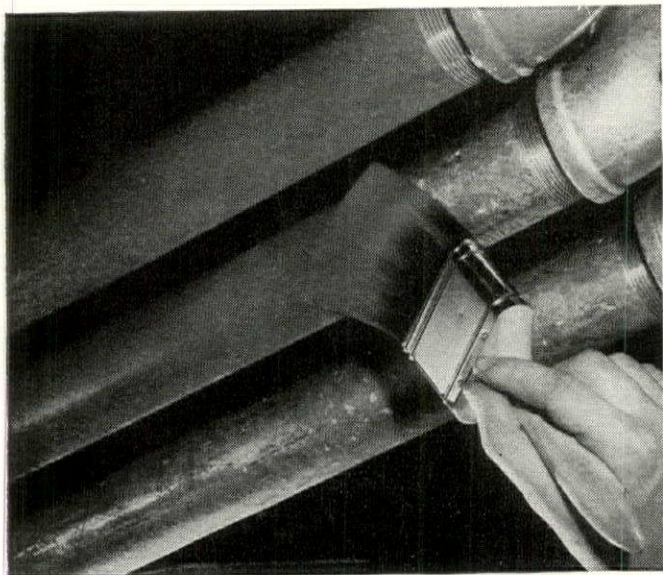
*Committee on
Steel Pipe Research*
OF
AMERICAN IRON AND
STEEL INSTITUTE

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STEEL PIPE MAKES IT POSSIBLE!



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



S.R.P. MEANS "SURE RUST PREVENTION" FOR IRON, STEEL AND GALVANIZED IRON SURFACES

Here's a "Sure Rust Preventive" for new and old metal! S. R. P. is a penetrative rust-preventive coating that "insulates" metal against the corrosive action of salts, moisture, acid fumes and vapors, and weather exposure.

S. R. P. is easy to apply—needs no expensive preparation—goes on like paint—and you don't have to remove firm rust. S. R. P. penetrates through and combines with existing rust to bond firmly with clean metal, forming an impermeable coating against air as well as moisture. Its exceptional elasticity prevents formation of pinholes and resists the damaging effects of expansion and contraction.

Protect piping, fences, structural members and sheet metal surfaces with S. R. P. #75 Primer; then, as a finish, apply either S. R. P. #87 or SONOLASTIC Aluminum Ready-Mixed.

See SWEET's for further information, and for descriptive literature write Dept. A-11.

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IT'S
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SPIRAL IN ANTIQUES

Sales climb high, prices boom.

When glassware, furniture, silverware and a raft of diverse objects become antiques, their metamorphosis is the most curious in merchandising. Age, rarity, intrinsic value and fashion combine to take them out of the drab market for second-hand goods and into one of the subtlest and most hypnotic bazaars in the world.

Last month, as the official antiques auction season opened, the atmosphere was more exciting and the buying more fabulous than ever before. Boom demand, growing since the start of the war, had lifted the nation's antique business to a record crest estimated at \$100 million.

At New York's Antiques Fair, largest and most famous of the fall shows, 83,000 people paid \$1.50 each to wander in and out of the booths strewn through the cavernous 71st Armory building. They bought over \$1 million worth of everything from \$5 glassware to thousand-dollar old English secretaries, viewed items offered by 160 dealers.

The nation-wide antiques boom was piling up profits for big and little sellers. Prices were some 50 per cent higher at the quality Kende Galleries and the plush galleries of Parke-Bernet, Manhattan's biggest auction house for objets d'art. For thousands of country dealers and side-street city antique-sellers with less gilt-edged stock, there was also a frenzy of trade. New York City, still the center of the antiques trade, had acquired hundreds of new dealers since the beginning of the war. Even Daytona Beach, Fla., which had one store before the war, now had five. Antique shows modeled after New York's well-staged affairs were being

held in Philadelphia, Miami, Asheville, Boston and Pittsburgh.

Inferior quality antiques were enjoying the most obvious inflation: grandma's Victorian dresser, hardly worth its weight in lumber before the war, was fetching \$100, repainted in gold and white lacquer. There was somewhat less exuberant buying of quality pieces: a set of Chippendale chairs was still purchasable at its 1941 price—\$5,500; fine Persian rugs and 18th century silver held at near-normal values. But one-generation-old walnut sewing tables and cut-glass water pitchers had suddenly found new buyers willing to pay top prices. In the Southwest and South especially, dealers reported, the heavily-ornamented sideboards of a generation ago were being dusted off as "period" furniture. Chief result of such buying has been a tremendous increase in sales volumes, a decline in the average sale. The standard definition of an antique—an object of some durable intrinsic value manufactured before 1830 (and by law, duty-free)—has begun to disintegrate.

People are buying antiques for old as well as new reasons. Oldest and most lasting is the appeal of unduplicable fine china or craftsman-signed 18th century chairs. Dealers are stressing with effect the argument that fine antiques are stable investments—time generally augments rather than depreciates their value. But old things have been popular, too, because new things are unobtainable. Families who had never bought antiques before are buying "good old furniture" because good new furniture is hard to find. New buyers with war-savings in their pockets are jamming the antique shops. Among their favorite purchases: antique jewelry, which has

(Continued on page 18)

NEW YORK ANTIQUES FAIR drew record crowds hunting the useful and the curious. Below, women search lamp and china tables for scarce furnishings. At lower right, Fairgoers regard \$4,000 Swiss music box.



Dave Robbins

NO BATHROOM IS MODERN WITHOUT THE ANYSTREAM

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FOR NEW CONSTRUCTION AND MODERNIZATION

The Speakman Anystream Shower Head is a must for any truly modern bathroom installation. The Anystream is three showers in one, delivering a spray to suit any user in any mood. In the flood position, the Anystream is self-cleaning, passing off all sludge, pipe-scale or sediment. Under all kinds of water conditions and under almost any pressure, the Anystream always gives a full, 48-jet shower pattern. It's simple in design, rugged, delivers years of trouble-free service, if given ordinary care.

Money-Saver, Too

Particularly important in hotel, school and institutional installations are the Anystream's water and fuel saving characteristics. In the needle-spray position, it uses up to 58% less water than ordinary shower heads.

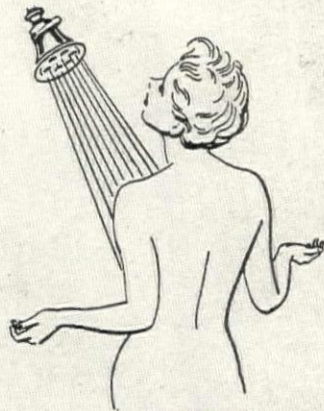
The Anystream is sold by leading plumbing supply dealers and contractors. Now available for immediate delivery. For the name of your nearest Speakman representative, and an illustrated leaflet on the Anystream, write for folder S-42. See Sweet's Architectural File for 1946 for a condensed catalog of Speakman showers and fixtures.



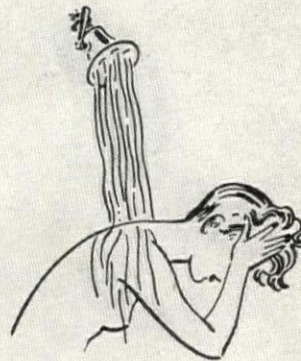
"The best in brass since 1869"
SPEAKMAN
SHOWERS AND FIXTURES
SPEAKMAN COMPANY, WILMINGTON 99, DELAWARE



A TURN OF THE LEVER GIVES . . .
Needle spray for stimulation!



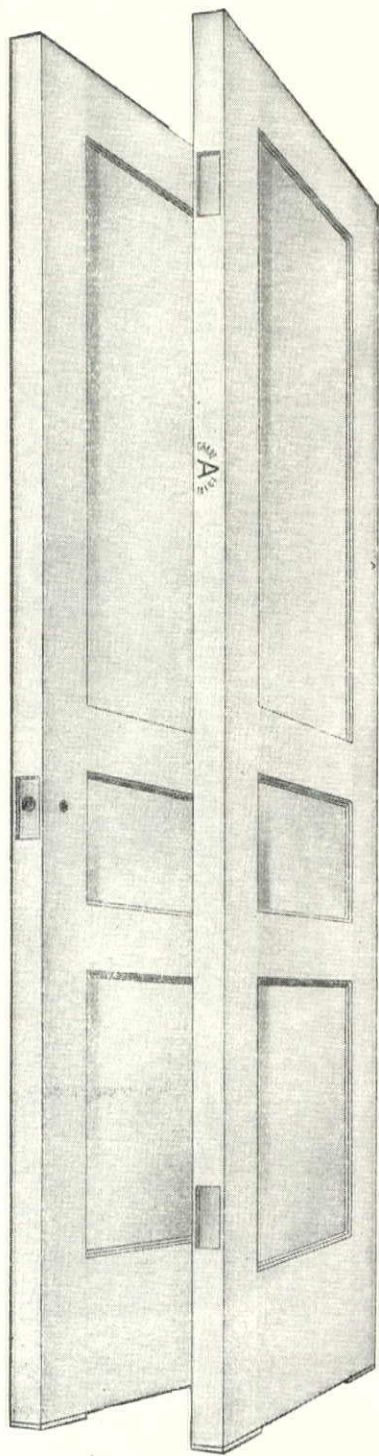
Normal spray
for relaxation!



Flood spray
for no-splash rinse.



Never this!—
The Anystream
is self-cleaning.



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*that's why the supply situation
is temporarily critical*

TODAY'S greatest need is for veteran housing — and Douglas fir doors must be channeled to meet that need.

This fact — plus the severe shortage of shop lumber from which stock doors are made — has naturally created a critical supply situation for general building uses.

But once present difficulties are overcome, Douglas fir doors will again be available, in ever-increasing numbers. They'll be **better** doors in every way — durable, attractive, made to exacting standards by modern precision methods. Study the features outlined below — features which assure the biggest stock door values in a decade!

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NATURE MAKES
DOUGLAS FIR
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Durable Douglas fir doors
are made from all heart-
wood vertical grain, soft,
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FIR DOOR MANUFACTURERS**

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Douglas fir doors will be available pre-fit to exact book size . . . ready to hang without on-the-job sawing and fitting.

FACTRI-FIT

Douglas fir doors will also be available completely machined — not only pre-fit, but gained for hinges and mortised or bored for locks as well. Doors will be grade-marked, as in the past, for ease in specification and ordering. They'll be better doors in every way.

PRE-SEALED

Douglas fir doors will be available pre-sealed . . . a feature which improves dimensional stability, reduces moisture absorption, and eliminates the need for one prime coat.

INSULATE as you build



INSULATION OUTSIDE

- Insulite sheathing builds a strong, weather-tight, windproofed wall... providing effective insulation.



INSULATION INSIDE

- Insulite Sealed Lok-Joint Lath provides a strong, rigid plastering surface... plus a second wall of insulation.

Refer to Sweet's File . . . Architectural Section 10 a/9.

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Unretouched photograph of floor in Zahn Dry Goods Store, Racine, Wisconsin.

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of Rugged
Service . . .*

AND LOOKS LIKE NEW!"

The above statement, made by Edward J. Zahn, Vice President of Zahn Dry Goods Co., tells more emphatically than we could, why you can recommend the use of Wright Rubber Tile with complete assurance. Installed in 1925 this Wright floor has withstood the shuffling of millions of hurrying feet. Subjected to the two-way traffic of the main store entrance, it has taken the full abuse of summer grit and winter mud. And yet a weekly mopping and waxing has kept it "looking like new" through all these 21 years.

It is this ability to stand up under the heaviest traffic that has earned for Wright Rubber Tile its reputation for long life, lasting beauty and low maintenance—that has established it as the *quality floor that costs less to own*. But please remember this when recommending or specifying Wright Rubber Tile—because of production problems we cannot make stock shipments, but orders for immediate installation will be filled in their turn. A partial list of representative *Wright* installations—some of which may be in your locality—will be sent on request.

TAYLOR MANUFACTURING CO.
Wright Rubber Products Division
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WRIGHT RUBBER TILE
Flooring of Distinction.

enjoyed so great a recent vogue that it has set the styles in all forms of costume ornament.

The present boom is the second in the recollection of today's antique trade, the first having occurred in the twenties—when people had money, too. And traders, recalling that the market in antiques flopped with the collapse of securities prices, fear another cave-in next year. Even if buying power stays high, they point out, new consumer products will have begun to preempt family funds—and washing machines, where the choice must be made, look sweeter than whatnots.

CITIES

CHICAGO'S CODE-MAKER

Merrill to redo Chicago Code.

The country's biggest code-revision job went last month to Architect John O. Merrill, assigned to tackle Chicago's 600-page, restriction-barbed building law. Voted a fund of \$100,000 (a personal fee of \$15,000), Merrill will spend a year in drafting a new code, get a free hand until ready with the complete document. If adopted, the Merrill code may radically change building conditions in one of the country's busiest construction areas.

Like many another city, Chicago was finding that major overhauling of its code could no longer be deferred. Prefabricated homes were only a part of the needed construction fenced out by outmoded Chicago rules. Costs of conventional building in Chicago were being boosted out of sight of many builders by code stipulations far in excess of recognized standards—over-dimensioned plumbing, excessive fire-retarding and insistence on unnecessary wall-thickness. Ruled out by the code were such

low cost building techniques as frame construction and dry-wall interior finishing.

Merrill, who with partners Skidmore and Owings plans major Chicago projects, has already helped to clear the site for a new city code. Collaborating with the John B. Pierce Foundation last year, he had lent a hand in drafting a sweeping indictment of Chicago's present law. The Pierce study declared that the code needed more than blue-penciling. Essentially a specification list, it was already hopelessly outmoded when published in 1939; subsequent correction had failed to catch up with advances in building technology. What was needed was a revision written from an entirely fresh point of view, a code of performance measures which would define the functions of building materials, leave specific selection to the ingenuity of architect and builder.

The Chicago Association of Commerce, which had commissioned the Pierce Foundation study, laid it on Mayor Kelly's desk last fall, waited for the fuse to go off. First result was a feeble "pop": the city council passed an ordinance allowing code-banned materials on housing tagged for dismantling, a let-through inviting only to government-sponsored housing. Private builders were told to apply to the city council for individual permits of unorthodox construction—only one such permit topped red-tape hurdles (Homes for Veterans, Inc. which was told to go ahead with 25 Gunnite processed houses).

Real progress was finally in sight when Chicago's city council and the Mayor's advisory code committee asked for a clean start in new building regulation, suggested that Merrill be named technical director of the revision job. Merrill will call upon expert consultants in the fields of materials analysis and legal regulation, aim for the Pierce Foundation's goal: "Standards when formulated, must be so written as to permit construction with the greatest freedom possible. They should provide the fewest possible restrictions in the choice of materials or method of construction. They should not hamper the construction of buildings providing adequate safety to health and life at a commensurate minimum cost. They should be so written as to permit the use of new techniques in the art of building and of new materials as they prove themselves. The code of regulations should be so written that it is not obsolete before it has been adopted. It should have within it the regenerative power to keep itself alive."

When the new code was completed, it would go before the city council, face wrangling in public hearings. Chicagoans recall

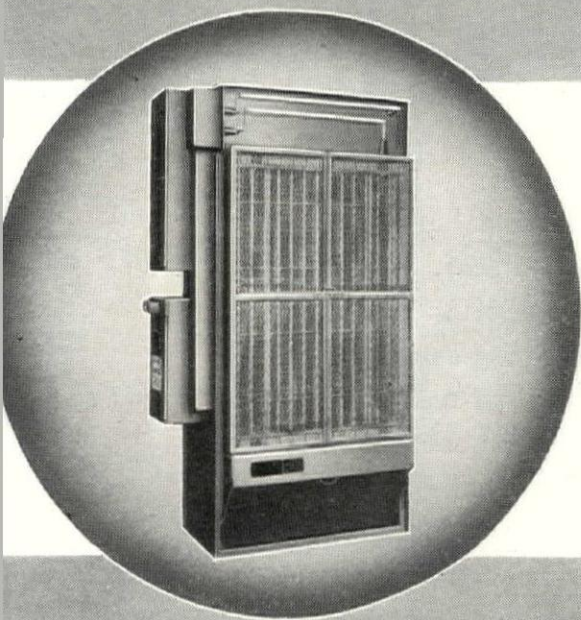
Chicago Daily News



MERRILL, left, and Friend

(Continued on page 22)

THREE TYPES OF *Electronic* PRECIPITATORS TO MEET EVERY AIR CLEANING NEED



Electro.MATIC

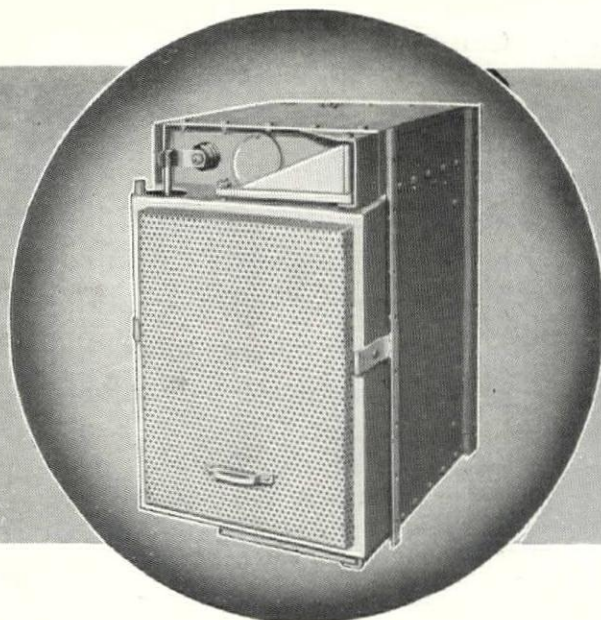
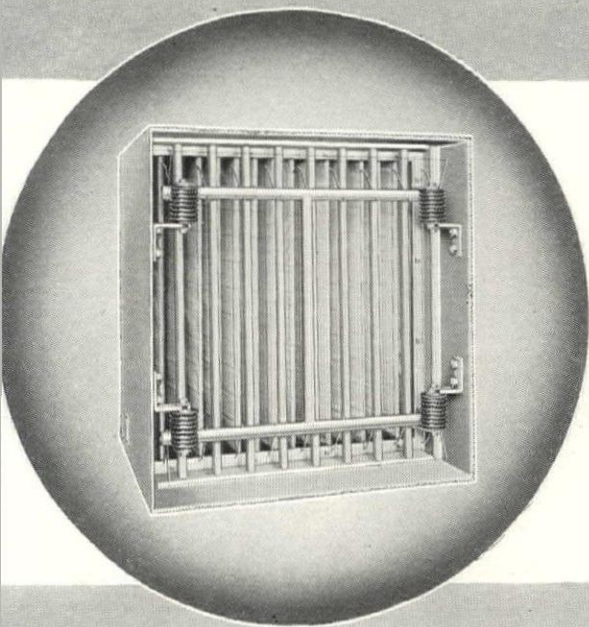
ELECTRONIC PRECIPITATOR

combines electrical precipitation with fully automatic air filtration to obtain the highest efficiency in the removal of atmospheric dust and smoke. Entirely automatic and self cleaning. Made in self-contained units of different sizes for any space conditions or air capacities, and may be operated from 110 Volt A.C. lighting service without special wiring. Complete information is given in Bulletin No. 250E — send for it.

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ELECTRONIC PRECIPITATOR

a sectional type filter in which the removable collector plates permit a choice of maintenance methods—tank cleaning or washing in place. Available with either inged or removable ionizers. Made in vertical sections of two widths and heights up to 15 feet in 9-inch increments to meet practically any space or capacity requirement. For complete information send for Bulletin No. 252.



Electro.AIRMAT

ELECTRONIC PRECIPITATOR

is the only dry-type electronic filter on the market. The collecting element is "charged" Airmat paper. Combines mechanical and electronic air cleaning principles to provide complete protection against dust infiltration under any operating conditions. Requires neither water nor sewer connections for cleaning, nor spraying with oil to maintain efficiency. Standard units 24" square in straight bank or "V" arrangement for any required capacity. Send for Bulletin No. 253.



Electronic PRECIPITATORS

AMERICAN AIR FILTER COMPANY, INC. • 427 CENTRAL AVE., LOUISVILLE, KENTUCKY

In Canada: Darling Bros., Ltd., Montreal, P. Q.

HOUSING the general offices and engineering department, this Administration Building of the Scullin Steel Company, at St. Louis, Mo., faces the steel foundry. Designed in semi-modern style, of reinforced concrete construction, the building contains the executive and personnel offices, arranged for ample lighting and accessibility.

The 13-inch walls are of variegated red brick, trimmed with stone. The central feature of the building, of Bedford limestone, extends three stories in height, with four large stone columns forming an impressive, curved effect. A four-foot stone base course extends around the structure, setting off the brick and enhancing the general appearance.

Close collaboration between the architects and the firm's engineering staff, even to the selection of Pratt & Lambert Paint and Varnish, resulted in a building that is modern, fireproof and attractively decorated. The nearest P&L Architectural Service Department will aid you in obtaining outstanding decoration with lowest maintenance costs.

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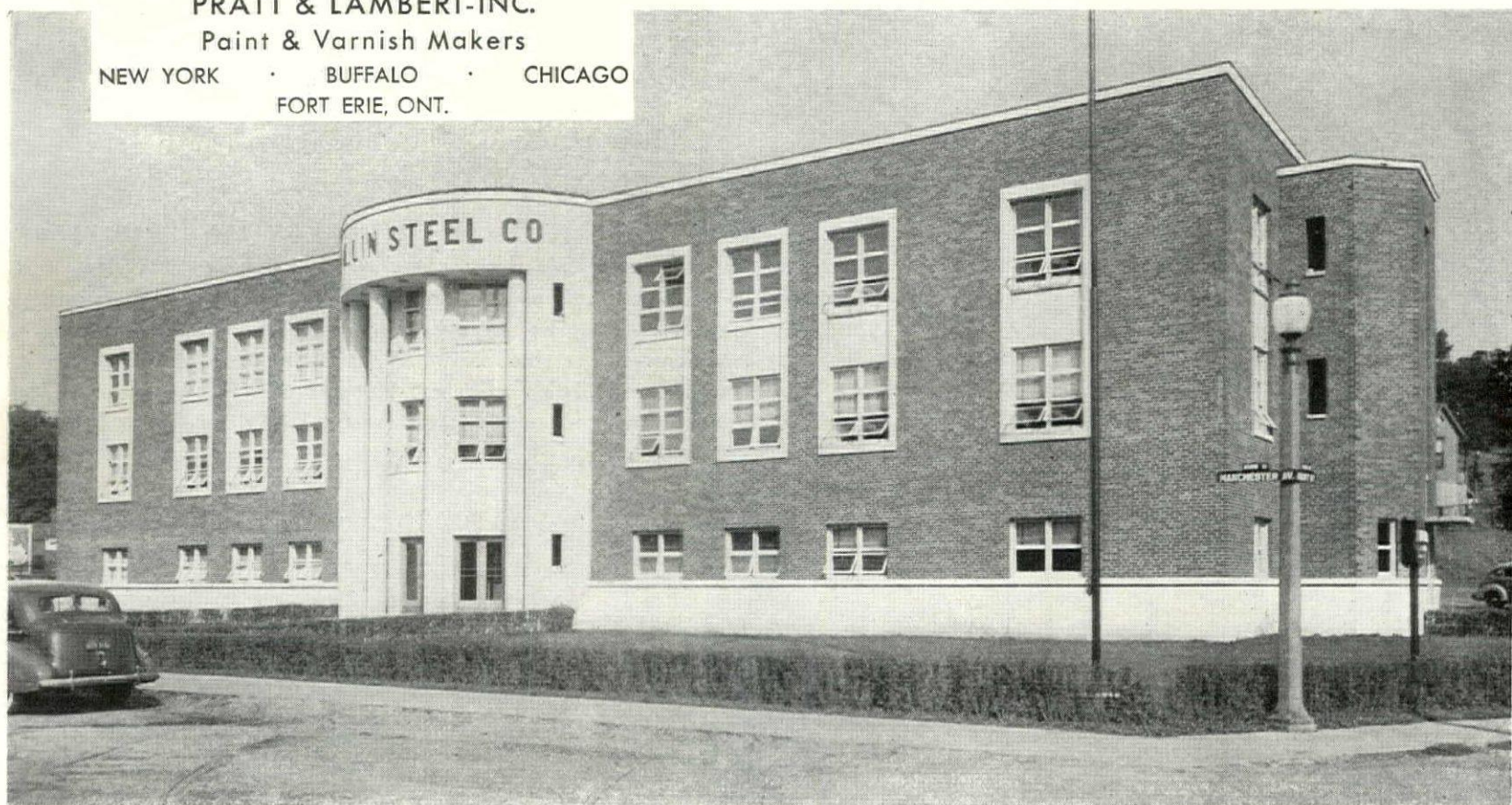
PRATT & LAMBERT

PAINT AND VARNISH



Volumes have been written on proper painting of industrial plants, from the decoration of offices, to the color-planning for the plant proper. Points advanced include greater efficiency of employees, less eye-strain, less fatigue, safety factors, and identification of pipe lines, etc. To these advantages, familiar to management, we add the very important consideration of economical maintenance through the use of durable, washable P&L Paint and Varnish.

ADMINISTRATION BUILDING, SCULLIN STEEL COMPANY, ST. LOUIS, MISSOURI
SCHMIDT & PAOLINELLI, Architects, St. Louis. H. B. DEAL CO., Inc., General Contractors, St. Louis.
KOEDDING PTG. CORP., Painting Contractor, St. Louis.



The Modern Machine for All-Electric Typing



IBM

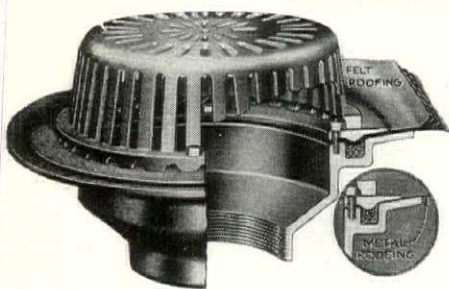
ELECTROMATIC TYPEWRITER

INTERNATIONAL BUSINESS MACHINES CORPORATION, 590 MADISON AVE., NEW YORK 22, N. Y.

Roof Drainage Problem?

Boosey

No. 1148
ALL PURPOSE DRAIN



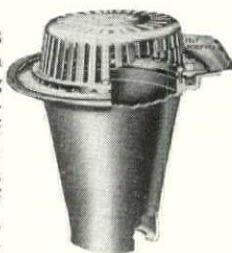
**New Patented
Clamping Ring
Eliminates Bolt
Holes in
Flashing**

Permanent Water-Tight Connection

Why not end roof drainage problems with the perfect roof drain. Its shallow self-cleaning bowl does not collect and hold dirt. It may be used with either felt or metal roofing and makes a permanent water tight non-freezing installation. All connections are visible and convenient to inspect. Strainer is easily removable without disturbing the other connections. Well constructed dome guard, five inches high, with greater diameter than drain inlet provides more inlet area through strainer and outer guard to prevent foreign substances from entering the down spout line. Outlets 3", 4", 5", 6", or 8" Hub or Tapped with 9" or 13 1/2" strainers. Furnished with gravel stop when specified at no increased price. A masterpiece of engineering, the 1148 Roof Drain has a proven record of thousands of trouble-free installations.

No. 1148-B with Increaser

Having all standard features of the 1148 the new Boosey 1148-B Roof Drain with increaser, has been approved by leading architects and engineers and has the maximum roof drainage area capacity. City of Chicago Ordinance, Section 82-64 reads: "When the diameters of the downspouts are increased at the roof for a length of at least twice the area of the downspouts, the following areas in horizontal projection may be drained to them." (See listing below.)



1148-B With Increaser

With Increasers Area of roof in horizontal projection (sq. ft.)	Without Increasers Area of roof in horizontal projection (sq. ft.)	Diameter of Downspout (inches)	Diameter of Increaser (inches)
2,250	650	3"	4"
3,800	1,300	4"	6"
7,750	2,400	5"	8"
11,500	3,800	6"	9 1/2"

Send us your roof drainage problems.
We are sure we can be of help to you.

NORMAN BOOSEY
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General Sales Offices:
420 North La Salle St.
Chicago 10, Illinois

AMERICAN SKEIN and FOUNDRY COMPANY

FACTORY: RACINE, WISCONSIN

ESTABLISHED 1900

the historic battles staged each time code revision had come up—wonder if Chicago will continue to be known as "plasterer's heaven."

NATIONAL CODE-MAKING

New Building Officials Foundation will push code improvement.

The revision of Chicago's code will do much to establish new and better regulation standards, but the costly procedure of city-by-city reform is certain to be slow work. Few of the country's 2,700 code-regulated communities can afford the scientific thoroughness planned by Chicago's revisers. Suggested for years is an alternative procedure: establishment of a National Code.

Building officials, anxious for more housing, have found themselves charged with the unhappy task of administering codes they know to be backward and restrictive; few of them have had any share in drafting the laws they administer. Last month the Building Officials Conference put local enforcement officials squarely in the field of code-formulation. Meeting for their annual convention in Memphis, they approved a two-pronged program: 1) completion of a model national code as a master-pattern for all communities; 2) establishment of a research foundation to keep the model code up to date.

The uniform code, to be ready in a few months, has been under preparation for two years by Conference Staffman Albert H. Baum, St. Louis building commissioner and George E. Strehan, New York engineer. Chairman of the Foundation will be Bernard A. Savage, commissioner of the Board of Standards and Appeals of New York. Savage and his staff will run a national testing laboratory, work to keep the code abreast of current developments and, in addition, offer technical advice to city officials in code-trouble.

The model code will be written in two sections: a set of performance standards and a book of applicable specifications of methods and materials, to be issued in frequently-revised loose-leaf editions. For small communities there will be a separate simplified code.

Cheers for the public service proffered by the building officials was almost certain to come from several harassed groups—chiefly, city building departments without the facilities to establish the worth of new methods or materials, manufacturers put to wasteful expense in establishing their products in city after city. Industry will foot most of the bill for the project: an endowment of \$600,000 will be subscribed to by manufacturers interested in piercing old

(NEWS continued on page 26)

Cornerstone says "1924" Heating Results say "1946"



Home of
Trenton
Trust Co.
Trenton, N. J.
Mercer County's
Oldest
Trust Organization.
Bank and 14-story
office building erected
1924. Extension
at left added 1939.

Twenty-two years of keeping up-to-date—that's the reason for the heating comfort and economy enjoyed by Trenton Trust Company.

Trenton Trust was founded in 1888—the same year Webster started serving steam-using customers. In 1924 when their present building was built it was provided with a Webster Heating System. Webster Sylphon Traps were installed on the 614 radiators and vacuum assured by a Nash Vacuum Pump.

In 1939 in order to give the entire building full advantage of newer developments, a 4-zone Webster Moderator System with balancing orifices and automatic control-by-the-weather was added.

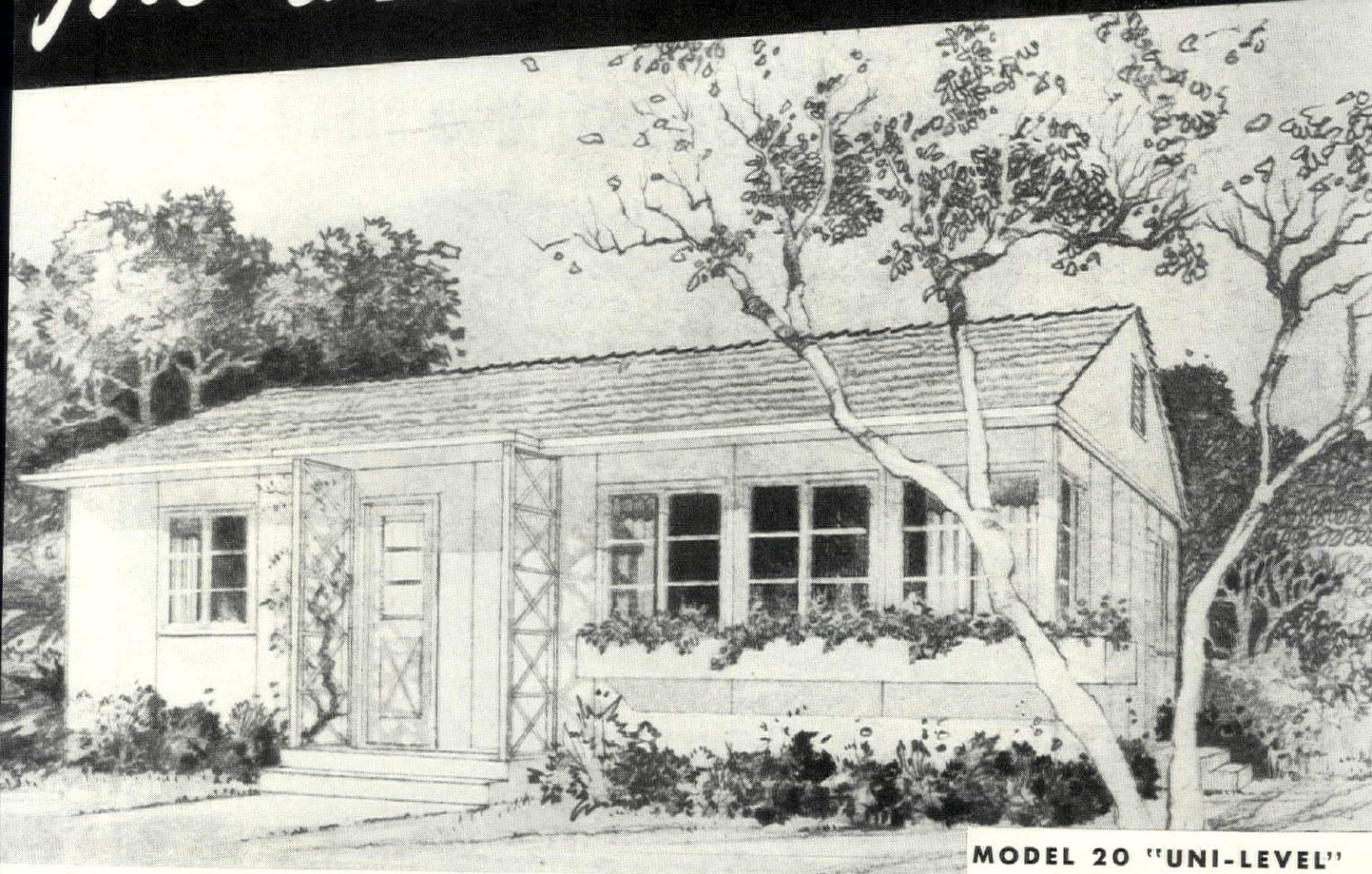
Results in comfort and low cost have been outstanding. Repairs have been few, but promptly made when needed; maintenance has been regular; pressures have been kept low.

We solicit the opportunity to work with you in the same way we have been privileged to work with Trenton Trust.

WARREN WEBSTER & CO., Camden, N. J.
Representatives in principal U. S. Cities: : Est. 1888
In Canada: Darling Brothers, Limited, Montreal

Webster
HEATING SYSTEMS

First Guaranteed Market Contract to HOMEOLA CORPORATION



MODEL 20 "UNI-LEVEL"

Shipments of this new HomeOla model, completely equipped, began in October. Floor area is 32 x 24 feet, with two bedrooms. Living, dining, kitchen and utility areas may be arranged in many ways. Exterior wall panels are interchangeable.

ON October 11, 1946 the Reconstruction Finance Corporation signed, with the HomeOla Corporation, the first Guaranteed Market Contract authorized under the Wagner-Taft-Elender bill. Uncle Sam now stands ready to buy any of the two models that cannot be sold through regular trade channels.

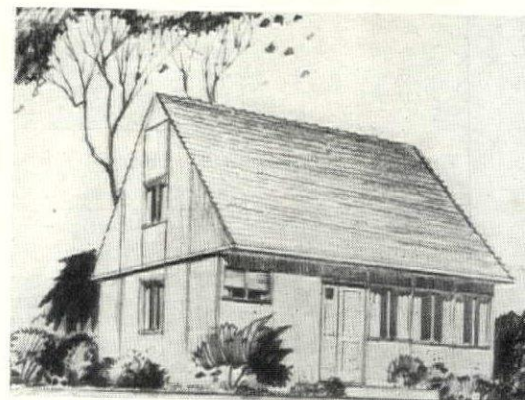
But it is highly improbable that any HomeOla house will ever be owned by the government under this newest endorsement by RFC, because: (1) these houses are accepted *nationally* by FHA for financing; (2) they have enthusiastic dealer demand from coast to coast; (3) 736 veterans' fami-

lies in 23 states have proved them good houses to live in; (4) the houses are proved worthy of high commitments from lending agencies.

19,400 HomeOla houses are scheduled for production before December 31, 1947 for national distribution to individual veterans through established dealers.

To those interested in a community plan for owner erection we will send The Naperville Plan booklet. Literature on Model 20 and Model 11 is available. Builders, dealers and architects will want information on the new LOKSTEP Steel Stair Units that build a stairway in 90 minutes.

Valuable lumber dealer franchises are still open in a few places.



MODEL 11, 1 1/2 STORY

This first HomeOla model has 24 x 20 foot floor plan, two upstairs bedrooms and a 20 x 12 foot living room. It has been readied for occupancy in as few as 194 man hours, including installation of complete equipment furnished.

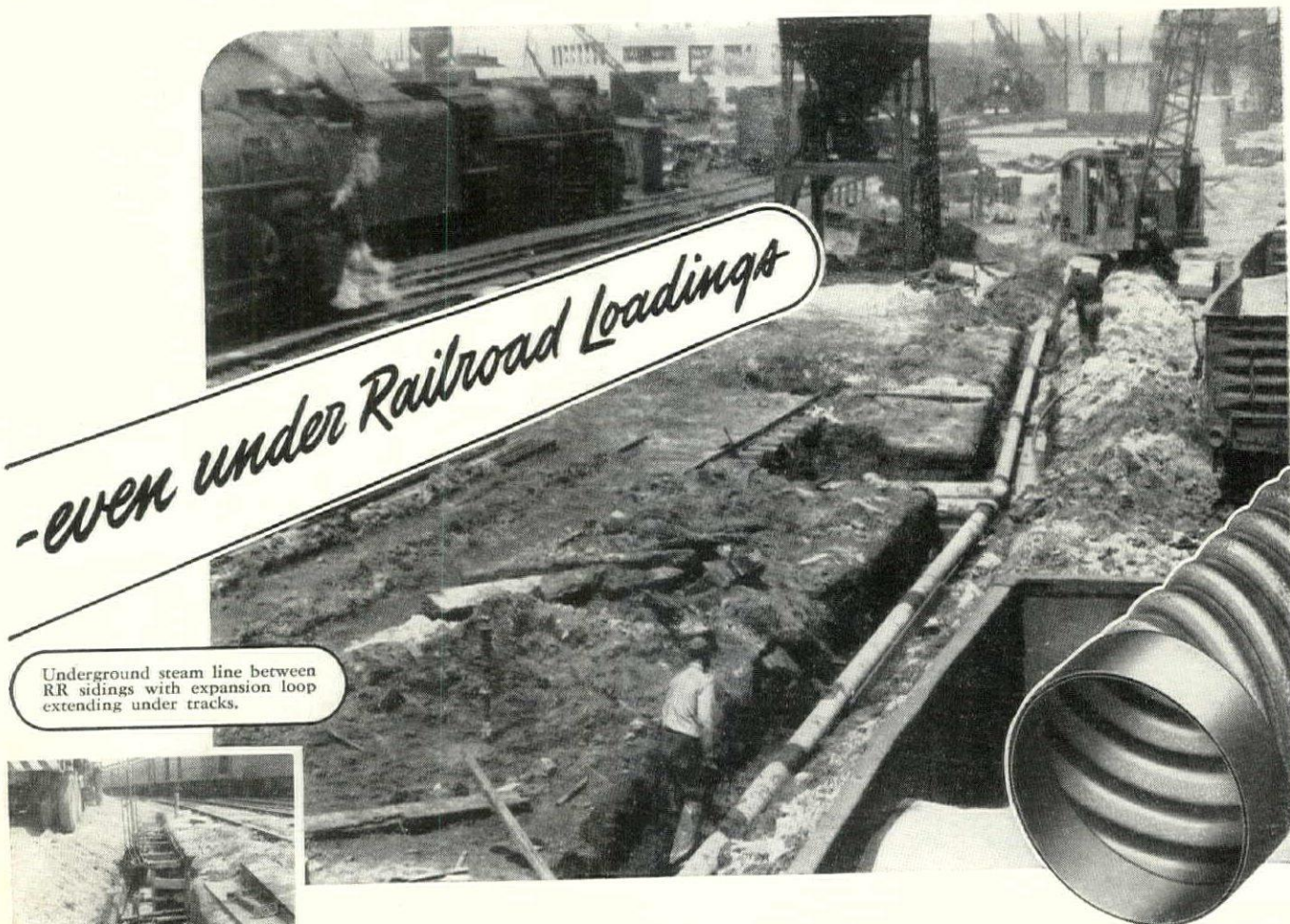


THE HOMEOLA CORPORATION

9 SOUTH CLINTON STREET • CHICAGO 6, ILLINOIS

MANUFACTURERS OF STANDARDIZED HOUSE PARTS

FLEXIBILITY *and* STRENGTH of **RIC-WIL** CONDUIT PERMITS SHALLOW INSTALLATION *of* STEAM LINES



-even under Railroad Loadings

Underground steam line between RR sidings with expansion loop extending under tracks.



21 ft. Ric-wil Prefabricated Insulated Pipe unit lowered into trench alongside tracks at RR passenger station without interrupting rail traffic.

The heavy-gauge helically corrugated shell used in Ric-wil Prefabricated Insulated Pipe Units makes possible a resilient construction of high beam strength, which can safely be installed under E72 RR loadings with only 3 feet of ground cover, and under E90 loadings with only 5 feet. Because of this and other exclusive Ric-wil features, the trend of engineering departments of railroads is to specify Ric-wil for all underground steam lines. It is possible to jack Ric-wil through existing right-of-ways and to install steam lines without disturbing sidewalks, pavement or tracks and without permanent deformation of roadbeds, thus saving both installation and maintenance expense.

Secret of the strength and flexibility of Ric-wil units is in these corrugations. Seam-welded, helically corrugated, heavy gauge galvanized iron shell with full round smooth ends and special Ric-wil coupler, provide pressure-tight construction.



(Left) Normal traffic was maintained on this busy downtown street while Ric-wil units were installed under pavement. Units were jacked through from building basements and joined to utility's steam main at manhole in center of street. (Right) Close-up of manhole showing auger crew and tool for drilling under pavement.



See our exhibit at 17th National Exposition of Power and Mechanical Engineering, Grand Central Palace, New York, Booths 38 and 39.

RIC-WIL

INSULATED PIPE CONDUIT SYSTEMS
THE RIC-WIL COMPANY · CLEVELAND, OHIO
AGENTS IN PRINCIPAL CITIES

SERVING YOU THROUGH SCIENCE

"U.S." PLASTIC

Naugahyde
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D I S T R I B U T O R S

ATLANTA, GA. — Erickson Co.; La France Industries.

BALTIMORE, MD. — John Duer & Sons, Inc.; La France Industries.

BOSTON, MASS. — Andrew Dutton Co.; La France Industries.

BUFFALO, N. Y. — La France Industries.

CHARLOTTE, N. C. — Mill Remnants Co.

CHICAGO, ILL. — La France Industries; Lite Products Corp.; Lussky, White & Coolidge, Inc.; Reliable Textile Co.

CINCINNATI, OHIO — B. H. Irvin Co.; Miami Rubber Co.

CLEVELAND, OHIO — B. Berger Company; La France Industries.

DAYTON, OHIO — Payne & Co.

DENVER, COLO. — The Pawley Co.

DETROIT, MICH. — La France Industries.

FT. WAYNE, IND. — Mossman, Yarnelle Co.

GRAND RAPIDS, MICH. — La France Industries.

HIGH POINT, N. C. — Carolyn Fabrics.

HOUSTON, TEXAS — Higbee & Mitchell.

JACKSONVILLE, FLA. — Excelsior Mills Corp.

LOS ANGELES, CALIF. — Boething & Dunlap; La France Industries; Pacific Hide & Leather Co.

LOUISVILLE, KY. — Fulton, Conway & Co.

MEMPHIS, TENN. — Bluff City Broom Corn Co.

MINNEAPOLIS, MINN. — La France Industries.

NEW HAVEN, CONN. — Roberts, Crozier & Ballou.

NEW ORLEANS, LA. — C.V. Harold Rubber Co.

NEW YORK, N. Y. — Abeles-Lewit Co., Inc.;

Asher & Boretz, Inc.; La France Industries;

J. Rosenheim & Co.; F. Schumacher & Co.

OKLAHOMA CITY, OKLA. — S. & J. Supply Co.

PHILADELPHIA, PA. — Gerhab & Ludlam Co.; La France Industries.

PHOENIX, ARIZ. — Keyston Bros.

PITTSBURGH, PA. — La France Industries.

PORTLAND, OREGON — Ballou & Wright.

ST. LOUIS, MO. — La France Industries; Sligo Iron Store Company; Specialty Fabrics & Supply Co.

ST. PAUL, MINN. — Farwell, Ozmun, Kirk & Co.

SAN FRANCISCO, CALIF. — Keyston Bros.; La France Industries.

SPARTANBURG, S. C. — Connor & Gregory.

TORONTO, CANADA — Anthony Foster & Sons.

WASHINGTON, D.C. — Bedell Mfg. Co.; Savarese Fabrics, Inc.



UNITED STATES RUBBER COMPANY

COATED FABRICS DIVISION, MISHAWAKA, INDIANA

"Tops" IN A COOKING SERVICE



ROPER

**"AMERICA'S FINEST
GAS RANGE"**

To earn the hearty approval of your clients, recommend a range backed by over 60 years of progressive manufacturing experience—a range that's smartly designed in the modern tempo—a range with many outstanding features to assure tastier meals cooked more easily.

SPECIFY THE RANGE WITH

*Jewels of
Cooking Performance*

"STAGGERED" COOKING TOP

"SIMMER-SPEED" BURNERS

LARGE "3-in-1" OVEN

"GLO" BROILER

"SCIENTIFIC" COOKING CHARTS

GEO. D. ROPER CORPORATION
Rockford, Illinois

HER FOODS COOK WHILE SHE'S AWAY...
It's Automatic!

building restrictions. Heading endowment fund-raising is Aluminum Company of America executive John Morehead.

PEOPLE

ABRAMS SURVEY

Noted houser canvasses Europe.

When U. S. houser Charles Abrams walked into the U. S. Embassy in Copenhagen not long ago, he encountered a prominent display of Nathan Straus' *Seven Myths of Housing*. It is not a matter of record whether Abrams immediately suggested the substitution of his own well-known *Revolution in Land*, but he did express surprise that



Abrams

the Embassy should appear so preoccupied with housing. Embassy officials explained: they were trying to spotlight U. S. housing achievements for Europeans whose picture of this country seemed to have been painted chiefly by John Steinbeck.

Many Europeans believe, Abrams said, that the U. S. is controlled by ruthless trusts and cartels, that the plight of the American negro is universally hopeless, that, except for TVA, this country has provided almost no social services for its people. Against this point of view, Europeans found U. S. housing progress news.

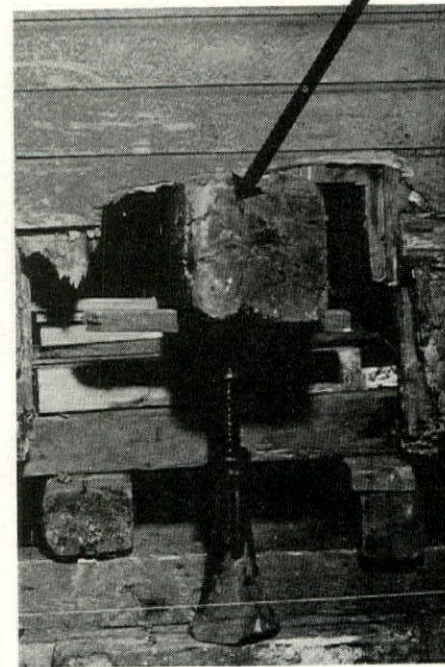
Industrial Orphan. Abrams' look at Europe's housing headaches included England, France, Sweden and Denmark. "All over the world," he said, "housebuilding has emerged as the orphan of the industrial revolution. Everywhere big business has failed to tackle housing as a major enterprise. When big industry in the U. S. confined its interest in building to the materials industry, the whole world suffered. There is no solution in sight, and no prospect that the building industry will at any time soon share in the dividends of the technological developments of our time."

Abrams found that Britain's wartime interest in basic re-planning is giving way against the pressure for housing. "But any Britisher who would oppose a housing appropriation because it threatened the private enterprise system would be recommended for the booby-hatch. England allows entrepreneurs about one-fourth of the building priorities, the rest go to public housing."

(NEWS continued on page 30)

NOW...

You Can Safeguard Clients Against This Costly Damage

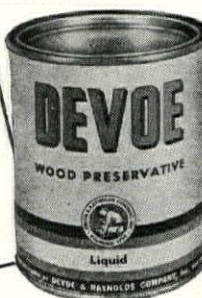


SPECIFY DEVOE WOOD PRESERVATIVE

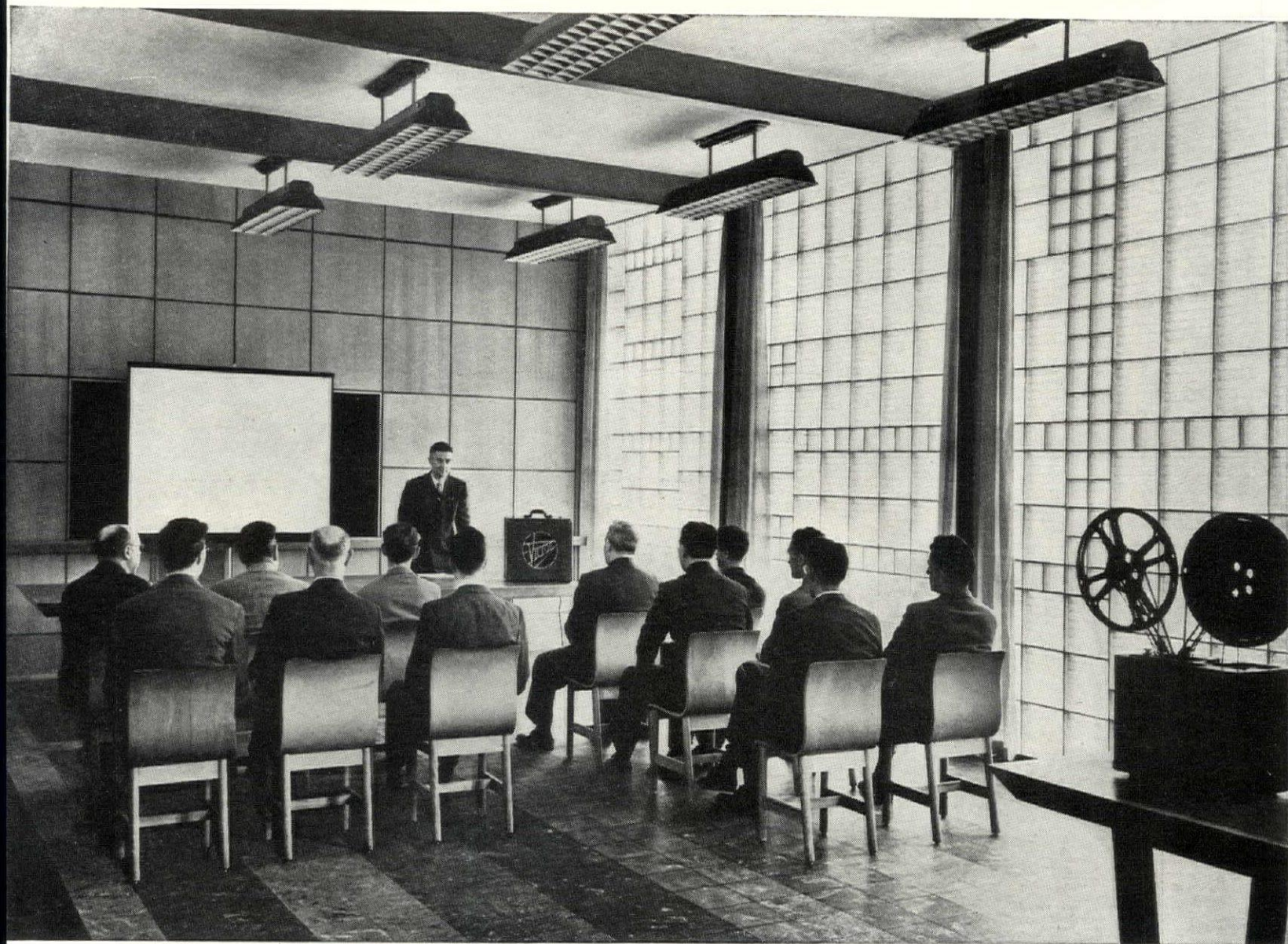
NO longer need sills and other timbers be an immediate invitation to the ravages of wood-destroying fungi, termites and other insects. Devoe Wood Preservative brings within the reach of all the same active ingredient (Copper Naphthenate) that protected Army and Navy installations so effectively throughout the world. It is easily applied by brush, dip or spray, and penetrates deeply into the wood fibres. The oil base vehicle assures long-lasting effectiveness, is non-leaching—and permits treated members to be painted over readily.

Begin now to specify Devoe Wood Preservative for all new construction and to safeguard timbers on reconstruction jobs. Write today for informative brochure.

**A DEVOE
POSTWAR
PRODUCT**

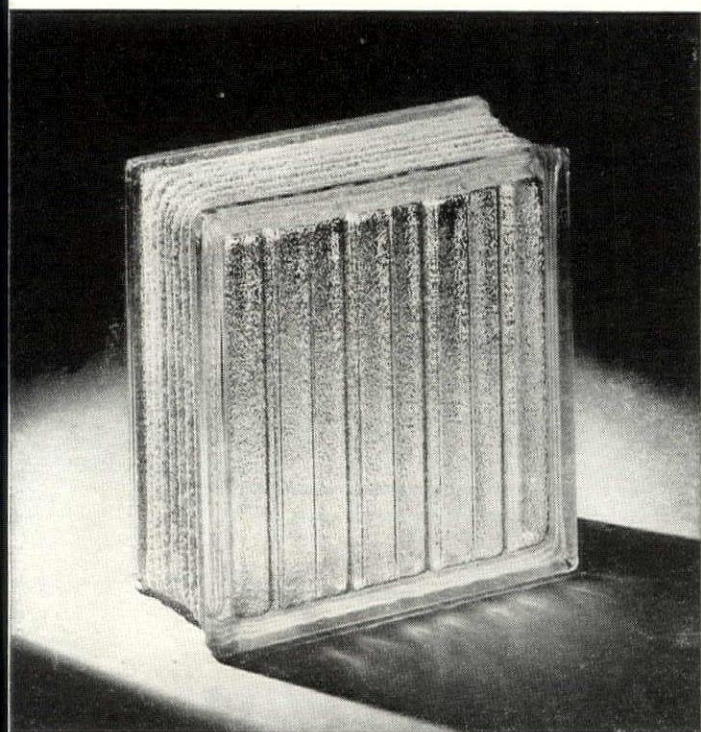


Devoe & Raynolds Company, Inc., Dept. 20
787 First Ave., New York 17, N. Y.



Note the unusual use of 12" and 6" square Insulux Glass Block in the floor-to-ceiling panel in this conference room. Architects Perkins, Wheeler & Will, Chicago, selected Insulux for Benjamin Electric Mfg. Company's new product

development and testing laboratory. Bi-lateral daylighting is accomplished by a clerestory panel of Insulux on wall opposite that shown. Insulux panels are easy to clean and keep clean.



Insulux Glass Block is a functional building material that does many things other materials cannot do. It is in keeping with both traditional and contemporary materials and design. Investigate!

Light subject for careful consideration

Architects find interesting new lighting treatments come easily with Insulux Glass Block.

Insulux has many special properties that merit your careful consideration in any building. Natural daylight can be diffused through areas that are usually gloomy. Furthermore, Insulux reduces sound transmission, preserves privacy, and its high insulating value simplifies heating and air conditioning.

Maintenance expense is remarkably low, because Insulux does not rot, rust or corrode and no painting is needed.

OWENS - ILLINOIS
INSULUX
GLASS BLOCK

Technical data, specifications and installation details will be found in the "Glass" section of Sweet's Architectural Catalog. Or write Dept. C-23, Owens-Illinois Glass Company, Insulux Products Division, Toledo 1, Ohio.



Clients expect refinements like

THREE HINGES ON EVERY DOOR"



More and more people are discovering the real economy of *three hinges on every door*. . . They are learning that the two or three dollars initial hinge expense per home is hardly a fraction of the cost of repairing one warped door later on.

When you specify three hinges on *every door* you are guarding against warping at the jamb, helping to keep latches and locks clicking to a perfect fit, summer and winter.

Your clients will appreciate this visible proof of sound planning . . . it will help convince them that you design truly well-built homes.

Always specify *three* hinges to a door. The Stanley Works, New Britain, Connecticut.

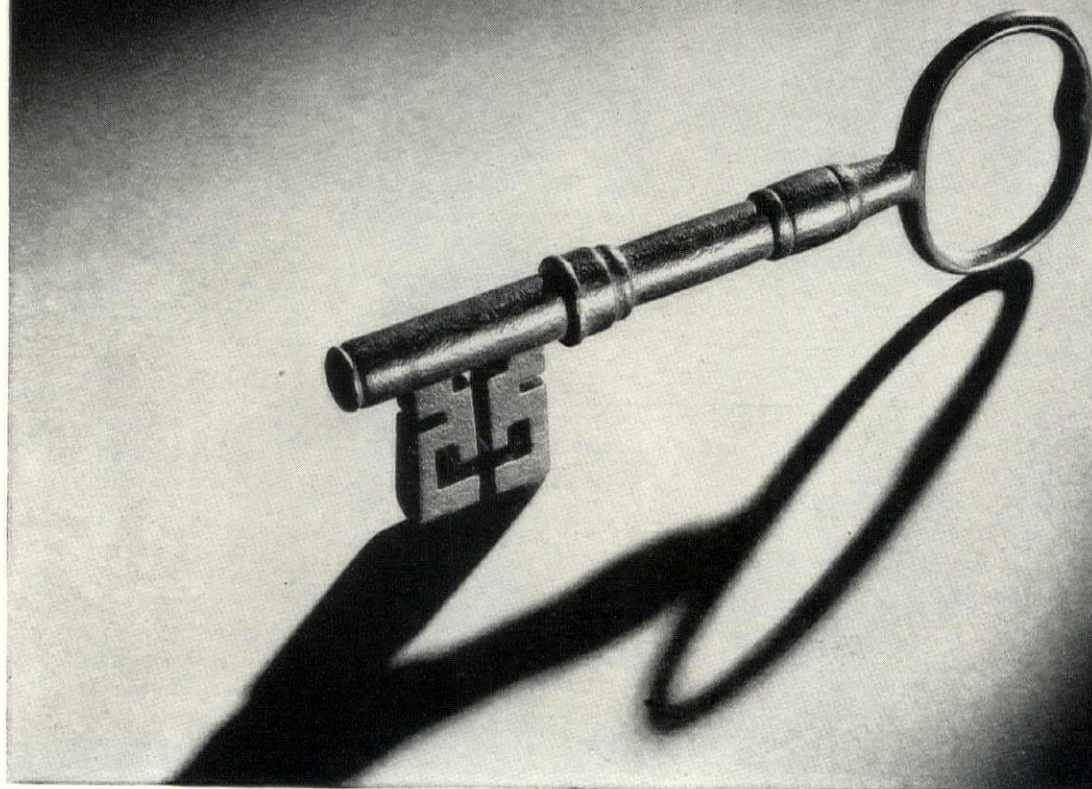


Trade Mark

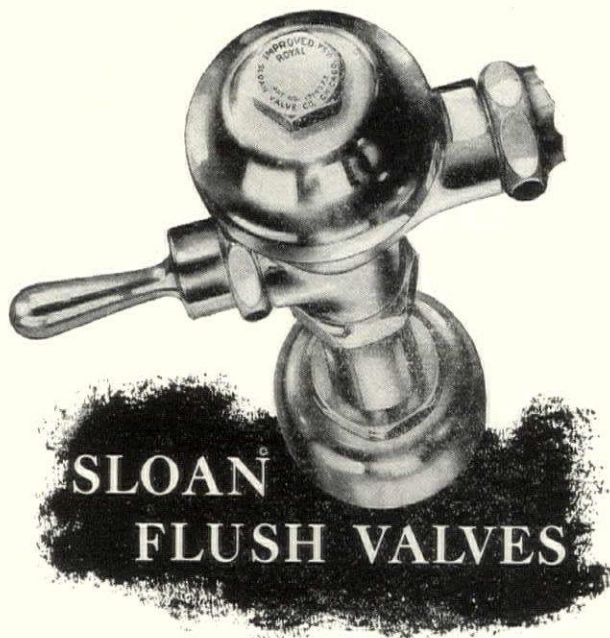
REMEMBER . . .

THREE HINGES TO A DOOR

Like a key...



The Royal never needs adjustment



Because there's nothing to adjust

The ROYAL is the *only* Flush Valve which has no adjustment or regulation. Its simplicity of engineering design, *plus* precision manufacture, insure accurate and lasting performance.

More than 4 million ROYAL Flush Valves are in daily service—including thousands of the first ROYALS installed over 36 years ago.

The ROYAL is "standard equipment" with discriminating builders and owners throughout the country. In fact, entire school systems, hotel chains, hospitals, industrial institutions, etc., use ROYALS exclusively.

For the best in Flush Valves specify Sloan—remember, there are more Sloan Flush Valves sold than all other makes combined.

SLOAN VALVE COMPANY
4300 WEST LAKE STREET, CHICAGO 24, ILLINOIS

HALL-MACK

THE SMARTEST IN BATHROOM ACCESSORIES

TOILET PAPER HOLDER No. 370
Chrome Roller



TUMBLER AND TOOTHBRUSH HOLDER No. 330



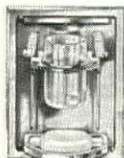
SOAP HOLDER No. 322—With Unbreakable Crystal Tray



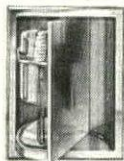
ROBE HOOK No. 381—2½" Long



SQUARE TOWEL BAR No. 394—¾" Square Bar, Lengths: 18", 24", 30", 36"



CONCEALED LAVATORY UNIT
U. S. Patent No. 2,039,065



No. 338—OPEN
Soap Dish, Tumbler and Toothbrush Holder exposed for use.



No. 338—TURNING
Turned at the touch of a finger.

No. 338—CLOSED
Toothbrushes, Soap and Tumbler hidden from sight.

ARISTOCROME accessories are made of solid brass, nickel plated and then heavily chromium plated to add distinction to the finest bathroom.

HALL-MACK COMPANY
(FORMERLY HALLENSCHIED & McDONALD)

1344 WEST WASHINGTON BLVD., LOS ANGELES 7, CALIF.

Expropriation. In France, Abrams said, "Landlords are caught between the shears of rent control and inflation. The average family now pays about five per cent of its income for rent. This means the property owners hardly realize enough to pay expenses, which combine with rent control to mean virtual confiscation of property. Private builders will no longer build."

Sweden seems to be suffering from an attack of excess publicity. "Actually, the ideologized cooperative movement is little more than a dressed-up counterpart of a U. S. corporation. Swedish co-op members take very little interest in the management of the enterprise." Rent subsidies go only to families with three or more children, leaving a large number of lower-income families unassisted.

"We have much to learn from democratic Sweden but on close inspection the Middle Way, in many respects, looks more like the Muddled Way."

SHREVE DIES

Leaves massive works.

Among the year's losses to architecture, none would outrank the death of Richmond Harold Shreve, senior member of Shreve, Lamb & Harmon. With his partners and others, Shreve worked on some of New York's most important buildings, including the Empire State Building, Williamsburgh Housing Project, Metropolitan Life's Parkchester and Hunter College. Work underway when he died included a new building for the *New York Times*, the upper-Fifth Ave. store of Best & Co. and the research laboratory of the Johns-Manville Corp.

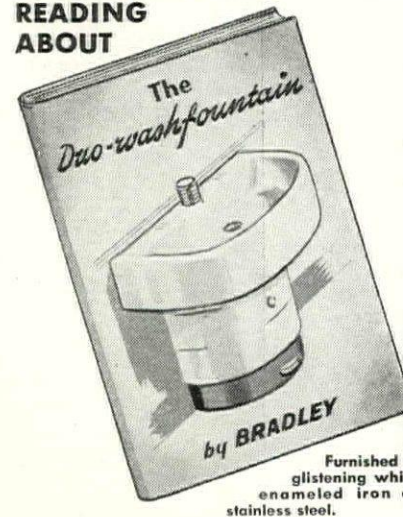


Shreve

The complete list of jobs on which Shreve collaborated bids fair to be one of the most imposing in his generation, and enumeration of the clients involved reads like a Who's Who of Big Business; General Motors, Standard Oil, R. J. Reynolds Tobacco Co. are among the firms for which he and his partners worked. But Shreve was also interested in housing and slum-clearance and identified himself with the movement to rebuild New York's rundown neighborhoods.

Shreve's career began with Carrere & Hastings, itself no mean example of oldtime success. In the twenties he formed his own firm with William Lamb and Arthur Loomis Harmon. The tripartite team proved outstanding for its collaborative efficiency: design came generally from the boards of Lamb and Harmon; the schedule of production was Shreve's.

SOMETHING NEW WORTH READING ABOUT



A smaller edition of the big Bradley Washfountain known and used throughout industry, the DUO has been developed for widespread use in factories, schools, institutions and public building washrooms. It combines a modern, attractive appearance with long-life durability.

The new Bradley DUO-Washfountain saves on water, and hot water heating expense, since one DUO takes the place of two ordinary "single-person" wash basins with one Bradley sprayhead replacing four faucets.



DUO-Washfountains save water, space and assure maximum sanitation.

In addition, the DUO automatic foot-control, easily cleaned spray head, and self-flushing drain reduce maintenance detail and afford maximum sanitation. Employees' health is safeguarded since hands touch nothing but clean running water. BRADLEY WASHFOUNTAIN CO., 2235 West Michigan Street Milwaukee 1, Wisconsin.

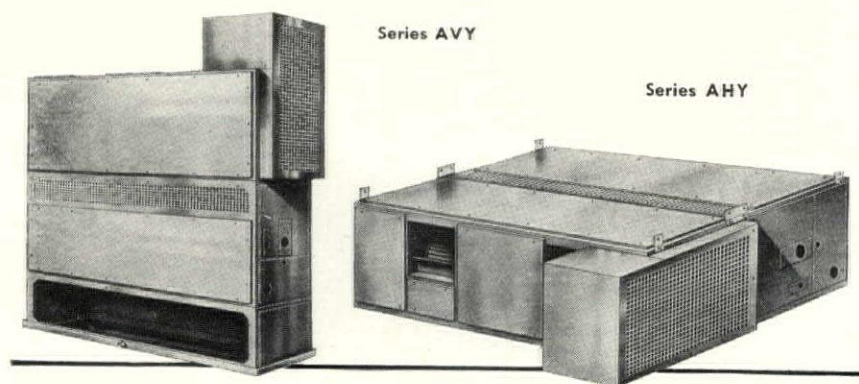
Write for interesting illustrated Bulletin 464-D today.

BRADLEY
Duo Washfountain

WORTHINGTON

Air Conditioning and Refrigeration Report

Worthington Pump & Machinery Corporation, Harrison, New Jersey



TOP PERFORMANCE ASSURED WITH THESE NEW IMPROVED AIR CONDITIONERS

Worthington's New Series AVY (Vertical Floor Mounted) and AHY (Horizontally Suspended) Air Conditioning Units are designed to bridge the gap between Worthington's Self-Contained Air Conditioners for smaller business spaces and the huge Worthington Systems that serve the largest plants and buildings.

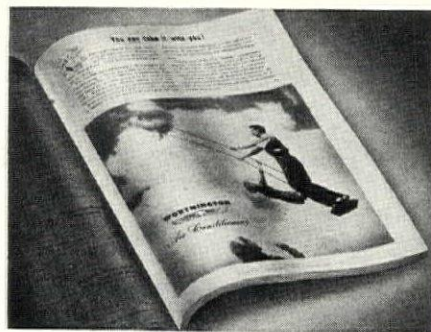
Available in five sizes, handling air quantities ranging from 1,600 to 12,000 c.f.m., AVY and AHY models operate on both water cooling and direct expansion.

Teamed with one of the various Worthington Compressors of suitable type and capacity, they will perform every air conditioning function — cooling, heating, humidifying, dehumidifying, cleaning and circulation — with top efficiency and economy, year in and year out. Send for further information on these most up-to-date Commercial Air Conditioners. *Worthington Pump and Machinery Corporation, Harrison, N. J. Specialists in air conditioning and refrigeration machinery for more than 50 years.*



Famous Chicago Hotel Modernizes with Worthington Air Conditioning

Patrons of the Bismarck Hotel and its adjoining Palace Theatre are looking forward to enjoying the ideal outdoor weather indoors they'll get when the two Worthington 500-ton steam turbine-driven compressors now being installed go into action to supply the necessary refrigerating effect.



Worthington Advertising Ranks at the Top

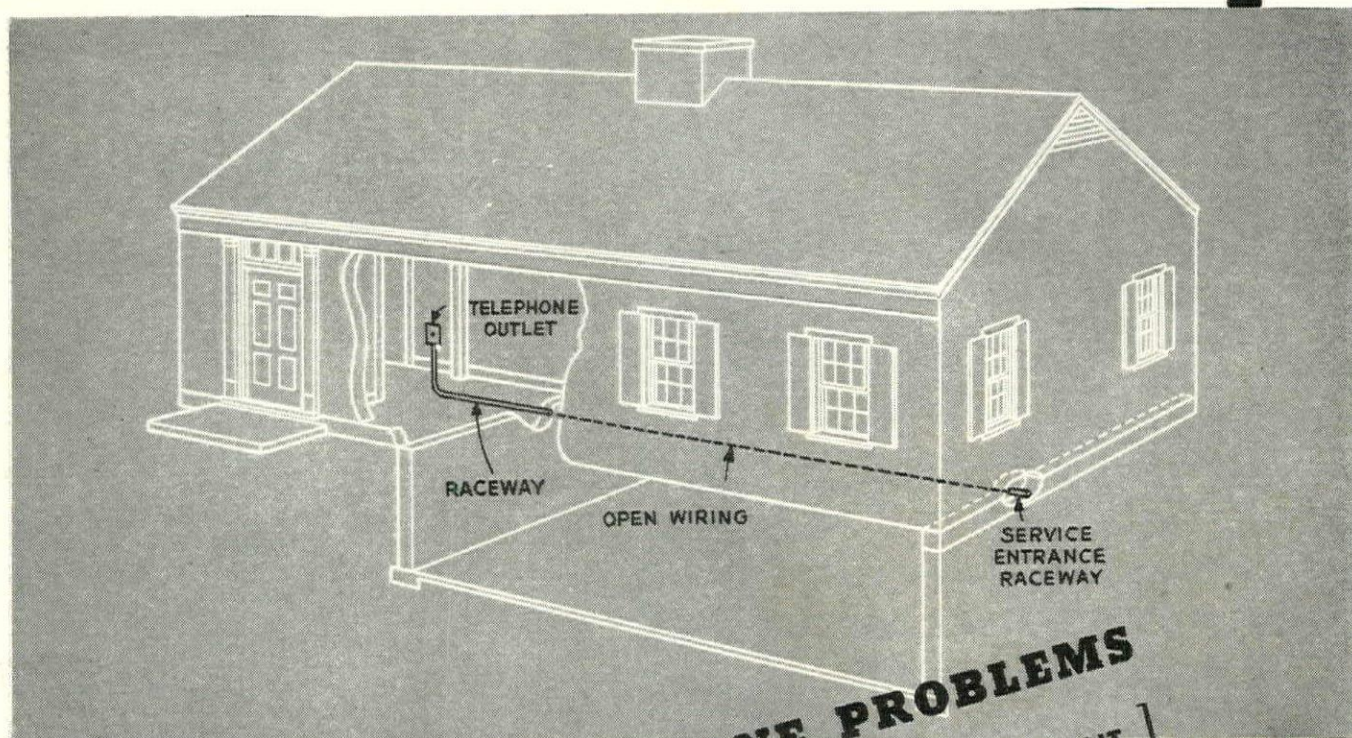
Recent Starch reports on advertising in TIME Magazine rate current Worthington Air Conditioning ads as leading all competition in attention-value and thorough readership, on the basis of results per dollar invested. This indicates that American businessmen are becoming increasingly familiar with the advantages Worthington offers.

Worthington "Integration" Offers Many Advantages

Making so many of the vital "innards" of an air conditioning or refrigeration cycle . . . compressors, condensers, pumps, turbines, valves, fittings, etc. . . . Worthington is in an ideal position to combine them into the integrated unit that will give long, trouble-free, economical service. Your nearby Worthington Distributor will be glad to give you further details that prove there's more worth in Worthington.



EVEN SMALL HOMES SHOULD HAVE RACEWAYS FOR TELEPHONE WIRES



SMALL-HOMES TELEPHONE PROBLEMS

[THE CASE OF THE ONE-STORY HOUSE WITH UNFINISHED BASEMENT]

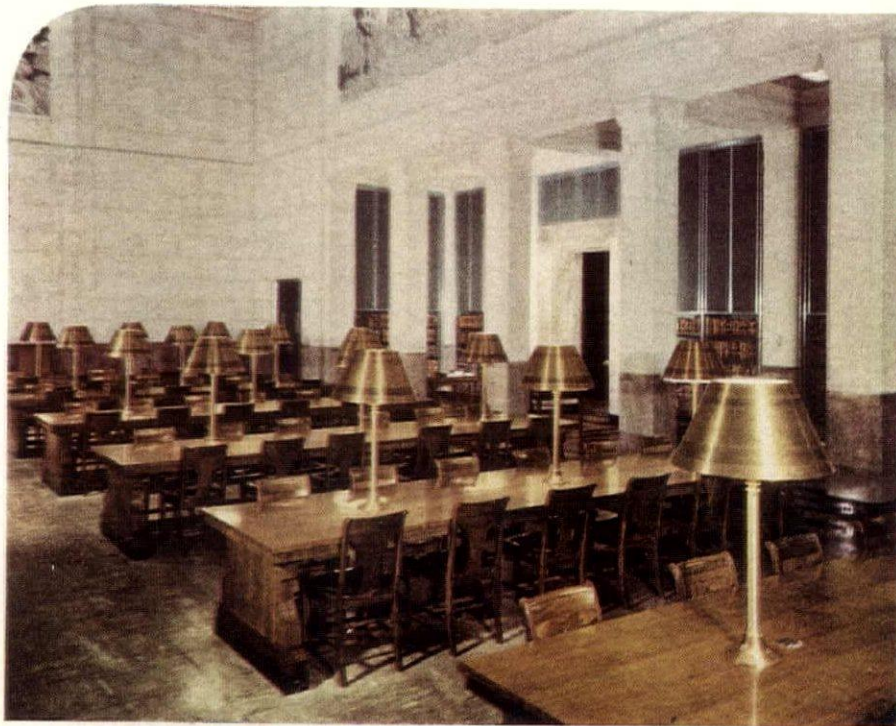
Raceways for concealing telephone wiring in smaller homes are easy and inexpensive to install. And they are an added convenience which your clients will appreciate.

When planning a one-story home with an unfinished basement, the simple telephone wiring arrangement shown above is usually satisfactory. A short piece of pipe or other form of raceway is installed within the wall from the basement to a convenient telephone outlet. It assures concealed telephone wiring in the living quarters.

Your Bell Telephone Company will be glad to help you plan for telephone wiring facilities in the homes you design. Just call your Telephone Business Office and ask for "Architects and Builders Service."

BELL TELEPHONE SYSTEM





REALWOOD

FOR DIGNITY,

FORMICA laminated plastic surfacing material is so flexible in color and patterns that it is adaptable to any kind of installation from the most dignified and permanent to "jive" color combinations that may be desired for cocktail rooms or theaters. ¶ The color photograph shown above represents the reading tables surfaced with Formica "Realwood" in the reading room of the annex to the Congressional Library in Washington, where a great deal of Formica was used both for dignity and durability. ¶ Below is the cocktail lounge of the Statler Hotel at Washington where something livelier was desired. ¶ In either case the practical wearing qualities of the material are the same. It is non-porous and unstainable, cigarette-proof on horizontal surfaces, washable with soap and water or with solvents—and extremely long wearing and durable. There is no painting or refinishing required ever—no maintenance, no time out of service, no trouble.

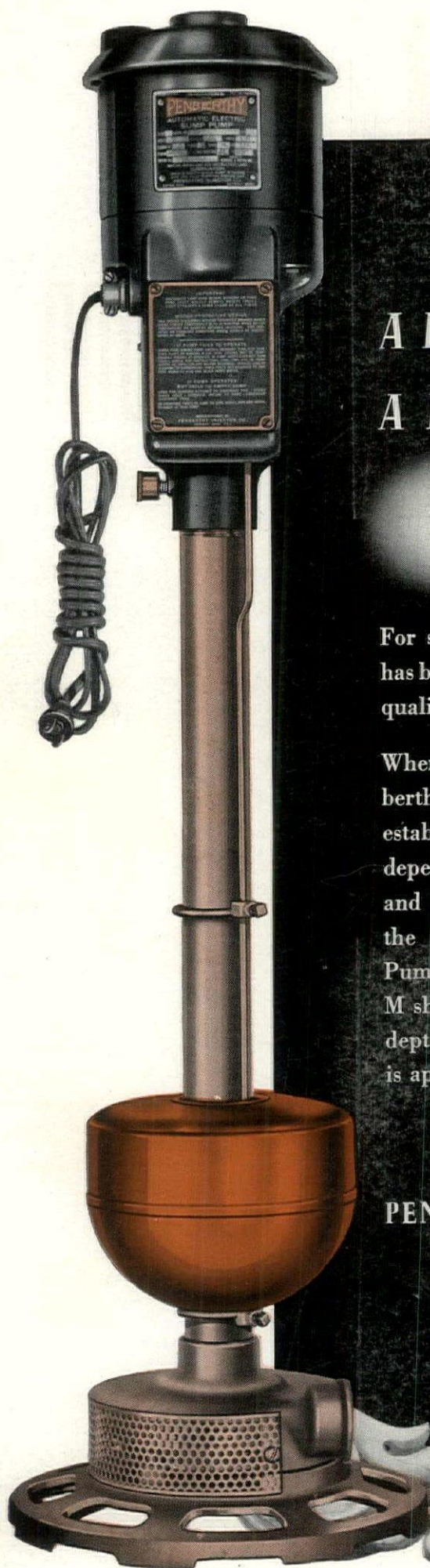
THE FORMICA INSULATION COMPANY, 4639 SPRING GROVE AVENUE, CINCINNATI 32, OHIO



Color

FOR A THRILL!





A Distinguished Name...

A Distinguished Product

**PENBERTHY
AUTOMATIC ELECTRIC
SUMP PUMPS**

For sixty (60) years, the name "Penberthy" has been associated with products of the highest quality.

Wherever seepage water accumulates, Penberthy Automatic Electric Sump Pumps have established an outstanding reputation for dependability and long life. Made of copper and bronze throughout, they are immune to the attacks of corrosion. Penberthy Sump Pumps are available in three types; the Model M shown here is made for five different sump depths. They are preferred wherever quality is appreciated.

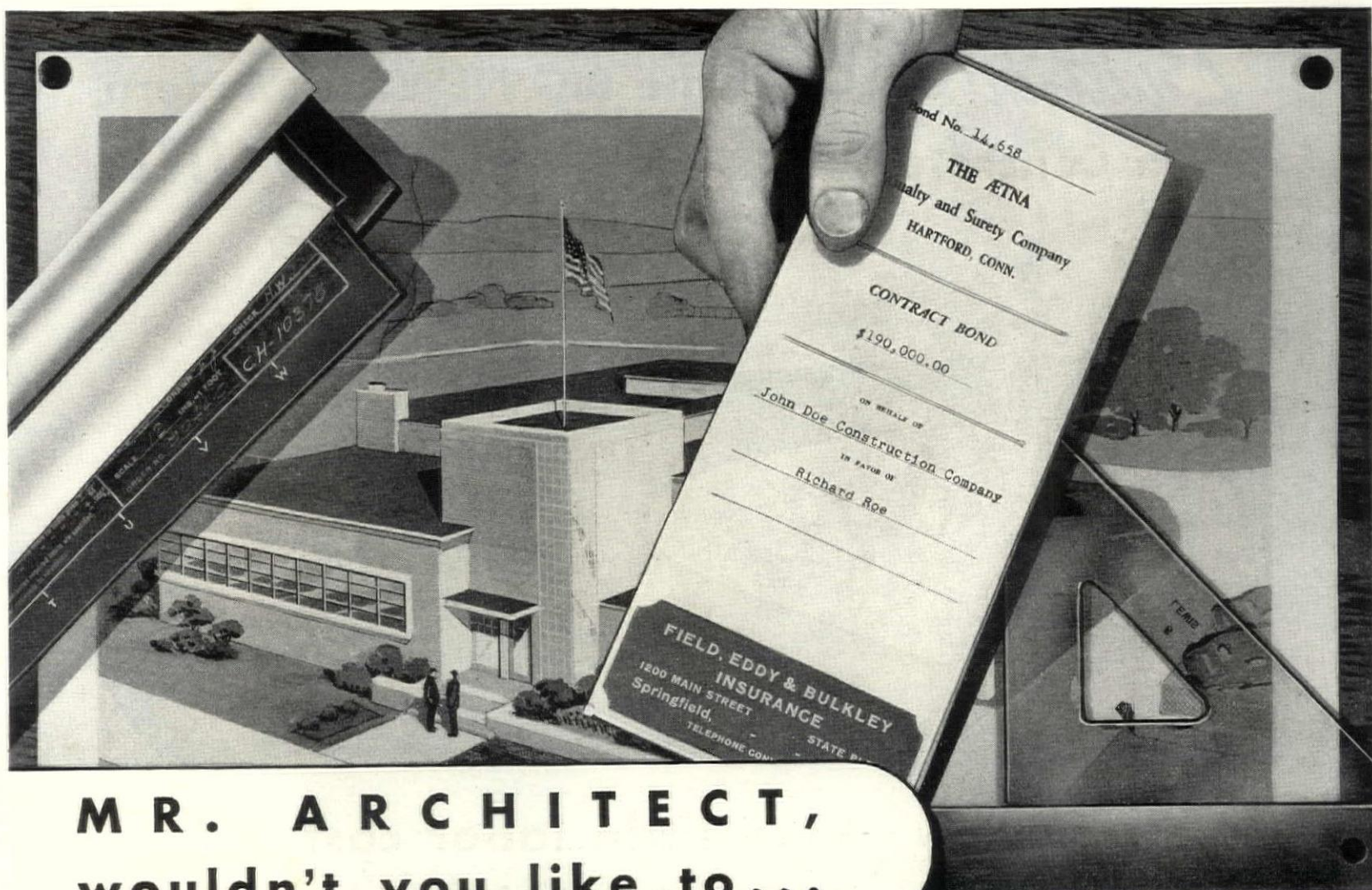
**CONSTRUCTED OF COPPER AND
BRONZE THROUGHOUT**

PENBERTHY INJECTOR COMPANY

Manufacturers of Quality Products Since 1886

DETROIT 2, MICHIGAN

Canadian Plant—Windsor, Ontario



MR. ARCHITECT, wouldn't you like to...

... recommend the lowest bid with confidence?

... let someone else worry should the contractor default?

... assure your client that the structure will remain free and clear of liens?

... know that guaranteed credit will help the builder to buy more advantageously in a "seller's market"?

... make an organization of unquestioned resources and experience available to arrange for completion of the work even under today's changed conditions in accordance with the contract?

Specify This New Contract Bond

For a small fee, a new form of Contract Performance and Payment Bond, developed in cooperation with the American Institute of Architects, provides more and quicker protection for the owner and those who provide materials. Formerly, the Surety could postpone action until after the trouble was remedied. Now, if work halts or trouble threatens, the Surety steps in and acts immediately.

Experienced men are available at once to straighten out the difficulty. If money is owing, workmen, subcontractors and suppliers are paid without delay. If necessary, new bids are secured and submitted to you and the owner. Funds are furnished as needed to keep the job rolling. The Surety makes arrangements for completion of the contract according to its terms and conditions.

This new contract bond takes many present day "ifs" out of building... but only if it is written by a Surety with experience and resources adequate to assume this major responsibility. Aetna Contract Bond service will bear the closest investigation. Ask our local man for full details.



AETNA CASUALTY AND SURETY COMPANY

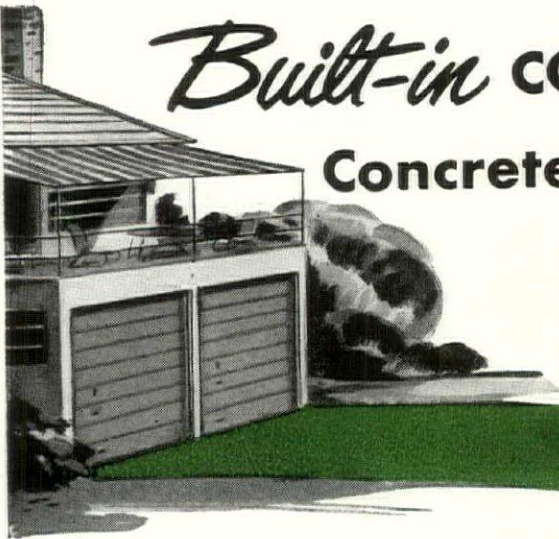
Affiliated with Aetna Life Insurance Company

Automobile Insurance Company — Standard Fire Insurance Company

HARTFORD 15 • CONNECTICUT

Built-in COLOR is the **BIG NEWS** in Modern
Concrete Work—and it **COSTS SO LITTLE**
with **ART-ROC**

REG. U. S.
PAT. OFF.

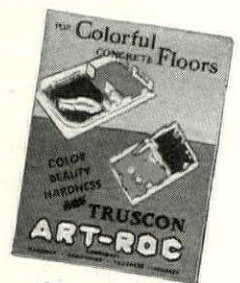


**Very little labor cost—small
material cost for beautiful**
Built-in **COLOR!**

TRUSCON
ART-ROC
AGGREGATE

GIVES
Built-in **COLOR**
HARDNESS
DURABILITY
EXTRA VALUE
at Low Cost!

Everybody likes color but most people don't know that they can easily have color in *any* flat concrete surface—at small cost for labor and very little added cost for material. You can give your clients color in concrete by specifying and using Truscon ART-ROC Aggregate which is simply dusted on before finish troweling and produces a rich, beautiful finish of built-in color that is right **IN** the concrete. Colored concrete sets your jobs apart and gives them distinction—and adds a valuable sales feature. Over fifteen years of successful use. We invite your inquiries. Write Dept. AR-2, *Truscon Laboratories, Division of Devoe & Reynolds Co., Inc., Detroit 11, Michigan.*



SEND FOR
FREE FOLDER

TRUSCON *Laboratories*





in tune with
the times...

NUTONE IS THE
WORLD'S LARGEST
MAKER OF
DOOR CHIMES



Prospective home buyers like the modern, friendly sound of a NUTONE Door Chime. It fits perfectly into the better-living pattern of a well-planned home.

You'll like NUTONE Door Chimes, too, because they're easy to work with. Fourteen different styles are available to suit every type of interior design and color. Compact, two-note models; short-tube chimes; a combination NUTONE Door Chime and Telechron kitchen clock with a large, legible dial; long-tube chimes in two-note and combination four- and eight-note styles—some with fine built-in Hall Clocks.

Prices from \$3.95 to \$59.95 (list) make it easy to meet cost specifications on every type of home.

Send for your copy of a new folder which illustrates and describes all fourteen NUTONE Door Chimes.

...better living means better listening, too!

NUTONE INCORPORATED, MERCHANDISE MART, CHICAGO 54;
200 FIFTH AVE., NEW YORK 10; 931 EAST 31st ST., LOS ANGELES 11; TERMINAL SALES BLDG., SEATTLE 1

Censure and Acclaim . . . Berla & Abel Aghast . . . Allen vs. Zarapop . . . Cries from a Red-Tape Captive . . . *The Nippon Times* on the Imperial Hotel . . . Competition Critique . . . Letter from Arizona.

POISON AND MEAT

Forum:

Please cancel my subscription to the FORUM on the STRENGTH of the WEAKNESS of the September cover design. I could write a volume on the shallowness of your publication but don't have the inclination or time at the moment.

DAVID G. LEWIS

Palo Alto, Calif.

Forum:

Your cover designs seem to be getting better each month. The September one was particularly effective, I thought.

LAWRENCE MILTER

New York, N. Y.

SEPTEMBER COMMENTARY

Forum:

Congratulations on "William the Conqueror . . ."

PAUL LASZLO

Los Angeles, Calif.

Forum:

—And all graduates of the University of Illinois, in Architecture—

Upon reading your latest issue it seems to me that Bill Pereira was the only guy from Illinois who took seriously the BIG BUSINESS that Prof. Provine was always lecturing about. When the rest of us refused to give up our Saturday afternoons to put that big job across Bill must have been right in there pitching. No chicken coops for him. When they put up that ten story building in Seattle, Bill must have got the last four stories on in three days instead of four like the Professor.

That is mighty nice going, Bill—with a build up like that who knows what may happen in 1948? Look out for Ole Chuck Luckman, though. He was a year behind you in school but he's breathing soap suds right down your neck.

BILL KAESER

Univ. of Ill. '31

Madison, Wis.

Forum:

The entire September issue has pace and interest. Wouldn't Bill Pereira be quite a guy to play Roark in *The Fountainhead*? Except that Bill is civil to his clients which, of course, would never do if he had integrity. I haven't got any either.

I know Reg Isaacs and that bunch on the Michael Reese planning program. I

fervently hope that action will result from their efforts but I wish it didn't have to be put as a burden on a hospital to carry out the planning of its surroundings to this extent.

LAWRENCE B. PERKINS

PERKINS & WILL, Architects

Chicago, Ill.

Forum:

May I tell you how attractive a story you have produced on the plans of the Michael Reese Hospital and associated groups.

The proposal is presented in excellent form with good basic objectives and concepts, and is sound and very well delineated. The Michael Reese staff is to be complimented on the job, and this is my personal word of commendation.

The preliminary plans and the direction of them is so well done that it is unfortunate that you saw fit to make a few caustic comments about other agencies.

Your reference to the Regional Plan Association, which as you know, is the Chicago Regional Planning Association, is of course unnecessary, and I am sure you know that the statement is not appropriate. ("The Regional Plan Association which might be expected to assert a certain amount of leadership, takes the standoffish view that Chicago is not its special province." FORUM, Sept. '46.)

Our Association was organized by a number of civilians and public officials in the suburban area outside Chicago for the purpose of developing and harmonizing all the planning in the suburban metropolitan areas. I am sure you know also that our plans are keyed to, and coordinated with, those of the many agencies of the city of Chicago. You should know that it would be absurd to have two over-all agencies planning the same territory. Were we to assume responsibility for planning work in the city, your article might appropriately have referred to the added confusion of having two separate bodies working on the same problems.

ROBERT KINGERY

Chicago Regional Planning Association
Chicago, Ill.

WHO'S GOT FANTASY?

Forum:

With regret we convey the discomfort felt upon reading the introductory remarks to the Berla & Abel Portfolio in the August issue. The quoted remarks of both of us

were inaccurate to the point of fantasy and tactless to the point of being extremely embarrassing. We feel that a good professional periodical ought not to depend on cute journalistic tricks for interest. In any case we prefer not to be the subject of such an imaginary interview another time.

We were extremely pleased with your presentation of our material . . .

BERLA & ABEL

Washington, D. C.

Unless our researcher has holes in her head (which we checked) this was no imaginary interview—Ed.

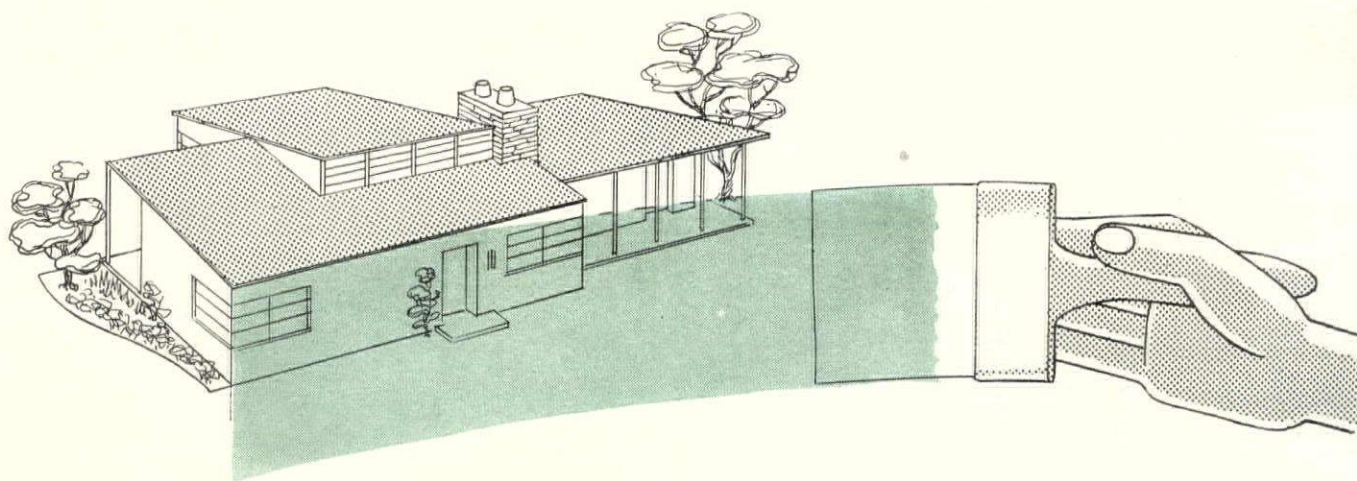
INFLATION AND FRIED MUSH

Forum:

I am sitting in my lavishly appointed office reading an article with the title "Action Now Can Avert Possibility of Inflation." I am smoking a costly nickel cigar for which I paid 18 cents and have just driven downtown in a new Ford sedan that cost, to be exact, \$1,434.43. (The last Ford I bought in 1940 cost \$818.00.) Naturally, I am all agog to see what I can do to ward off even the tiniest smitch of inflation when a valued client came in, whom I shall call Mr. Zarapopoulos just so that you will not confuse him with Mr. Zarafonetis, who is in the newspaper business, while Mr. Zarapopoulos is in the restaurant business up to his neck, of which he has ample. However, this does not make things as clear as I might wish because Mr. Zarafonetis used to be in the restaurant business until the occupational hazard incident to that profession (broken arches) caused him to pass to another field. In fact, Mr. Zarafonetis's Uncle Gus still is in the restaurant business and if you see him say hello for me. His feet hurt, too.

Mr. Zarapopoulos, whom in view of the paper shortage I will hereafter refer to as Mr. Zarapop, gave me a copy of a publication call "The News Bulletin of the National Restaurant Association," which contained articles by Mr. Nathaniel Owings, architect, of the firm of Skidmore, Owings & Merrill of Chicago, and Mr. John W. Root, architect, of the firm of Holabird & Root, also of Chicago. These two able characters were discussing the modernization of restaurant facilities. "Every restaurant owner," said Mr. Owings, "should feel a civic responsibility and develop a pride and interest in the block he is in." "What's he mean by that?" demanded Mr. Zarapop.

(Continued on page 40)



BONDEX answers

the call for

COLOR

on exteriors

Perhaps it stems from a determination to get away from the drabness of war. Maybe it's just a device to individualize homes and buildings that would otherwise be stereotyped. One thing is sure — the interest in "exterior decoration" is spreading fast to all parts of the country.

Bondex, the leader among waterproof cement paints, proves its leadership by expanding its line of shades from 8 to 12 and by offering specific color suggestions for harmony among walls, roof and trim. For "mellowing" concrete block — for adding beauty to stucco and masonry — color-style with Bondex.

BONDEX waterproofs as it beautifies

Bondex Waterproof Cement Paint actually does two jobs at once. First, it provides a convenient and economical way of satisfying personal color preferences. Also, it bonds with the surface and seals up the tiny cracks and pores through which moisture may penetrate.

Bondex has demonstrated its ability to perform this double service to the point where more Bondex is sold than the total of all other waterproof cement paints combined.

THE REARDON COMPANY • St. Louis 6 • Chicago 9
New York 6 • Los Angeles 21 • Montreal 1

12 SHADES AVAILABLE IN NEW COLOR CHART

Dutch White
Old Spanish White
Oyster Shell
Antique Ivory
Carthage Cream
Adobe
Tropical Coral
Spanish Buff
Monastery Gray
Grotto Blue
Ivy Green
Brick Red
Also, Pure White



SEND FOR THESE FOLDERS

These Bondex folders dealing particularly with color should be in your hands. They will be sent on request to the nearest Reardon Company office.

BONDEX *Waterproof*
CEMENT PAINT



G. Fox & Co., Hartford, Conn., Department Store

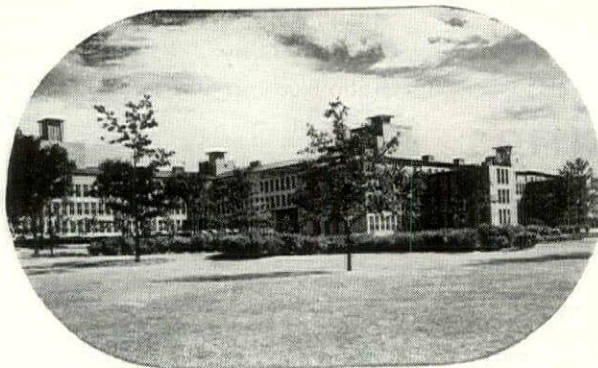
Walseal* valves and fittings

**cut pipe
maintenance
costs...**



*California State Capitol, Sacramento
Monumental Building*

all types of
in Modern Buildings



*Bell Telephone Laboratories, New Jersey
Commercial Building*



*Bellevue Hospital, New York
Institutional Building*

Silbraz* joints made with Walseal valves, fittings and flanges are specified on red brass or copper piping systems by leading architects and builders in the construction or remodeling of . . . hospitals . . . commercial buildings . . . schools . . . breweries . . . private homes . . . monumental buildings . . . department stores . . . and similar projects.

These men know through years of experience that Silbraz joints are permanent, leakproof, trouble-free . . . and their use will avoid costly maintenance and repairs.

Silbraz joints are threadless — Silver brazed (not soft soldered) joints that, when properly installed, actually make the line a "one-piece pipeline". They will not creep or pull apart under any condition which the pipe itself can withstand.

For further information regarding Walseal valves, fittings and flanges, write for Circular 84.

*Patented — Reg. U. S. Pat. Off.

WALWORTH
valves and fittings

60 EAST FORTY-SECOND STREET

NEW YORK 17, N. Y.

Make it a "one-piece



pipeline" with Walseal

DISTRIBUTORS IN PRINCIPAL CENTERS THROUGHOUT THE WORLD

LET THIS STEEL SENTINEL SOLVE YOUR PROBLEM OF *PROTECTION...*

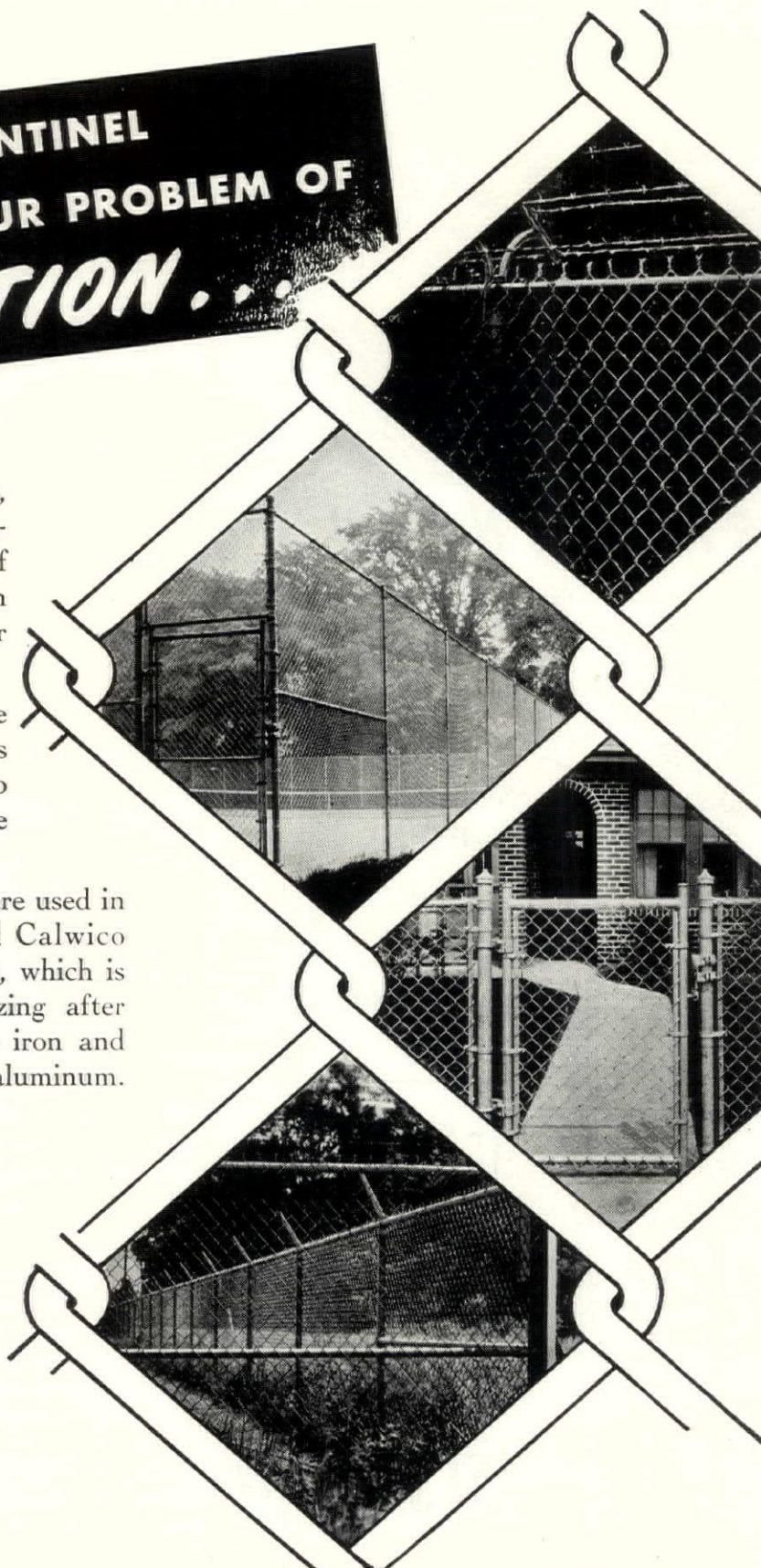
Power plants, playgrounds, refineries, reservoirs, schools, airports, institutions—are but a few of many types of property which require protection against trespassing, theft and other hazards.

A sturdy chain link fence solves the problem of property protection for its initial cost is moderate—it's easy to install—and maintenance costs are amazingly low.

Only the best selected materials are used in making Wickwire, Colorado and Calwico Brands of Chain Link Fence fabric, which is further protected by hot galvanizing after weaving. Fittings are of malleable iron and pressed steel, heavily galvanized, or aluminum.

FREE ESTIMATES

We will be happy to measure your property, work out details to secure proper protection, and submit estimates for fence material ready for erection or covering complete installation by our trained crews. For free catalog and further particulars, write to our nearest branch office.

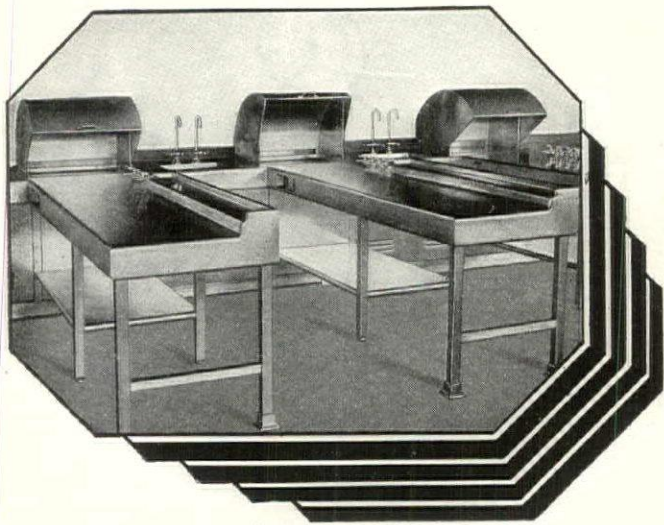


CHAIN LINK FENCE

WICKWIRE • COLORADO • CALWICO
DIVISIONS OF THE COLORADO FUEL AND IRON CORPORATION

Wickwire Spencer Steel	The Colorado Fuel and Iron Corporation	The California Wire Cloth Corporation
361 Delaware Ave., Buffalo 2, N. Y.	Continental Oil Bldg., Denver 1, Colo.	1001 22nd Ave., Oakland 6, Cal.





VARIATIONS IN

LABORATORIES

HOSPITALS

RESTAURANTS

HOTELS

INSTITUTIONS

KEEPING abreast of the technical requirements of a host of industrial and institutional clients develops an alert and resourceful organization — constantly "on their toes."

Our engineering staff is prepared to develop plans for the manufacture and installation of a job built to your needs. Consult us on problems of layout, materials and methods.

Polhemus
P. B. POLHEMUS COMPANY

specialized installations for
LABORATORIES

SCHOOLS
CAFETERIAS

INSTITUTIONS
HOTELS

P. B. POLHEMUS CO., INC.
ROSELLE, NEW JERSEY

11 Park Place

New York 7, N. Y.

"He means you must become a leader in your area, rising by slow degrees until you are generally recognized as the block head," I explained.

"Okay," said Mr. Zarapop. "Then what does this mean?" He pointed to Mr. Root's statement, "Restaurants must have atmosphere."

"This fellow means we gotta have air in our restaurants?" demanded Mr. Zarapop, aghast. I ignored Mr. Z.; I was fascinated by another Root statement, "So fast are we moving to the modern, it is said that in ten years' time, mortgage companies will not lend money on a period building." It had just dawned on me why they refer to it as "period" architecture; a period is a full stop. Hence, period architecture is architecture that has come to a full stop.

Frankly, Messrs. Owings and Root, you are on a false trail. You want to know what is the matter with the restaurant business. They don't serve fried mush properly, that's what's the matter with the restaurant business. Cornmeal mush should be sliced thin and fried very crisp and you do not put synthetic maple syrup on it; you pour over it the gravy from pork sausages. What do you get in a restaurant when you order fried mush? I mean besides a hell of a look from the waitress? You get a slice of something half an inch thick and very limp and lackadaisical over which you are supposed to pour a menacing looking syrup that tastes like sunburned machine oil.

I explained this to Mr. Zarapop but his mind was on other things. "Both these architects," he announced, pointing to their photographs, "are better looking than what you are."

"That in itself hardly suffices to make them unique," I replied coldly and went out into the drafting room and slammed the door.

ROGER ALLEN

Grand Rapids, Mich.

OUT FOR BLOOD

Forum:

Since returning home from almost five years in the armed services, my brother and I have endeavored, as contractor and architect respectively, to do our best by our fellow veterans as well as to help alleviate the housing shortage. But not since my army career or my stay in Germany have I seen so much red tape and obstructionism by government officials, their agencies and their thousands of parasites.

It seems deliberate government policy to create this situation of chaos so as to discredit the entire building industry. I make this statement here and now: I spent too many years of my life fighting against just such control and chaos to stand idly by.

The Civilian Production Administration is as great an enemy to this country as Hitler ever pretended to be. We have almost done as Hitler predicted, adopted servitude to the omnipotent state. Our every breath is almost decreed by some government agency or other.

These complaints are not made on the spur of the moment, for I have spent months trying to cut through the red tape of various government agencies. I have filled in myriad forms, spent hundreds of dollars on blueprints and specifications—for filing in the waste-basket of some agency.

It's time the American people or their honest representatives endeavor to right this un-American situation. While the veteran deserves a good deal of consideration, he is nevertheless no more an American than the thousands of people who worked in the factories, mills and on the farms; for they have as much right to a home as he. . . . I am writing this with the intention of correcting this deplorable situation of subordination to the state, and to exercise one of my prerogatives as a citizen in a democracy. I suggest that something be done immediately about the arrogant attitude and dictatorial policies which prevail in such offices as that of the Civilian Production Administration in St. Louis, Mo.

America and its productive capacity are equal to the task, given freedom of opportunity, for the people are willing and the country is bountiful.

JOHN W. EDELMAN, JR.

Flat River, Mo.

COMPETITIVE MODERN Forum:

Mr. Trouchaud and myself had been reading all about postwar housing and how wonderful life is going to be in the future. Then we took a look at what is being built today under the G. I. Housing bill. We wondered if it wasn't about time to see whether something could be done, and do it!

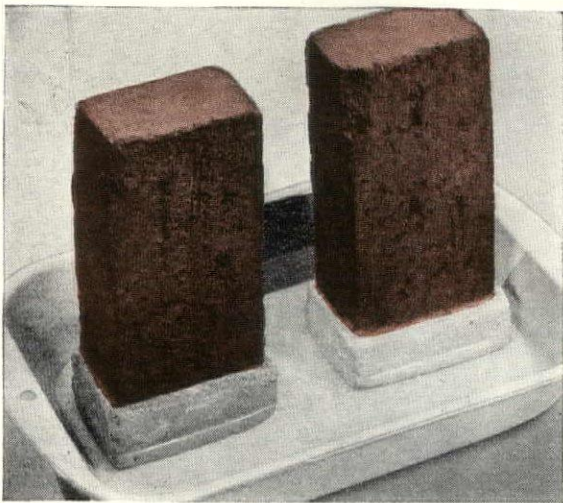
We have started a group which, we think, will actually construct "the house of tomorrow" for the people in the medium income bracket. At the present moment we have been working about six months against all the stumbling blocks of banks, labor unions, heating contractors, etc. The whole tendency seems to be against doing anything that was not done by our grandfathers. We are starting in to construct our first houses; three before fall, four later on, and then larger quantities.

To give you an idea of what they are: We are giving a piece of property in every case except one, of over 60 x 100. All the houses have the correct orientation and are taking advantage of solar heating.

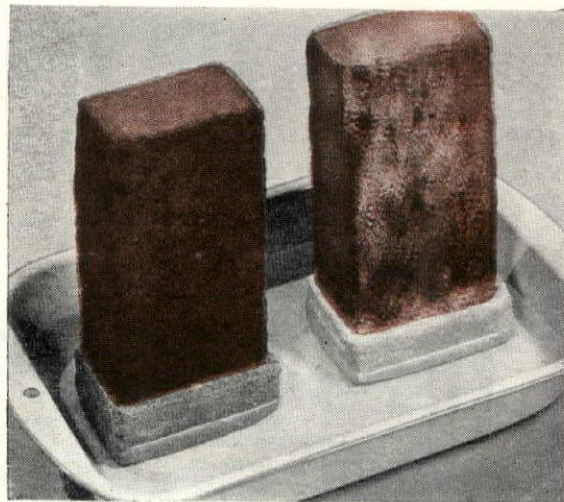
(Continued on page 44)

BRIXMENT MORTAR

Helps Prevent Efflorescence



To test two mortars for resistance to efflorescence, "cap" two brick heavily with the mortars—let harden, and



keep both brick for a few weeks in a shallow pan of water, as shown. Try this with Brixment mortar!

HERE'S WHAT CAUSES EFFLORESCENCE—AND WHY BRIXMENT MORTAR HELPS CONTROL IT

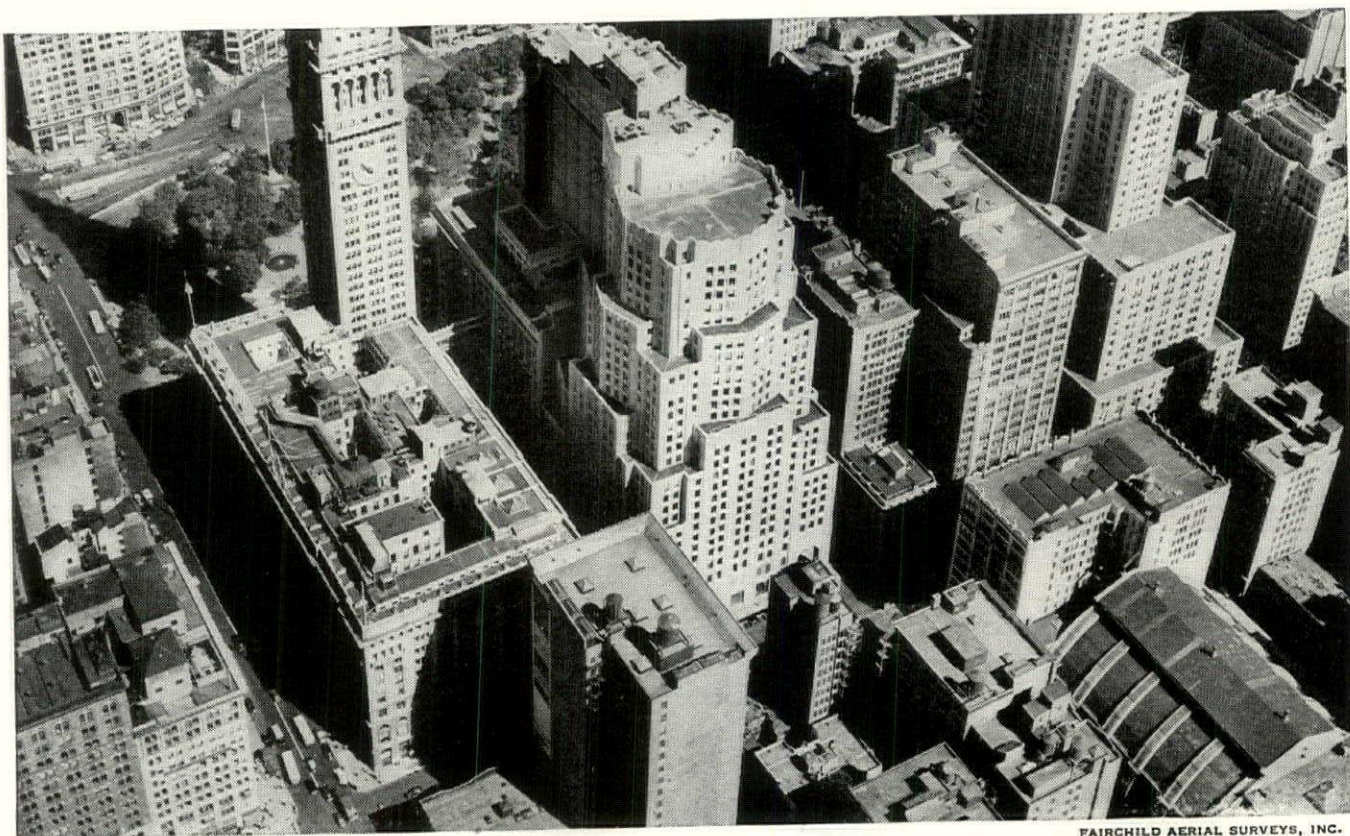
Efflorescence is an outcropping of minute white crystals on brickwork. When these crystals occur on colored mortar joints, the condition is sometimes mistaken for *fading*.

Efflorescence is caused by the presence of soluble salts in masonry materials. When reached by water, these salts dissolve, and are drawn by evaporation to the surface of the wall.

Brixment itself *does not cause efflorescence* because it is practically free from soluble salts. Even when such salts are present in the sand or brick, the waterproofing in Brixment usually *prevents them from coming to the surface*.

Bricklayers who have used Brixment mortar for years say they have far less efflorescence with Brixment than with any other mortar.

LOUISVILLE CEMENT CO., Incorporated, LOUISVILLE 2, KENTUCKY
CEMENT MANUFACTURERS SINCE 1830




FAIRCHILD AERIAL SURVEYS, INC.

The right roof for any job— FROM ONE SOURCE

You see an endless variety of built-up roofs in any modern city. But whether they're Smooth Surfaced Asbestos; or Coal Tar Pitch with gravel or slag surfacing; or Asphalt, smooth or gravel-and-slag surfaced—Ruberoid makes them all, and in specifications to meet any condition.

You'll see still other types as more new buildings are erected—roof developments worked out by Ruberoid engineers in order to make valuable roof areas more truly productive—promenade roofs, heavy traffic roofs, gar-

den roofs. Ruberoid has developed sound, tested specifications for each of these new roofs, available from Ruberoid Roofers. There's a Ruberoid Approved Roofing Contractor in your community. His wide experience, facilities and the resources of Ruberoid's complete line of roofing materials are at your service—complete assurance of top quality and workmanship.

The RUBEROID Co., Executive Offices:
500 Fifth Avenue, New York 18, N. Y. 
Asphalt and Asbestos Building Materials. Thermal Insulations



The Name **HOPE'S** *Guarantees*
1818 WINDOWS 1946



The King Residence, Sea Island, Georgia. Francis L. Abreu, Architect

FOR A "ROOM WITH A VIEW"

More than any other type of fenestration, HOPE'S Steel Casement Windows help the architect accomplish his purpose. Their versatility in layout is a constant aid to the imagination. In the room illustrated, the unobstructed view and the effect of a large glass area is obtained without sacrifice either of structural support or openings for ventilation at any point in the arc.

In specifying HOPE'S Windows, the architect also assures his client of the benefits of perfected construction, effortless operation, and life-time durability.

HOPE'S WINDOWS, INC., Jamestown, N. Y.

THE FINEST BUILDINGS THROUGHOUT THE WORLD ARE FITTED WITH HOPE'S WINDOWS



RALPH HUSZAGH, ARCHITECT

"Born with a
2000-year-old
pedigree!"



A whiter white for your buildings, with EAGLE Ready-To-Use WHITE LEAD PAINT

Plan to give your buildings the brilliant white gloss of new Eagle Ready-To-Use White Lead Paint! It's a whiter white... and it stays white longer. Besides this unique advantage, don't overlook the exceptional smoothness of Eagle RTU White Lead Paint. It literally flows on, covers completely, leaves practically no brush marks. Because it's ready to use it's a real time-saver, too.

Being lead, this marvelous paint defies wear and weather... has all the tough, protective qualities made famous by white lead for over 2000 years. No other paint surpasses its combination of beauty, durability and economy. Backed by 103 years of Eagle-Picher paint-making experience—your assurance of highest quality. Eagle RTU is being made available as rapidly as production will permit. Two forms: Primer Sealer and Outside White Finish Coat. One, two and five gallon pails.

THE EAGLE-PICHER COMPANY
Cincinnati (1), Ohio
Member of the Lead Industries Association



OLD RELIABLE SINCE 1843
Eagle White Lead in oil

EAGLE PURE WHITE LEAD *Paint*

They will have large windows with a novel idea of ventilation. They will have panel heating. The room sizes are all larger than ordinary: the living room is 12 x 20, bedrooms 12 x 12 or 12 x 16. All the houses have modern lighting and include a carport. We are coming as close as we can to doing all the things that were talked about for the postwar house, and at the same time we are building ours complete, including property, for a trifle under \$10,000. The houses are a combination: partly prefabricated and partly conventional.

Looking at one of your back issues, I discovered that practically all real estate people and developers throughout the U. S. are still handing out the same old stuff and no one yet has actually done a modern house in the competitive price range.

From what I have discovered in the field of contracting and building, it will take a hell of a lot of people with a hell of a lot of guts, or we will get the same old junk thrown at us for at least 15 years.

CALEB HORNBOSTEL

New York, N. Y.

WRIGHT

Forum:

In relation to the letters you published in the August issue "Men against Wright"—I should like to know who are these "men"—what have they contributed to the arts and civilization—where is their work and who cares what their petty personal opinions may be?

Frank Lloyd Wright has shown us his faith by his works.

Give us a look at these "men," will you please?

JOHN LLOYD WRIGHT, Architect
La Jolla, Calif.

Forum:

In an article on Frank Lloyd Wright (FORUM, Jan. '46) you make the following statements:

"A case in point is the Imperial Hotel, which was floated on a mat of concrete in place of a conventional foundation. The design was without precedent, and in the considered opinion of top U. S. engineers, it was also without structural merit. But when the Japanese earthquake of 1925 came, almost the first news that came through was that the hotel had floated through with a minimum of damage. Practically every paper in the country carried the story..."

In view of this widespread belief about the Imperial Hotel, I thought you might be interested in this excerpt from the *Nippon Times* for Aug. 31, 1946:

"... On September 1, 1923, Tokyo was

rocked by the most disastrous earthquake in history. But the damage, as was the case in the San Francisco 'quake, was done mostly by fire. Every building in the city withstood the shocks. The only things which toppled down were flimsy, ancient wooden houses, but this wasn't generally known, so when Mr. Wright received a telegram from Baron Okura informing him that the Imperial Hotel withstood the 'quake, he naturally concluded that the floating foundation had saved it. That is how the hotel won world-wide renown for its ability to stand up against earth tremors when, in actual point of fact, few buildings in the city were as badly damaged by the 'quake as was the Imperial Hotel. There were great fissures in its walls. In the basement where there was a swimming pool, the fissures were so large that the pool has never been used since. So, instead of working on floating foundations, Tokyo's contractors, who rebuilt the city's burned structures, gave... Wright's experiment a wide berth.

"But the Imperial Hotel's reputation was already established. All over the world it was regarded as the safest place to be in during an earthquake when, as a matter of fact, it is about the most dangerous. Its present occupants may not know it, but the building was condemned by building inspectors of the Metropolitan Police a good many years ago and work on tearing it down was just about to start when the war broke out."

DONALD KOEHLER

Tokyo, Japan

According to Brigadier General Ken R. Dyke (until recently chief of the Civil Information and Education Section, GHQ, SCAP), the Imperial Hotel, where he and other brass hats were quartered after the occupation of Tokyo, was in excellent condition except for one wing which had been damaged by fire bombs. If structural defects were present, General Dyke would have noticed them since his previous position with Johns Manville gave him a thorough working knowledge of construction. Comments Dyke: "The most conspicuous structural defects in the hotel were the fallen arches among the members of the staff."—Ed.

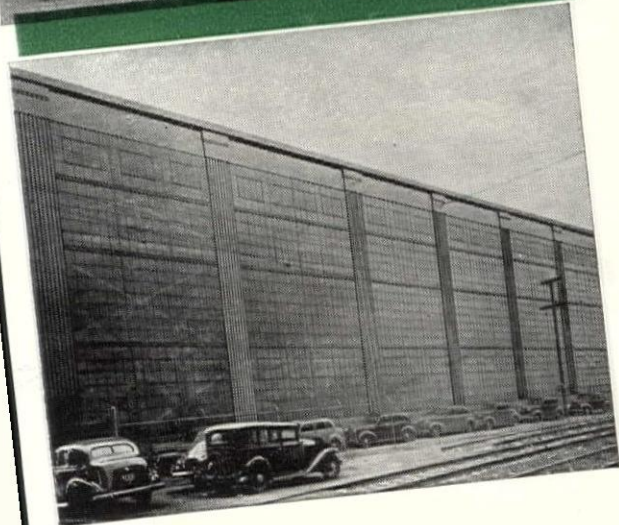
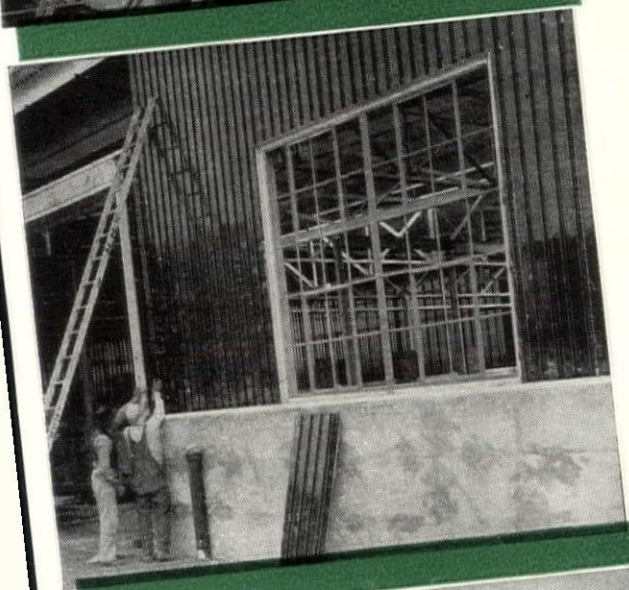
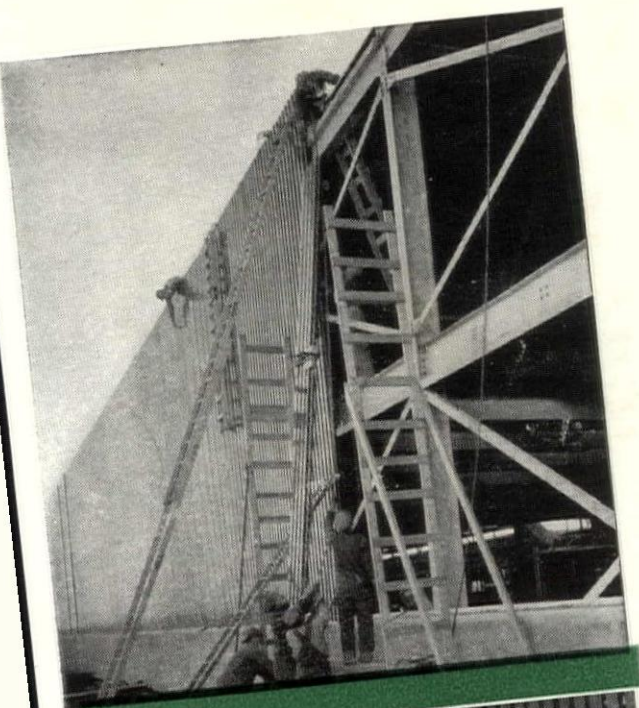
BUILDING FOR DEMOCRACY

Forum:

I am neither an architect nor a builder, but a school teacher and member of the American Missionary Association. This organization has long majored in education among underprivileged groups in the South. We are in constant contact with state, county, city and town officials for consultation on problems of education. For instance, in the state of North Carolina where construction of schools is now going on at a very rapid pace, we have had many building plans submitted to us for approval. In one instance where a grade school was be-

(Continued on page 48)

Steel framework gave birth to Q-PANEL WALLS



WEIGHT

7 pounds per square foot

INSULATION VALUE

equals 12-inch dry masonry

ERECTION SPEED

50 square feet every 9 minutes

Q-PANEL

Q-PANELS, made by the H. H. Robertson Company, of Pittsburgh, Pa., are wall-building units two feet wide and up to 25 feet long, being a fluted section and a flat section separated by $1\frac{1}{2}$ inches of insulation. Steel or Galbestos is usually used, though stainless or aluminum are also frequent.

Q-Panels are delivered to the job cut to fit and are assembled on the steel framework with six bolts. So fast is construction that an acre of wall has been erected in three days.

Construction is dry, clean, noncombustible and the finished wall has thermal insulating value equal to a foot-thick, dry masonry wall.

Architects have found great leeway of expression in combinations of texture and color. Flat and fluted sections can be combined to produce striking patterns of light and shade.

The light weight, seven pounds per square foot, introduces substantial economies. For details write:

H. H. ROBERTSON CO.

2403 Farmers Bank Building
Pittsburgh 22, Pennsylvania



Offices in 50 Principal Cities
World-Wide Building Service

MAINTENANCE OF RESILIENT FLOORS

Architects are rarely consulted by owners on proper maintenance of new resilient floors. Usually the owner goes ahead with his own methods, which may damage the appearance or shorten the life of his floor. Then, if the floor gives unsatisfactory service, the architect may be thought guilty of an improper selection of flooring materials.

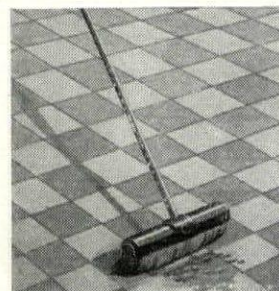
It is in the architect's interest, therefore, to understand maintenance of new resilient floors. If he can educate his client to follow the rules of floor care set forth by the manufacturer, longer lasting and better looking floors are assured, with minimum time and cost for maintenance.

The following recommendations for resilient floor care have been outlined by the Armstrong Research Laboratories. At these laboratories, all types of cleaning materials and methods have been tried out over a period of years on all types of resilient floors. And results of this continuing research have indicated that some of the simplest methods of floor maintenance are the best.

1. SWEEPING

The surface of resilient flooring is smooth and lustrous, so dirt tends to slip off readily. Such floors can be kept clean for long periods of time (depending on traffic, tracked-in dirt, etc.) by merely sweeping daily with a soft broom or dry mop. Oil mops are not recommended, as

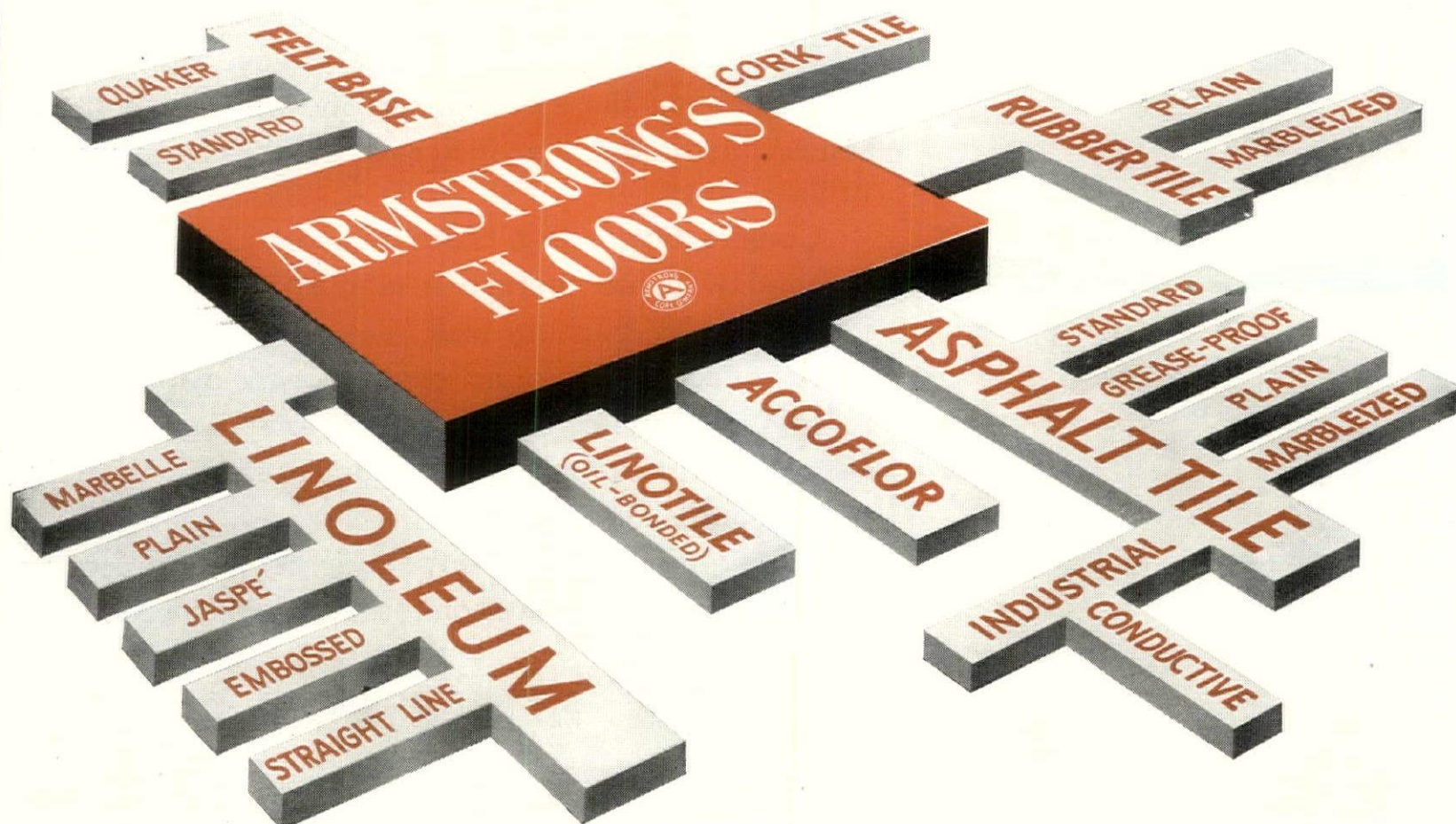
they leave a dirt-catching film on the surface. Sweeping compound may be used if it contains no oils, sand, or chemicals. Since many sweeping compounds do contain harmful ingredients, Armstrong offers a sweeping compound which contains wax and thus helps to renew the wax finish of the floor.



2. WASHING

An old adage in the flooring business says, "More floors are washed away than are worn away." Washing should be a relatively infrequent event with resilient floors unless they are subjected to unusual amounts of dirt. When such a floor finally grows dirty, it should be washed with a mild aqueous solution. For its linoleum, Linotile*, and cork tile floors, Armstrong recommends Armstrong's Cleaner, a liquid which is mixed with water, one-half cup to a pail of lukewarm water. For asphalt tile and rubber tile floors, Armstrong's Cleaning Powder is recommended, one-half cup of which is mixed with ten quarts of warm water. Oily soaps and oily cleaners are not recommended for

* REG. U. S. PAT. OFF



asphalt tile and rubber tile. Gasoline, benzine, naphtha, turpentine, and organic solvents are harmful to all resilient floors and may cause unremovable discoloration.

New resilient floors should not be washed until the adhesive is thoroughly set. Armstrong recommends a setting period of at least four or five days for all its resilient floors.

Immediately after they have been washed and allowed to dry, resilient floors should be waxed.

3. WAXING

Most people have a tendency to use too much wax. This results in a thick film of wax which forms a crust on top, leaving a soft gummy mass underneath. Dirt penetrates the crust and lodges in the soft wax making the floor appear gray and dirty. It is much better to apply two thin coats of wax than a single heavy coat. To make certain that the second coat is a thin coat, it may be "cut" with an equal quantity of water.

Paste waxes, which may contain oil, grease, or solvents such as naphtha and turpentine, are bad for asphalt tile and rubber tile. The ideal wax for all resilient floors is a water emulsion type such as Armstrong's Linogloss Wax, which dries in 20 minutes to a hard, colorless finish that is lustrous but not shiny.

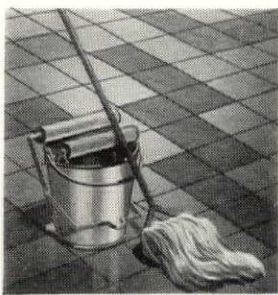
If the wax coat becomes smeared or streaked by wear, its lustre can be quickly restored by using a ring of No. 0 steel wool under a buffing machine. Buffing tends to give the surface a harder, longer-wearing finish.

4. PROTECTION

One element in the care of resilient floors which is often overlooked, but adds greatly to their life and attractiveness, is the use of furniture rests. The very fact that a floor is resilient means that it will "give" under impact. When a heavy static load is applied to such a floor in one small spot, a dent results. This happens when furniture is supported by small button glides or casters. Furniture rests minimize this effect by distributing the weight over a larger area, thus helping to prevent indentation. In general, the greater the weight the wider the rest should be. (See chart of Armstrong Furniture Rests.)

* * * *

Armstrong's Research Laboratories will gladly advise the architect on any special problem of floor care. For further data on the care of any Armstrong's resilient floor, call any of Armstrong's district offices, or write direct to Armstrong Cork Company, 2311 Duke Street, Lancaster, Pennsylvania.



STAIN REMOVAL METHODS

*Recommended by the Armstrong Cork Company
for the resilient floors it manufactures*

This chart does not cover all types of blemishes, and it is not a guarantee that the stains listed always can be removed by these methods. Strong solutions or blemishes should receive immediate attention, but even then damage may result. For example, if iodine is spilled, it should be wiped up at once and the floor

rinsed with water. However, if it remains on the floor for a time, the methods described should be followed. If they fail to remove all traces of the stain, the only alternative is wear or replacement of the material. The Armstrong Cork Company will be happy to give advice on any blemishes not covered in this list.

TYPE OF STAIN	METHOD OF REMOVAL					
	LINOLEUM	STANDARD ASPHALT TILE	GREASEPROOF ASPHALT TILE	LINOTILE	RUBBER TILE	CORK TILE
Alcohol	3	2	2	3	2	3
Acids						
Alkalis						
Burns						
Drain Cleaners						
Ink						
Iodine						
Lye						
Mercurchrome						
Metal						
Nail Polish	4	5	5	4	5	4
Chewing Gum						
Paint						
Varnish						
Tar	6 or 8	7	7	6 or 8	7	6 or 8
Dry Cleaners						
Fruit Juices						
Grease						
Oil						
Shoe Polish	1	5	5	1	5	1
Rubber Heel Marks	4 or 8	5	5	4 or 8	5	4 or 8

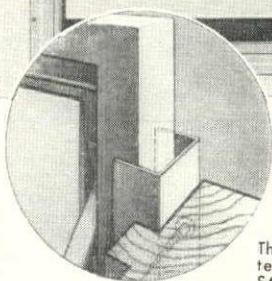
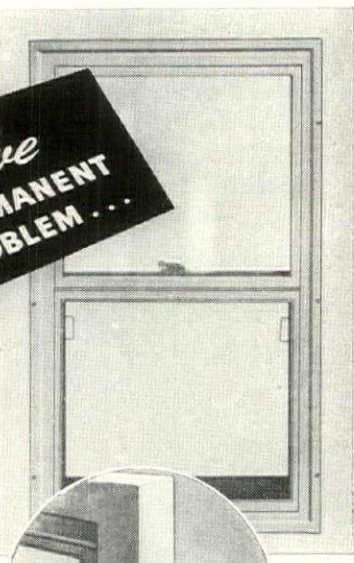
METHODS OF REMOVAL

1. Wash with Armstrong's Cleaner, rinse, and wax.
2. Wash with solution of Armstrong's Cleaning Powder, rinse, wax.
3. Rub with No. 0 dry steel wool, rinse, wax.
4. Rub with No. 0 steel wool dipped in Armstrong's Cleaner, rinse, wax.
5. Rub with No. 0 steel wool dipped in solution of Armstrong's Cleaning Powder, rinse, wax.
6. Remove with putty knife, rub with steel wool dipped in Armstrong's Cleaner, rinse, and wax.
7. Remove with putty knife, rub with wet, steel wool dipped in Armstrong's Cleaning Powder, rinse, and wax.
8. Rub lightly with a cloth dipped in gasoline or dry cleaner, rinse, and wax.

Weight of Furniture Determines Protection for Floor					
WEIGHT OF FULLY LOADED FURNITURE IN POUNDS PER LEG	Rest or Cup Required				
	LINOLEUM	RUBBER TILE	LINOTILE (Oil-Bonded)	ASPHALT TILE	CORK TILE
Up to 50	NT- 10 CT-100	NT- 10 CT-100	NT- 10 CT-100	NT- 20 CT-200	NT- 10 CT-100
50-100	NT- 20 CT-200 NDC- 6	NT- 10 CT-100 NDC- 6	NT- 10 CT-100 NDC- 6	NT- 50 CT-500 NDC- 7	NT- 10 CT-100 NDC- 6
100-150	NT- 20 CT-200 NDC- 6	NT- 10 CT-100 NDC- 6	NT- 10 CT-100 NDC- 6	NDC-225	NT- 10 CT-100 NDC- 6
150-200	NT- 35 CT-350 NDC- 6	NT- 10 CT-100 NDC- 6	NT- 10 CT-100 NDC- 6	NDC-325	NT- 10 CT-100 NDC- 6
200-250	NT- 35 CT-350 NDC- 6	NT- 20 CT-200 NDC- 6	NT- 20 CT-200 NDC- 6	NDC-425	NT- 20 CT-200 NDC- 6
250-300	NT- 50 CT-500 NDC- 7 NDC-125	NT- 20 CT-200 NDC- 7 NDC-125	NT- 20 CT-200 NDC- 7 NDC-125	NDC-425	NT- 20 CT-200 NDC- 7 NDC-125
<div> NT SERIES Nail Type CT SERIES Cotter Type NDC SERIES Cup Type NDC SERIES Cup Type </div>					

Solve THE "PERMANENT FIT" PROBLEM . . .

RUSCO provides screens, storm sash and weatherproofing all in one permanent unit . . . with nothing to change . . . nothing to store . . . plus year-round, draft-free, rain-proof, filter-screen ventilation.



The RUSCO Patented Closure Strip or Sub-Frame automatically adjusts to contraction, expansion and settlement . . . weatherproofs entire window opening.

Window frame "floats" in insulating air space. Perfect fit is assured under all conditions. Ends costly repairing and refitting.



RUSCO ALL METAL Self Storing

COMBINATION SCREEN AND STORM SASH

Rusco Combination Windows are designed and constructed for PERMANENCY. They're made of rust-resisting, galvanized and Bonderized steel . . . finished with finest quality baked-on enamel. Plastic screen never needs painting . . . will not stain woodwork or masonry.

Rusco Windows harmonize with all types of architecture . . . because they fit flush with windows they do not disturb shadow lines. Rusco is the "tailor-made" Insulating Sash . . . for all types of commercial or domestic architecture. In design and construction . . . in final benefits to the owner . . . it offers greater advantages in comfort, convenience, safety, economy and beauty. Manufactured by the pioneer in "window conditioning" . . . the first manufacturer to produce a practical all-metal self-storing combination screen and storm window.

You can specify it with confidence. Engineering data and specifications can be found in Sweets 18a-7. Literature available upon request.

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Manufacturers of the famous RUSCO ALL-METAL VENETIAN AWNING.

"Always one step ahead of the weather" with
RUSCO

ing built, plans were drawn up on a very conservative, old-fashioned basis. I immediately dug out my copies of the FORUM and sent the more modern suggestions to the architect. We did not get everything we wanted, but we certainly did get more than the state department in North Carolina ordinarily gives to Negro schools.

Last winter three counties in North Carolina decided to ignore county lines and build a consolidated school on property which had been used formerly for a school serving only the immediate community. As happens in so many conservative political circles, the state education authorities had often wanted to construct a modern building but were afraid they would be criticized by local groups. Since our organization has great prestige among the people of this area, we called them together to discuss the matter. And again we took out our copies of the FORUM and got busy. We fed our ideas to the state department of education with the result that the plans now submitted are probably the most advanced and workable of any small-town school in the state of North Carolina.

This story could be repeated hundreds of times. In our office we face the fact that we are novices at architecture. But we do have convictions about the influence of building on the whole democratic process.

RUTH A. MORTON

American Missionary Assoc.

New York, N. Y.

COMPETITIONS REFORMED

Forum:

There must be a better way to select architects for important work than a competition as usually conducted. Too frequently, as in the most violent competition—war—no one wins. Time has repeatedly mocked the presumptive awards of even the most conscientious judges.

One of the most carefully planned architectural competitions in recent years was for the selection of architect for postwar construction at the United States Military Academy, West Point, N. Y. A local planning board engaged in extensive preliminary study prior to actual determination of the scope of proposed building. Architectural assistance was used in preparing sketches and budget estimates as a basis for the program. A capable and respected architect-educator served as professional advisor, and under his guidance a carefully organized competition program was submitted to ten architectural firms. The firms selected were the screened results of requirements designed to assure the highest quality of participants. Each competitor

(Continued on page 52)

The trend on

Electric
water heaters
is . . .

UPWARD

NEMA survey discloses huge pent-up demand

There's no let-up in the desire for Electric Water Heaters.

Sales almost tripled in the 6 pre-war years—and a survey made by NEMA in 1944 disclosed three times as many women wanting Electric Water Heaters as now have them, because:

SAFE—Flameless, fumeless.

CLEAN—Smokeless, sootless.

ADAPTABLE—Permit short hot water lines—Require no flue or vent.

TROUBLE-FREE as electric light!

ECONOMICAL—The cost is low for plenty of hot water all the time.

Installing Electric Water Heaters in every house you build, means giving women what they want!

Electric Water Heater Section
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
ADMIRAL • B & F • CLARK • ELECTROMASTER • FOWLER •
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A House Wired For An Electric
Range Is Already Wired For an

Electric
WATER HEATER!

NATIONAL MAGAZINE SURVEYS PROVE WOMEN WANT

Electric Ranges



WOMAN'S HOME COMPANION survey shows that more women plan to buy an Electric Range than any other type!

McCALL'S MAGAZINE readers made the Electric Range their 2-to-1 "must have" choice in a recent contest.

SUCCESSFUL FARMING survey shows that nearly twice as many REA customers intended to soon buy an Electric Range as then had one.

HOUSEHOLD MAGAZINE survey indicates that 3 times as many women want Electric Ranges as "now have" them.

COUNTRY GENTLEMAN survey shows that among the upper two-thirds of white farmers the Electric Range is the 2-to-1 choice

Magazines can't guess about the preferences of their readers. They've got to **KNOW**—and they find out by making surveys.

These magazines found both on the farm and in the city an overwhelming preference for **ELECTRIC RANGES**. The convenience, cleanliness, dependability and economy of electric cooking are getting across to women everywhere.

Your houses can take advantage of this trend at little cost. Just build in the wiring for Electric Ranges. It's one of the most sales-worthy features you can install!

Electric Range Section
NATIONAL ELECTRICAL MANUFACTURERS ASSOCIATION
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HOTPOINT • KELVINATOR • LEDO • MONARCH • NORGE • QUALITY • UNIVERSAL • WESTINGHOUSE

TO KEEP THEM MODERN

Wire your houses
FOR ELECTRIC RANGES





More Uses — more freedom

One piece of Furniture by Tomlinson serves several functions, can be used in different rooms, fits into various floor plans, gives more freedom to interiors. This thinking answers today's living needs, is typical of all Furniture by Tomlinson.



Furniture by
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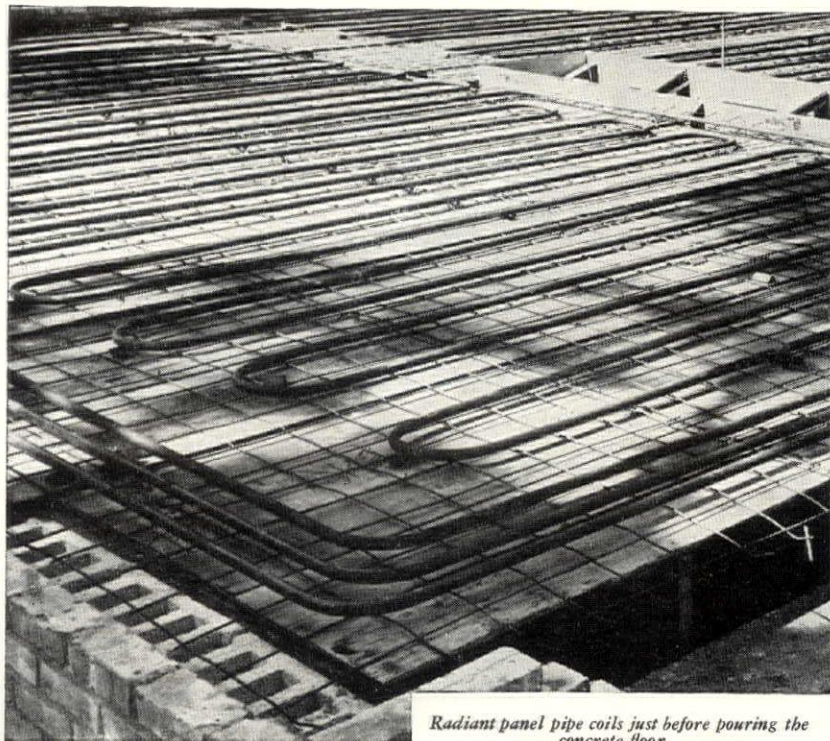
NEW YORK

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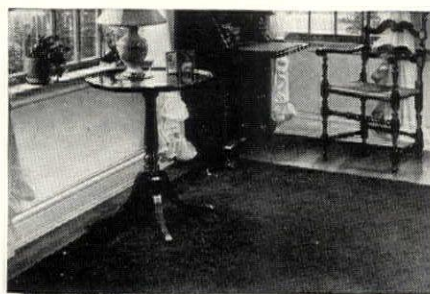
CHICAGO

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HIGH POINT



Radiant panel pipe coils just before pouring the concrete floor



An installation of radiant baseboards



Cleaner, smaller, more effective is this modern recessed radiator

Radiant Heating at its Best



Always plenty of hot water for kitchen, laundry and bath.

so essential to real comfort. It is flexible as a whip—delivering just the right amount of heat for any weather condition. No overheating in mild weather and no lack of heat when the thermometer hits bottom. At all times, indoor temperature is maintained steadily at whatever degree is preferred.

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Domestic hot water a bonus feature

Where a B & G *Hydro-Flo* Heating System is installed, no separate water heater is required. The same boiler that heats the house also heats the domestic water—not only in winter but *all around the calendar*! What feature could have more appeal to the lady of the house than a bountiful supply of piping hot water . . . always ready for kitchen, laundry and bath . . . at every hour of the day and night.

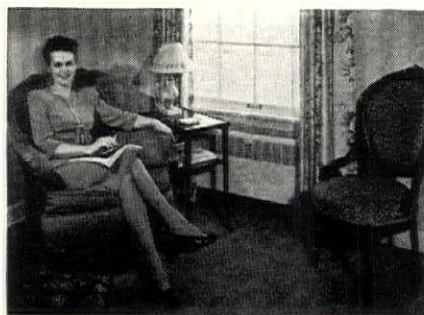
No wonder B & G *Hydro-Flo* Heat is the preferred heating system!



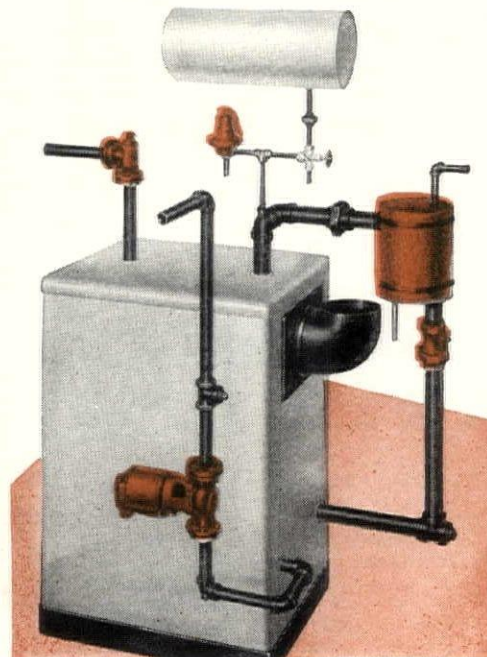
BELL & GOSSETT CO. • Dept. T-10, Morton Grove, Ill.

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CONVECTOR, RADIANT BASEBOARD AND
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The convector fits in unobtrusively with smart decorative schemes



THE KITCHEN IS THE HEART OF THE HOME

Plan a kitchen that has all the modern conveniences of gas even though you are building beyond the gas mains.



Specify "PYROFAX" GAS SERVICE

"Pyrofax" gas burns just like city gas—it operates the same appliances such as a Magic Chef gas range, a silent Servel refrigerator, and an automatic water heater. "Pyrofax" gas brings new economy, convenience and cleanliness to country homes—with modern automatic "Pyrofax" gas service your clients will have no service interruptions, no dirt or odor. "Pyrofax" gas is distributed in most states east of the



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SUPERIOR GAS SERVICE FOR 25 YEARS



COOKING • WATER HEATING
REFRIGERATION • ROOM HEATING
BEYOND THE GAS MAINS



received a generous compensation for his presentation, which then became the property of the U. S.

There is no argument that the West Point Competition was not in accord with the best practice. All details were scrupulously planned and executed, and those concerned were frank in their approval of its handling. And yet, to a critical observer, certain disadvantages common to most architectural competitions, were obvious.

Does the owner win?

Since some limiting of competitors was considered economically necessary, requirements were set up which included such paradoxical propositions as (1) the firm must have done several million dollars worth of work in a single year; and (2) not be too busy to concentrate on the project immediately. The firm must also have completed large amounts of similar educational buildings. Are not such limitations detrimental to the purposes of the owner? Many of the very best architects might be eliminated because they were too busy, or had never constructed considerable amounts of similar building.

Since useful ideas would undoubtedly be found in each design, it was desirable that all presentations become the property of the owner. Ideas are the most valuable commodity an architect has; therefore, a compensation more generous than normal was appropriate. The total cost of the West Point Competition would have paid the customary architectural fees for the design and supervision of over two million dollars worth of building. Did the owner get a proper return on this investment? The designs now rest in the Museum, and it is doubtful that the winning competitor has obtained any vital idea from the losing designs.

Does the winner win?

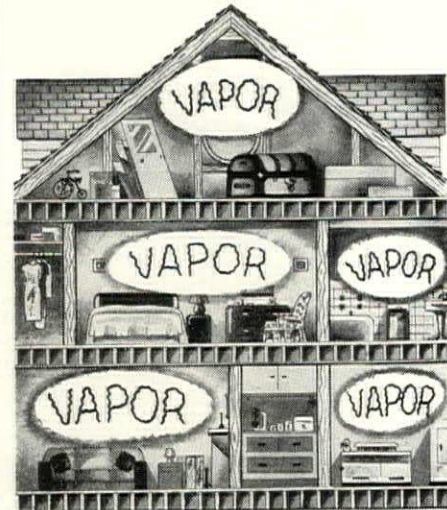
In the flush of victory, a contract is signed. In the case of government participation when appropriations are in definite amounts, a percentage fee based on budget estimates forms the fixed amount of the architect's compensation. In the West Point Competition, estimates were so inadequate that adjustment was necessary. Even so, there was hardly enough profit to make the job worth while. There must be times when a winner wonders if he won.

Do losers win?

Initial payments for competition drawings rarely meet the cost of production. It is doubtful that competitors in the West Point Competition felt that the compensation, generous from the owner's viewpoint,

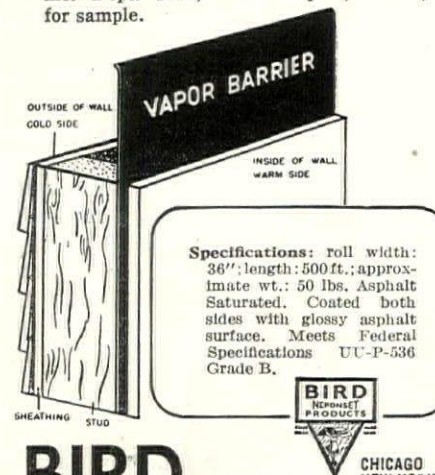
(Continued on page 56)

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Every insulation job is menaced by the "storm clouds" of moisture constantly forming within every house. This vapor, suspended in the inside warm air, works through walls to the outside, cold atmosphere. As it passes through the wall, condensation will occur in the wall where the lower, dewpoint temperature is encountered. This makes insulation damp and soggy—impairs its efficiency, causes exterior paint peeling, interior wall stains, hastens structure rot. The sure way to lick this problem of condensation is with Bird Neponset Black Vapor Barrier. Applied on the warm side of insulation, it effectively combats "in-wall" condensation—gives lifetime service—costs only about \$20. for a \$10,000 house. Remember! No insulation is completely effective without a separate vapor barrier. Specify Bird Neponset Black. Consult Sweet's Architectural Catalog 9 b-2 or write Bird & Son, inc. Dept. 1611, East Walpole, Mass., for sample.



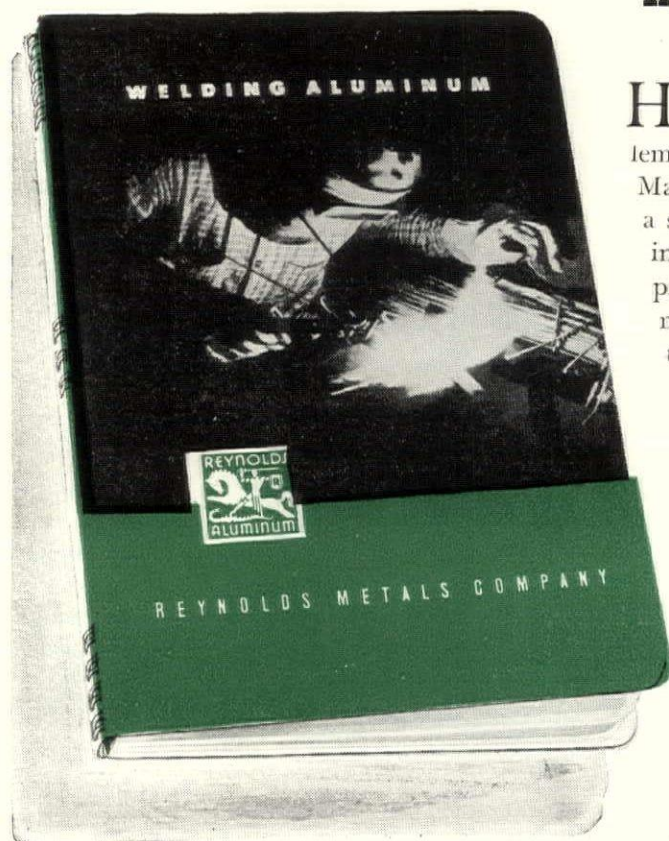
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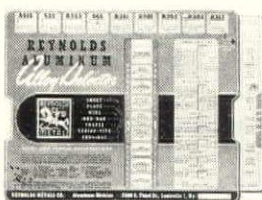
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Clay masonry, through the years, has been the predominant choice of architects and builders. For this reason—and because brick and tile are available at reasonable cost—brick and tile are being used in much of today's essential building.

For this reason, too, designers of tomorrow's homes, churches, office structures, stores, factories and apartment houses will continue to show preference for brick and tile of coordinated dimensions.

Clay masonry gives architects wide range for artistic design. Now it is being made available in modular sizes, and as always, in many colors and textures with maximum durability and structural strength.

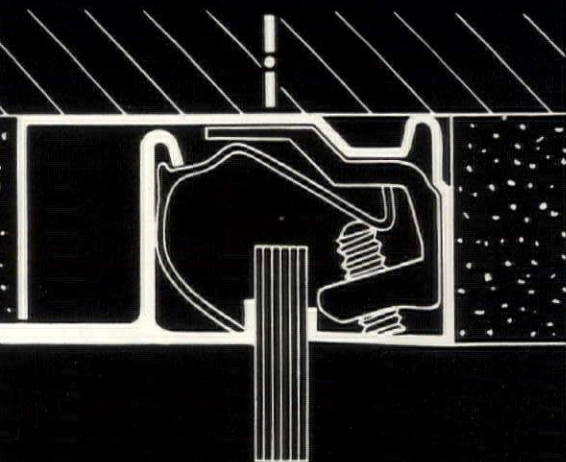
Modular sizes mean savings in designing and erection time. And, of course, the traditional permanence, economy of upkeep and fire safety will be part of tomorrow's buildings designed and built with modular brick and tile.

Architects are invited to write for two FREE booklets. One, "Modular Sizes of Brick and Tile," for those desiring to use these sizes in current design, and the other, "The ABC of Modular Masonry," for those interested in the development of coordinated dimensions. For either or both write the Structural Clay Products Institute, Dept. AF-11, 1756 K Street, N.W. Washington 6, D. C.

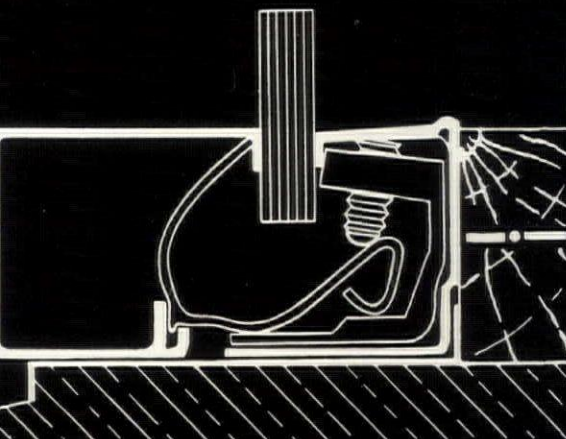


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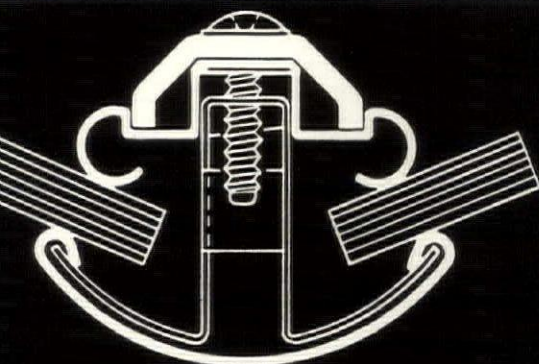
BRICK AND TILE



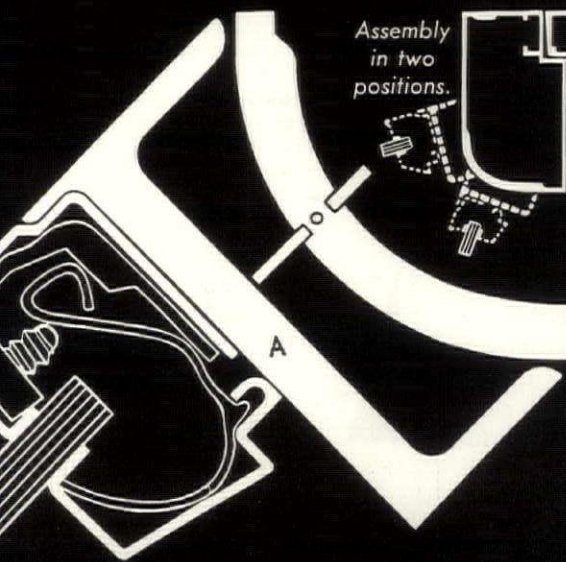
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K-47 corner bars are self-adjusting and will receive glass at any angle within a range of 70 degrees without altering the bars.



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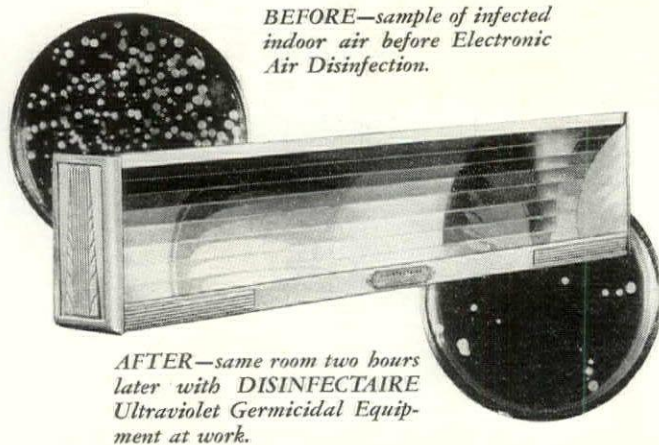
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was adequate enough to be considered profitable in a purely financial light.

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Certain simple changes in the conduct of a competition would eliminate the most glaring defects of the present system:

(1) Let the program consist simply of a complete description of the site and of the functions to be accommodated. Additional information courts the danger of either restricting the imagination of a competitor or pointing to a solution—which is the same thing.

(2) Let there be many competitors.

(3) Let the jury be more numerous, more varied, more skilled in the interpretation of plans—and better paid.

(4) Let jury action be without discussion, and voting secret and anonymous.

(5) Let presentations be much simpler. The competition should be judged just before the expensive presentation drawings are made. A capable jury can discover the most meritorious design from far less in the way of presentation drawings than is normally required.

F. CARTER WILLIAMS, A.I.A.
Raleigh, N. C.

LETTER FROM ARIZONA

Forum:

Running longitudinally through the heart of Arizona is a strip of territory 200 miles long by 50 miles wide. Known as the Navajo Indian Reservation, this area is larger than some of our Eastern states and nearly as large as all England. Yet the tract supports a population of less than 70,000, most of whom are Navajos, a few Hopis. The reservation has agencies to administer their legal affairs. It has hospitals to keep them well, schools to educate them and trading posts to purchase their handiwork.

Ethnologically, the Navajos are perhaps the most advanced of North American Indian tribes. Their intricate jewelry, their picturesque costumes, their vividly beautiful and highly imaginative sand painting, rug weaving and pottery turning all bespeak a high degree of culture.

Yet, despite these evidences of advancement, the Navajos resist change with an obstinacy that amounts to fanaticism. More vividly than any other single factor, their dwellings illustrate this fact. During the summer months, each family occupies a wickiup—which is nothing more than a cage-like framework of sticks and poles overlaid with branches and leaves. With the approach of winter they move into the traditional hogan, a larger and more substantial structure, built of logs with a sod

(Continued on page 60)

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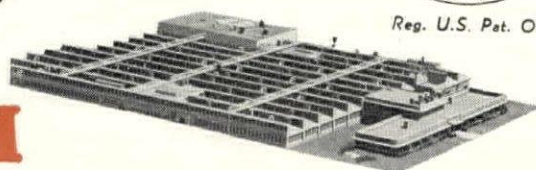
Large-scale shipments of Premier Aluminum Sash have begun. Many jobbers throughout the nation already have complete stocks on hand. As the tempo of our production lines increases, shipments will also increase,

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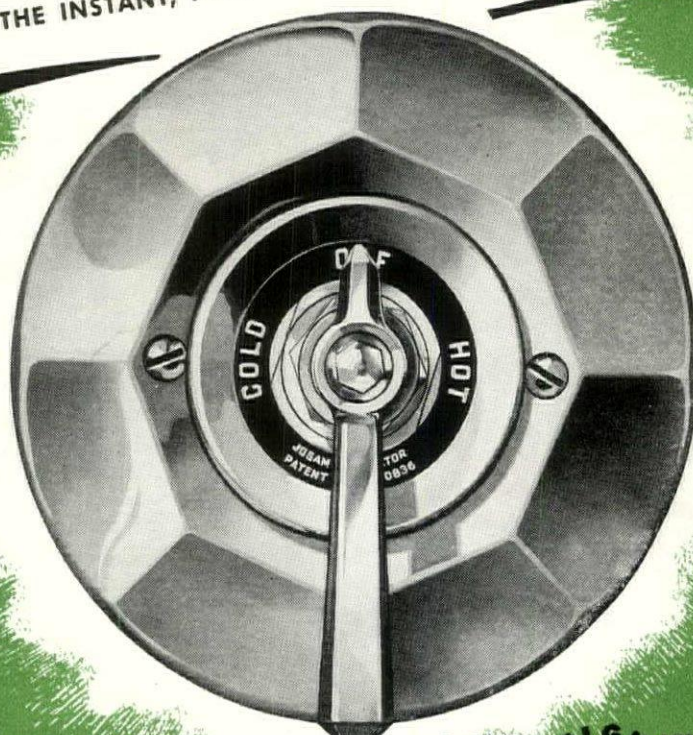
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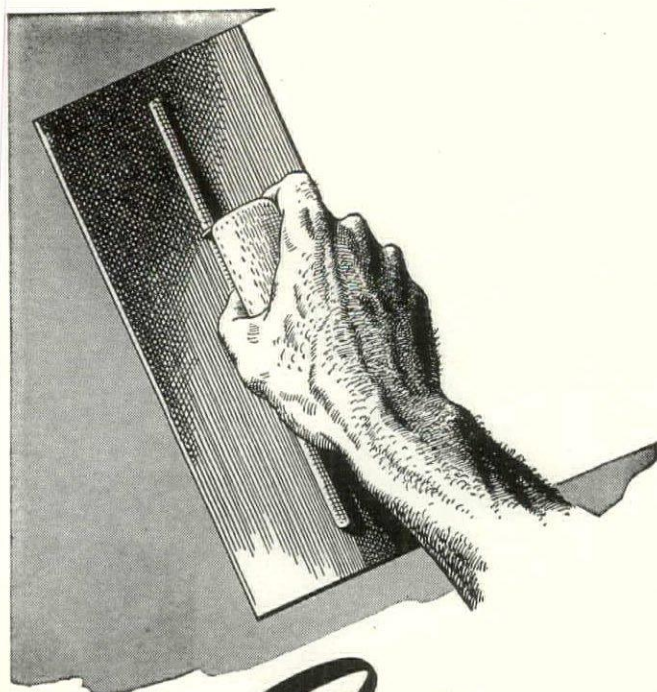
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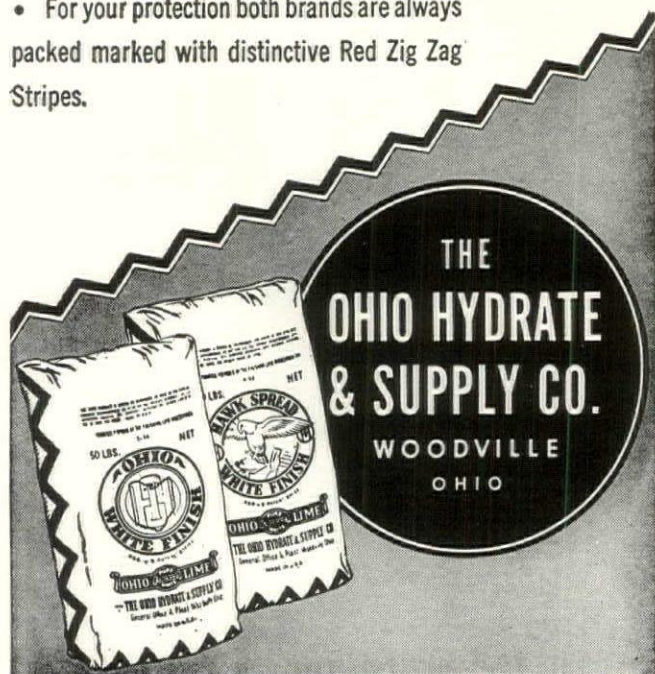
LETTERS



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roof. It has an abnormally low entrance, closed with a wooden shutter or a makeshift door of sheet metal. Frequently it is sealed with an old blanket that flaps inadequately in the breeze. It has only one room and the bare earth serves as a floor. Seldom is the structure high enough to permit an adult



Hogan and friends

male to stand erect. There are no chairs, benches, or tables; the family sleeps on sheepskin mats on the floor. Instead of a stove, a fire for cooking and heating is built on the earth floor, the smoke escaping as best it can through an aperture in the roof.

Both *wickiup* and *hogan* have been used for uncounted centuries. There are records that they have been in use in the Southwest for a thousand years. It is possible the *hogan* is the most primitive habitation surviving on the face of the earth.

The main factor behind this slavery to tradition is the Navajo's superstitious attitude toward death. When any member of the tribe dies in a lodge, the dwelling is immediately abandoned and very often burned with all the effects of the deceased. Building an elaborate and permanent form of structure would only mean abandoning it in the event of death. Because of this ancient tradition, the *hogan* and *wickiup* remain the most primitive and authentic touches in the Southwest. They are relics of surpassing interest to the archaeologist, as well as outstanding scenic attractions for the tourist.

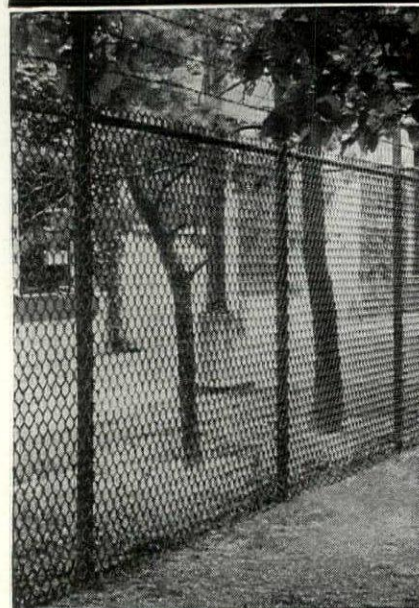
Today, over the length and breadth of the vast Navajo Reservation, these log and sod *hogans* stand forlornly amid the sage, or among the ever-present junipers. They form the most alien and at the same time the most picturesque habitations to be seen in this country.

PHILIP FERRY

San Francisco, Calif.

(Publishers' Letter on page 66)

ANCHOR FENCE STANDS UP Under Hard Use!



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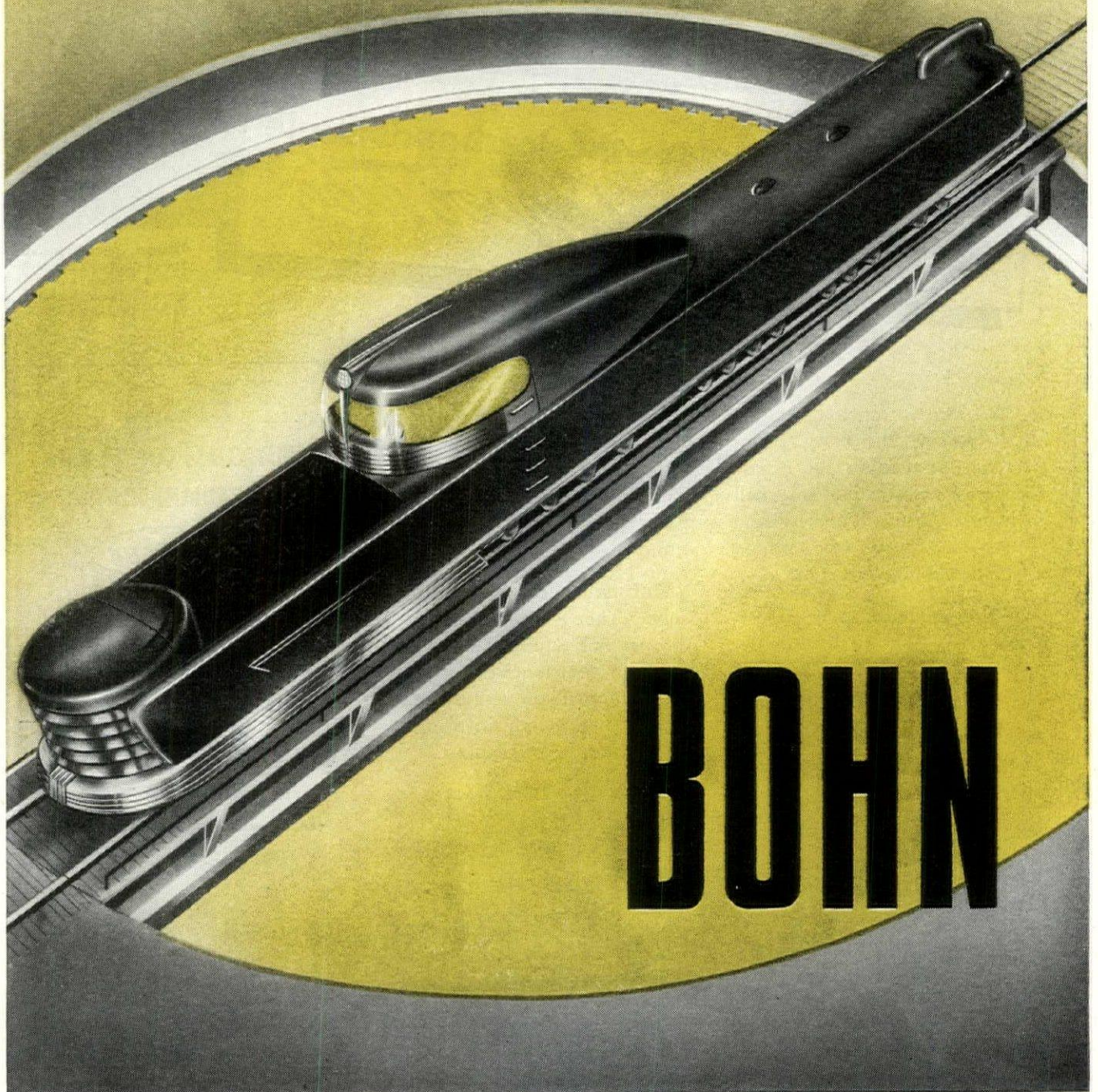
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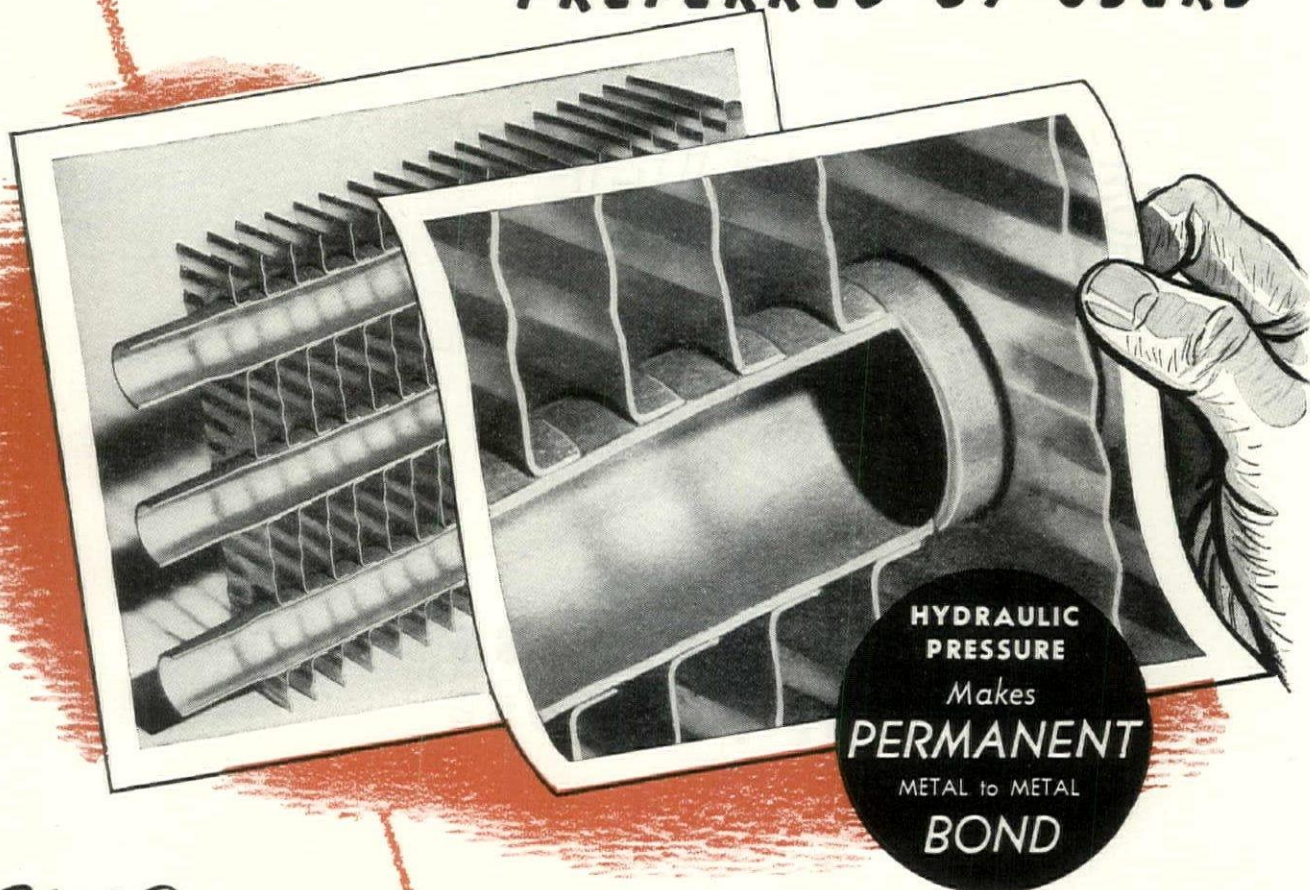
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These exclusive features make McQuay performance possible and establish their preference among users. McQuay coils are available in a wide variety of styles and sizes, both standard and special coils for steam, hot water, cold water, brine, direct expansion and other applications.

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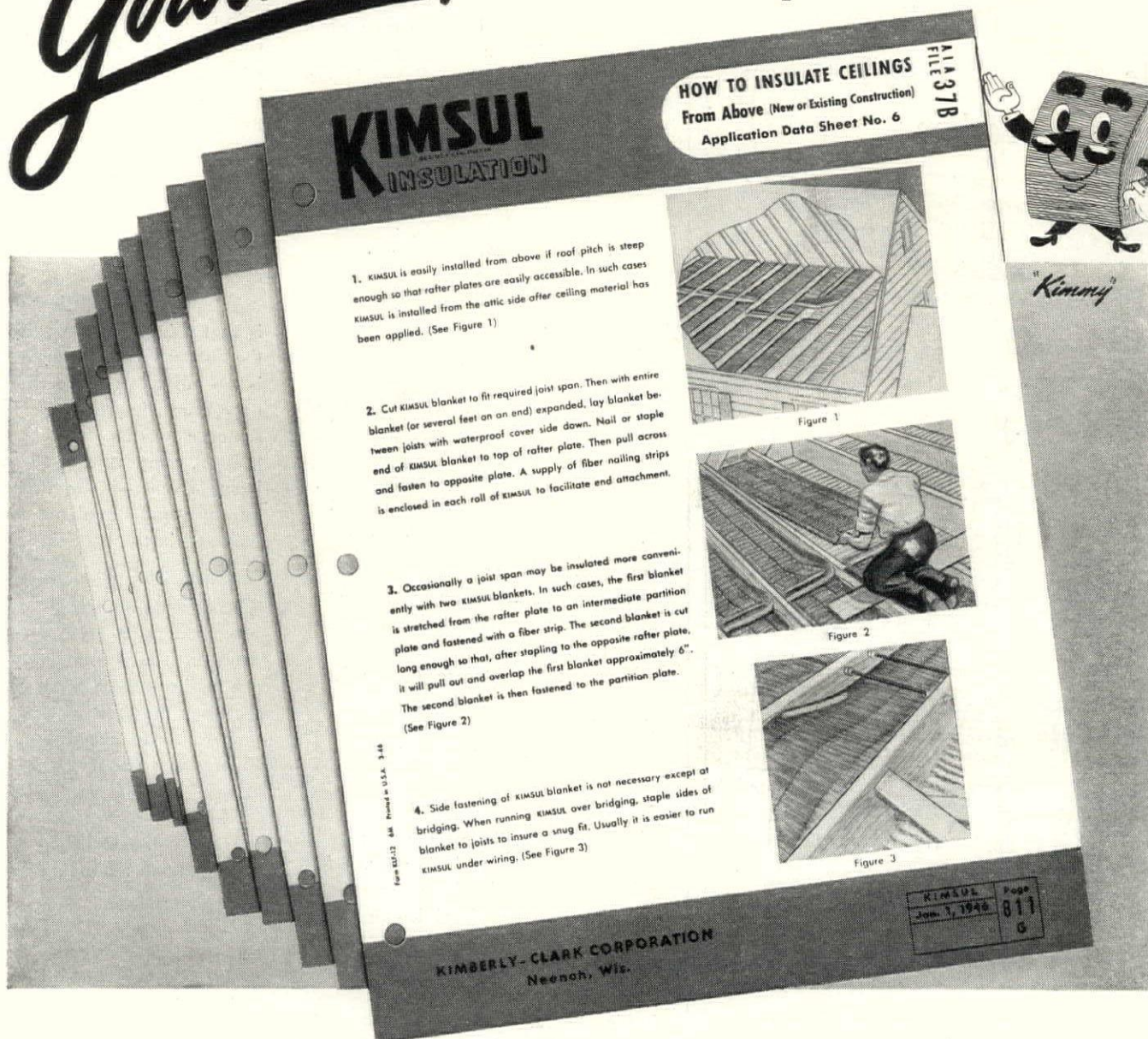
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This practical file of
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KIMSUL
INSULATION

HOW TO INSULATE CEILINGS
From Above (New or Existing Construction)
Application Data Sheet No. 6

FILE A1137B

1. KIMSUL is easily installed from above if roof pitch is steep enough so that rafter plates are easily accessible. In such cases KIMSUL is installed from the attic side after ceiling material has been applied. (See Figure 1)

2. Cut KIMSUL blanket to fit required joist span. Then with entire blanket (or several feet on an end) expanded, lay blanket between joists with waterproof cover side down. Nail or staple between joists to top of rafter plate. Then pull across end of KIMSUL blanket to top of rafter plate. A supply of fiber nailing strips is enclosed in each roll of KIMSUL to facilitate end attachment.

3. Occasionally a joist span may be insulated more conveniently with two KIMSUL blankets. In such cases, the first blanket is stretched from the rafter plate to an intermediate partition plate and fastened with a fiber strip. The second blanket is cut long enough so that, after stapling to the opposite rafter plate, it will pull out and overlap the first blanket approximately 6". The second blanket is then fastened to the partition plate. (See Figure 2)

4. Side fastening of KIMSUL blanket is not necessary except at bridging. When running KIMSUL over bridging, staple sides of blanket to joists to insure a snug fit. Usually it is easier to run KIMSUL under wiring. (See Figure 3)

Figure 1

Figure 2

Figure 3

KIMBERLY-CLARK CORPORATION
Neenah, Wis.

Kimmy

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*KIMSUL (trademark) means Kimberly-Clark Insulation

Kimberly-Clark Corporation
KIMSUL Division, Neenah, Wisconsin

AF-1146

Please send at once FREE Application Data File and full information on many-layer KIMSUL Insulation.

Firm _____
Address _____
City, Zone, State _____
Attention _____

FIRST AID FOR PROPERTY OWNERS As told to 180,000 Fortune readers...

IF YOU HAVE A "SICK" PROPERTY INVESTMENT

TRY TAKING ITS
TEMPERATURE!

The owner of a Dunham System is protected against the expense and responsibility of the divided responsibility in an "assumed" system of heating built by different manufacturers... A few examples...

DUNHAM HEATING MEANS BETTER HEATING
INVESTIGATE DUNHAM CONVECTORS AND RADIATOR HEATING

- IN FUEL ECONOMY AND GREATER HEATING EFFICIENCY
- IN SATISFIED TENANTS
- IN REDUCED MAINTENANCE

Scientific comparisons made between the fuel consumption with and without "Differential" operation show consistent reduction of fuel costs from 25 to 40 percent.

HEATING IS OUR BUSINESS. We've been at it since 1903. Dunham Differential Heating takes on the whole burden of maintaining comfort level temperatures at all times, in all parts of the building, in all weather conditions, under variable loads in service and occupancy.

Brochure 433 (non-technical) and Technical Bulletin 441 will give the necessary information to enable you to discuss with your consulting engineer, architect or heating contractor, the possible conversion of equipment in your present building to Differential operation — or the installation of this system in new construction. C. A. Dunham Company, 436 S. Ohio St., Chicago 11, Illinois. Sales and Engineering Representatives in principal cities.

Or, how to solve your HEATING PROBLEMS

Satisfy your clients by specifying a heating system that gives precise control of temperatures; operates automatically; eliminates "guesswork" and maintains temperatures at desired levels throughout the building in all weather. Write C. A. Dunham Co., 450 East Ohio Street, Chicago 11, Illinois for bulletin number 632A—it gives complete information about the DUNHAM DIFFERENTIAL VACUUM HEATING SYSTEM.

11-46

DUNHAM HEATING MEANS BETTER HEATING

A LETTER FROM THE PUBLISHER

Dear Reader:

Frankly, we never suspected that when Associate Editor Joe Hazen traipsed off to fight with the Field Artillery his war experience would make a direct hit on the FORUM's pages.

But when you turn to page 101 of this issue, you will find one result of some things Lt. Col. Hazen used when he was throwing long-range artillery fire across the Rhine into the Ruhr. Apparently, it is all the same whether you



want to fit a photograph of a building model into an air photograph of its locale or whether you have to locate targets from a plane to direct gunfire eleven miles away.

We now turn the "mike" over to Hazen and hope that at least a few of the FORUM's fifty-odd-thousand readers will understand his explanation better than we do:

"We got an existing aerial photograph of Flushing and traced the area to be covered by the shopping center. After relating the altitude of the airplane and the plate size and focal length of the aerial camera to the characteristics of our photographer's camera, we got the outline of the model as it would appear in his camera. We drew this outline in red on tracing paper and pasted it to the plate of our photographer's camera. Meanwhile, by determining the altitude of the plane, the angle of the aerial camera, the scale of the air photo and the point on the ground above which the picture was taken and by making adjustments for the relative scale of the model, we were able to set up our photographer's camera in the same relative position as the aerial photographer's. However, despite these simple algebraic calculations, considerable maneuvering of our camera was necessary to fit the image of the model to the red outline. (Lack of exact information on the height from which the aerial photo was taken gave us only approximate calculations.)

After bumping our heads on the wall and ceiling for about two hours, we got on the target, and the picture was taken with a 20-second exposure. To add realism to the combination photograph, we set up a large spotlight in the relative position of the sun at the time the aerial photo was taken.

"In the Army we used a three-lens camera which took an oblique photograph of the enemy area and, at the same instant, a vertical photo of the ground position of the plane, called the "plumb point," plus a practically useless oblique of our rear area. With these photos we could quickly and accurately determine the relationship between the photo and the target area and direct artillery fire accordingly."

The point of this little story, of course, is that this is routine performance for the FORUM's staff. No amount of trouble is too much to make certain that every page, every picture, every drawing, every sentence tells its story clearly, authoritatively, compactly. FORUM readers are busy. We count it our duty to keep them informed and stimulated with the least pain and in the least time.

* * *

Last month brought new honors to the FORUM. The American Institute of Architects and the Producers' Council named Managing Editor Henry Wright as one of fourteen pioneers in the field of modular coordination of building materials and equipment.

A few days earlier FORUM received three awards, the largest number given to any U. S. magazine, for editorial excellence, in the annual competition sponsored by the magazine, *Industrial Marketing*. None of these feats is likely



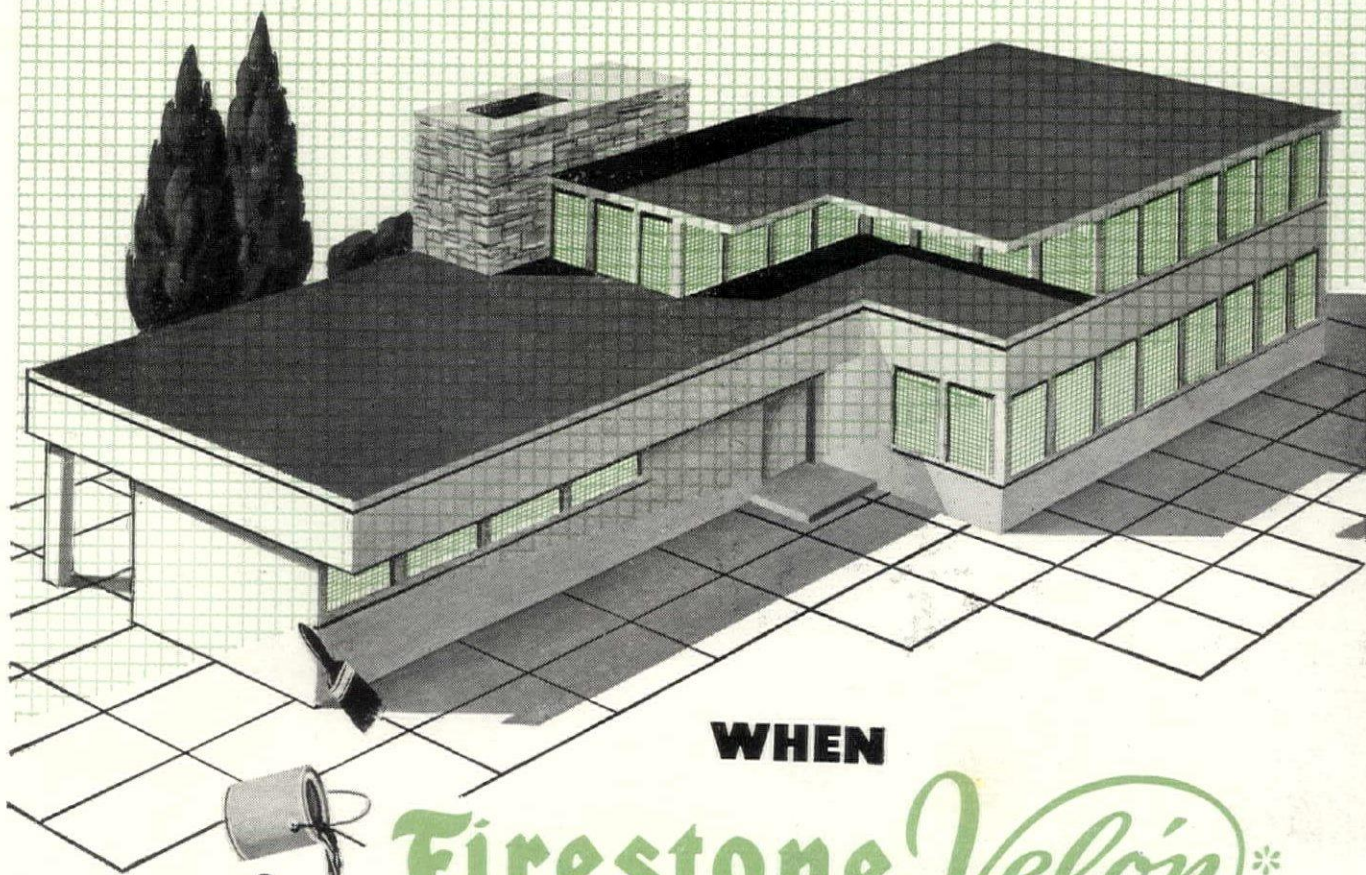
to turn our heads, which, as always, are buried in work for none other than — guess? — you, dear reader.

* * *

No ceiling department. From a sign on a New York building: "This building is to be altered, remodeled, refurbished and embellished." H.M.



Patching and pampering go out the window



WHEN

Firestone *Velon**

TINTED SCREENING GOES IN

Now you can free your clients from screen worries with Firestone's amazing new material—*Velon*.

Resists impact up to six times more than metal screening of equal gauge, without dents, bulges or breaks.

100% corrosion-proof. Impervious to sun, rain, salt-spray. *Velon* screens cannot rust or leave ugly bleed stains down the front of the house.

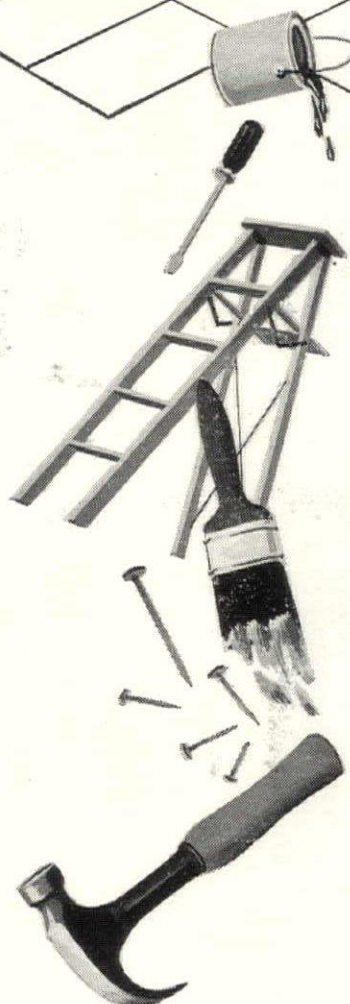
Easy to handle. Only one-fifth the weight of metal, and corresponding-

ly more manageable. Cuts with ordinary scissors, leaves no sharp ends.

Blended beauty. *Velon* screening is tinted to harmonize with interior and exterior color scheme.

Now available in standard widths and gauges. Investigate *Velon* screencloth for utmost in client satisfaction.

FREE—Write Firestone, Akron, for your copy of *Velon* booklet and samples of *Velon* screening.



TRADE MARK

LISTEN TO THE VOICE OF FIRESTONE MONDAY EVENINGS OVER NBC





**WHEN YOU TALK ABOUT VALUE IN
TODAY'S NEW HOME...REMEMBER**

Andersen Windowalls

WHEN the conversation these days drifts to the topic of what the home owner is getting in the way of value today, compared to 20 years ago, you can be sure it isn't long until Andersen WINDOWALLS are mentioned.

Today's home is a better place to live—better by far than one built two decades ago—because of Andersen WINDOWALLS. Just check these points, and you'll see how today's home buyer gets more for his money:

PREFABRICATED AT THE FACTORY—Andersen WINDOWALLS are precision milled, with frames and sash that fit perfectly.

COMPLETELY WEATHERSTRIPPED—WINDOWALLS are weathertight, weatherstripped at every vital point where cold air may infiltrate. No more fussing with weatherstrips after the home is built.

SUPERIOR OPERATION—WINDOWALLS incorporate special precision hardware that works and wears well . . . insures trouble-free operation. No more balky, rattling, sticking windows.

NEW CONVENIENCE—Removable sash, special screens and removable double glazings (in place of ordinary storm sash), all handled from the inside, are features of Andersen WINDOWALLS that reduce a housewife's or home owner's "chores".

ADAPTABILITY—Today you can WINDOWALL large areas in the home, simply by combining stock-size Andersen Window Units into bays, picture window combinations, corner installations. Limitless variations to add personality to a home.

WOOD PARTS CHEMICALLY TREATED—To guard against decay and termites, all wood parts in Andersen WINDOWALLS are chemically treated in accordance with highest industry standards.

ECONOMICAL INSTALLATION—Today builders slip Andersen WINDOWALLS into place in the wall section quickly and economically. Gone are old-fashioned cut-and-try methods that used to run costs up.

NEW BEAUTY AND SELECTION—Today the home buyer gets his choice of four fine designs in Andersen WINDOWALLS—choosing each type of window for its function. Superior design brings charm and attractive individuality to the WINDOWALLED home.

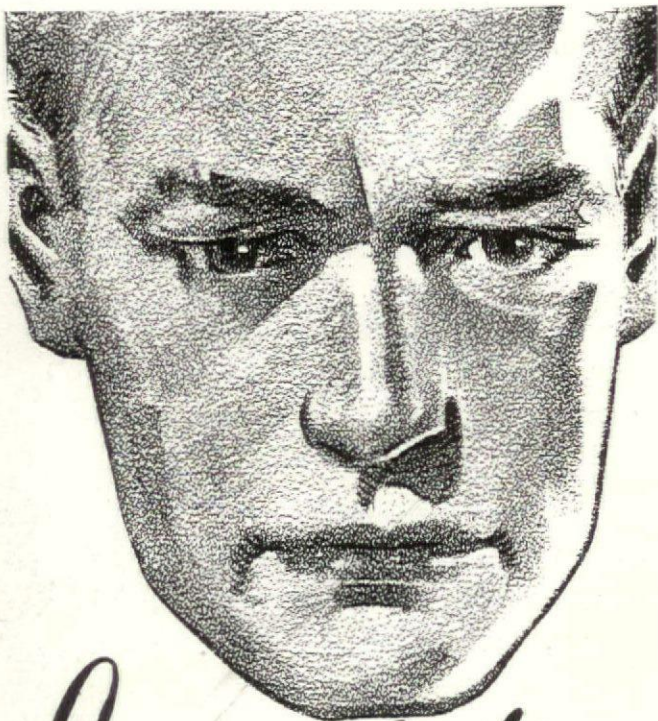
Andersen Corporation

BAYPORT, MINNESOTA

Manufacturers of WINDOWALLS, Including Complete Wood Casement, Horizontal Gliding, Double Hung and Basement Window Units. For details, consult Sweet's Catalog or see your millwork dealer.

FORUM

Behind the scenes with FORUM contributors



I wanted DEPENDABILITY

GRAND RAPIDS
Invisible
SASH BALANCE

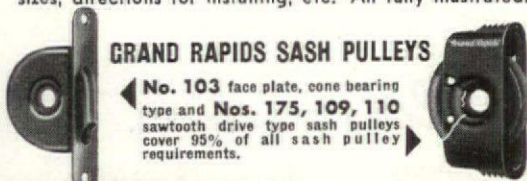
gave me

Dependable Performance

The Grand Rapids Invisible has many features of superiority, as has been conclusively proved in thousands of war time and peace time installations. Among these are ease of installation, actual invisibility, and dependable, efficient operation in all climates and under varying conditions. The same balance for upper and lower sash make them interchangeable and 10 sizes meet 95% of all residential requirements. Complete illustrated instructions are on every carton.

SEND FOR SASH BALANCE CATALOG

which contains complete information on sash balance sizes, directions for installing, etc. All fully illustrated.

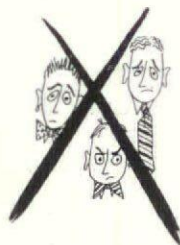


GRAND RAPIDS SASH PULLEYS

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

GRAND RAPIDS HARDWARE COMPANY
GRAND RAPIDS • MICHIGAN

If, to paraphrase Dan Burnham, only big plans have the power to move men's minds, then William Zeckendorf is the world's prime mover. This genial giant (285 lbs. stripped) has in the past year jarred conventional real estate circles with three whoppers: a \$3 billion Buck Rogers airport which would run a landing strip over a good quarter of mid-town Manhattan; a \$150 million "skyscraper city" expected to transform the entire East Side; a \$50 million Long Island shopping center complete with mobile sidewalks and rooftop garages (p. 100). Typically Zeckendorffian is a current project for lifting the entire business section of a city of 350,000 and transporting it six miles to the left. Such stunts come close to unhinging the ordinary real estate mind and one such gentleman now clings to the firm belief that it's going to be Mr. Z. and not the rocket scientists who will first land on the moon.

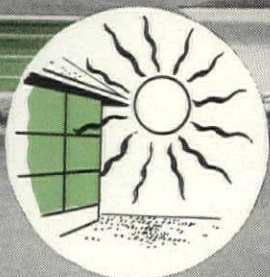


Landscape architect for the unorthodox Dickinson house (p. 90), James C. Rose at 36 finds himself an old hand at challenging entrenched tradition. He began at Harvard in the middle thirties when, as a graduate student from Cornell, he was confronted by a bulletin board notice warning that any modern solution would automatically receive an "X." Rose joined forces with landscapists Garrett Eckbo and Daniel Kiley to test this White Paper of black reaction. Their modern solutions got one "X" after another and the trio was hanging on the ropes when Hudnut and Gropius moved in on Harvard's architecture. The effect on the landscape school was immediate, beneficent and not a moment too soon for Rose, Eckbo and Kiley.

John Lincoln is a fugitive from the FORUM who exchanged his typewriter for a T-square, and the canyons of Manhattan for the rocks of rural Connecticut. His career as a Yankee is the fulfilment of a tinkering yen which, in the old days, led him to buy a Stanley Steamer and tenderly rebuild its engine into putt-ing condition. Considering a body an affectation, he finished off his treasure by placing a kitchen chair above the chassis, rode thus enthroned onto Merritt Parkway for a trial spin, munching the while on a chicken sandwich. An unruly valve suddenly enveloped the parkway in a burst of steam, Lincoln in dew and chicken salad, confirmed his notion of leaving for Stonington immediately where he now has a brisk practice combining architecture, engineering and building. His own house (p. 98) has as yet burst no pipes.

Eleanor Le Maire, designer of the Goodall fabric showroom (p. 124), is a reasonable facsimile of a perpetual motion machine who keeps an eye on her staff of 35 experts, hops from business office to drafting room and from east coast to west without so much as shifting gears. Member of the "100,000-mile Club" (for having flown the equivalent of four times around the world), Miss Le Maire blanches at any job not on a direct air route, calls home wherever she can wiggle her toes. The Le Maire recipe for the good life is "color, variety, music, glamor, fun . . ." a dish she was already dedicated to at the precocious age of 15. Commissioned to redecorate her mother's club rooms, she attacked the dignified chambers with more zeal than client understanding. The good ladies suffered patiently through one unfettered idea after another, put a horrified collective foot down when Eleanor painted a cherished ebony piano pale ivory. Since that time her jubilant talent has overcome such conventional restraints. Remarked a friend about one of her latest creations: "It's just a little job. Le Maire only used 32 colors."





A new measure of service . . .

Screen from

SARAN

In *length* and in *kind* of service, screen from Saran surpasses other types—at lowest cost.

This Dow plastic is a new yardstick for length of service in screen because it is not affected by weather and climate—rain, snow, heat, cold, salt air. Saran screen can't rust. It won't corrode.

And that long service is carefree. Screen from Saran is stronger

than ordinary screen. It won't sag, dent or bulge. It's easy to maintain—its smoothness makes it easy to clean. It has its own color that needs no paint to preserve it. It doesn't stain and discolor home exteriors.

Saran screen is only one way in which Dow plastics make better homes. Look into the growing possibilities with Dow plastics in building now.



Let's work it out together

Success in plastics is best measured in end products. It calls for the combined efforts of manufacturers, designers, fabricators and raw material producers. Dow is ready to do its part. Save time and money—call on Dow and get the most out of plastics.

PLAN NOW WITH THESE DOW PLASTICS

Saran for colorful rustproof screen; plumbing parts and equipment; name plates; wire coating; paint brush handles. Styron for brilliant lighting fixtures; escutcheons; decorative objects and trim; insulators; food-handling equipment. Ethocel for modern window blinds; extruded shapes for kitchen trim; rods, tubes and bars. Properties of these Dow plastics make them adaptable to still other architectural uses.

PLASTICS DIVISION

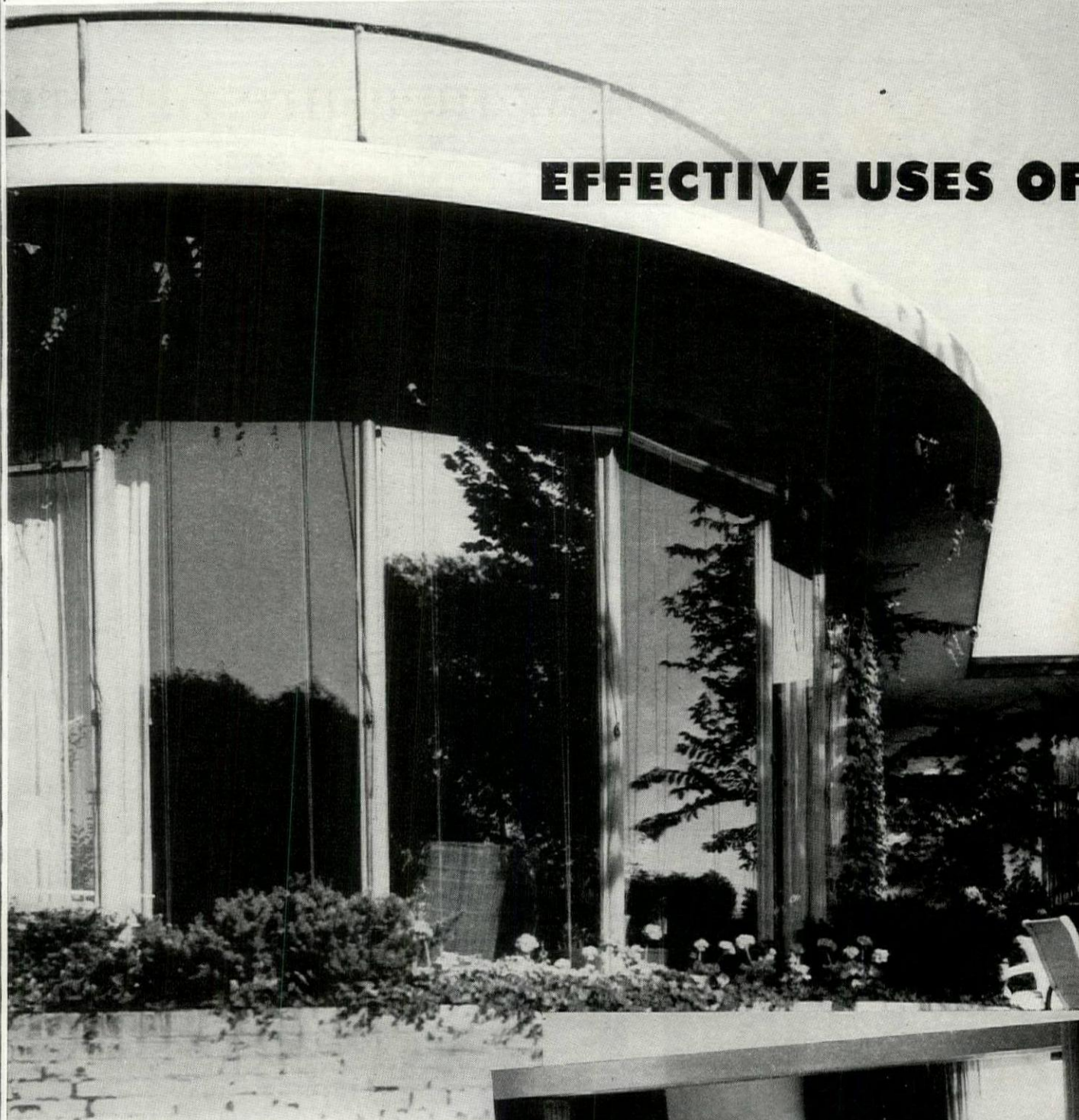
THE DOW CHEMICAL COMPANY • MIDLAND, MICHIGAN

New York • Boston • Philadelphia • Washington • Cleveland • Detroit • Chicago • St. Louis • Houston
San Francisco • Los Angeles • Seattle

DOW
PLASTICS

ETHOCEL • ETHOCEL SHEETING
STYRON • SARAN • SARAN FILM

EFFECTIVE USES OF

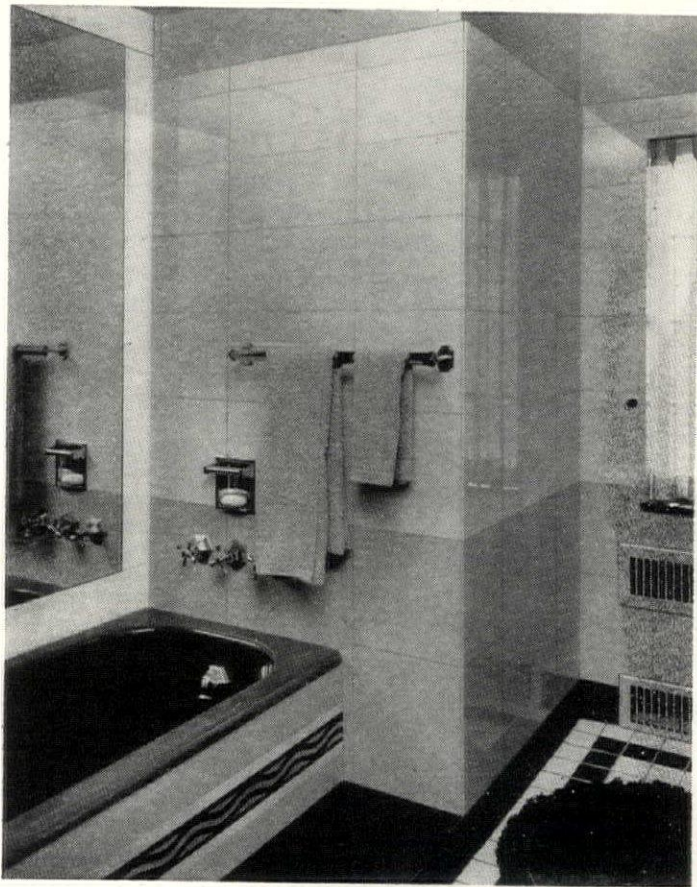


LARGER WINDOWS have won wide acceptance in recent years for all types of dwellings. And such applications have become truly practical with the introduction of Twindow, Pittsburgh's new window with built-in insulation. Twindow, consisting of 2 or more panes of glass with sealed-in air space between them, has far greater insulating efficiency than ordinary windows. It cuts heat loss, minimizes downdrafts, adds to comfort the year 'round, and affords clear, undistorted vision.

MIRRORS are among the most versatile tools at the architect's command in matters of interior design. You will find Pittsburgh Mirrors helpful in making small rooms look larger, dull rooms look brighter, plain rooms look luxurious, and *all* rooms more fashionable and modern. Pittsburgh Mirrors are available made of various colors of Plate Glass and with silver, gold or gunmetal backing. Architect: James W. Minick.



Glass IN RESIDENCES



BATHROOM AND KITCHEN design possibilities are tremendously expanded when Carrara Structural Glass is employed for walls, wainscots and ceilings. The colorful beauty of Carrara Glass is supplemented by its practical qualities of easy-cleaning, sanitation, and long life, to make it an ideal structural material for residential use. Available in ten shades and numerous thicknesses. Architect: Maxwell A. Norcross.



FOR GENERAL GLAZING purposes, it pays to specify "Pennvernion" . . . and not just "window glass". Pennvernion assures good vision because it is unusually clear for a sheet glass, remarkably free from distorting defects. And it has a bright, reflective surface-finish on both sides of the sheet.

We believe you will find much to interest you in our illustrated booklet of ideas for the use of Pittsburgh Glass in architectural design. Send the coupon for your free copy.

★ Design it better with

Pittsburgh Glass



"PITTSBURGH" stands for Quality Glass and Paint

Pittsburgh Plate Glass Company
2450-6 Grant Building, Pittsburgh 19, Pa.
Please send me, without obligation, your booklet entitled: "Ideas for the Use of Pittsburgh Glass in Building Design."

Name.....

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City..... State.....

PITTSBURGH PLATE GLASS COMPANY

**A DISTINCTIVE ^{NEW} PACKAGE
TO IDENTIFY AND PROTECT
THE SPARKLING BEAUTY OF**

Salter MASTERPIECE FIXTURES



Now when you specify Salter quality, your clients and customers will be doubly conscious of your desire to make their brass plumbing trim truly reflect masterpiece perfection. Not only does each Salter fixture excel in appearance, design and construction, but each unit is also skilfully packaged for safer shipment and maximum identification. On the job, this extra impression of the Salter trademark design, along with the Salter guarantee of quality tag, combine to forcefully reflect your interest in their behalf.

Make plans now to capitalize on the Masterpiece in Brass quality of the complete Salter line. Write today for information on the ever increasing variety of patterns which are or soon will be available and the name of Salter sales representative in your vicinity.

H. B. Salter MFG. CO.
MASTERPIECES IN BRASS
MARYSVILLE, OHIO
and division **THE GLAUBER BRASS MFG. CO., Kinsman, Ohio**

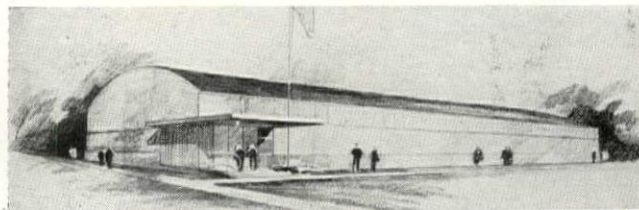
A STUDY OF ZONING FOR OFF-STREET PARKING, including regulations, practices and examples of this type of parking in all cities of 10,000 population and over, will be collected and reviewed by the Eno Foundation for Highway Traffic Control, Inc., Saugatuck, Conn. The report will be distributed without charge to public agencies and officials.

"THE FAMILY HOUSE," a series of lectures by Hermann Herrey, architect and planning consultant, aims to familiarize laymen (especially veterans) with the practical and technical problems of buying, building, remodeling and equipping a house. The 15 sessions will be held in Queens College, Flushing, N. Y. between Sept. 30 and Jan. 27, 1947.

36TH ANNUAL CONVENTION of the National Association of Real Estate Boards will be held during the week of November 10 at Atlantic City, N. J. to discuss problems of importance in the field.

THE NORTH AMERICAN CONFERENCE ON CHURCH ARCHITECTURE for architects, church building board executives and others interested in church work will be held in New York City on January 4. Further information may be secured from the Director of the Interdenominational Bureau of Architecture, 297 4th Ave., New York 10, N. Y.

BUILDING PREVIEWS



THIS NEW PLANT FOR ADVANCED AIRCRAFT, INC., at Eddington, Pa. (Manuel Greenberg, architect) provides outside light for intricate machine-tool work by use of corrugated and block glass for roof as well as walls. Large openings beneath the eaves provide ventilation. Designed for an initial 16,000 sq. ft. of floor space, the plant will cost about \$130,000 exclusive of special equipment.

A PARKE-DAVIS & CO. LABORATORY for the development and production of antibiotics is now under construction by the H. K. Ferguson Co. The four-story building (275 x 75 ft. in area) will be of structural steel with brick and stone exterior.



THE WESTON ELECTRICAL INSTRUMENT CORP. BUILDING at Newark, N. J., above, is being erected by Walter Kidde Constructors, Inc., New York, N. Y. This structure of reinforced concrete with brick facing will provide all services, lighting and partitioning on a module basis for maximum flexibility. Each laboratory will be provided with 6 types of electric services housed in continuous utility enclosures along the exterior walls. Occupancy is planned for May 1947.

NEW OFFICES

KENNETH JONES, formerly Chief Land Planning Consultant, FHA, has opened an office of land planning at 244 California St., San Francisco 11, Calif. (Continued on page 76)



Architect: Edward D. Stone

Presenting THE SHOW-ROOM HOMES of the Nation

EVEN in the blueprint stage, homes like this begin to be show-places for your best building materials and equipment. (You know how a proud new home-owner shows his plans around.)

Owners of better homes like this are the leaders in residential communities from coast to coast. They are families whose plans are of interest to others . . . families whose preferences for certain roofing or heating or plumbing for their own houses are likely to influence what goes into the homes of their neighbors.

In short, they are families like the one and a half million who read *TIME* each week.



A change of address will be coming through for the *TIME* subscription of Mr. Charles B. Strauss, when this new home is completed for him in Stamford, Conn.

TIME-readers have the incomes (double the U. S. family average) to buy, build, remodel and equip homes that set new living standards. Get the attention of the *TIME* market—and you spotlight your products for millions of other home-owners who tend to follow their example.

THE GATEWAY TO THE BUILDING MARKET



ADVERTISING OFFICES • NEW YORK • CHICAGO • BOSTON • PHILADELPHIA
CLEVELAND • DETROIT • ST. LOUIS • SAN FRANCISCO • TORONTO • MONTREAL

ANNOUNCEMENTS

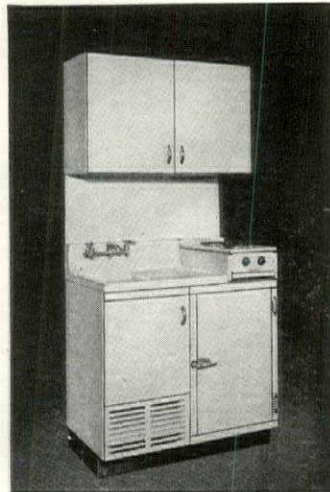
Murphy Cabranette Kitchens made in 4 widths

Designed, engineered, manufactured and guaranteed by one organization which devotes its entire facilities to the manufacture of apartment kitchens.

Of welded steel construction, with exposed surfaces of genuine vitreous porcelain, Murphy Cabranette Kitchens are unique in the permanence of their beauty. They never require re-decorating; upkeep costs are negligible.

No. 39

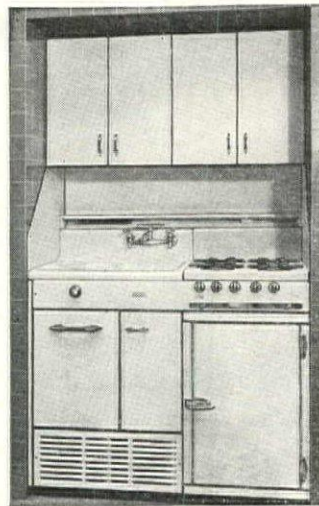
Ultra-compact kitchen, planned for the small efficiency apartment or bachelor suite. Only 39 inches wide and 23 inches deep, it fits in a tiny space.



No. 480

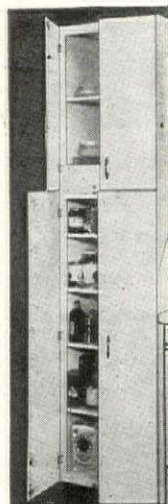
Full kitchen convenience in two-by-four space. Gas or electric range with oven, electric refrigerator, sink and storage cabinets. Only 48 inches wide.

Illustration below illustrates Models 60 and 66.



Utility and Implement Cabinets

Implement cabinets and utility cabinets (with shelves) in 15 and 21-in. widths, can provide for added storage space.



No. 60
(60-inch)

No. 66
(66-inch)



Utility and implement cabinets fit all kitchen assemblies.



DWYER PRODUCTS CORPORATION

Dept. F11, Michigan City, Indiana

IVAN REYNOLDS and ROSS MORRISON, associated architects, announce the opening of an office at 740 Hightower Bldg., Oklahoma City, Okla.

CHARLES DANA LOOMIS, AIA, formerly Technical Director, Baltimore City Housing Authority, has resumed private architectural practice at 22 E. 25th St., Baltimore 18, Md.

JULES CHANNING announces the establishment of his office of civil engineering at 1540 Washington Ave., Miami Beach, Fla.

KENNETH HESS, architect, recently with the Army Air Forces, has opened his office at 32 S. Oak St., Ventura, Calif.

VIRGEL DAVIS and HARRIS ROBERTS have formed a partnership for the practice of architecture at 206 Medical Arts Bldg., Waco, Texas.

CHRISTOPHER KANTIANIS, recently of the U. S. Naval Reserve, announces the opening of his architectural office in the Springfield National Bank Bldg., Springfield, Mass.

PAUL ATCHISON and CARL KLOVERSTROM announce their association as Atchison & Kloverstrom, architects, 1254 Monaco Pkwy., Denver 7, Colo.

G. A. McELROY & ASSOCIATES, architects and engineers, have opened offices in the Thompson Bldg., 152 Pitt St. W., Windsor, Ont., Canada.

KELLER CONSTRUCTION CORP. (formed by the merger of Excavators, Inc. and Keller Construction Co.) announces the opening of its new offices at 7930 Palm St., New Orleans, La.

ERICH GNANT, residential and commercial designer, has reopened his office at 3331 W. Libson Ave., Milwaukee 8, Wis.

WALLACE ATKINSON has resumed practice in landscape architecture and site planning at 520 N. Michigan Ave., Chicago 11, Ill.

(Continued on page 80)

ARCHIE SAYS:

SPECIFY PIERCE
Balanced Lag
Renewable Fuses
for QUALITY
and ECONOMY

Quality is a much abused word Pierce claims to quality are based on a fuse built of finest materials and packed with exclusive features that mean improved protection to personnel and equipment—avoidance of unnecessary current stoppage—important savings in the cost of fuses and refills.

Among the Pierce Features are:

Pierce Balanced Lag Link. It avoids unnecessary "blowing" and lapses of service, yet can be depended upon to "blow" if shorts or grounds cause dangerous current surges.

Screen Ventilation—makes perilous afterblow impossible; avoids injury to maintenance workers and uncalled for destruction of fuses.

Arch Bridge Construction—insures perfect alignment independent of the cover. Result—longer fuse life—links replaced in seconds, only a screw driver needed.

These exclusive fuse features give a new meaning to Quality, with possible savings up to 50%. FREE Sample Link sent for inspection, together with complete data on renewable fuses. Just mail the coupon.

PIERCE RENEWABLE FUSES, INC., DEPT. L-6

211 HERTEL AVENUE, BUFFALO 7, N. Y.

Please send me complete data on renewable fuses, and FREE Sample of PIERCE Balanced Lag Link as checked at right.

YOUR NAME.....[] 30 Amps.
POSITION.....[] 60 Amps.
COMPANY.....[] 100 Amps.
ADDRESS.....[] 200 Amps.
P.O.....[] STATE.....[] Voltage

Urgent Demand for Veteran Housing Means Allocation of Douglas Fir Plywood

TODAY, a substantial proportion of Douglas fir plywood production is allocated by order of the Civilian Production Administration to the Reconversion Housing Program. Housing contractors, stock cabinet manufacturers, prefabricators and distributors **must** be supplied first — and this means a temporary shortage for all other industrial and construction users. But **MORE** plywood is being produced today than in pre-war years. When the present demand is met, an increased supply will be readily available. So — anticipate your needs as far in advance as possible. Keep in touch with your regular source of supply!

DOUGLAS FIR PLYWOOD
Tacoma 2, Washington

**DOUGLAS FIR
PLYWOOD**
LARGE. LIGHT. STRONG.
Real Wood
PANELS

ASSOCIATION



These "Grade Trade-Marks" Are Your Assurance of Uniform Quality Standards

There is a type and grade of Douglas fir plywood for every building need. Each **MUST** meet rigid performance tests — in the field and in the Douglas Fir Plywood Association Laboratory. Choose the type you need by these "Grade Trade-Marks" — stamped on every panel.

EXT.-D.F.P.A.

EXTERIOR-TYPE plywood is made with completely waterproof synthetic resin binder especially for permanent exposure to weather and water. It is widely used for building exteriors, for outdoor signs, for railroad car siding, and in all phases of marine construction.



PLYSCORD is an unsanded utility panel of unusual rigidity, made to withstand the rigorous service demanded of wall and roof sheathing and of sub-flooring.



PLYWALL is the grade of interior-type plywood made for use where only one side is exposed, as in wall paneling. It is suitable for most stained finishes, for painting or papering.

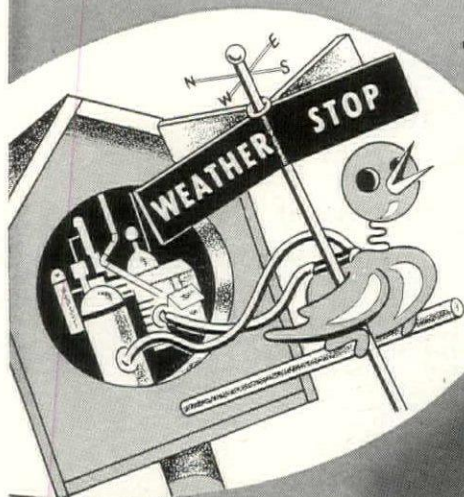


PLYFORM is the special concrete-form grade of Douglas fir plywood — a quality grade manufactured with highly water-resistant glues and intended for multiple re-use in form construction.

PLYPANEL D.F.P.A.

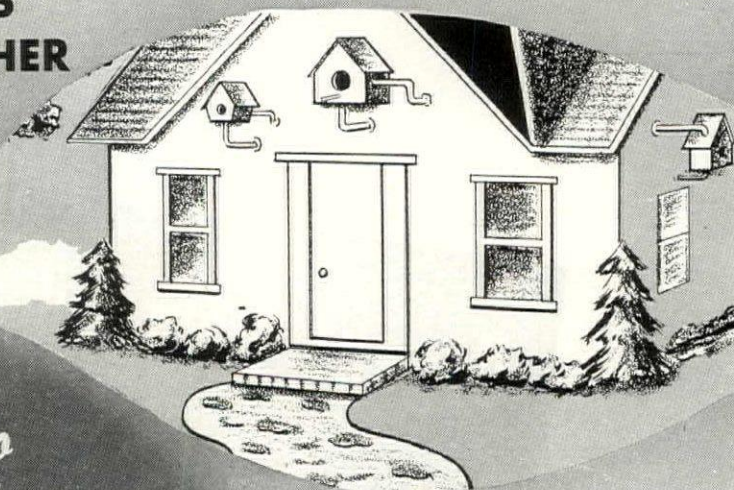
PLYPANEL is the grade of interior-type plywood made especially for high quality interior work on walls, ceilings, for booth partitions, cabinet doors and similar uses.

TRANE ENGINEERS WANTED THE WEATHER TO STAND STILL,



SO...

*They Built
Bird Houses to
Beat the Weather*



HOW ACCURATE HEATING TESTS ARE MADE DESPITE CHANGING WEATHER CONDITIONS

To test a newly developed product, Trane engineers compare its performance with that of similar units. To be accurate, such tests should be made under identical conditions. Trane engineers perform these tests in a special test house that is exposed to the weather on every side.

When constantly changing outdoor temperatures are involved, testing becomes a problem. Trane engineers had to devise some means of making the "weather stand still." That's where the Effective-

degree-day Meters—"Bird Houses" for short—come in.

These devices, utilizing thermal and electrical principles, are mounted on the exposed walls of the test house. Each unit registers a different set of conditions, and these readings are averaged to record the total outside weather effect on the entire building. In this way, Trane engineers measure changing weather and "cancel out" day-to-day variations to make exacting tests whenever they please.

EXACTING ENGINEERING STANDARDS MEAN PREDICTABLE AIR CONDITIONS

Using thermal and electrical principles to make precise tests of steam and hot water heating units is another example of the adaptability of Trane engineers who carry out a constant program of research in the development and refinement of Trane products and systems.

All Trane products are designed and built together for service together. The architect and

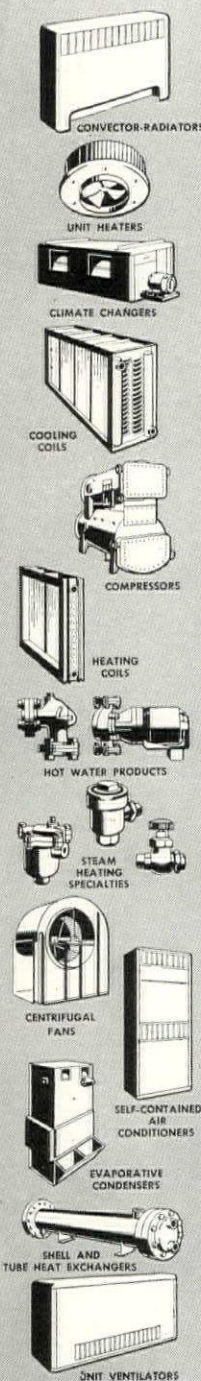
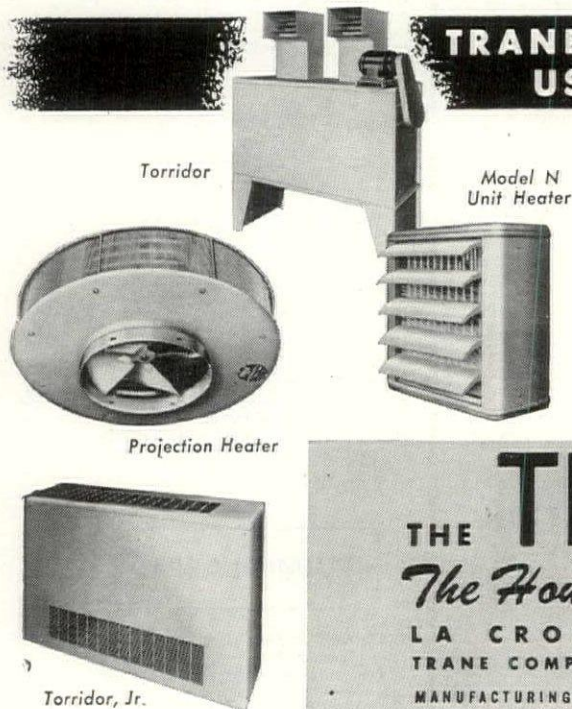
engineer will find that there is a complete Trane system for almost every conceivable application in heating, cooling, and air conditioning.

More than 200 Trane field engineers in principal cities all over the country cooperate with architects, engineers and contractors in the application of Trane Weather Magic.

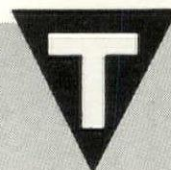
TRANE UNIT HEATERS...MOST WIDELY USED...MOST WIDELY USABLE

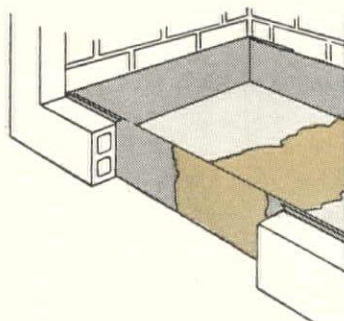
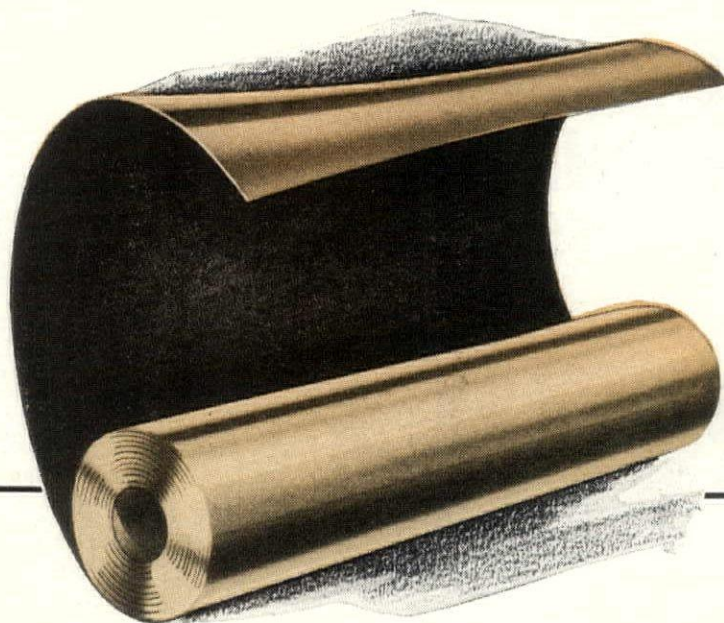
The four outstanding Trane Unit Heater types cover a range of sizes and capacities to meet every heating requirement.

1—The Trane Model N Unit Heater, a conventional model, uses a special broad bladed fan to move large quantities of air. 2—The Trane Projection Heater, pioneered by Trane, tucks up under the ceiling, yet adequately heats a broad area. 3—The Trane Torridor, a blower type unit, is recommended for those areas where a long distance of throw is necessary or against the resistance of ductwork. 4—The Trane Torridor, Jr. combines the advantages of a blower unit heater with the attractive cabinet of the Convactor-radiator.

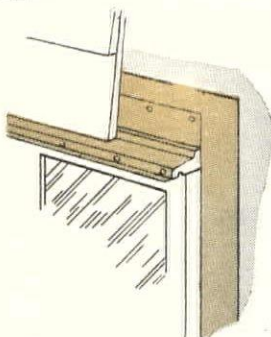


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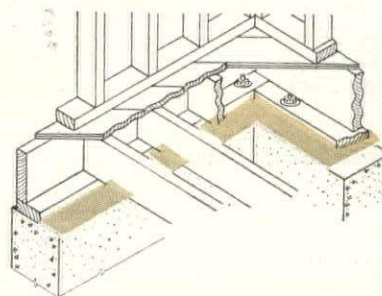




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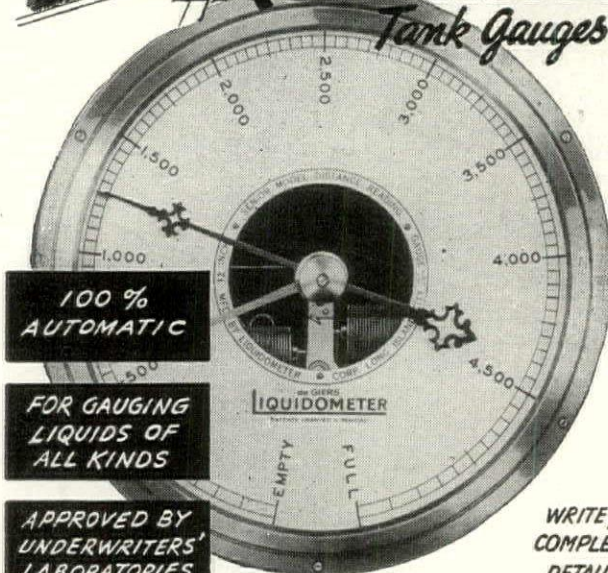
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JULIUS MEYER and RICHARD AYERS have joined Riffin Buckler and G. C. Fenhagen, architects, in the association of Buckler, Fenhagen, Meyer & Ayers, 325 N. Charles St., Baltimore, Md.

WALTER MALLORIE has become partner in the new firm, Clepper & Mallorie, registered architects (formerly Clepper & Clepper), 72 Vine Ave., Sharon, Pa.

RAYMOND SELLON and HARRY COLLINS, JR. have opened an industrial design studio at 808 N. 3rd St., Milwaukee 3, Wis.

APPOINTMENTS

IRA BACH, formerly Planning Director of the Chicago Housing Authority, is now Executive Director of the newly organized Cook County Housing Authority in Illinois.

FREDERICK EARL WALLACE, Commissioner of Banks of Massachusetts, has been appointed Deputy Governor of the Federal Home Loan Bank System.

SIDNEY LITTLE, architect and associate professor at Alabama Polytechnic Institute, has been named Dean of the University of Oregon School of Architecture and Allied Arts.

DR. FRANK ROOS, recently of Ohio State University, has been appointed Head of the Department of Art at the University of Illinois, Urbana, Ill.

DOUGLAS MAIER, recently Captain in the U. S. Army, has been appointed associate professor of architectural design at Western Reserve University.

EDWARD BARNES, architect, will head the West Coast office of Henry Dreyfuss, industrial designer, at Pasadena, Calif.

JOHN WEAVER, designer, has joined the staff of Raymond Loewy Associates, industrial designers, as retail planner and account director.

(Continued on page 84)

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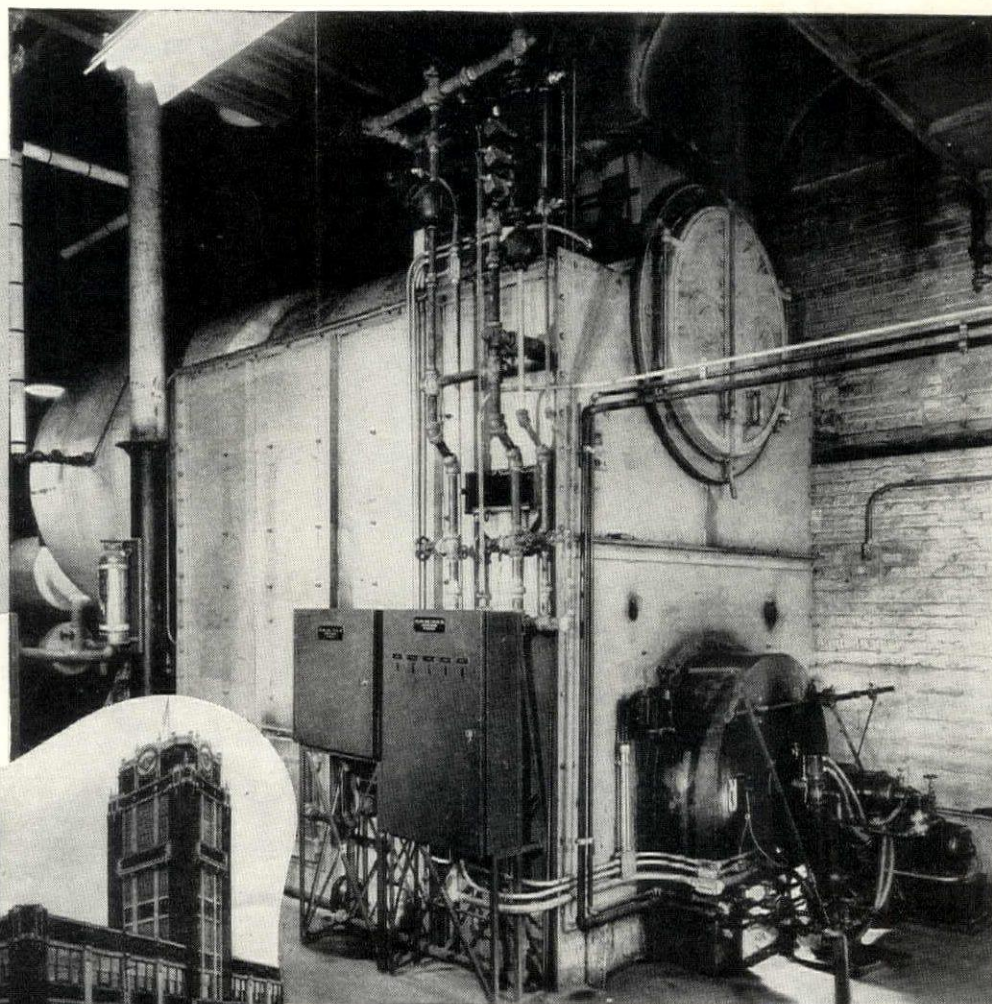
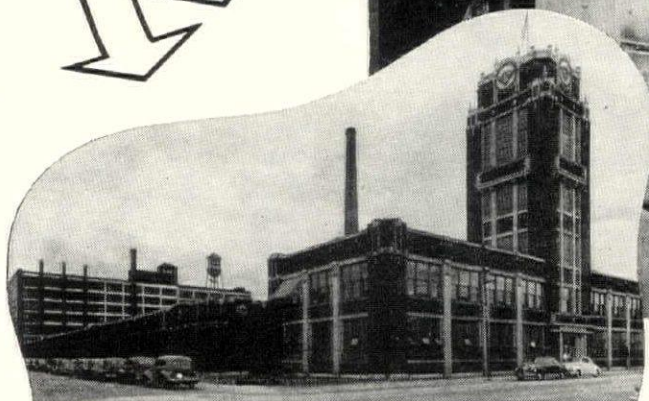
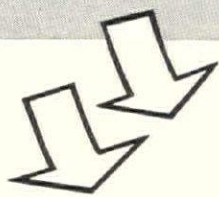
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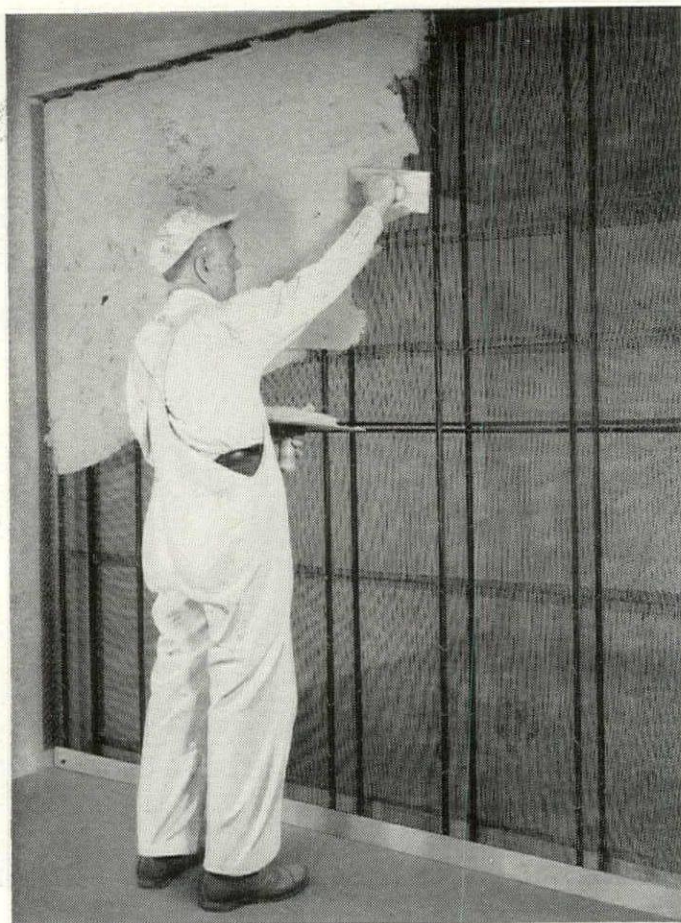
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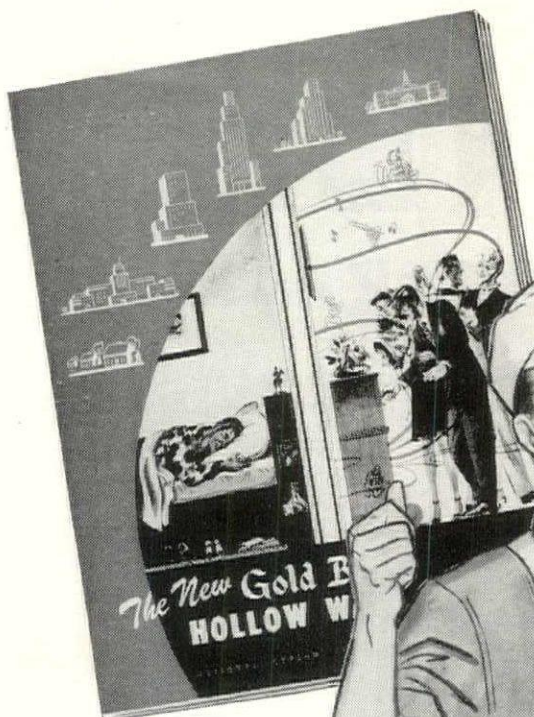
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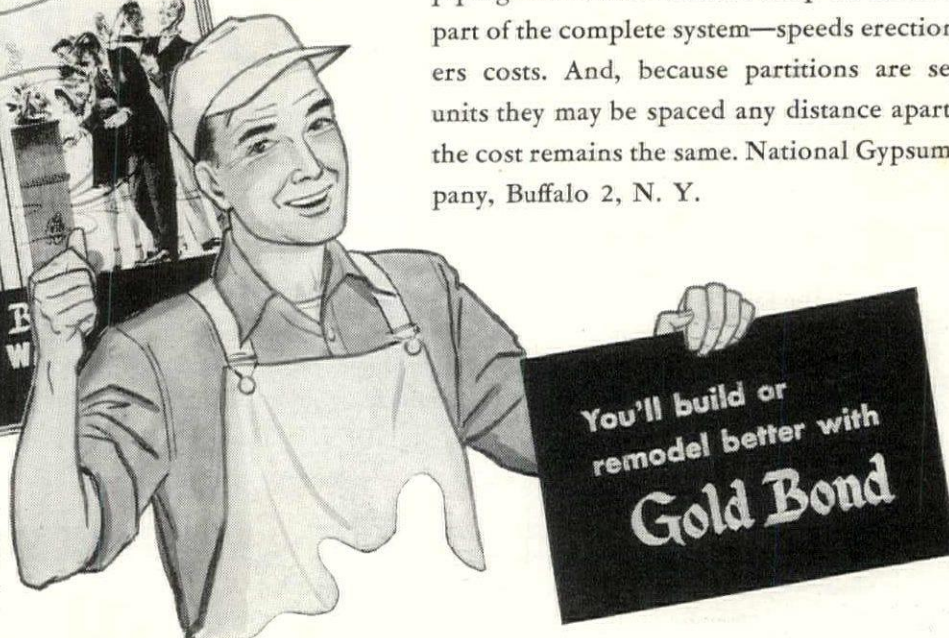
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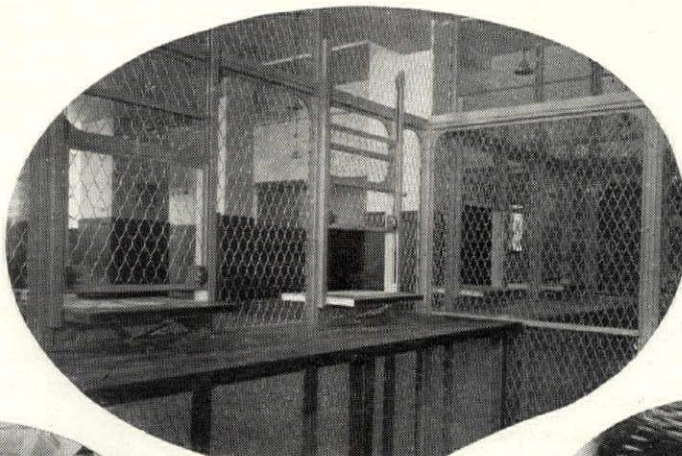
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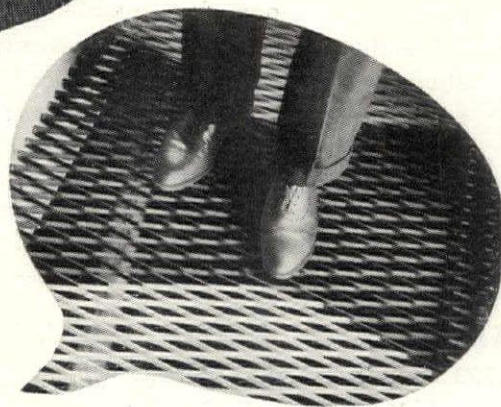
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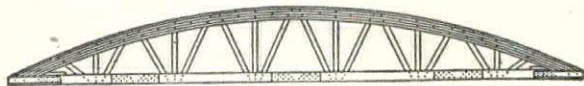
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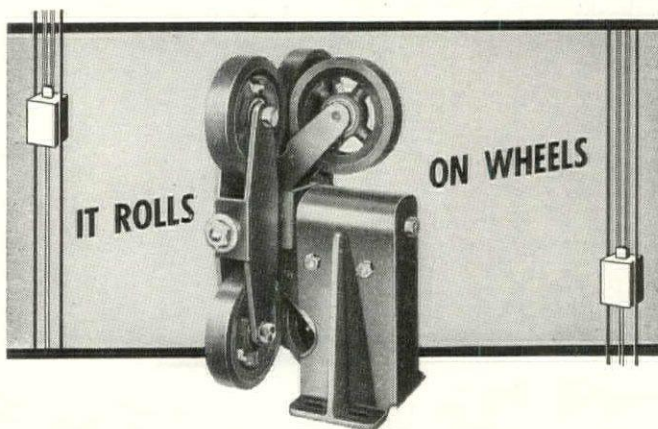
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CHANGES OF ADDRESS

KETCHUM, GINA & SHARP, architects, are now located at 227 E. 44th St., New York 17, N. Y.

FELIX AUGENFELD, AIA, ADI, has moved his office to 119 E. 57th St., New York 22, N. Y.

HARRY BARRETT, AIA, RIBA, has returned to private practice at 1309 14th St. NW, Washington 5, D. C.

PAUL DRAKE, AIA, announces that his office is now located at 100 Summit Ave., Summit, N. J.

HAYNES, STRANGE & KIRBY (until recently Haynes & Strange) are now located in their new office at 19th St. and Dixie Drive, Lubbock, Tex.

MOORE & HUTCHINS, architects, have moved their offices to 2 W. 20th St., New York 11, N. Y.

EDWARD TAUCH, JR., architect, announces the removal of his office to 250 E. 49th St., New York 17, N. Y.

CORRECTIONS

We regret the following inaccuracies in the September issue:

p. 32—Robert (not Richard) Burbank was co-winner of the international competition for Ecuador's new legislative palace
p. 140—Paul Schweikher and Winston Elting (not Eltine) have reopened the architectural office of Schweikher & Elting at Meacham Road, Roselle, Ill.

p. 177—The "on-the-job" feeding photo (orange tint) should have been credited to The Austin Co.

p. 182—The "burner radiant" in the central photo is not designed (as stated) to fit all types of gas burners, but only those of the individual company (in this case, the Argil Gas Burner of the Chicago Combustion Co.).

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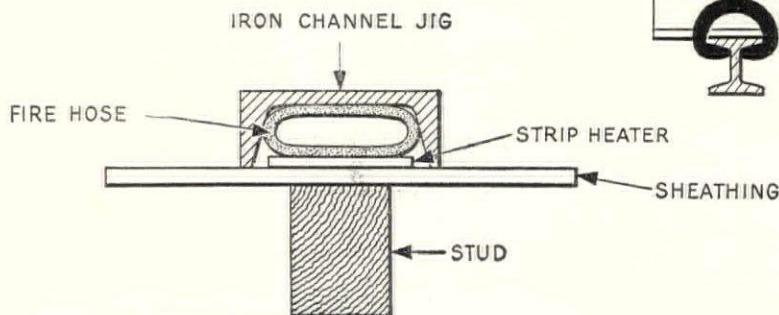
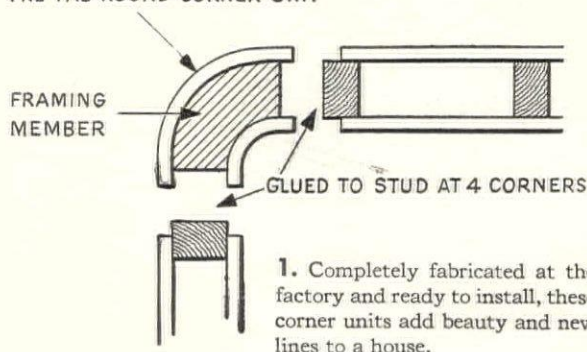
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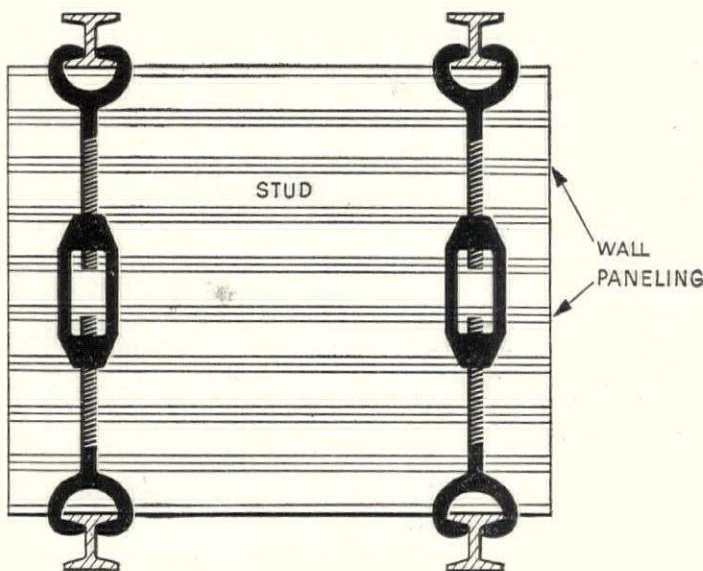
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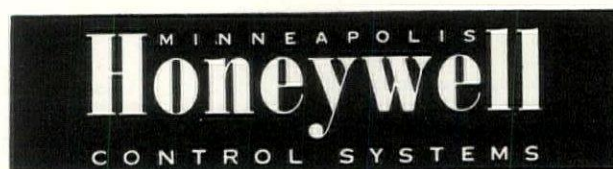
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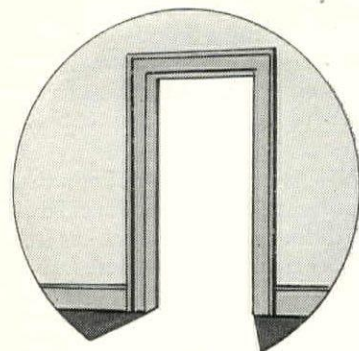
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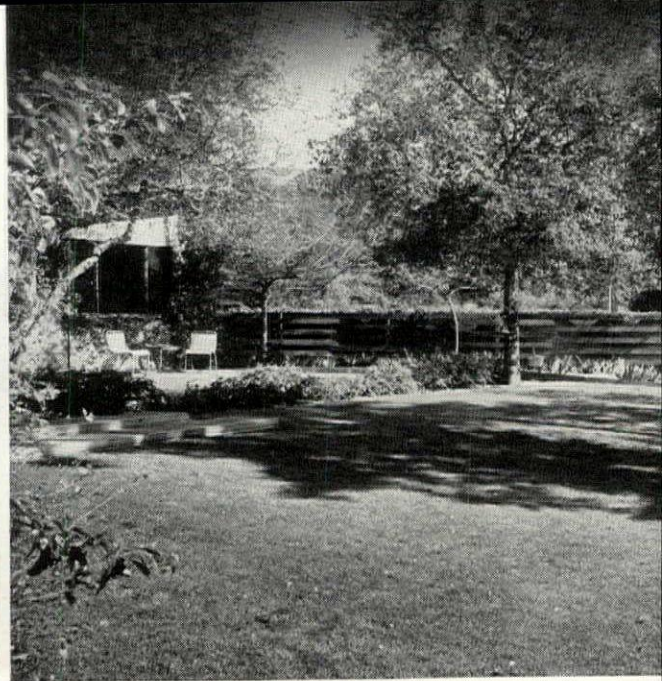
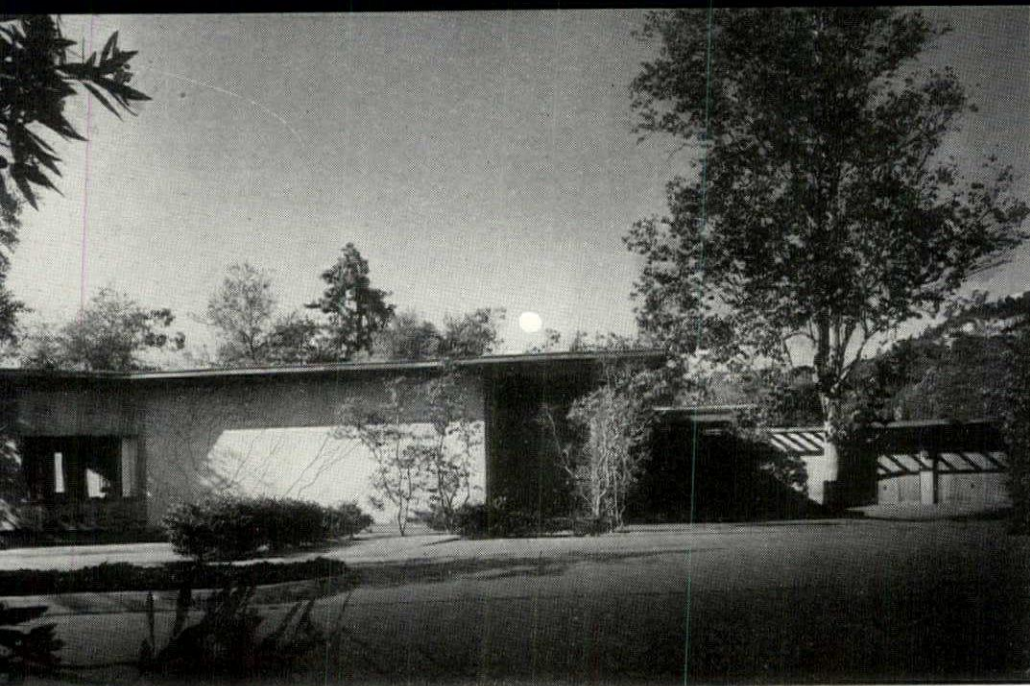
FORUM

Magazine of Building

Julius Shulman Photos



LANDSCAPE AND HOUSE
ARE ADROITLY MESHD
IN THIS THREE-MAN DESIGN



PLANTING ALONG STREET FRONT—LIKE THE HOUSE ITSELF—IS RESTRAINED. THE TERRACE AT REAR IS ENCLOSED BY PLEACHED SYCAMORE

HOUSE IN CALIFORNIA: Joint design by three-man team skilfully combi

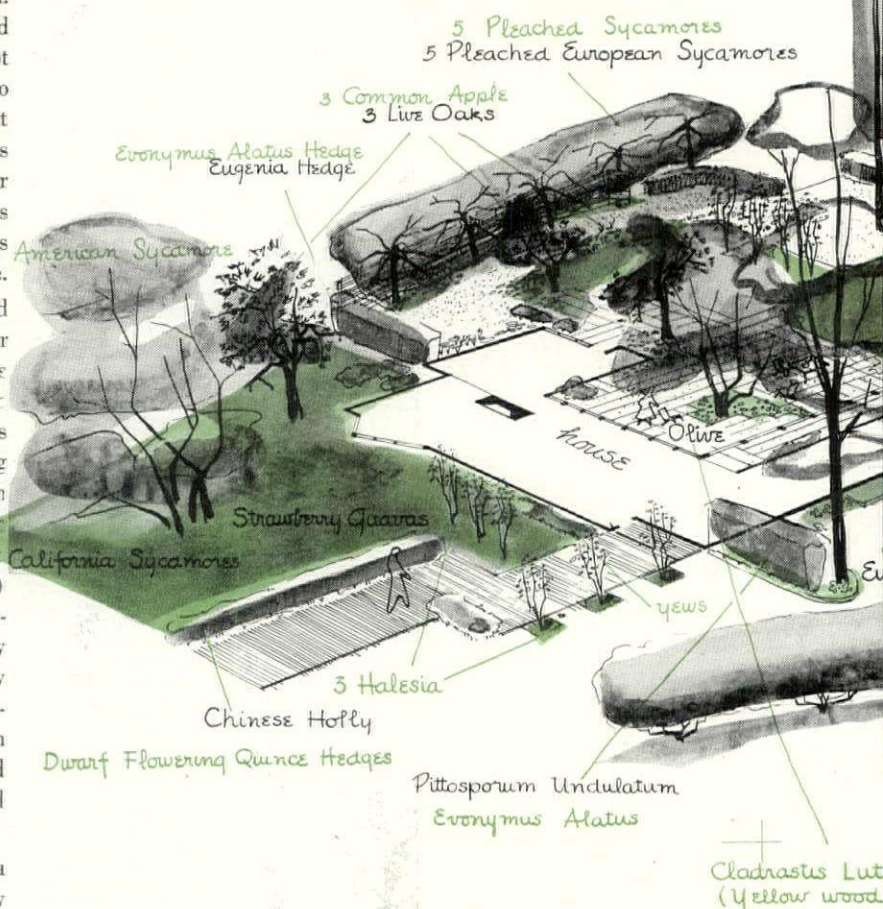
LAWRENCE TEST, Architect; WOODBRIDGE DICKINSON, JR., Designer;

JAMES C. ROSE, Landscape Architect; HOWARD ALLEN, General Contractor

For an elderly woman who lives alone and whose hobbies are gardening and flower arrangement, it would be difficult to imagine a happier solution than that provided for Mrs. Thompson Dickinson by her Pasadena, Calif. house. The entire project has a misleading air of simplicity and repose. Actually, in both house and grounds, the designers had many problems to resolve—problems which they have handled with facility and imagination. The plot, located in an already well-developed section, was a truncated wedge which sloped evenly and gently from the curving street to an abrupt drop into an *arroyo* at rear. At the edge of this precipice were two magnificent fern trees (*Graevillea*): beyond, a typically extravagant California landscape with a distant backdrop of snow-covered peaks. This outlook—together with the southwestern exposure—conditioned the major orientation of the whole design. Location of the house across the plot's center was determined by existing set-back restrictions and by the owner's desire for maximum isolation of her own suite from the rest of the house.

Working within this reference frame, landscaper Rose developed a layout of elegance and simplicity—one that, in 1941, was executed for approximately \$1,200. Heart of the scheme lies in the series of terraces across the entire southwest face of the house. At the extreme western corner, in the angle formed by garage and cliff edge, is Mrs. Dickinson's own terrace. This charming polygonal area, which also serves as a potting garden, is surfaced with gravel and enclosed by a glass-and-redwood screen (see p. 93). The main terrace is paved with concrete blocks, poured in place between redwood dividers 20 in. on centers, and acid-etched to expose colored aggregate. An economical and (for moderate climates) practical medium, this paving has been adroitly used. Its modular character permits freedom of shape and levels, so that the terrace flows easily into the lawn. The lawn, in turn, flows down past a line of strawberry guavas (whose fruit, incredibly, looks like cherries and tastes like strawberries) to the scheme's chef d'oeuvre—the "overlook" beneath the fern trees. All these areas are protected by planting, the mass of the house and the edge of the cliff, so as to afford perfect privacy for the owner and her guests.

The property facing the street has been kept severely plain. Here a new group of sycamores balances an existing eucalyptus, while a new line of *pittosporum* has been planted, screening the service court to the right. The stepped-back paved court provides for three parked cars, still permits access to garage. This causes a jog in the brick entrance walk, which Rose has effectively exploited with hedges of Chinese holly and another line of guavas. The result is a handsome frame for the Oriental character of the house facade.

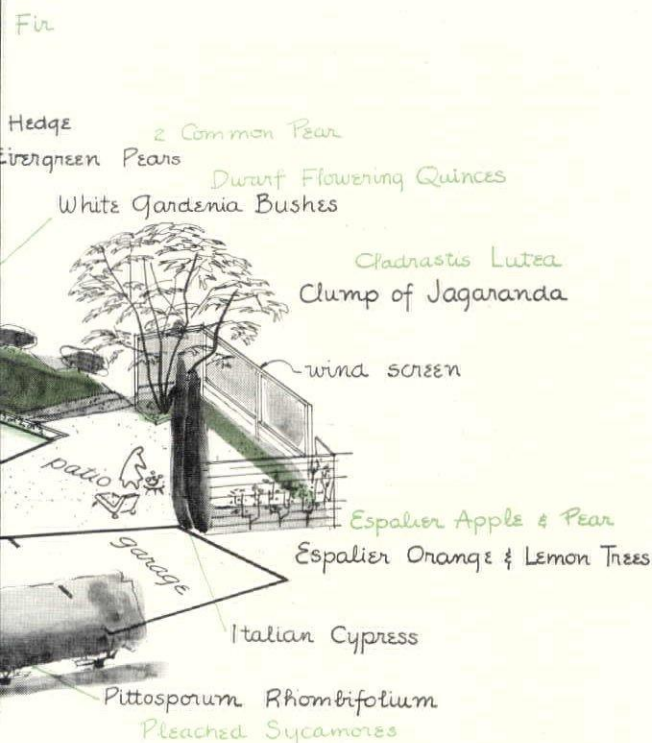




REDWOOD-PLANK FENCE

scape, planting and structure

Alternate plant material for
North east shown in green.



CALIFORNIANS HABITUALLY make use of gardenia, bougainvillea, Jacaranda, fuschia and similar exotics as permanent planting material. The FORUM asked Mr. Rose for an alternate planting schedule for soberer climes. His suggested list for northeastern U. S. is shown above in color. While these species approximate in structure, foliage and color those actually employed, Rose points out that only Douglas firs—and venerable ones, at that—could possibly substitute for the pair of fern trees in the original version.



PLANTING BEDS OF IRIS AND LILIES ARE EDGED WITH REDWOOD DISCS



GRAVELED "OVERLOOK" WAS DEVELOPED AROUND EXISTING FERN TREES

MODULAR PAVING MAKES TERRACE PLANTING SPACES A SIMPLE MATTER





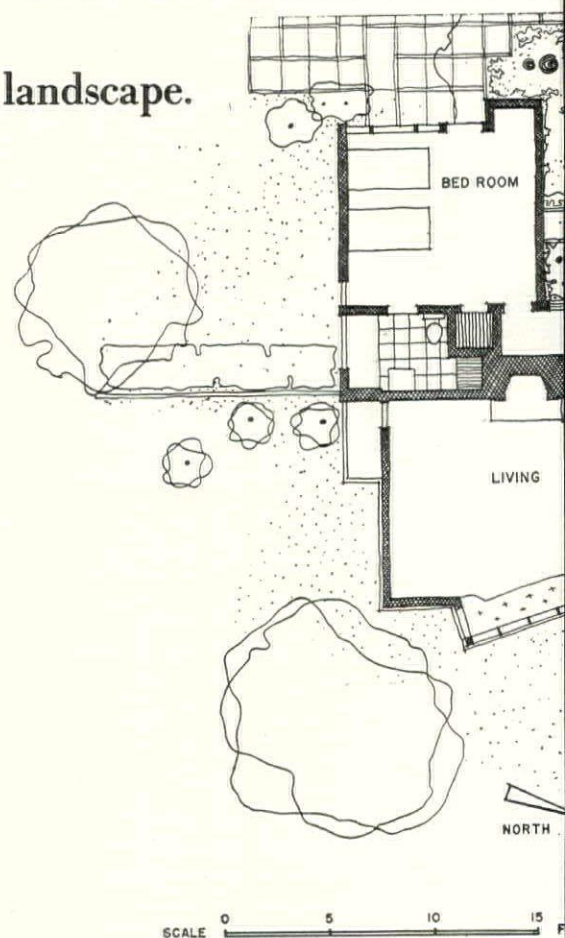
PLASTER CEILING, GRASSCLOTH WALLS AND REDWOOD TRIM OFFER PLEASANT, NEUTRAL BACKGROUND FOR OLD LIVING ROOM FURNITURE

THE HOUSE shows the same skilful simplicity as the landscape.

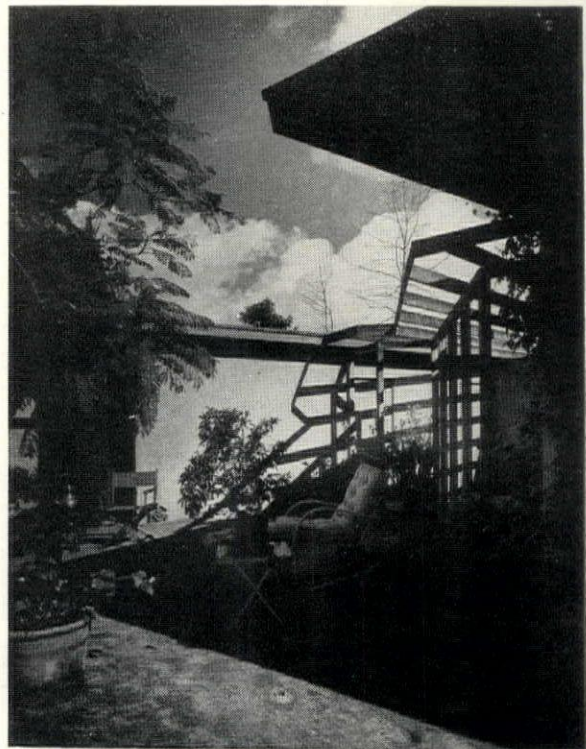
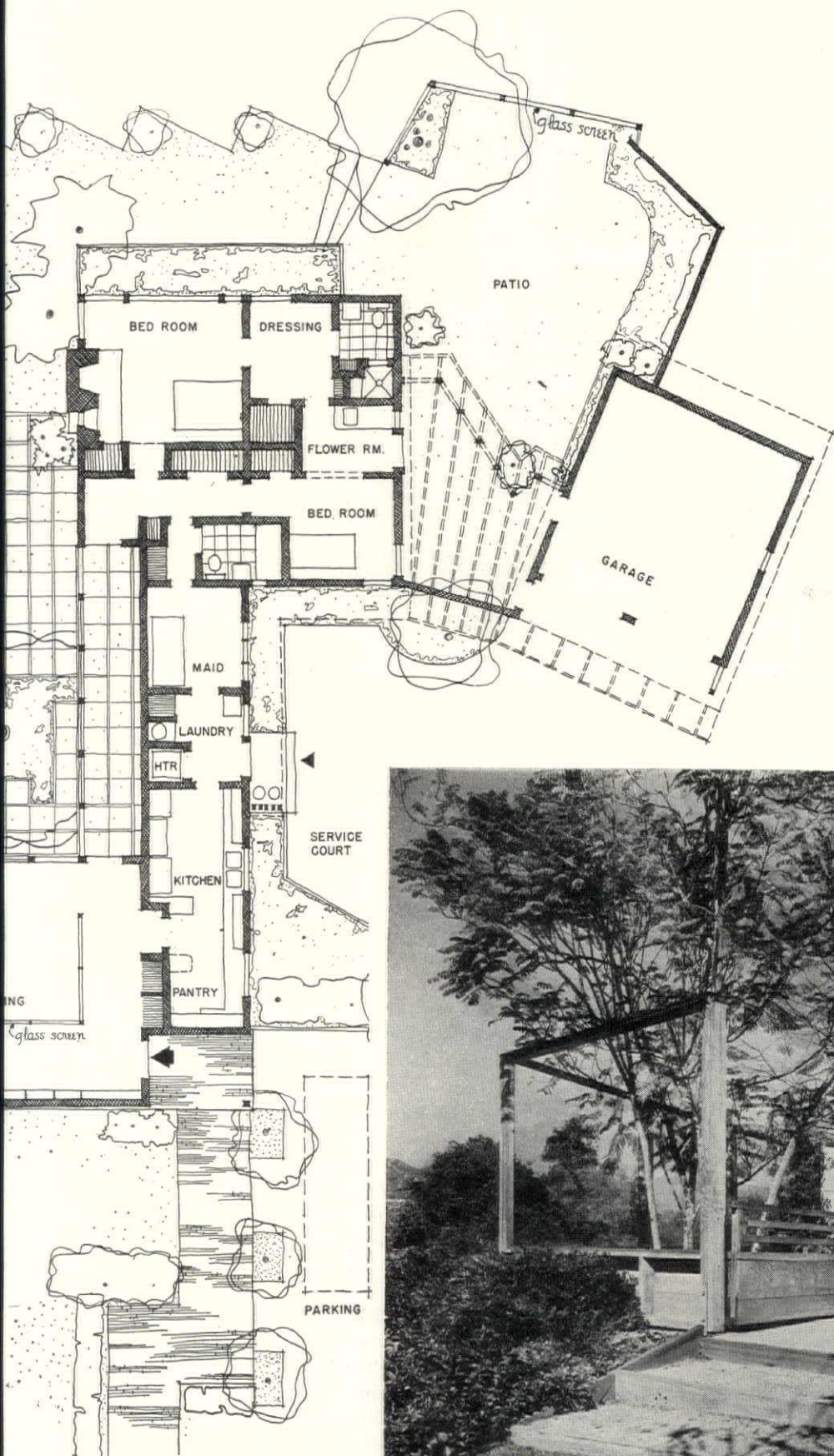
Design of the house proceeded side by side with that of the landscaping. To achieve thorough integration of indoors and out, there was constant checking back and forth, with many adjustments on both sides. (For example, the exterior trim was painted a brownish-pink to match the mahogany-like bark of the guava trees, while the courtyard paving was extended into the glazed passage in the owner's wing.) Considering her rather special requirements, this process has given Mrs. Dickinson's house the same qualities as her grounds—coherence, simplicity and polish. There is the same emphasis on growing plants and the same carefully-selected yet unostentatious colors and textures.

The plan directly expresses the household's habits. The guest suite is far removed from both service area and owner's rooms. By means of large sliding doors, the living-dining area may be thrown together with the paved terrace to create space for large scale entertaining. The service area is compact and closely related both to servant's bedroom and owner's space. This suite, in addition to bath and dressing room, has a flower room which opens onto a screened porch; the porch, in turn, gives onto the polygonal terrace and cutting garden (see facing page) and the garage and storeroom. Thus, the owner's wing provides for all her needs and activities in what is essentially an independent apartment.

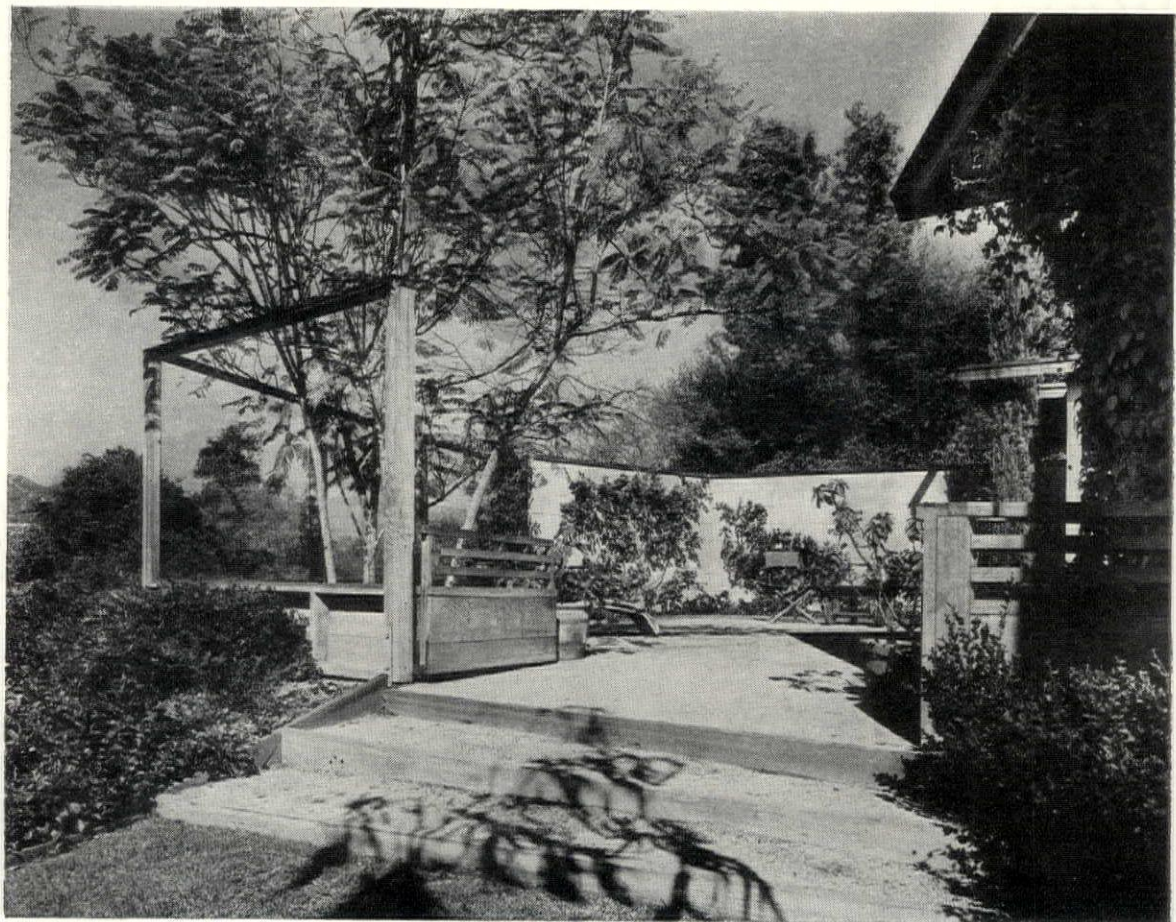
Built in 1941 at a cost of \$17,000, the house is wood framed, with a gravel-topped, white-painted roof. Exterior walls are surfaced in adobe-colored stucco except for living room bay, which is sheathed in vertical redwood. Interior walls are generally painted plaster; floors are oak, except for linoleum in kitchen, laundry and baths. Heating is by forced air, gas-fired.

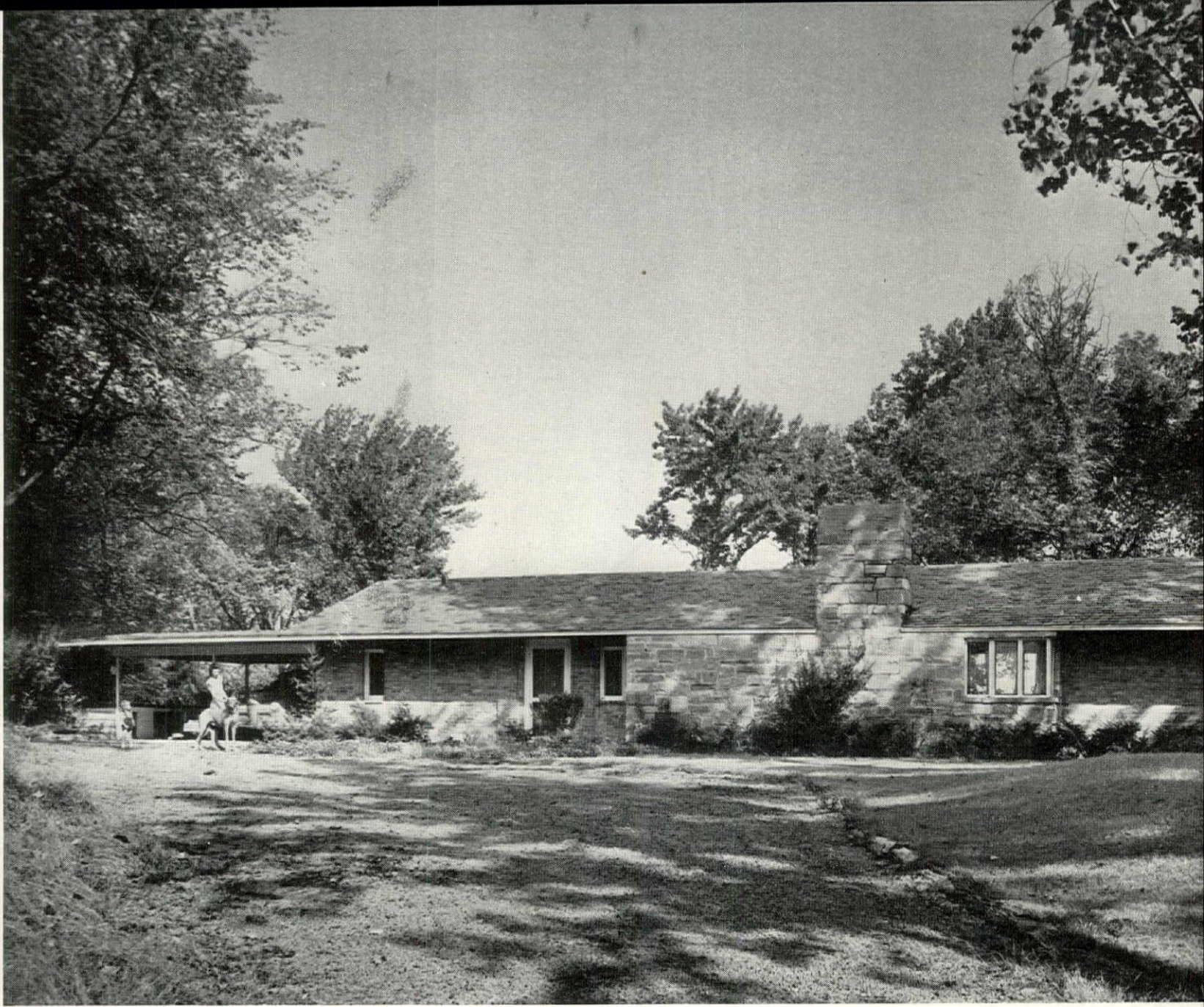


LAWRENCE TEST, Architect
 WOODBRIDGE DICKINSON, JR., Designer
 JAMES C. ROSE, Landscape Architect



SHELTERED FROM COOL WINDS, yet commanding a cliff-edge view of valley and distant mountains, Mrs. Dickinson's terrace serves as cutting garden, sun trap and—with adjacent workroom, tool shed and potting area—a base of horticultural operations.

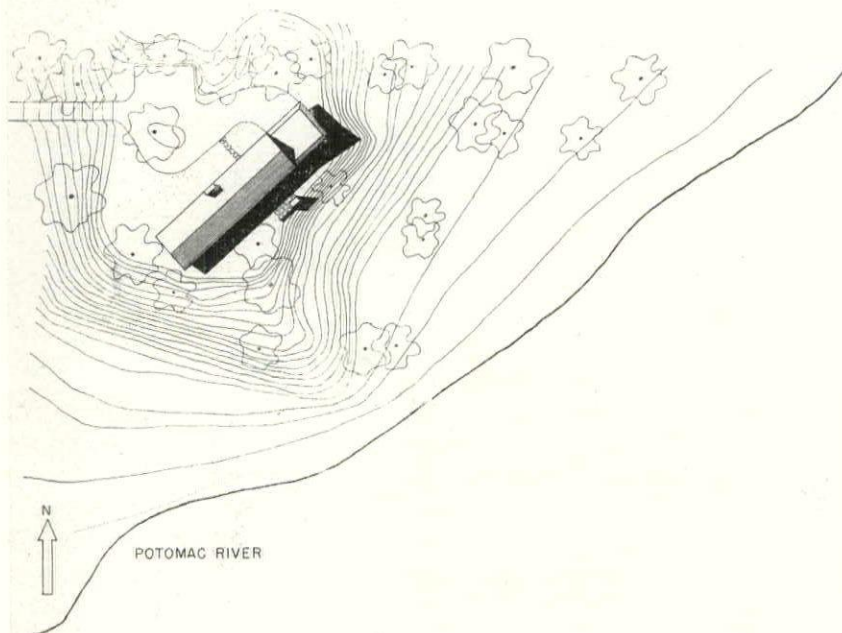




HOUSE IN VIRGINIA In-line plan achieves simplicity without monotony.

WILLIAM C. SUITE and ROSCOE L. WOOD, Architects

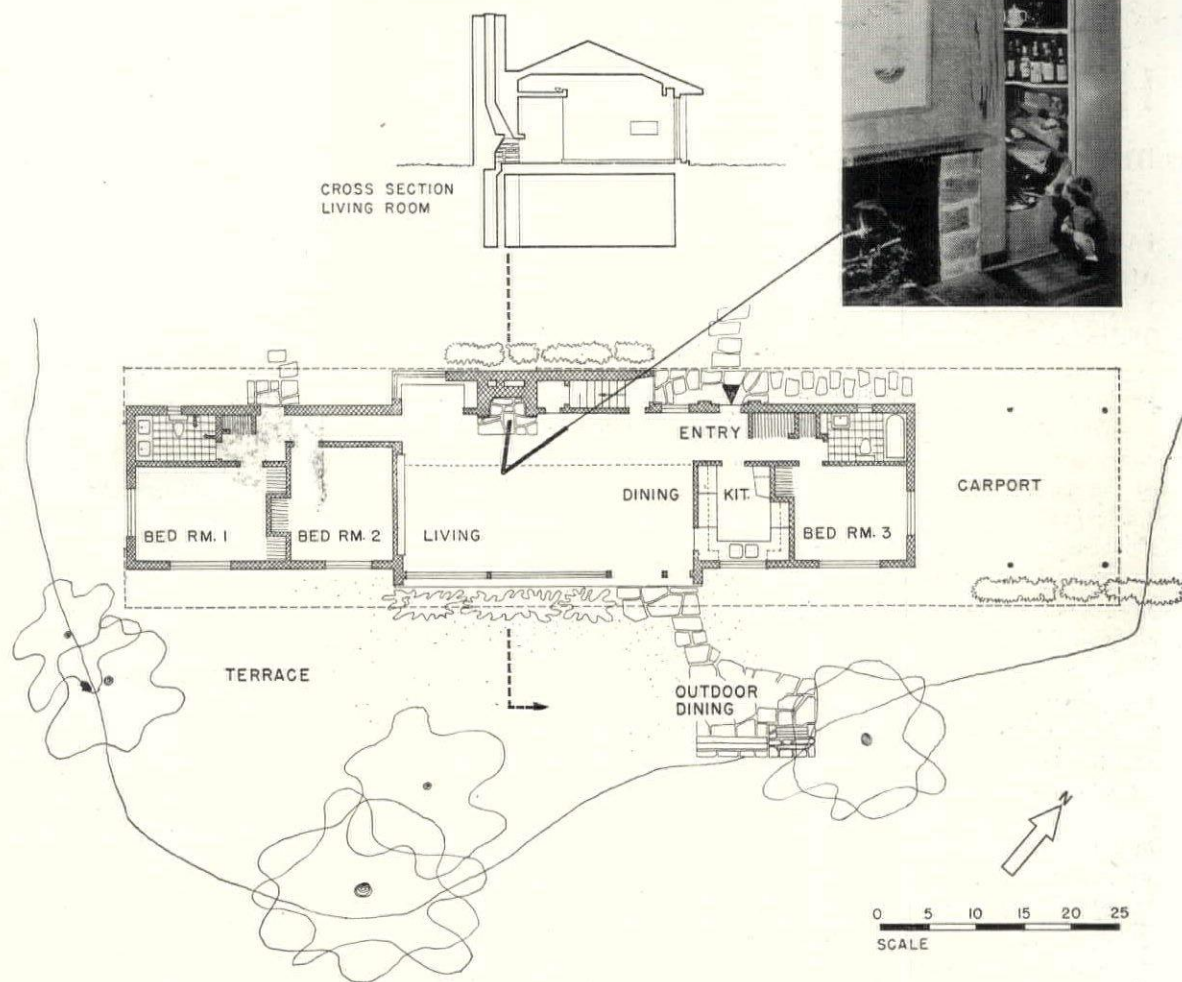
MALCOLM MATHESON, Contractor



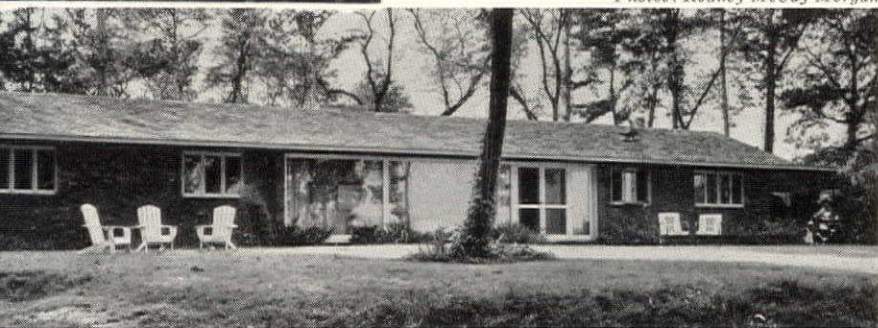
The plan of this country house, nothing more than a long narrow rectangle, illustrates forcefully that the best solution is often the simplest. Designed for a wooded site overlooking the Potomac River, it takes maximum advantage of the view by placing all rooms in a single line; avoids monotony with projecting center walls and variety of fenestration. The problem of circulation has been solved by placing the living area in the center, with short corridors to the bedrooms and kitchen on either side. Main entrances at both front and rear are placed conveniently near the kitchen.

Close collaboration between architects and client was responsible for some of the best features of the design. For family privacy, the master and child's bedrooms are grouped at one side of the living room while the guest room is isolated at the opposite side of the house. A fondness for sailing and gardening dictated the inclusion of a separate exterior entrance to the family bedrooms.

An equally convenient trick is the wood bin, designed with access from the living room for tossing another log on the fire and access from the basement stairs for filling the bin. Other special effects: an architecturally designed bed with blanket drawers and shoe racks concealed in the bay window; a food pass between dining area and kitchen, so arranged that those at the table can reach the toast or coffee without getting up.



Photos: Rodney McCay Morgan



LAYOUT OF HOUSE WITH CENTRAL LIVING AREA FLANKED BY BEDROOMS DETERMINED FORMAL BALANCE OF FACADE

CONSTRUCTION OUTLINE

FOUNDATIONS—cinder block. STRUCTURE: Exterior walls—brick furred, plaster inside; plywood walls in living room and halls. Floors—oak. ROOF—Asph/Flt. Deck—slag. INSULATION: North wall and roof—rockwool. SHEET METAL ROOF: Flashing—copper. Ducts—galvanized metal. WINDOWS: Sash—wood sash, Andersen Frame Corp., metal casement, Detroit Steel Products Co. GLASS—double strength and plate, Libbey-Owens-Ford Glass Co. FLOOR COVERINGS: Kitchen—linoleum. Bathrooms—tile. HARDWARE: Fixtures—indirect, built-in. KITCHEN EQUIPMENT: Range—built-in, refrigerator—Westinghouse Electric Mfg. Co. LAUNDRY EQUIPMENT: Washing machine—Bendix Home Appliances, Inc. BATHROOM EQUIPMENT: Toilet—tile. Cabinets—wood, built-in. SINK—C. F. Church Mfg. Co. HEATING: Warm air system, filtering, humidifying. Water heater—Westinghouse Electric & Mfg. Co.



HOUSE IN WASHINGTON

makes the most of site and sun.

PAUL THIRY, Architect

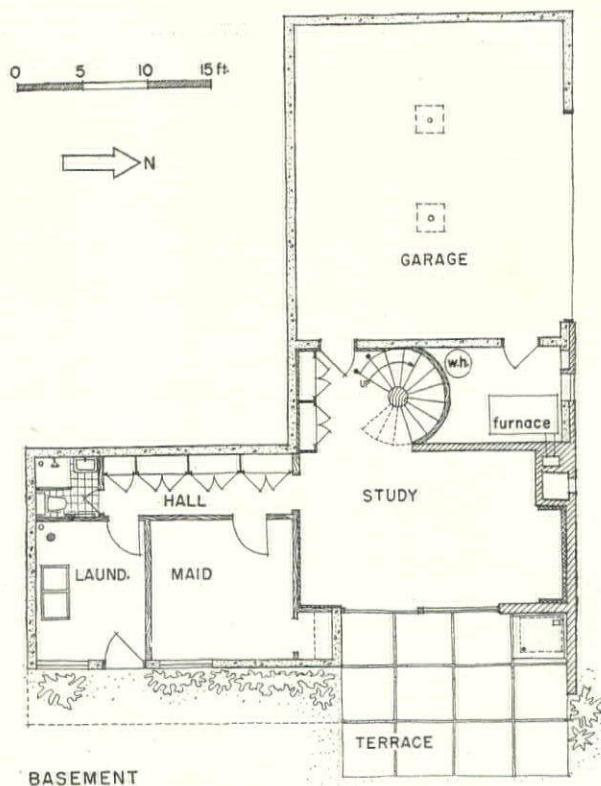
ALFRED DANIELSON, Contractor

The most interesting feature of this one-story and basement house is its ingenious tailoring of plan to a sloping lakeside site. The basement is conventionally underground on the street side, but appears at ground level as the slope diminishes toward the lake. Entrance at grade is thus possible on two levels. Front access is at the main floor through a central "gallery" which leads to bedrooms at the front of the house, living and dining areas at rear. To shield bedrooms and bath, while retaining the appearance of width in the hall, an inner partition is splayed toward the living room. Both front and rear walls of this main living area are glass, but the house is rescued from a fishbowl effect by front yard fencing.

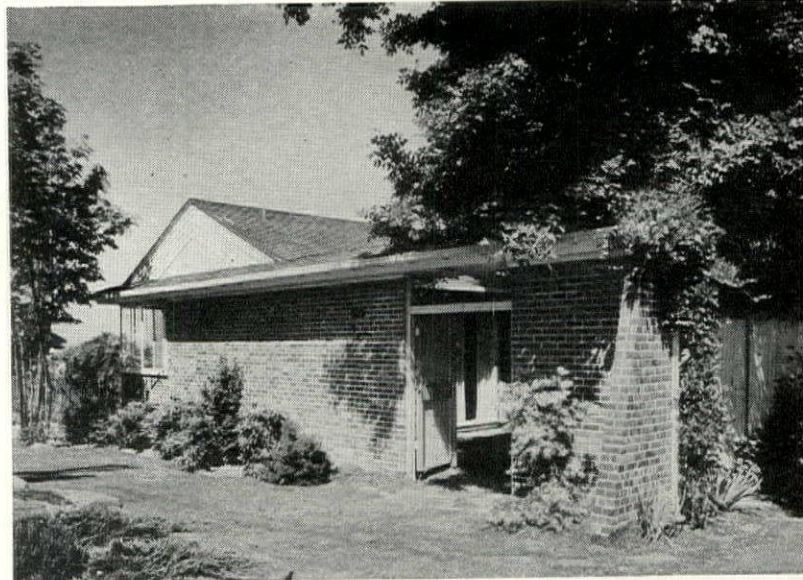
The rear entrance leads directly into the basement recreation room whose sliding glass doors make it part of a connecting terrace. Also included in the basement are a laundry with ground-level exit to the drying yard, a maid's room and bath which can double as swimmers' dressing space.

CONSTRUCTION OUTLINE

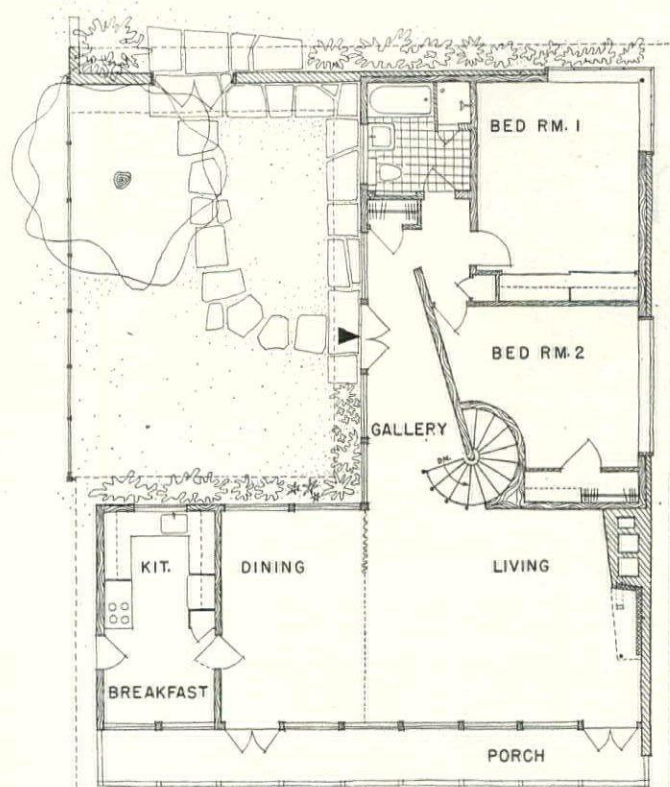
FOUNDATION: Concrete. **STRUCTURE:** Cedar siding or brick veneer. **Floors:** Oak. **ROOF:** Cedar shingles. **INSULATION:** Ceiling—rockwool, Johns Manville. **WINDOWS:** Sash—steel, Fentron Steel Works. Glass—single strength and plate, Libbey-Owens-Ford Glass Co. **FLOOR COVERINGS:** Halls and bathrooms—marble, Northwest Marble & Tile Co. Kitchen—linoleum, Armstrong Cork Co. **WALL COVERINGS:** Mahogany plywood or plaster, U. S. Plywood Co. **PAINTS:** Schorn Paint Co. **HARDWARE:** Yale & Towne Mfg. Co. **HEATING:** Warm air system, fan and filtering, Roscoe Mfg. Co. **Anemostats—**Minneapolis-Honeywell Regulator Co.



Photos: P. A. Dearborn



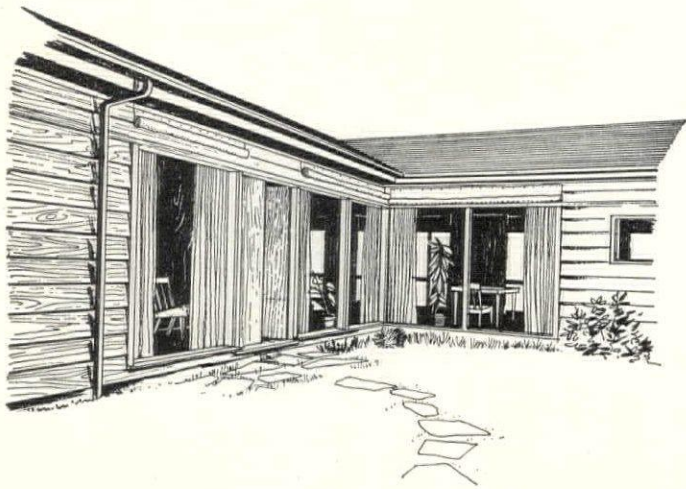
BRICK AND WOOD WALL SHIELDS GLASS HOUSE FROM PRYING E



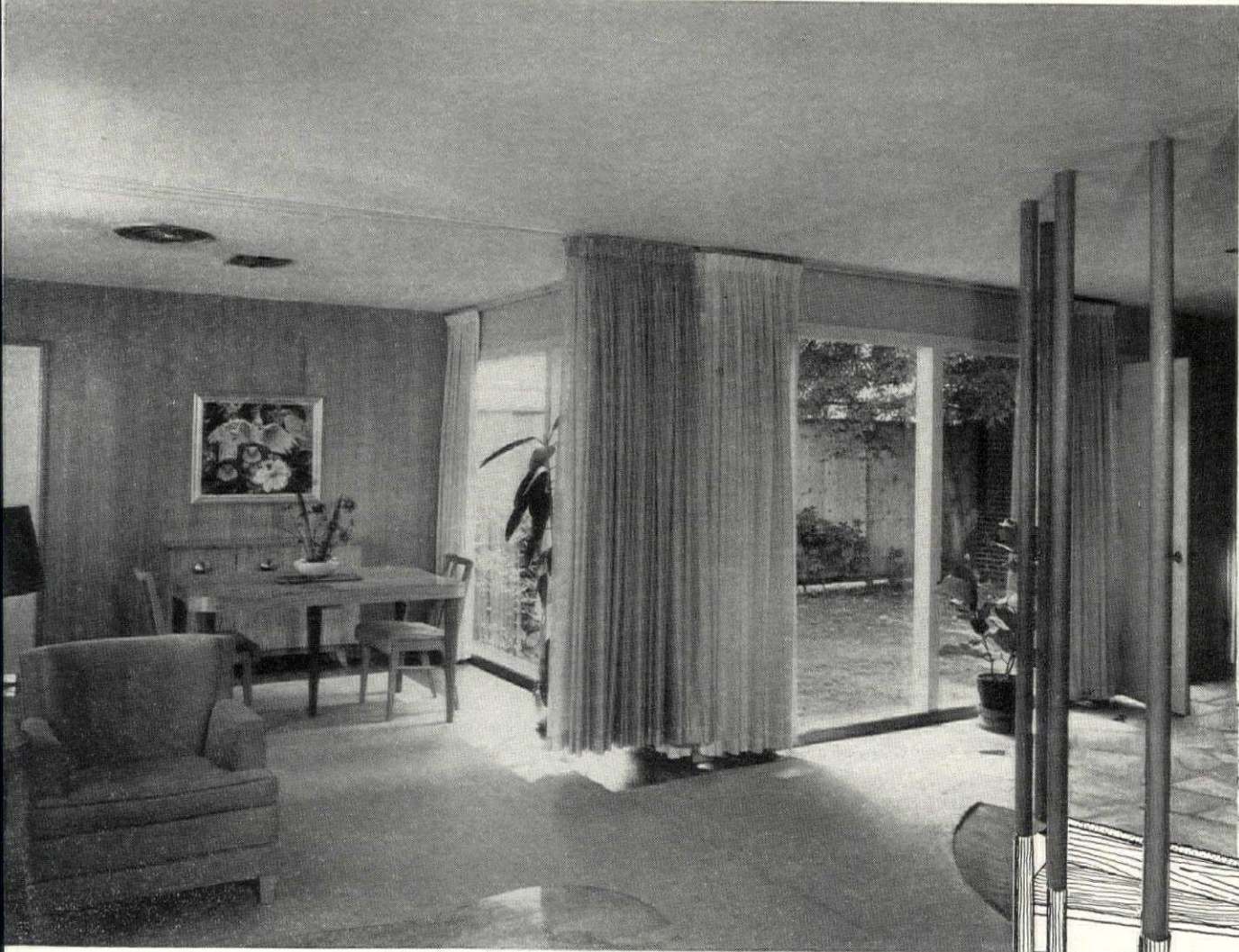
FIRST FLOOR

REAR WINDOW-WALL, BALCONY AND TERRACE EXPLOIT LAKE V

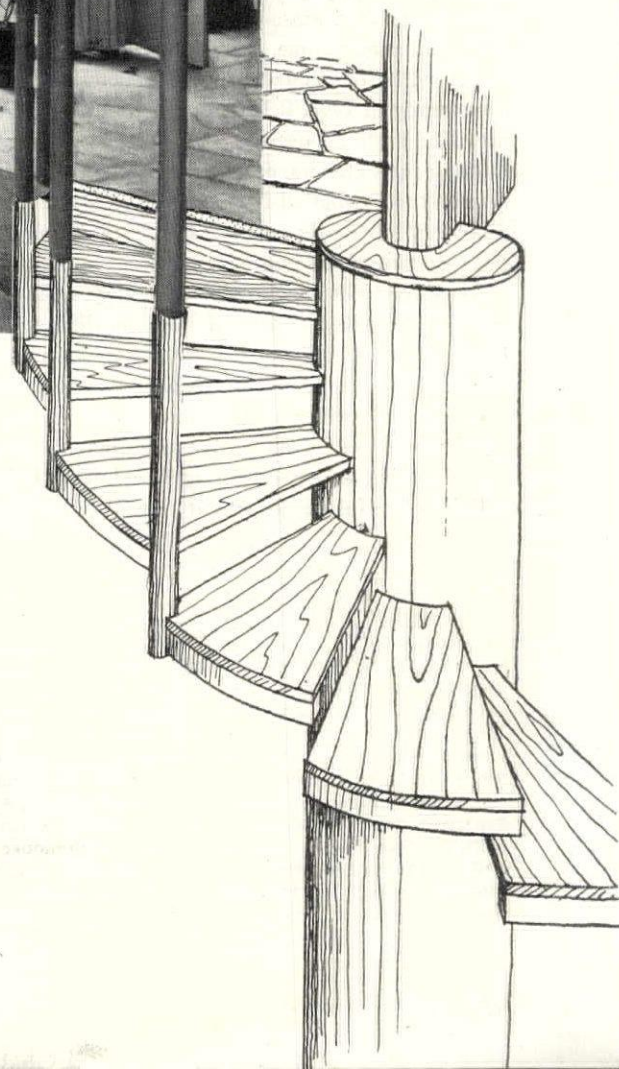
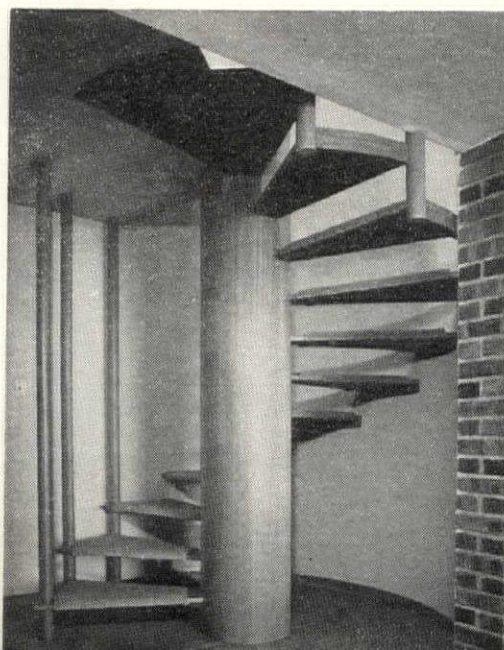


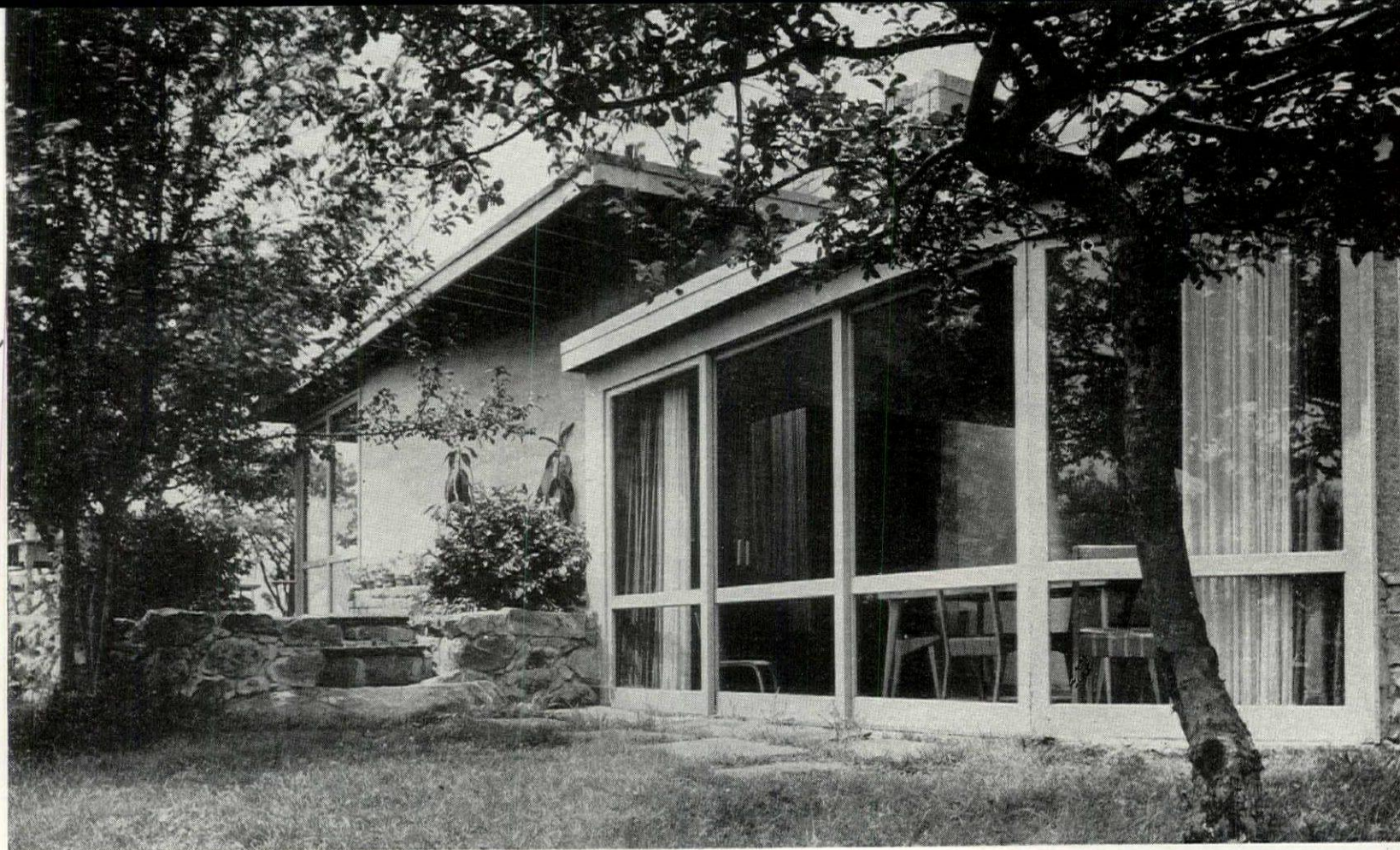


PATIO (ABOVE) IS FORMED BY L-SHAPED LAYOUT WHICH ALSO PROVIDES INTEREST IN LIVING AREA (BELOW)



POLISHED WOODEN STAIRWAY, CENTRALLY LOCATED NEAR MAIN ENTRANCE, WAS DETERMINING FACTOR IN PLAN.





VIEW OF DINING AREA, WITH LIVING ROOM BEYOND, REVEALS THE SPLIT-LEVEL RAMBLING PLAN USED TO AVOID TERRACES AND FIL

HOUSE IN CONNECTICUT is designed to fit a sloping site.

JOHN W. LINCOLN, Architect

The oft-repeated argument that modern design is suited to California's perpetual summertime, but not to rigorous New England winters is again disproved by this country house in Connecticut. Built for the architect's own family in 1942, it has been thoroughly tested by four years of actual use. The architect-owner reports that "heating is easy and, among neighboring acquaintances, our heating system is the last to be turned on in the fall, first to be shut off in the spring. Whether the sun shines or not, much solar heat obviously gets in. If I were designing the house now I would put even more glass in some rooms."

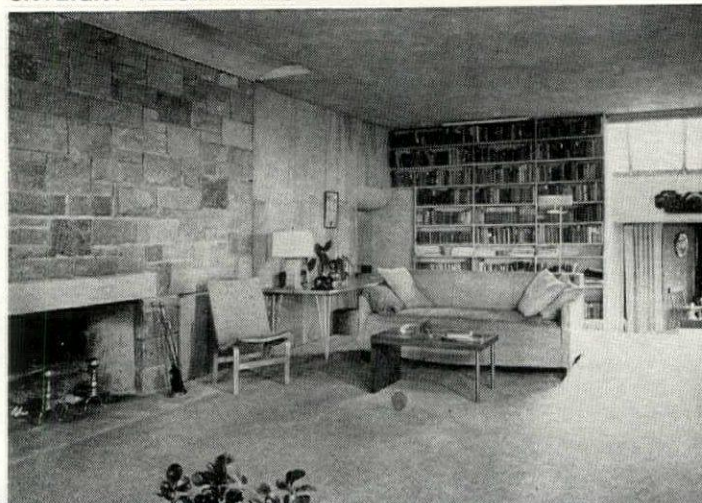
Aside from obvious practical advantages, the imaginative use of windows creates a pleasing variety of mood in different parts of the house. The large living room with its skilfully handled corner window is reminiscent of the old-fashioned sun porch near this glass area, but presents a warm, closed-in atmosphere next to the fireplace. These two distinct moods could not be achieved in either the traditional, small-windowed room or the modern living area with its large window-wall. In the dining room, ideally a light, cheerful space, an entire wall of glass is quite appropriate.

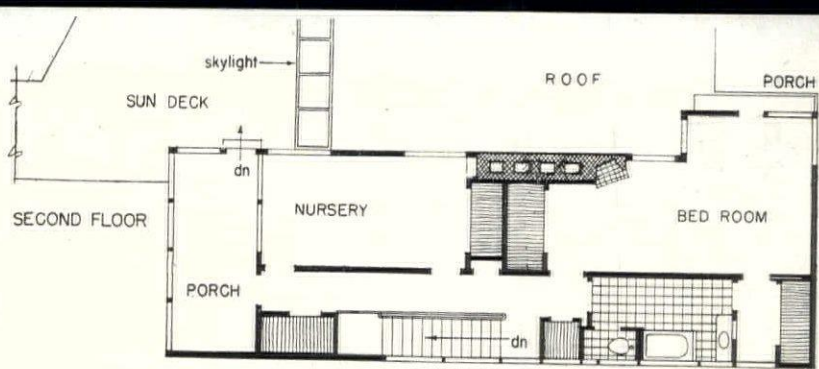
CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—(1st) granite, U. S. Gypsum Co., sheathing and Rocklath; (2nd)—red cedar siding, T. & G. sheathing. **ROOF**—Koppers Co., Inc. **INSULATION**—mineral wool, U. S. Gypsum Co. **SHEET METAL WORK:** Flashing—felt. Gravel stop—Armco iron, American Rolling Mill Co. **WINDOWS:** Sash—Andersen Frame Corp. Glass—plate and single and double strength, Pittsburgh Plate Glass Co. **FLOOR COVERINGS:** Bedrooms—carpet. Kitchen and bathrooms—linoleum, Armstrong Cork Co. **PAINTS**—U. S. Gypsum Co., I. F. Laucks Inc. and Valentine & Co. **HARDWARE**—Schlage Lock Co. **ELECTRICAL INSTALLATION:** Wiring—Bx. Switches—Hart & Hegeman. Fixtures—Holophane Co. **KITCHEN EQUIPMENT:** Range—gas. Refrigerator—Westinghouse Electric Corp. **PLUMBING FIXTURES**—Eljer Co. Shower—Henry Weis Mfg. Co., Inc. Cabinets—Charles Parker Co. **HEATING**—radiant system. Pipes—A. M. Byers Co. Regulators—Sarcotherm, Sarco Co., Inc. Pump—Westco, Micro-Westco, Inc.



SKYLIGHT ILLUMINATES STEPS BETWEEN LIVING-DINING

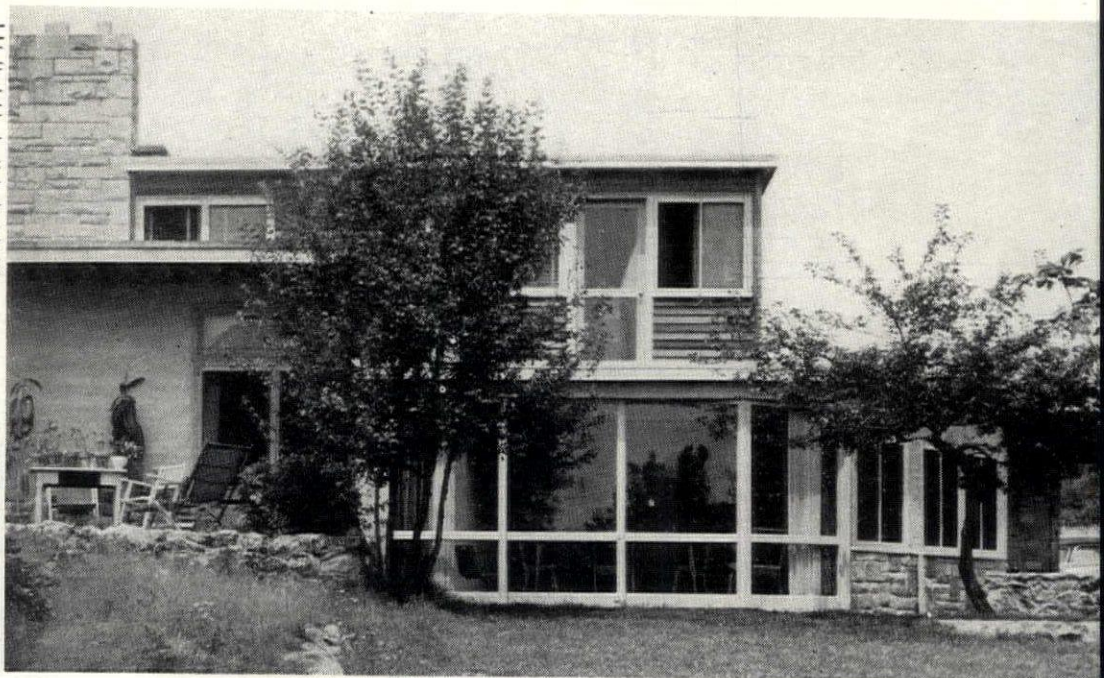
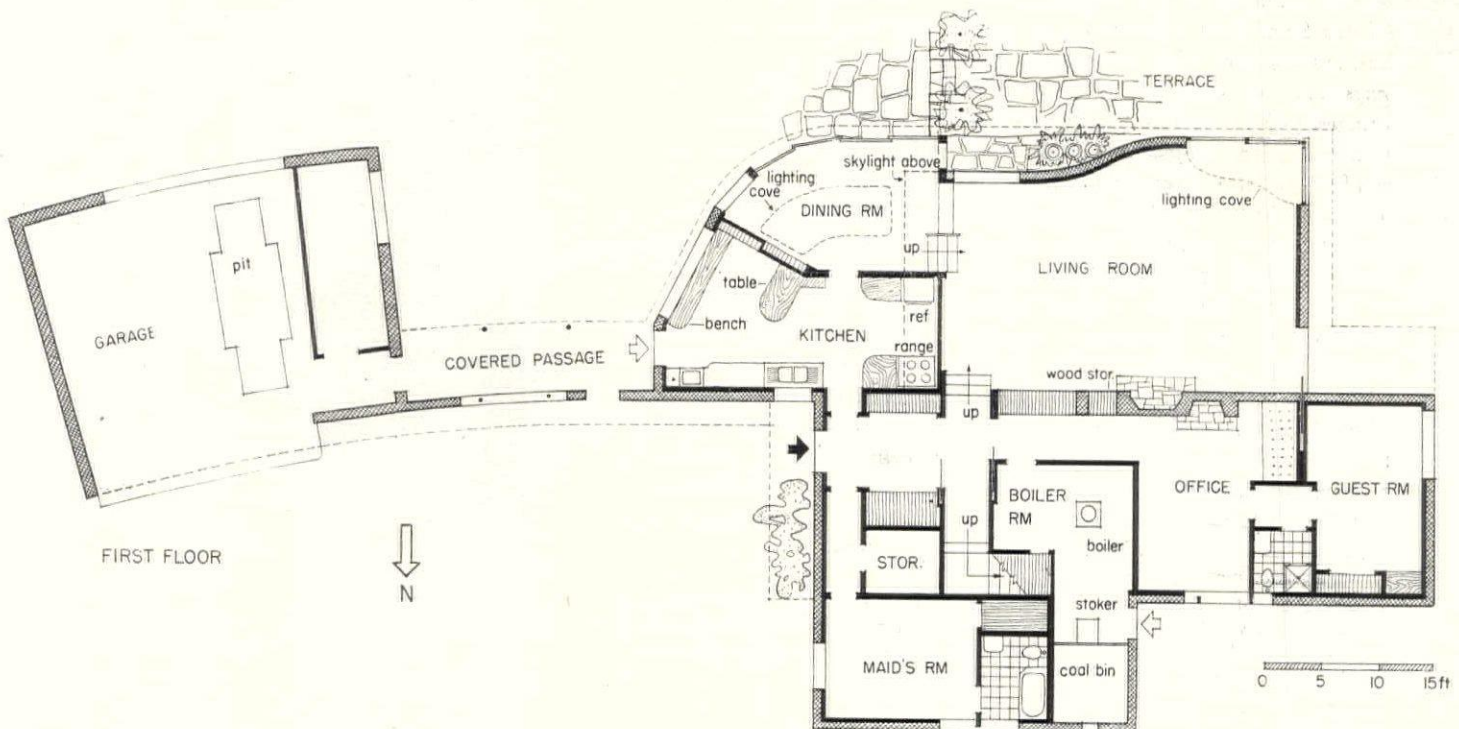




Photos: P. A. Dearborn



COVERED PASSAGE CONNECTS HOUSE TO GARAGE. NURSERY WITH TWO ENTRANCES (SEE PLAN) CAN BE PARTITIONED INTO SEPARATE ROOMS



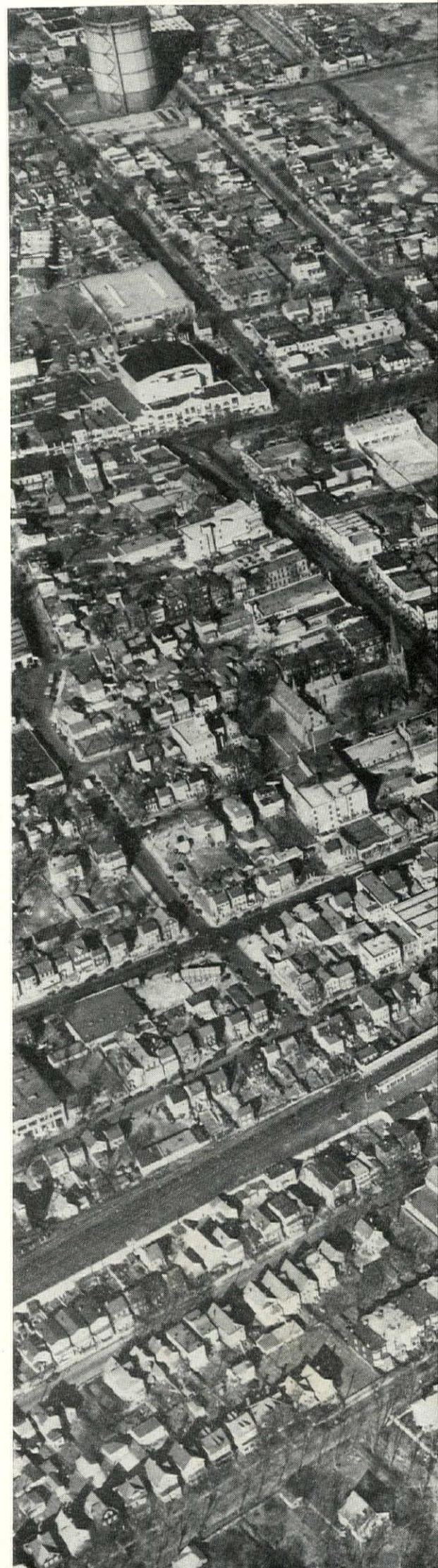
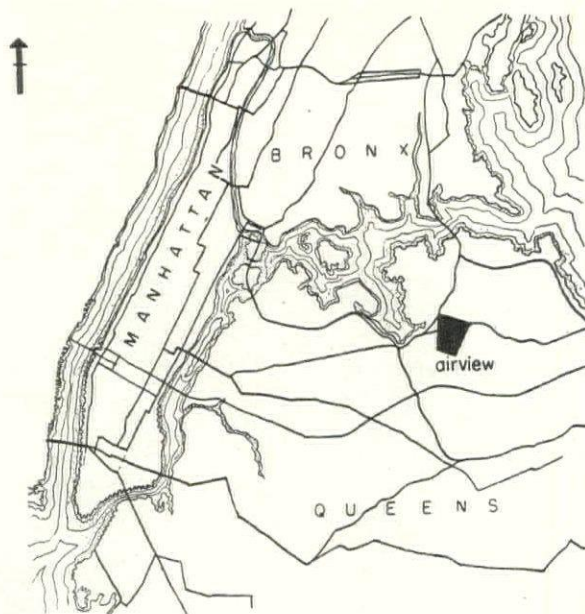
\$50,000,000 RETAIL CENTER for suburban New York

The most spectacular real estate man of the year, William Zeckendorf, 41-year-old executive vice president of New York City's Webb & Knapp Inc., knows a good commercial site when he sees it. And Architect Lester Tichy knows the tricks of planning and design necessary to convert a good commercial site into an attractive, profitable piece of real estate. These two experts have teamed up to produce a \$50 million project which will transform the heart of Flushing (right) into a shopping and amusement center for a good part of suburban New York. Zeckendorf found the site and the money, then outlined the project's requirements. Tichy, who also makes no little plans, encouraged him to buy still more land, to raze all existing buildings and thus to permit the comprehensive development of a well integrated, large-scale commercial center.*

Combined with the magnetism of good contemporary design, two features of the project assure its success, promise to make it a highspot on sightseeing as well as shopping tours: 1) The 23-acre site is ideally located from the transportation standpoint, for it includes important bus, subway and railroad stations and is served by a network of highways and parkways tapping all of Long Island and crossing nearby bridges to link with Manhattan, the Bronx and swank Westchester County. 2) The project will cater to the public's every need, whim and comfort—a large department store, a trio of office buildings and a 5,000-seat theater will look down on seven blocks of modern shops and markets, served by a mile of covered "air conditioned" sidewalks, 5,000 covered parking spaces and 4,000 ft. of subterranean moving sidewalks.

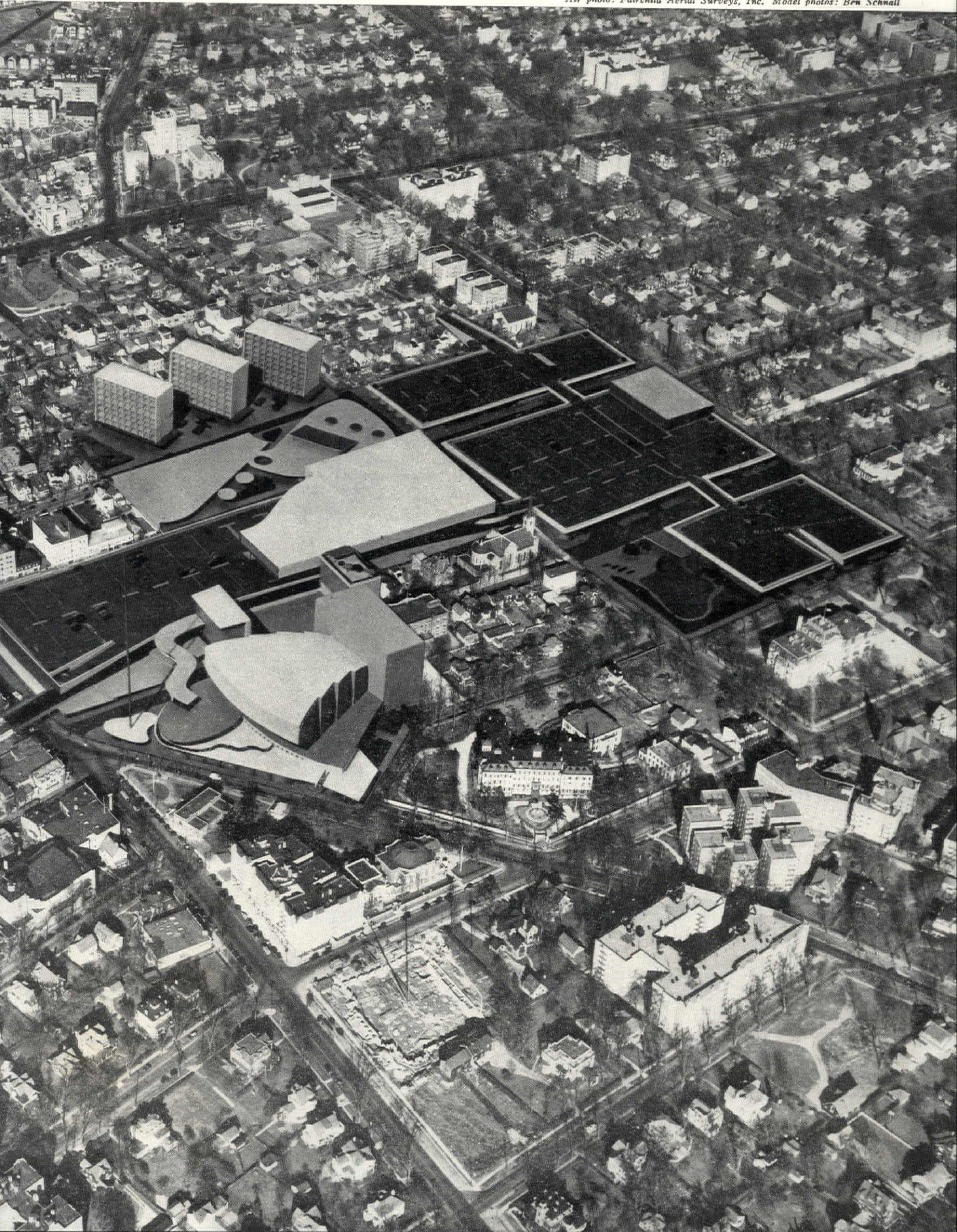
Primarily a business venture, the project has social implications, for it will rejuvenate the entire business center of Flushing. The site is currently a mixture of old residences and commercial buildings whose ill-kempt appearance is aggravated by the unrestricted display of gaudy advertising signs. A handful of relatively new buildings dot the area, and numerous churches and public buildings are situated nearby. Beyond the commercial zone are the solidly built-up residential sections of Flushing which flow without definition into other sections of Queens.

* Among recently announced projects for New York City, this center ranks second only to another of Zeckendorf's real estate giants: a \$100 million commercial city for 100,000 people and 10,000 automobiles to be built on midtown Manhattan's east side (FORUM, Oct. '46, p. 9).



exploit transportation and design, use customer conveniences to attract 125 million shopping dollars a year.

Air photo: Fairchild Aerial Surveys, Inc. Model photos: Ben Schnall



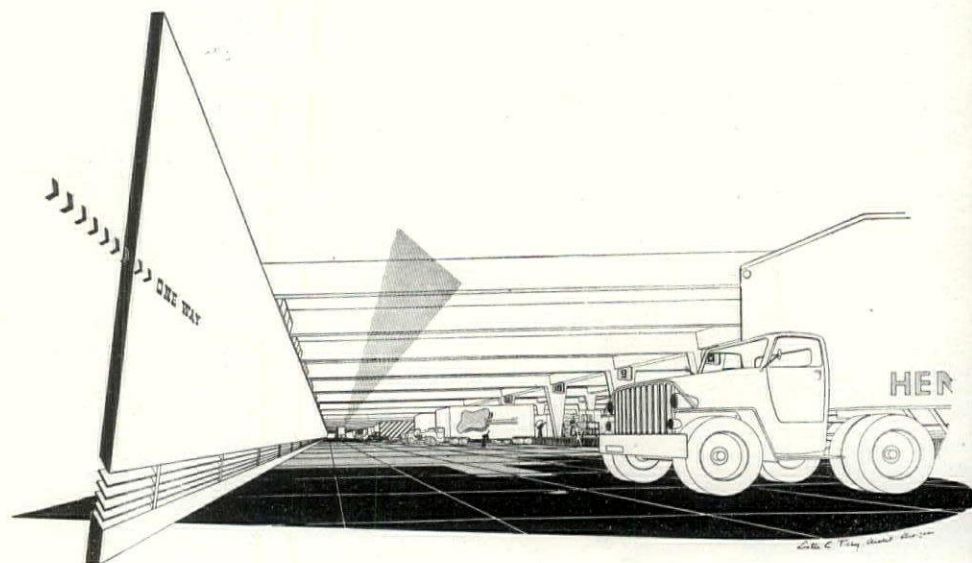
Already a transit hub, the site will be improved with underground trucking, covered parking.

Transportation facilities at the site jogged Zeckendorf's imagination, prompted him to buy the properties. Among the biggest buildings purchased is the terminal of the North Shore Bus Co. which carries more than 40,000 passengers each day between the site and their homes along the bus routes shown below. This terminal will be rebuilt, enlarged four times to accommodate an estimated 100,000 people per day.

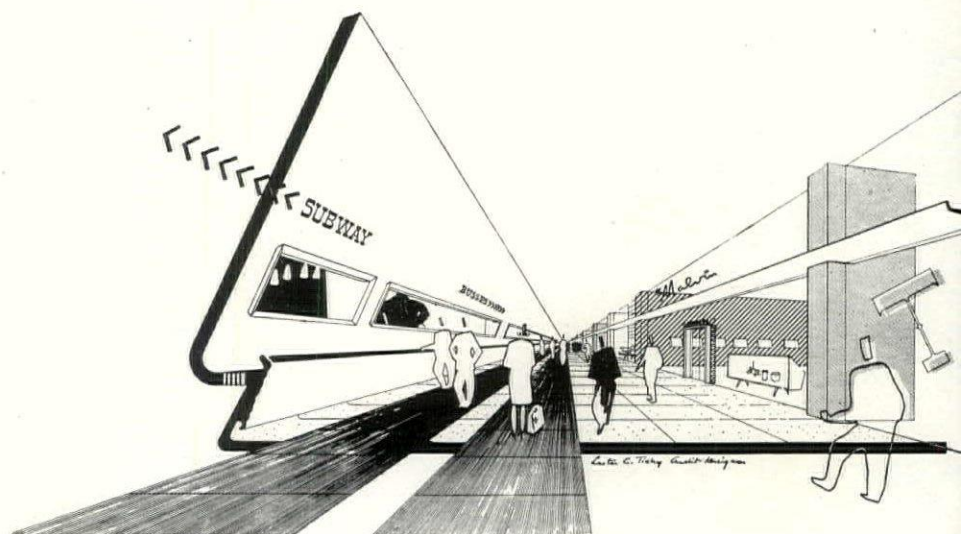
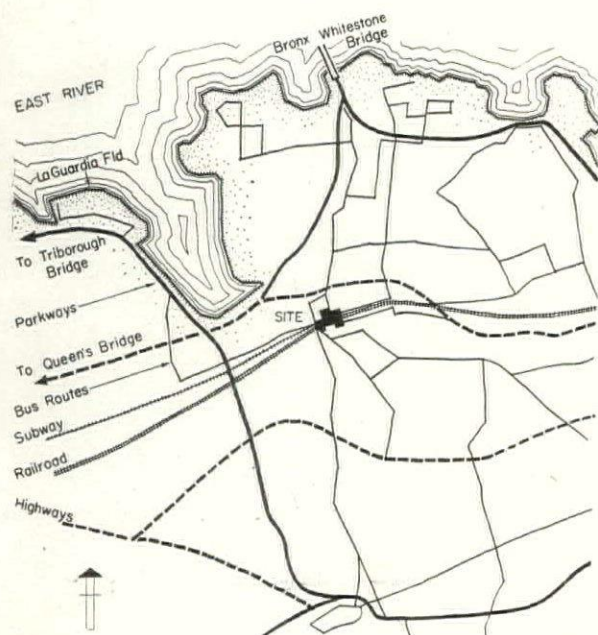
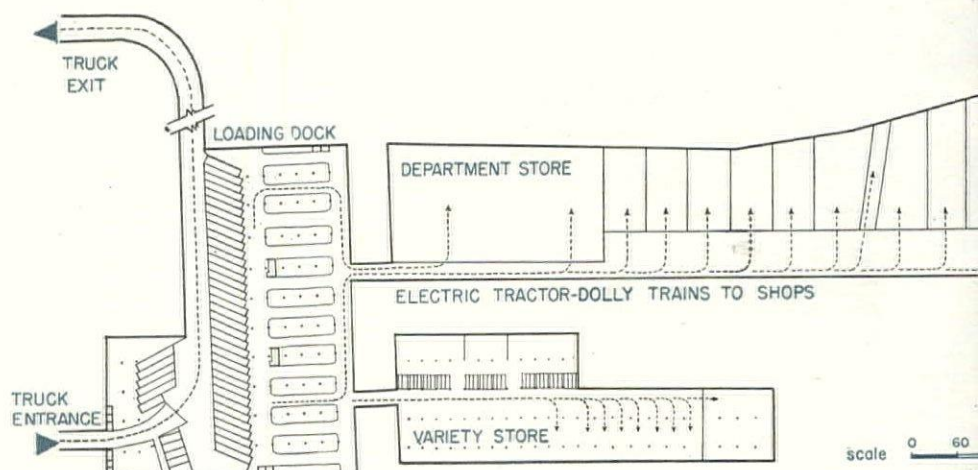
Across Main Street from the project's principal (west) front is the Flushing station of the Long Island Railroad which carries 15,000 commuters per day to and from Manhattan's Pennsylvania Station. Since the tracks will run through the proposed shopping center and the existing station is far from modern, the project promoters are negotiating with railroad officials for construction of a new station inside the center.

On another Main Street corner of the site are kiosks leading down to the Flushing terminal of New York's 237-mile, 5-cent rapid transit system. About 100,000 people per day use this subway. In the future they may ride a moving sidewalk the full length of the project between subways and bus terminals, or they may step off at any one of the basement shops along the way. Thanks mainly to these transit facilities, the area's sidewalks are alive with pedestrians. On Oct. 10, about 46,000 per hour were counted on Roosevelt Ave. between the hours of 8 A.M. and 10 P.M.—almost as big a volume per sq. ft. of sidewalk as at the corners of New York City's Fifth Avenue and 42nd Street.

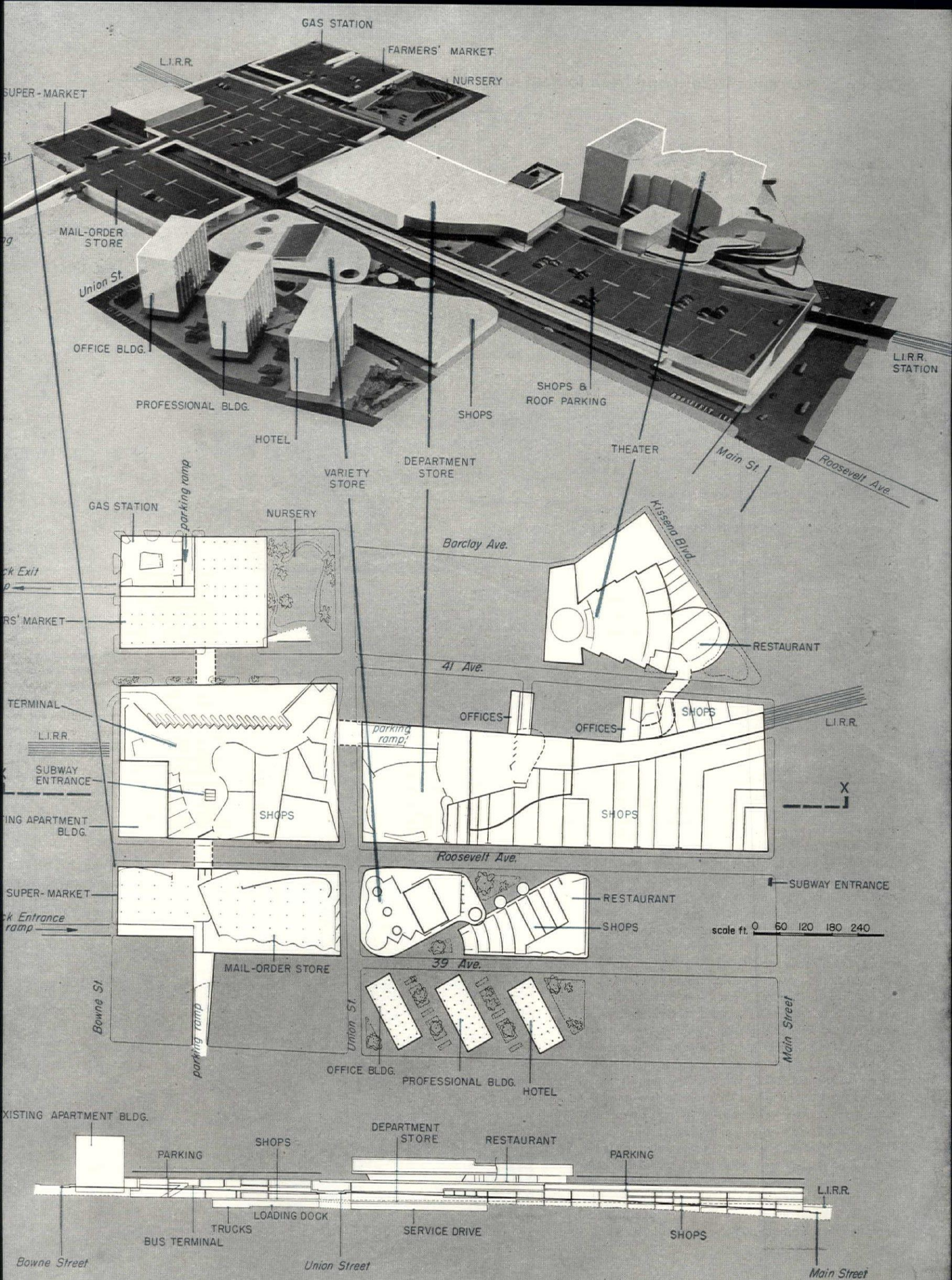
Despite discouraging parking facilities, vehicular traffic is also heavy. When invited by the new project's 5,000 covered parking spaces, an estimated 2,000 passenger cars per hour will pass in and out of the area—perhaps more. The potential volume is indicated by the fact that Northern Blvd., two blocks to the north, now carries 20,000 cars per day, that densities on nearby parkways approach 12,000 per day, and that the nearby Bronx-Whitestone Bridge brings an average of 14,000 passenger cars per day to Long Island—a volume 40 per cent above prewar and steadily increasing.



LOADING DOCKS in the sub-basement under the bus station accommodate all trucks serving the center. Entering and leaving the "freight station" via ramps off the rear street, trucks load and unload at one central dock connected with each establishment by tractor-dolly trains. Railroad shipments may also be made within the project—to and from a siding in the basement. Equally important as these off-street delivery facilities in the relief of street congestion is the provision of off-street parking space for 5,000 automobiles (shown uncovered in the model view, right), for 28 buses in the terminal and for the assortment of vehicles which will arrive each morning to form the farmers' cooperative market.



MOVING SIDEWALKS under Roosevelt Ave. connect the subway and bus terminals, operate slowly enough to permit riders to step off at basement shops along the way and, incidentally, provide one of the shopping center's most spectacular attractions.



SECTION X-X

Design of the center is bold and fresh to help make big money for both tenants and sponsors.

In addition to those buildings already mentioned and about 60 small shops for all types of merchants, the principal elements of the project will include a mail order house, 5 & 10 cent store, supermarket, gasoline station, plant nursery (which will double as a park), dance hall, skating rink, bowling alleys. The three 8-story structures have been earmarked as a professional building, an apartment-hotel and a general office building. Tenants for the ring-leading department store, mail order and theater spaces would be easy to obtain if the project sponsors were less choosy—each has been applied for by several companies. But shrewd Mr. Zeckendorf will sign contracts only with firms interested in making the new center a major outlet.

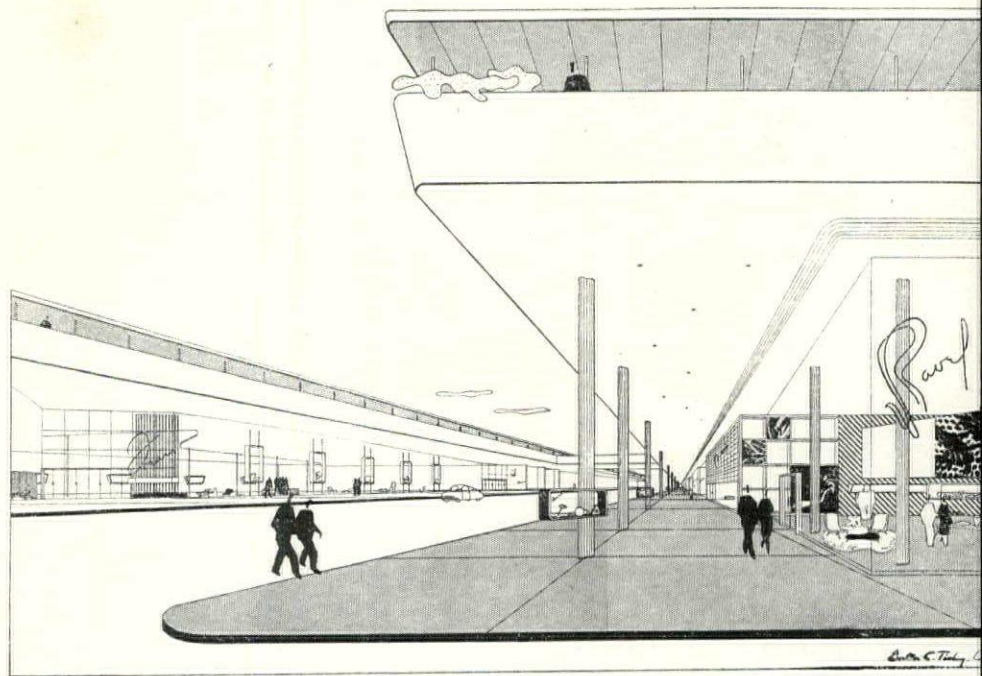
There is good reason for Zeckendorf's predilection for such energetic tenants; all space except that in the 8-story buildings will be leased on a percentage basis, whereby tenants pay small fixed monthly rents plus percentages of their gross annual incomes above specified levels.

To assure architectural attractiveness and a close relationship between the project's many elements, design of the entire development has been entrusted to a single architectural office. Architect Tichy will design all buildings, store fronts and exterior signs, and his control will probably cover the appearance and arrangement of tenants' interior displays.

Preservation of the project's character is further assured by the fact that not a foot of it will be sold. Webb & Knapp, who will manage the project from offices on the site, hope to gross \$6¼ million from annual rents—5 per cent of the \$125 million yearly retail business expected of their tenants. After taxes of \$1½ million, operating expenses of \$500,000 and interest and amortization on 25-year 3½-4 per cent loans amounting to \$3 million, their anticipated net will be a tidy \$1¼ million.

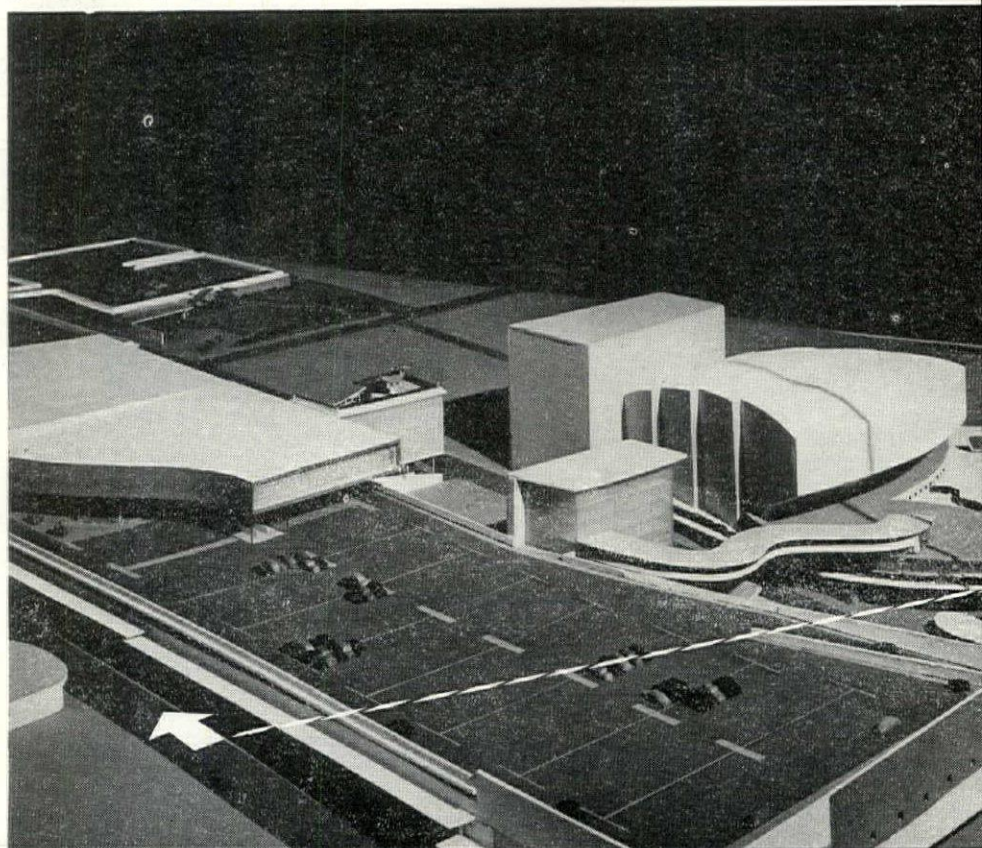
Including \$2 million borrowed from the Metropolitan Life Insurance Co., Webb & Knapp have already invested \$15 million in the proposal, the price of land acquisition which began quietly in late 1941. (The initial and largest single purchase was from Vincent Astor, one of W. & K.'s big clients.) Since then, about 150 other parcels have been acquired—most of them from individual home owners—and now more than 90 per cent of the necessary land has been assembled. (The appreciation in land values which accompanied this assembly of many parcels under a single ownership would permit Zeckendorf to sell today at a huge profit.)

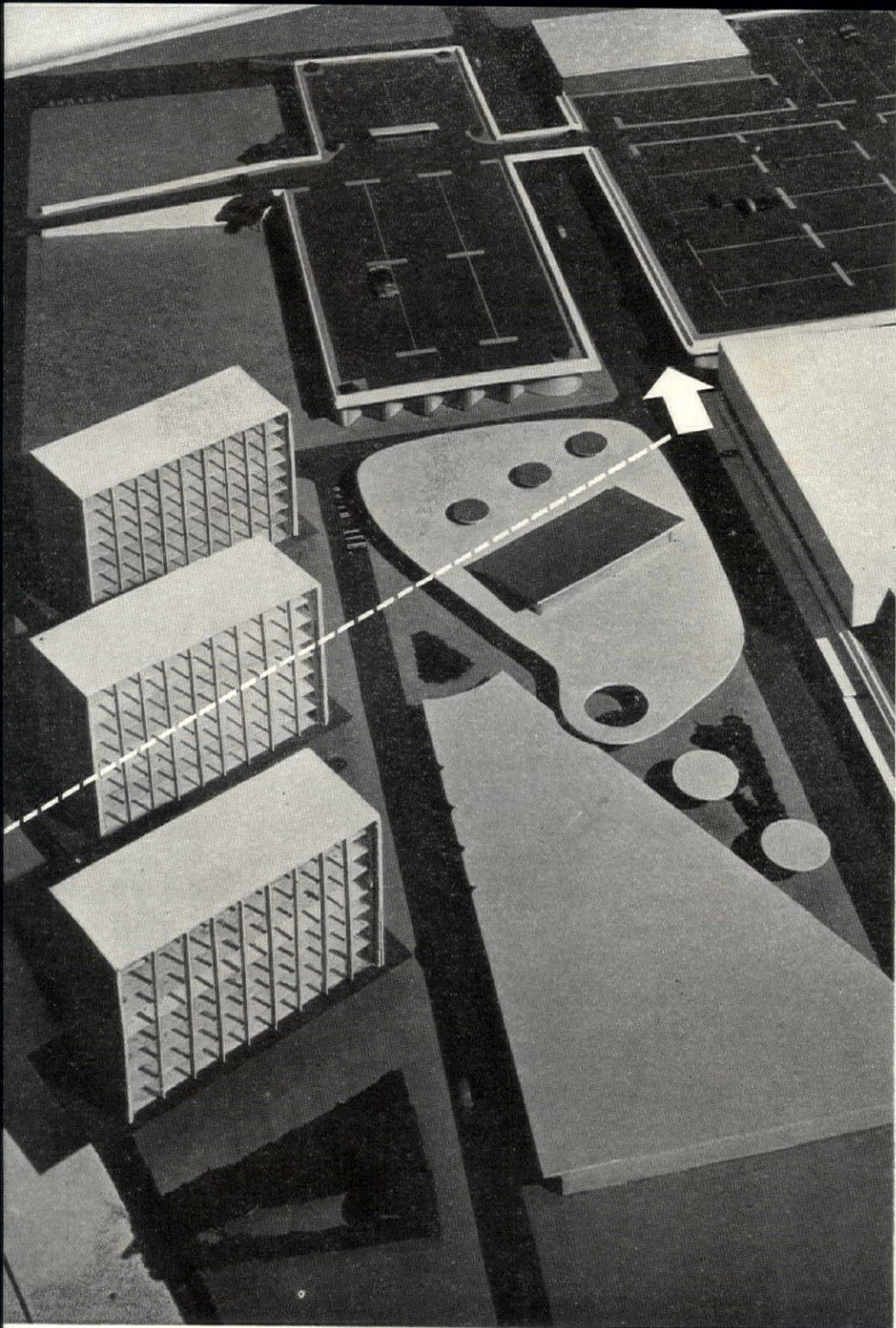
Priced beyond reason, the balance of the land must be acquired through condemnation with municipal assistance. Since city fathers, as well as local merchants, have reacted favorably to the proposed development, Zeckendorf anticipates no difficulty in obtaining this vital municipal assistance and the equally vital assurance that present assessed value of the land will not be boosted upon completion of the project. These and the current restrictions on non-residential building are the only bars to immediate construction. Despite them, William Zeckendorf, whose hunches have expanded Webb & Knapp's assets eight-fold in the past ten years, has a hunch that construction of his Flushing shopping center will get going late next year, be completed by 1950. Financially backing up his hunch, the Met has an option on the \$35 million construction loan.



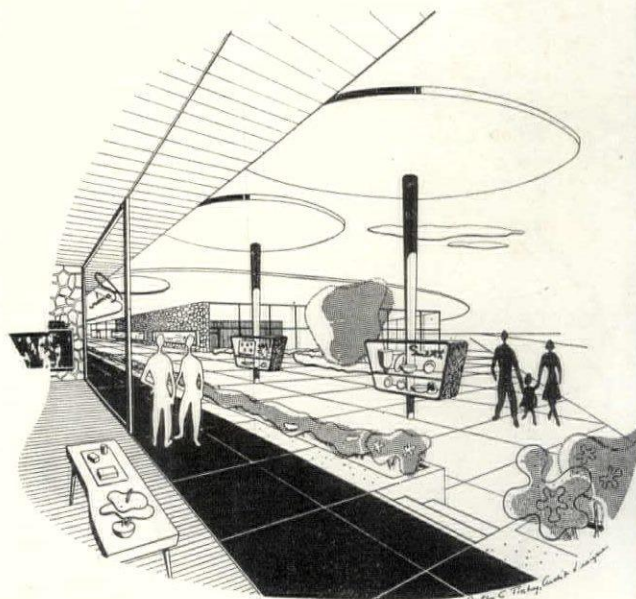
COVERED WALKS, like the covered parking areas above, make the Flushing project an all-weather shopping center. Unlike most storekeepers, Webb & Knapp's tenants will look forward to rainy days and hot, sunny weather when shoppers normally shun stores of traditional design. This view up Roosevelt Ave. shows the new bus terminal and adjacent shops to the right and, across the street, the inviting front of the mail order house. Exterior display cases affixed to columns relieve the monotony of the regularly spaced supports and create the illusion that the sidewalks are actually part of the shops. This illusion is heightened by the provision of flush lighting fixtures in the sidewalk canopies. Although the model has been stripped of its parking area roofs to dramatize the scope and convenience of the parking facilities, all 5,000 spaces will be sheltered. Thus, motorists may visit any part of the center without exposing themselves to the weather. Note, for instance, in the photo below, the winding covered bridge connecting the major parking area with the circular restaurant and adjoining theater. Calculated with a sizable safety factor, the surplus of parking space will assure that no shoppers are turned away for want of a place to leave their cars.

INTERESTING MASS OF 5,000-SEAT THEATER DOMINATES SOUTHWEST CORNER

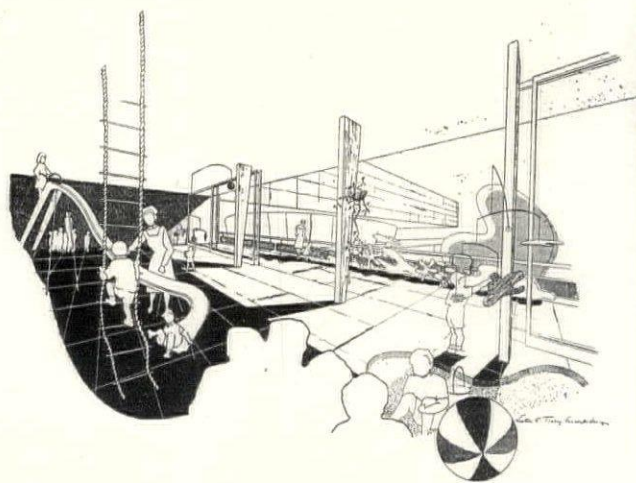




Photos:
Ben Schnall

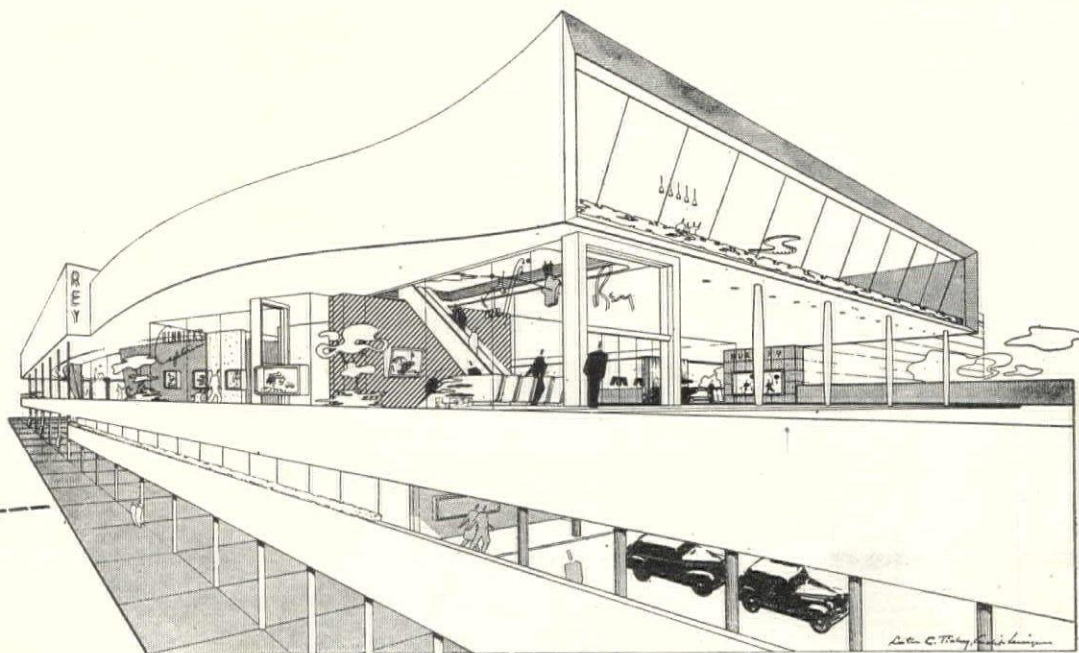


VARIETY SHOP, as viewed from inside a nearby store, demonstrates the open planning which characterizes all parts of the project. Walls of glass open shops to sidewalks, make tastefully designed displays an important part of the overall scheme. Generous use of plants and trees adds to the informal, restful atmosphere which keynotes the center.



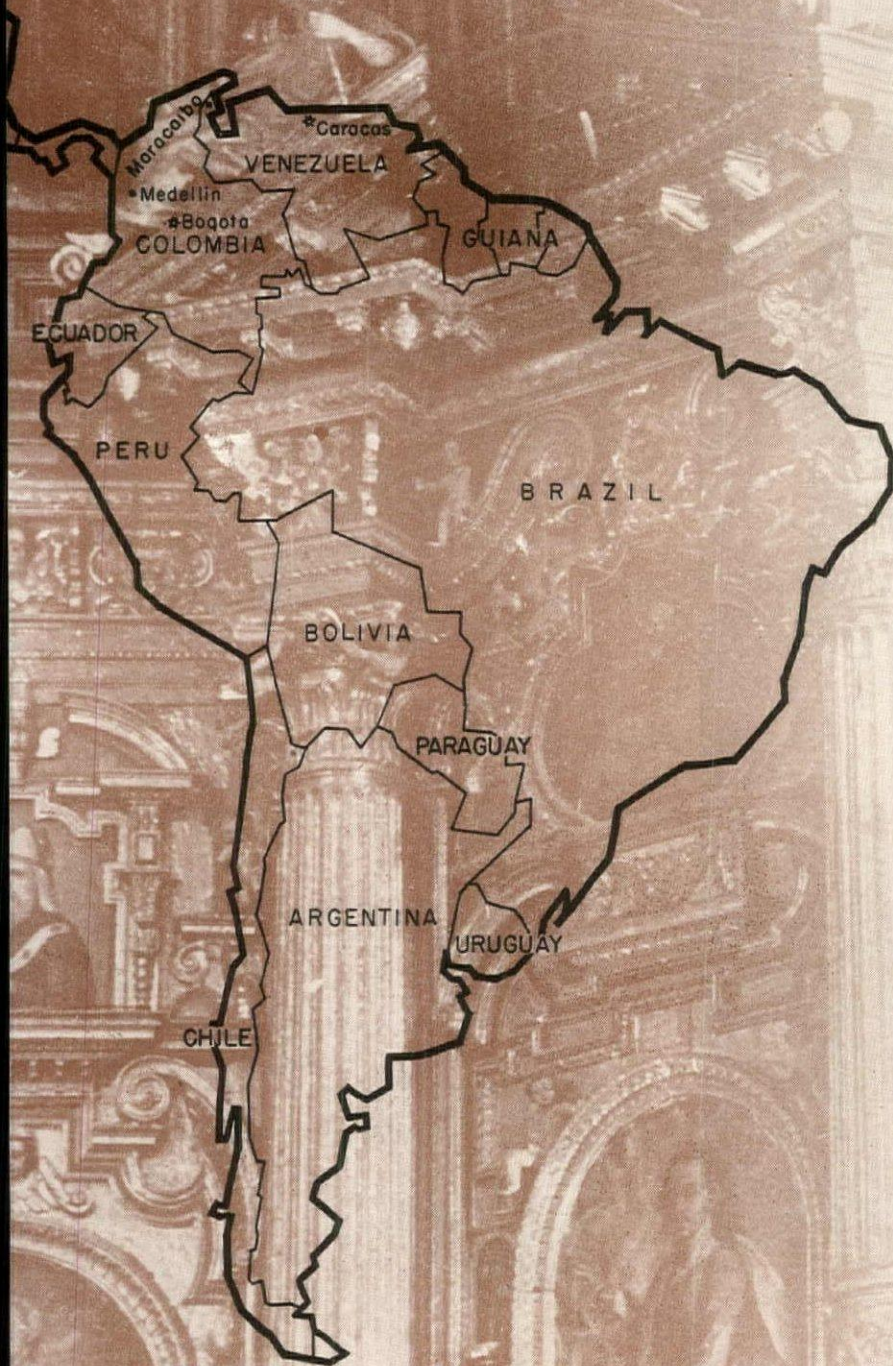
CHILDREN'S NURSERY, directed by trained nurses, is located adjacent to the department store. A rare convenience for mothers, it frees both hands for shopping, will more than pay its way through increased sales.

HANDSOME EIGHT-STORY OFFICE BUILDINGS OVERLOOK PARK-LIKE SHOPPING AREAS



DEPARTMENT STORE, as viewed from the busy corner of Main St. and Roosevelt Ave., extends three floors above the street level shops, is completely circled by a third-floor driveway leading to the major parking area. As in other sections of the development, Architect Lester Tichy has relied upon the functional mass of the building and its well-studied interior displays to produce a highly pleasing exterior appearance.

SOUTH AMERICA



When a U. S. citizen says "America" he usually means the U. S. A. Even when he remembers that the great continent to the south is also an America, he seldom makes any clear distinction between its rich and varied cultures. Yet the nations of South America have great diversity in people, culture, climate and geography. Indeed, so immense is the diversity that South Americans themselves know little of their own neighbors. Travel inside the continent has always been difficult. Most people were too poor to travel, and those who could afford it went neither to their neighbors nor even to the States, but to Europe.

This meant France, for since the end of the Spanish empire early in the 19th century, Paris has been the spiritual and cultural metropolis of the continent. Political colonialism might have disappeared but cultural colonialism remained. In such a context, it was inevitable that architecture and city planning were largely a reflection of European practice. While those regions with strong Indian cultures brought some of their old forms to Spanish Colonial, urban building during the last century has been almost purely European in inspiration. Only the provincial towns and remote countryside retained their traditional esthetic unity. The newly-independent capitals looked away from their own hinterlands and, from across the sea, imported all the confusion of method and form which the old world had perfected. This process of cultural importation has been continuous for over 100 years and — with few exceptions — still operates today. It is this process which largely explains the wide and rapid development of modern architecture in South America. Corbusier was accepted with the same eagerness as was Baron Hausman almost a century before.

In much contemporary South American work there is still a strong sense of "transplanted" European forms, of alien concepts not yet fully assimilated into the new environment. Yet there is a large body of genuinely exciting architecture in these countries — product of their vigorous and growing schools of architects, engineers and city planners.

Because of the wide interest in the subject, the FORUM here-with initiates a survey of contemporary architecture in South America; and because each country is different from every other, each will be covered separately. Material for this and subsequent studies has been collected by Miss Chloethiel Woodard who, for over a year, represented the FORUM in South America. Herself an architect from Washington, D. C., Miss Woodard had an unusual opportunity to study conditions at first hand as a professor at the University of Bolivia, as a practicing architect in La Paz, and as a Guggenheim Fellow in City Planning who visited every country on the continent. Her book on South American city planning is scheduled for publication next year.



COLOMBIA

In 1888, a U. S. visitor to Colombia remarked that "although geographically one of our nearest neighbors, Bogotá (the capital) is almost as far distant from New York as the interior of India—and quite as difficult to reach." Her territory split by great mountain ranges into tropical jungles and alpine plateau, Colombia's railroad and high-

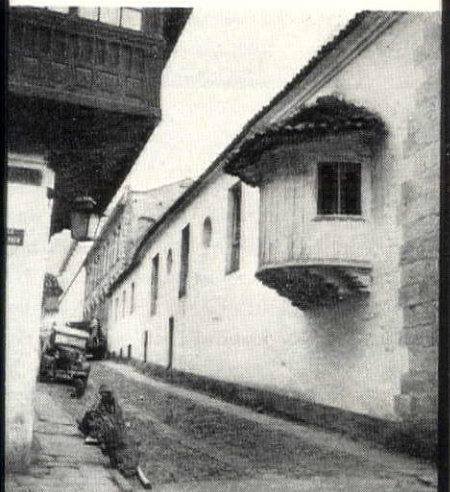
Old Colonial doorway in village of Papayán



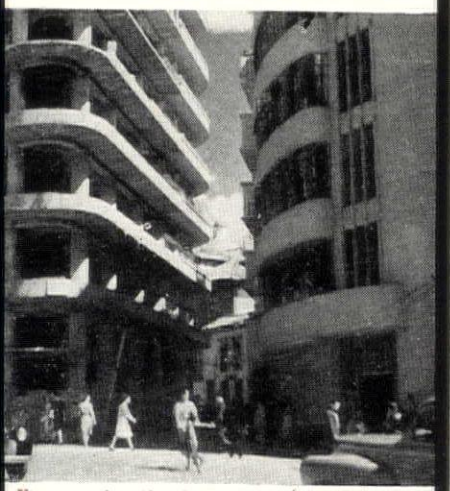
Bogotá has outgrown its old Spanish plaza



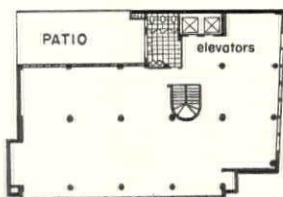
Village fountain is source of drinking water



Low masonry houses in old part of Bogotá



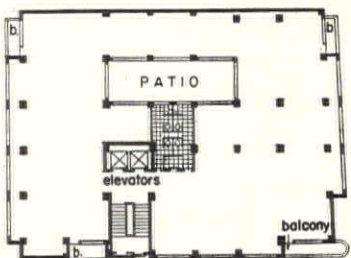
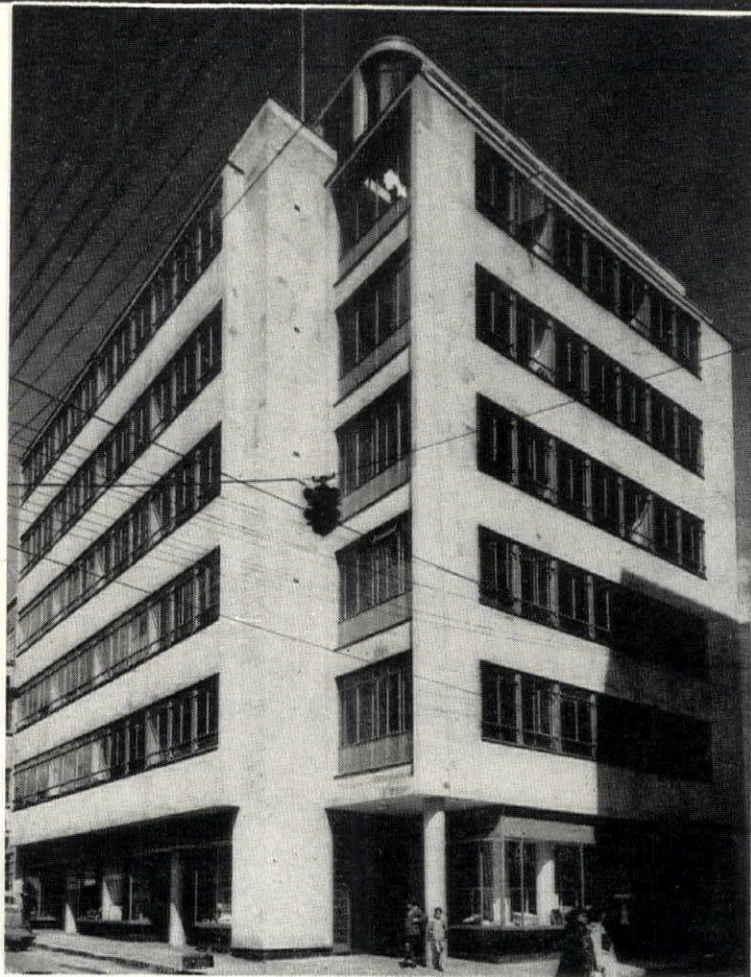
New construction jams Bogotá's old streets



0 20 40 ft.

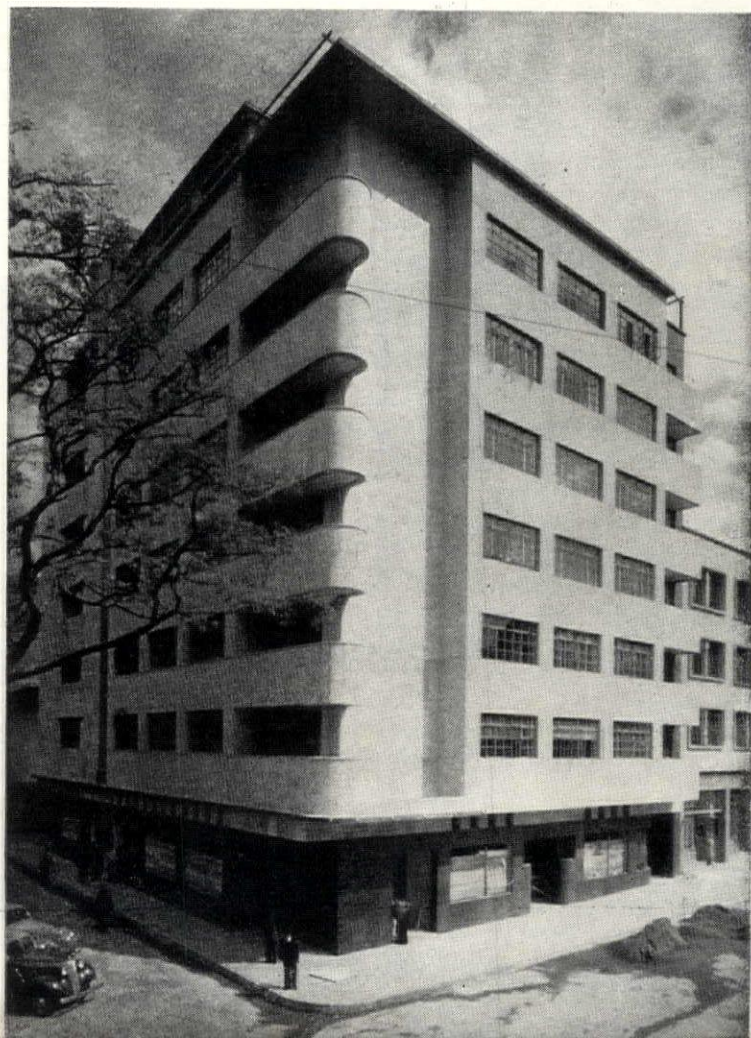
Office Building in Bogotá
Cuellar, Serrano & Gomez,
Architects

The clean lines and white stone veneer of this reinforced concrete building make it an attractive, bright spot amid the city's dark narrow streets. Projection of office floors beyond shop windows protects sidewalks from the rain and mist which characterize the mountain climate. To make the most of scarce sunlight, office floors are enclosed with broad bands of large windows.



Office Building in Medellín
Vieira & Valquez, Architects

Unlike Bogotá, Medellín enjoys year-round good weather. This is reflected in the design of this building. Windows are smaller than in its Bogotá counterpart, and balconies, frequently misused in South American cities, take advantage of the continual sunshine and distant mountain views. Dominating the corner of two broad streets, the first floor shops are trimmed with deep red terrazo, while the reinforced concrete walls above are finished with a warm yellow stone veneer, contrasting sharply with the blue-painted steel sash.



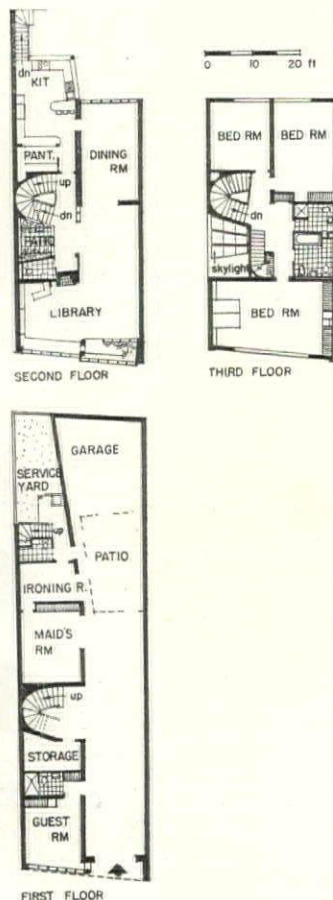
way system was then—and is still today—held to a primitive level. As a result cities and towns have, for centuries, lived independent and isolated lives, their citizens shut off from casual contact with even nearby districts.

If, in 1946, Colombian cities are closer to one another (and closer

to us) than ever before, this is largely due to the airplane. For today, with one of the world's highest per capita of commercial air cargo, Colombia moves by air.

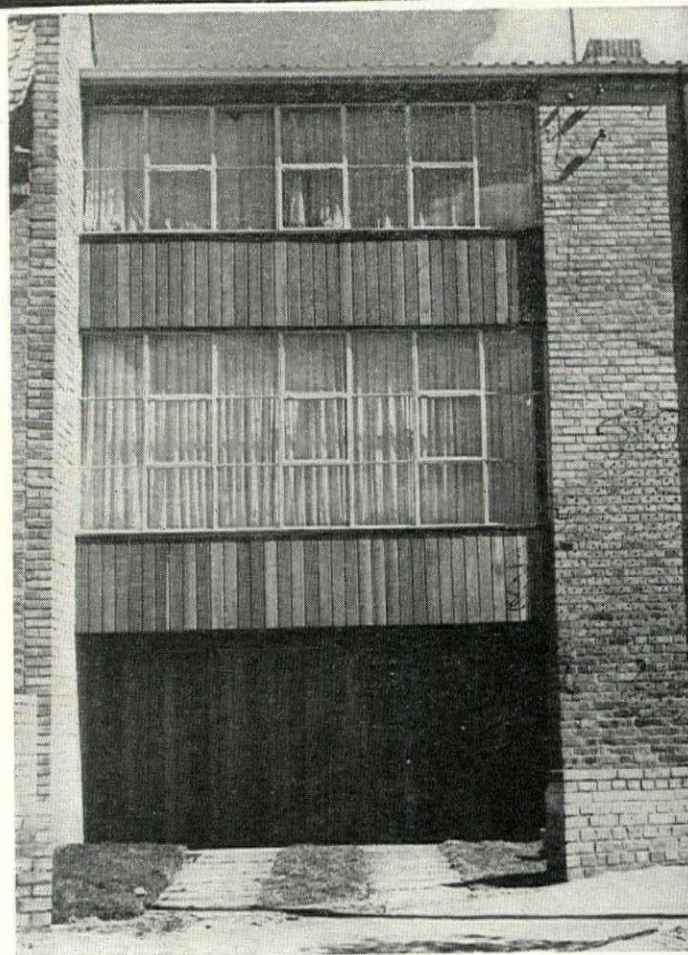
Main consequences of this new communication medium have been the unification of the country and a rapid increase in the size of its

COLOMBIA



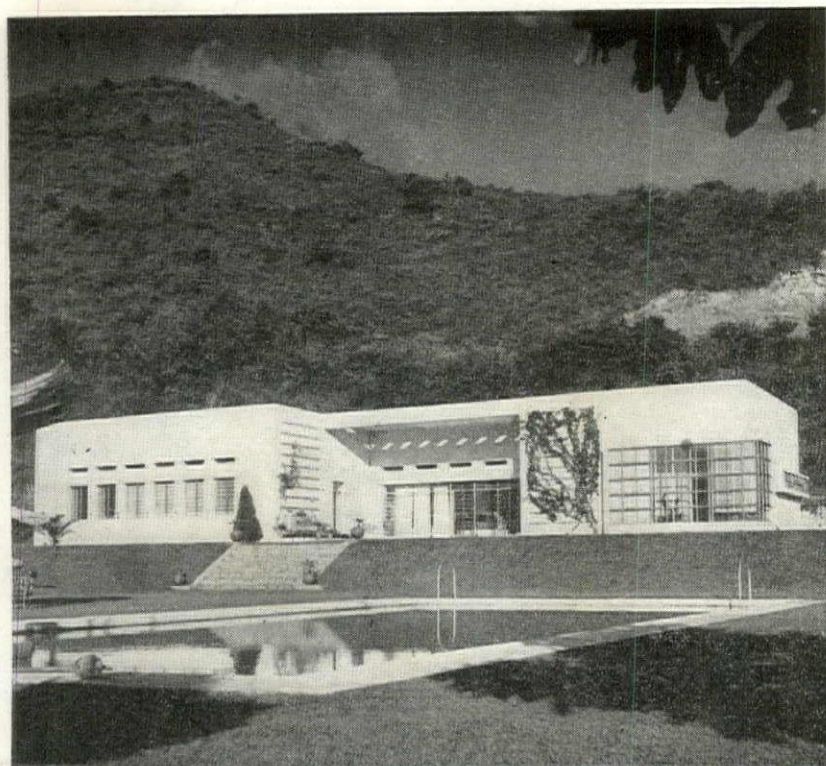
Town House in Bogotá
CUELLAR, SERRANO & GOMEZ, Architects

Contrasting sharply with the city's traditional Spanish houses, which are dark and cold with their high ceilings, covered galleries and wide eaves, this house is oriented and designed to receive the maximum of direct sun and light. The only bow to tradition is the strip of high, barred windows on the first floor which hark back to the iron grilles of older houses.



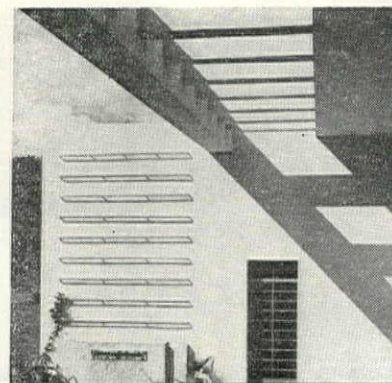
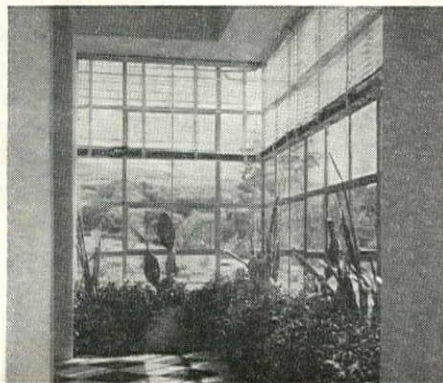
Town House in Bogotá
BRUNO VIOLY, Architect

Designing this small town house for himself, the architect was influenced by his own special needs, but nevertheless produced a house which would meet the requirements of any small family. Particularly interesting in this straightforward design is the combination of windows, vertical wood siding and brick work.



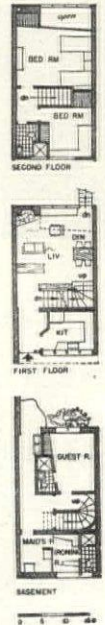
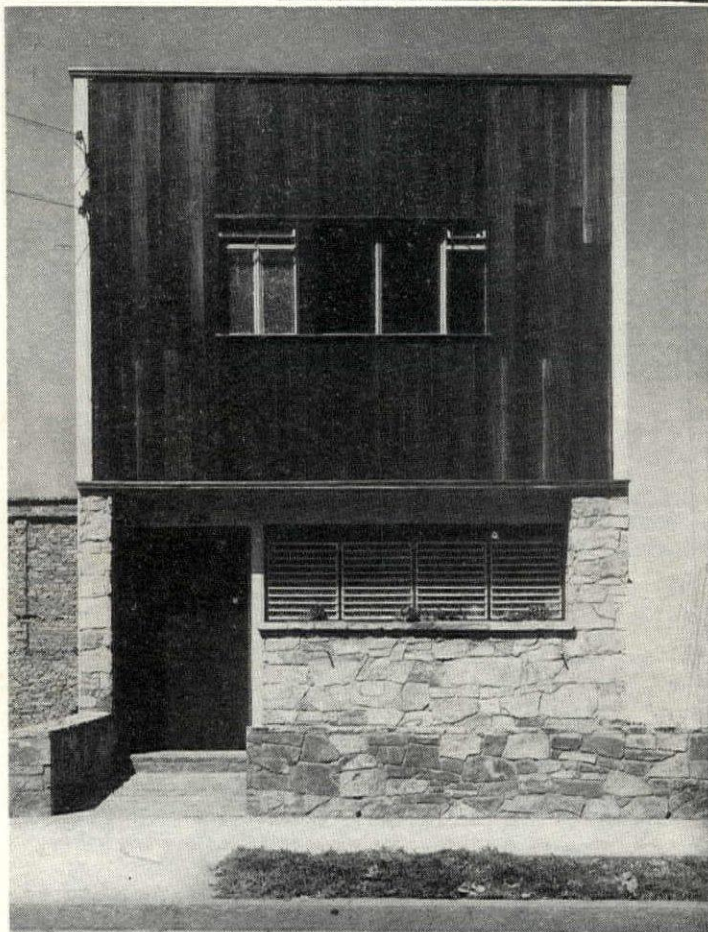
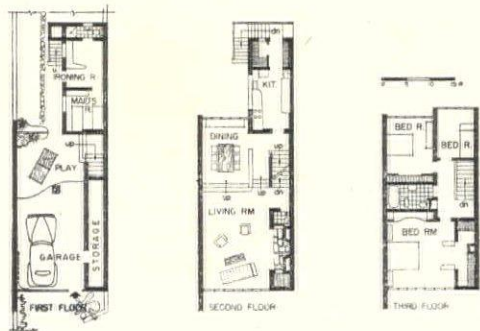
Weekend House in Fusagasuga
VINCENZO NASI, Architect

Intended for intermittent use in a warm climate, this brick and reinforced concrete house contains a central living room, a master bedroom and two independent guest rooms. To provide maximum ventilation and shade, corner windows are mounted on projecting concrete slabs and the latticed terrace roof is used to shield the living room windows.



cities. High in the mountains, Bogotá, the 400-year-old "Athens of South America," has doubled in size in the past decade. Down toward the coast, the town of Medellin has risen to become the country's economic center; and some eight other towns have seen a rapid growth. Compressed into the last twenty years, this urbanization has raised

characteristic problems in architecture, city planning and housing. Bogotá's experience is typical. Lacking both a master plan and an effective planning commission, her new suburbs have spread out planlessly, in all directions. Since 1936, many new stores, apartments and office buildings have begun to appear in the old Spanish quarters and

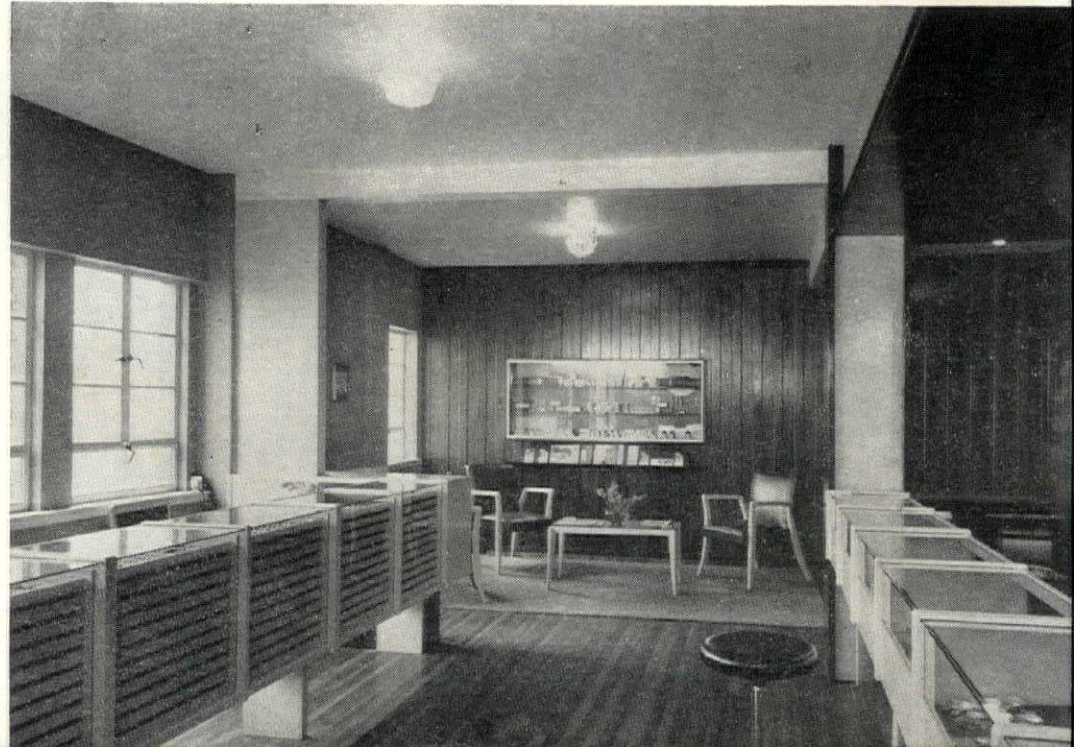
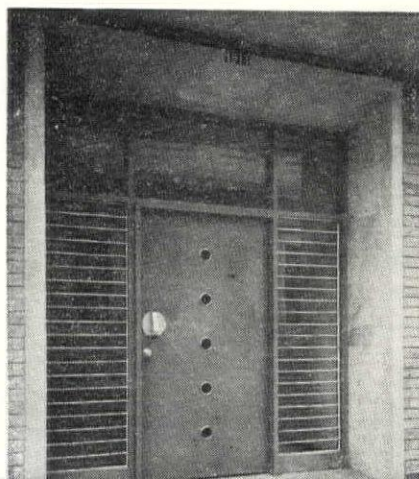


Drug Store in Bogotá
CUELLAR, SERRANO & GOMEZ, Architects

Obviously a real drug store, this small shop with its clean, functional interior lines offers interesting contrast with the customary chaos of the typical U. S. (and Colombian) "drug" store. Attractive furniture and display fixtures help offset the shop's small size and set it apart from most other Colombian drug stores which faithfully copy the graceless details of U. S. models.

House in Bogotá
CUELLAR, SERRANO & GOMEZ, Architects

Occupying a steeply sloping lot in one of the city's residential areas, this small house has an additional story facing the rear garden containing service facilities and a guest room. The crisp design features materials in their natural state and a complete absence of ornamentation. Note again the perpetuation of Colombian tradition in the small, protected first floor windows.

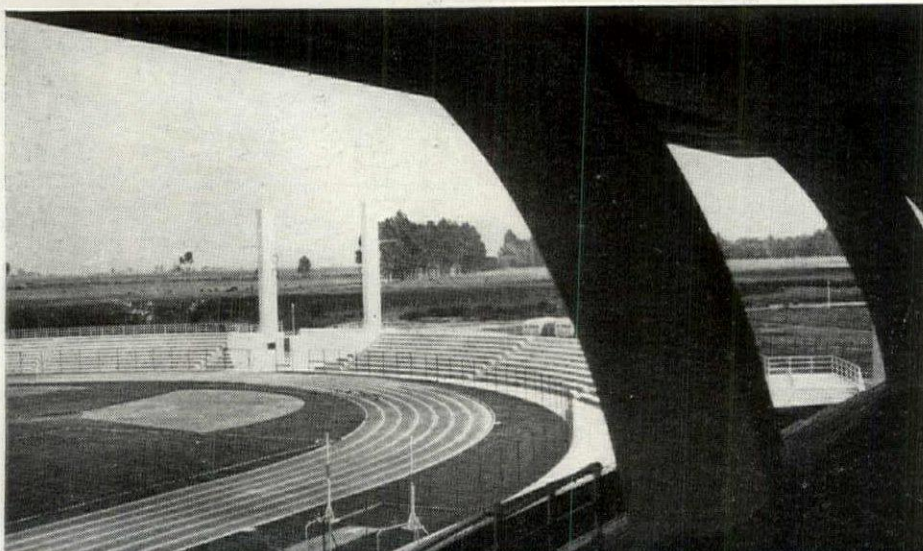
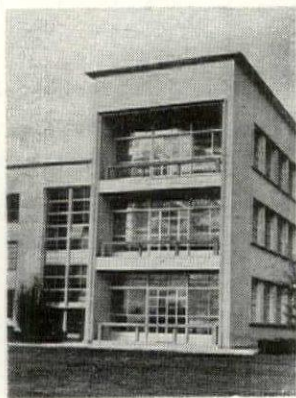
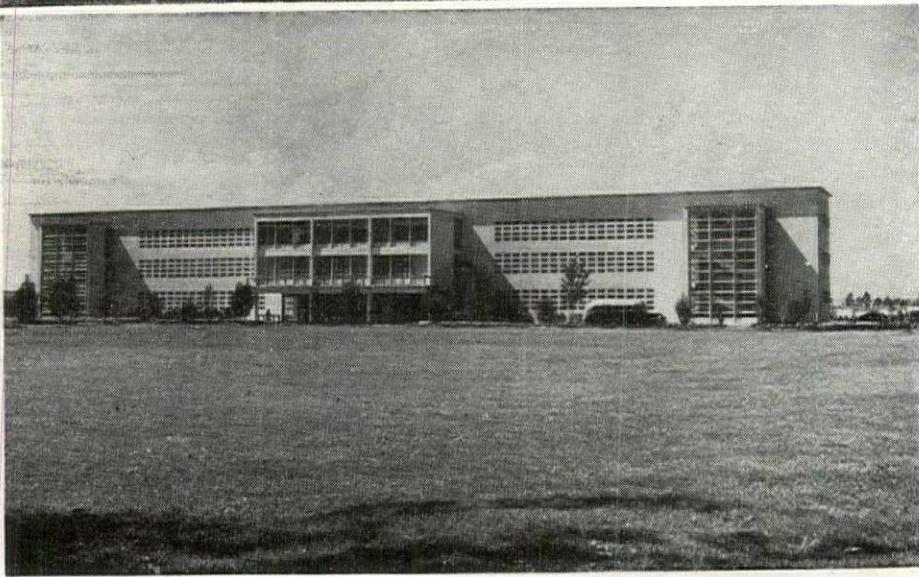


—often crowded along the old narrow streets—they further increase congestion. Yet despite all this hectic construction, Bogotá is plagued by a chronic housing shortage, high rents and over-crowding.

It is to such problems as these that the nation's comparatively new architectural profession is now turning its attention. With only

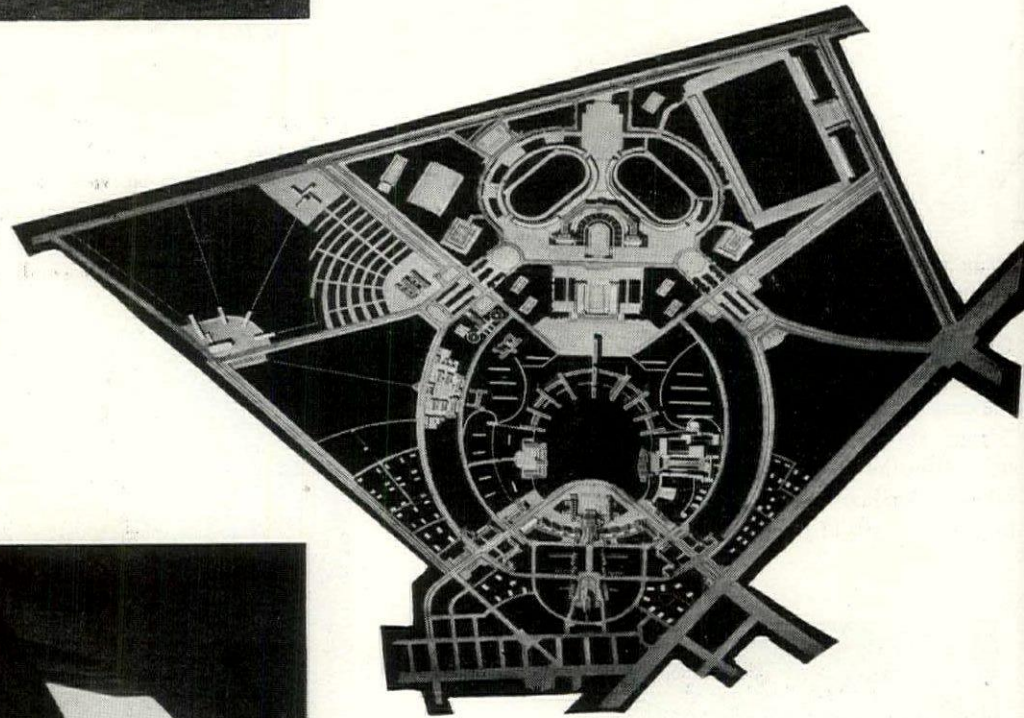
some 150 graduate architects (50 per cent trained abroad), inadequate registration laws and two architectural schools in a nation of 11 million, the profession's job is not easy. But Colombian architects and city planners are tackling it with characteristic energy and intelligence. Their accomplishments to date augur well for the future.

COLOMBIA



National University in Bogotá.

Sponsored by the Colombian government and designed by government architects, the University is located on flat valley land on the western edge of the city and is connected with the city center by main traffic arteries projected, or under construction. Although exterior appearance of individual buildings offers stimulating relief from Colombia's traditional architectural pattern, it is reminiscent of European modern of 20 years ago. Moreover, plans, shapes and orientation of these buildings, like the symmetrical plan of the campus itself, is more classic than Colombian. The extreme distances between buildings and the harsh white and gray surfaces of the buildings are poorly related to Bogotá's predominantly sunless weather. Perhaps subsequent designs will add more life to the project through variations in form, texture and color.



It is hoped that the formal monumental campus plan will serve only as a guide in future development of the project, that it will not stifle the imaginative architectural talent which Colombia is cultivating.

VENEZUELA

Perhaps the most important recent date in Venezuelan history is 1935—the year in which the dictator, Gomez, died. Since that time, in the short space of a decade, the country has seen its first real growth toward economic and political maturity. However, rapidity of its development has resulted in a lack of balance and coordination

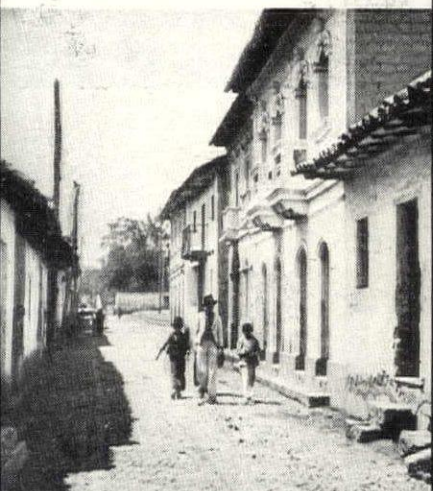
Caracas lies in a long narrow Andean valley



Urbanity and polish in a provincial plaza



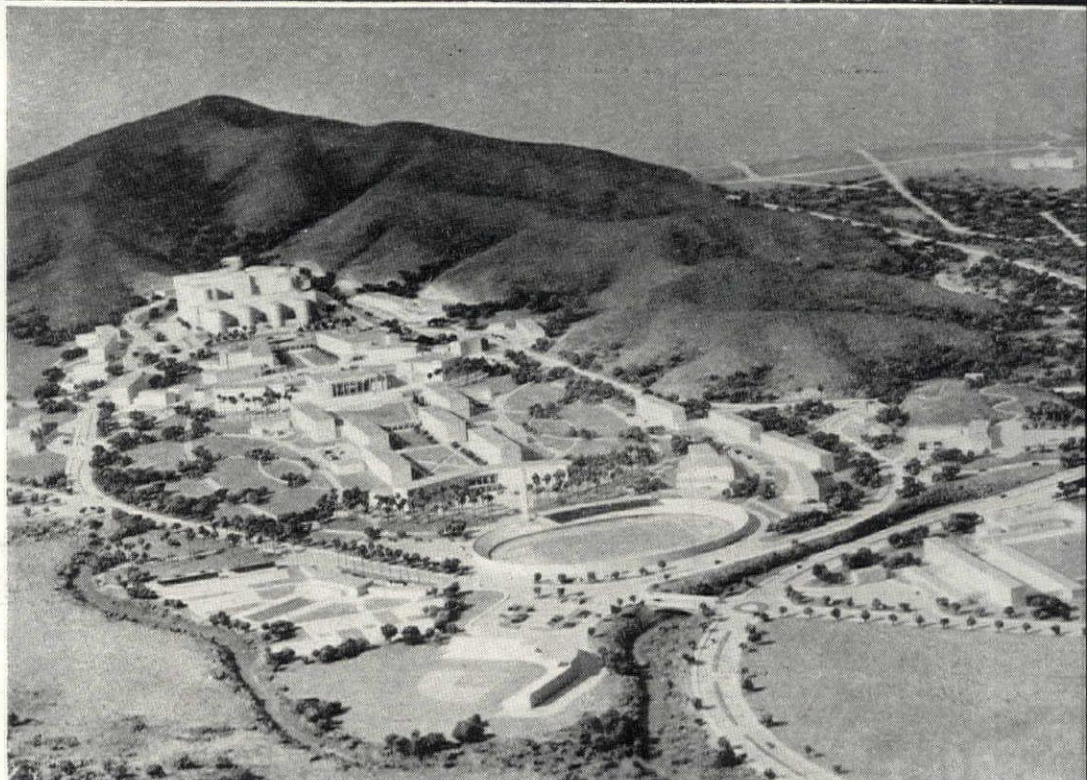
Coastal plain has fertile agricultural lands



Typical street scenes—cobble, stucco, tile



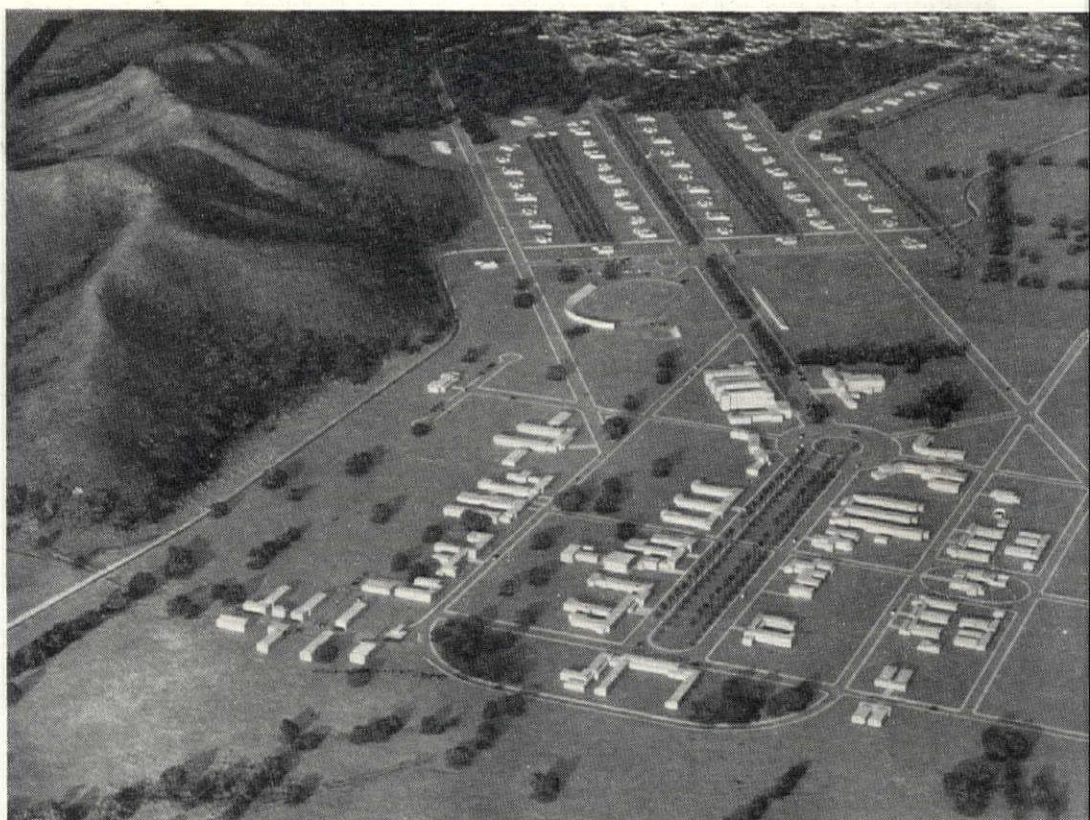
Dense, one-story building marks old city



Taller

Educational projects, planned and abuilding, are testimonials to Venezuela's growing interest in education and progressive thinking. In a relatively small nation, it is surprising to find such large scale projects as the National University City (model, above) whose construction has reached the first-floor level and the Agricultural School (model, below) which is still in the planning stage. Although somewhat monumental in character, the former is beautifully sited on the outskirts of Caracas, and Architect Carlos Raul Villanueva has used a free hand in placing the various elements of the campus along either side of a formal axis. Similarly located, the agricultural school is less monumental but equally formal. Distribution of facilities among a great many relatively small buildings achieves an openness of site plan in keeping with the project's purpose. Architect: Luis Malaussena.

Taller



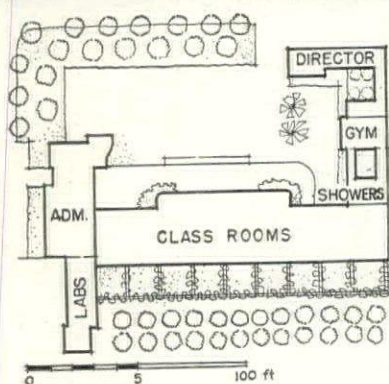
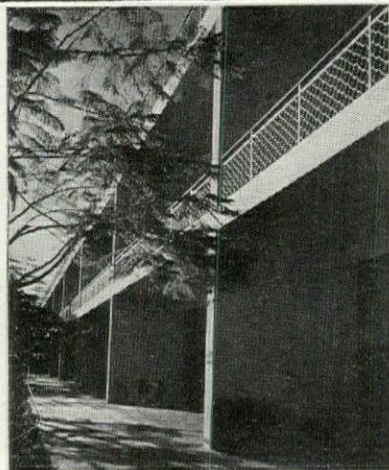
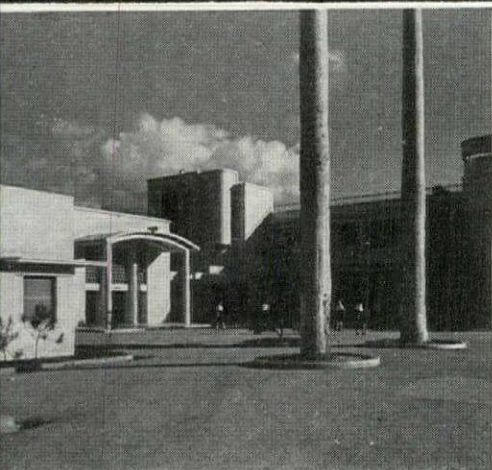
between the many elements of this forward surge.

The first effect of the new freedom was an over-expanded bureaucracy, centered in the capital city of Caracas. Almost overnight the small provincial town became a boom town. People from the provinces crowded into the city and with them came skyrocketing land

prices, speculative building and a general over-optimism. A master plan, developed in 1938, was tossed aside by impatient real estate speculators. Problem piled upon problem as the new government faced the realities of Venezuelan economics.

From its early days as a Spanish colony, Venezuela has been an

VENEZUELA



Normal School in Caracas

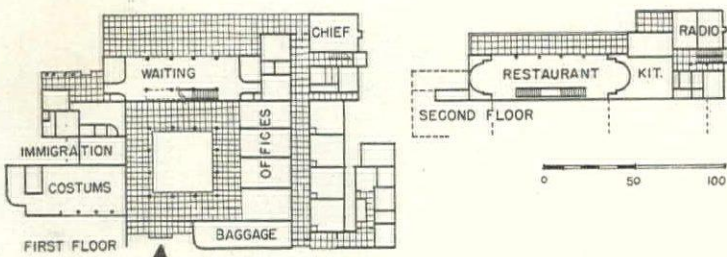
CARLOS RAUL VILLANUEVA, Architect

A combination normal-elementary school, this institution trains teachers practically through actual instruction of classes. Focused upon large central playgrounds, the first-floor classrooms may be opened to the outdoors and expanded to include patio terraces. Projecting balconies serve the same purpose for second-floor classrooms and protect terrace classes below from the changeable mountain weather, while projecting partitions support balconies and roof canopies and give privacy to the outdoor classrooms. Like most of the city's new buildings, the heavy reinforced concrete construction is designed for resistance to earthquakes.

Airport Building at Maiquetia

LUIS MALAUSSENA, Architect

Many travelers gain their first impression of a country through the appearance of its airports. This airport administration building in the seaport city serving the country's capital is proof enough that Venezuela appreciates the national advertising value of good airport design. The clean, simple lines of the building offer welcome relief from South America's usual pseudo-Spanish architecture. Only bow to tradition is in the patio, which gives light and air to surrounding public areas.



Below: Tall

agricultural nation, and a poor nation. For the most part it still is today. Although the Gomez regime left the government wealthy through its development of the rich Maracaibo oil region, this industry actually employs few people and thus does not affect the majority, except as the government uses its funds for social purposes.

There has always been a gulf between the life of the capital and that of the backward provinces. Within the city, too, there is a schism between wealthy landowners, whose homes lie in the lush valleys, and the poor, whose shacks cling to barren hillsides surrounding Caracas. This was the situation with which the rapidly expanding govern-

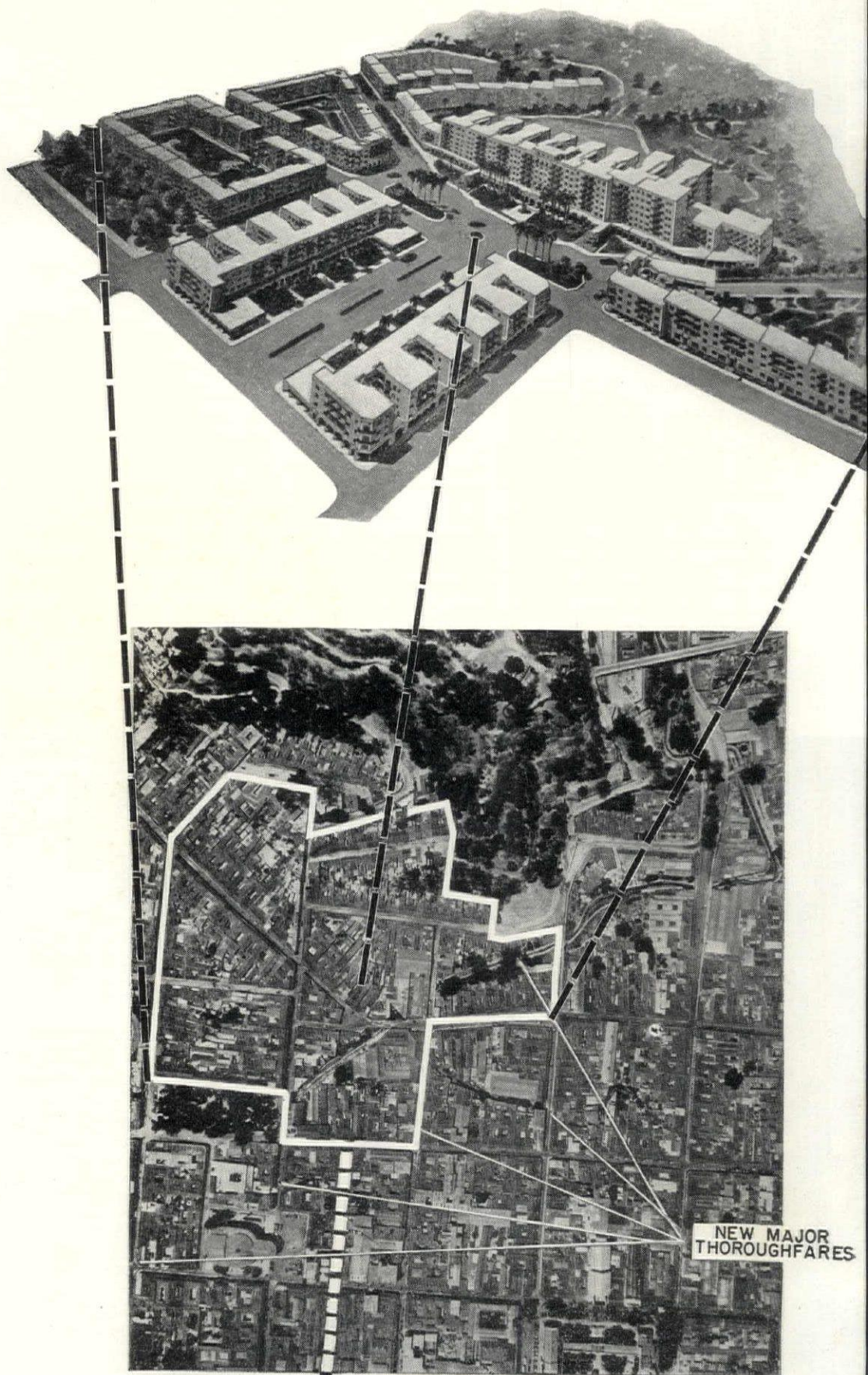
El Silencio Housing Project, Caracas
CARLOS RAUL VILLANUEVA, Architect

This \$20 million project is, understandably, the pride of Venezuela's capital. Lying at the western tip of the small mountain valley in which Caracas is located, El Silencio represents a three-fold addition to the city. It cleared a 22½ acre plot of vice- and disease-ridden slums; it provided modern dwelling units for some 4,000 persons at moderate rentals; and it resolved a serious traffic problem at the city's most important gate. But because of its multiple functions, it might seem somewhat unorthodox unless seen in relation to the city as a whole.

Like most South American capitals, Caracas inherited a Spanish Colonial nucleus of central plaza ringed with cathedral and public buildings set in the midst of a densely built-up gridiron. Under the impact of recent growth—almost 100 per cent in the past two decades—this center was surrounded by sprawling new suburbs which covered the valley floor and scaled the surrounding mountainsides. Its narrow old streets flooded with new traffic, the central district was almost isolated from its environs. Worst bottleneck lay to the west, at the present site of El Silencio, where the main highway to the coast begins its 3,000-ft. descent to the port city of La Guaira.

Here, in 1942, the City Planning Commission set to work. After the property had been acquired (at a cost of \$3½ million) and some 2,000 buildings razed, the deep ravine which had bisected the area was filled in, the entire plot graded and the new streets and plazas laid out. Main east-west axis of the new plan was an extension, greatly widened, of Avenida Bolivar. (Already one of the downtown section's best commercial streets, Bolivar will ultimately be widened for its entire length.) Where Bolivar intersects the relocated highways leading north and south out of town, a handsome fountained plaza was laid out.

While the site plan of El Silencio, thus trisected by arterial boulevards, will seem unorthodox to housers in this country, it has many interesting aspects. Already it has shifted the center of gravity of the city's commercial life. The large number of shops on Silencio's ground floor, while too numerous for the project's 4,000 tenants, are an important source of income. Several new projects are under way around it, including a theater and apartment building and a big automobile salesroom. Property values in its vicinity have skyrocketed by 1,100 per cent. Physically and economically, the whole end of town has been transformed.

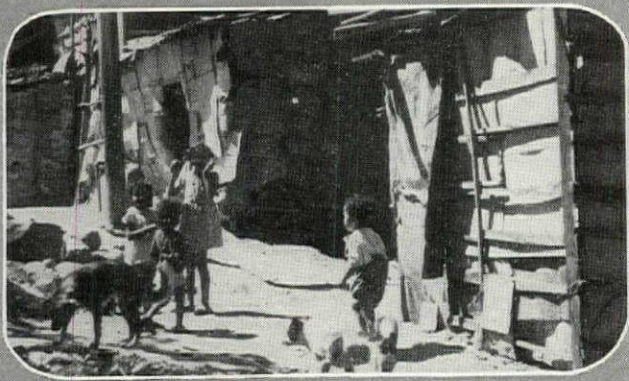


AVENIDA
SIMON BOLIVAR

ment had to struggle. And in spite of confusions and false starts, much has already been accomplished. A building program with emphasis on housing, education and health plus scheduling of projects for the provinces, represents the first step in what could become a unified social and economic plan. Because the country has only re-

cently embarked on its program of "social architecture," it is surprising to find that the quality of the building is generally good. Venezuela's future, both socially and architecturally, looks encouraging. But it is regrettable that a plan was not instituted at the beginning of the boom to take advantage of its unique period of growth.

VENEZUELA



Around El Silencio's landscaped and brilliantly-lighted plaza (below) are grouped 760 units of unique, slum-clearance housing in 4 to 7 story buildings. All of the units are—by North American standards—amazingly roomy. Apartments range from two to five bedrooms, have street front balconies and porches on the garden side. Compared to current rent scales in house-hungry Caracas, Silencio's rates (\$33 to \$63 per month) are moderate. Financed by Banco Obrero, a federal agency created to own and operate housing, the project is self-supporting.

Framed of reinforced concrete for 'quake- and fire-resistance, the buildings are unadorned except for the colonnades which connect all street floor shops around the plaza. Here, at the request of the planning commission, the architect has incorporated details reminiscent of early Colonial buildings still standing in the city. This baroque touch is an attempt to find some sort of stylistic continuity between the recent past and the present—a problem for architects the world over, and apparently insoluble.

Luis Noguera



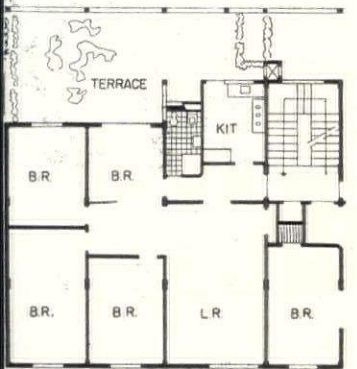
In preparation of the material in this issue, FORUM also had the valuable assistance of Prof. Jorge Arango, architect of Bogota, Colombia and Architect Fernando Salvador, of Caracas, Venezuela.



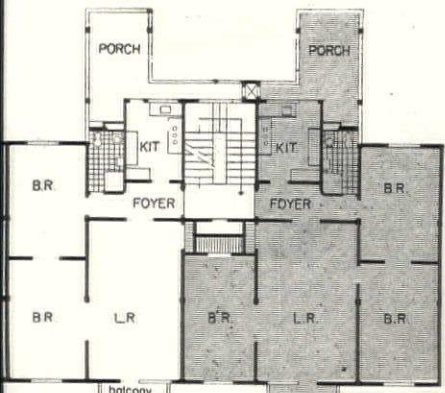
Garcia Toledo Photos



FIVE BEDROOMS

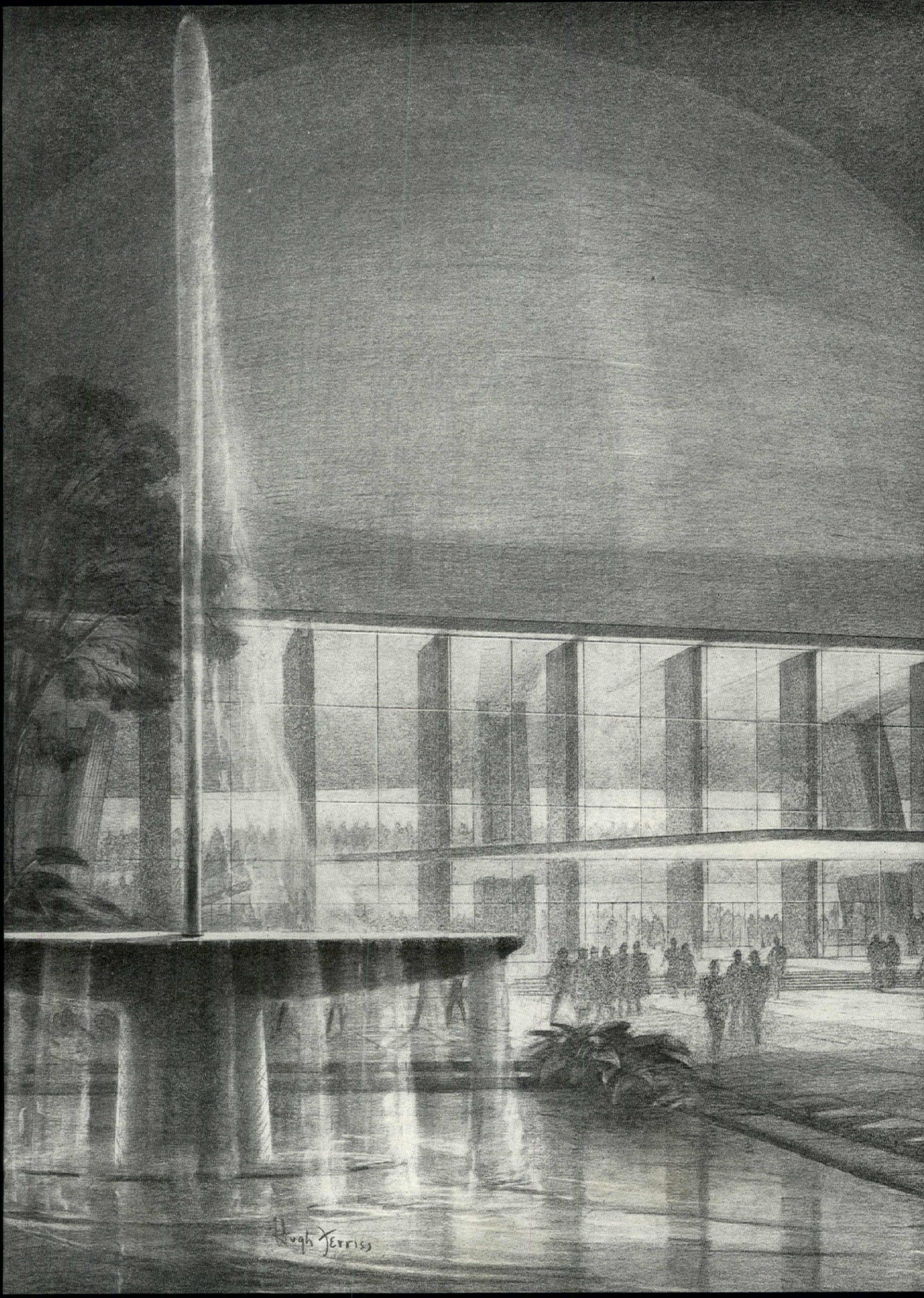


FIVE BEDROOMS



TWO BEDROOMS THREE BEDROOMS

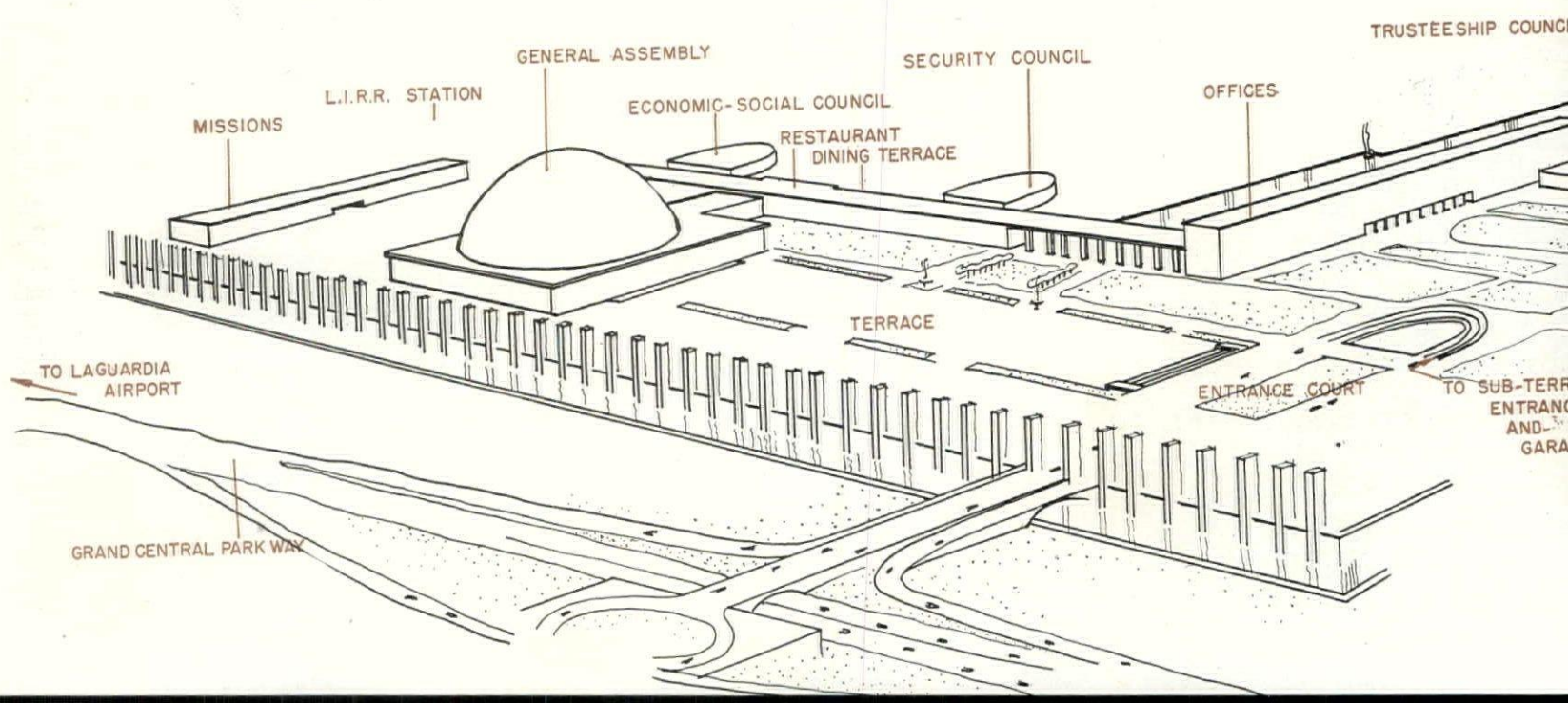
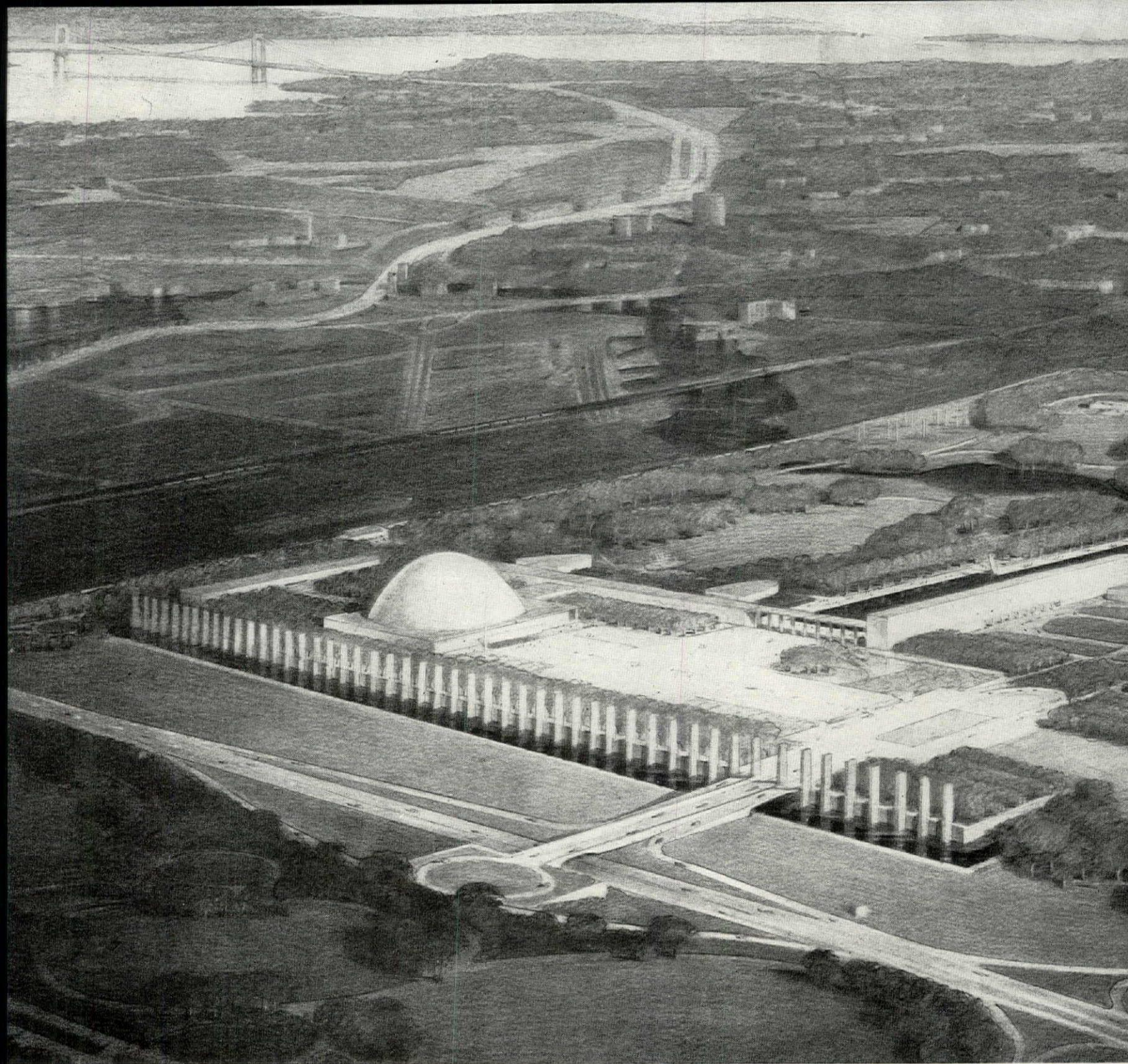


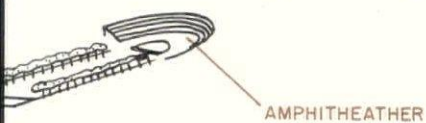


Hugh Ferriss



NEW YORK PROPOSES A **WORLD CAPITOL** FOR THE UNITED NATIONS





AMPHITHEATER

In a dramatic gesture to the United Nations, New York proposes a spacious park site within the city limits where the world's finest facilities for land, ocean and air travel converge.

BOARD OF DESIGN:

W. EARLE ANDREWS, Architect
 AYMAR EMBURY II, Architect
 WALLACE K. HARRISON, Architect
 JOHN P. HOGAN, Consulting Engineer
 LOUIS SKIDMORE, Architect
 GILMORE D. CLARKE, Landscape Architect, chairman
 Drawings by HUGH FERRISS

New York City has crashed through with a resounding offer of hospitality to the United Nations. Consensus of a year's study favors the general vicinity but this is the first specific site to be tendered — no strings attached. Looking at this sumptuous architectural proposal it is difficult to recognize a refurbished hand-me-down — Flushing Meadow Park, site of the New York World's Fair of 1939. Since the demise of that recreational Utopia this land, with its \$58,650,000 basic improvements, has lain fallow awaiting further developments, physical or political. Fortuitously for all concerned the plight of the homeless UN presents a seemingly perfect solution since it is doubtful that without Flushing Meadow at its disposal New York could have so lavishly offered a 350-acre site. Of far greater importance to New York and the world is the actual tangibility of getting the UN settled and functioning now.

Working with the Mayor's Committee on Plan and Scope, a galaxy of Knickerbocker architects, engineers and landscape architects developed the tentative scheme presented here. Believing the design of a world capitol should be the work of more than a purely local group, they unpretentiously term it a mere "consideration and indication" of what might rise from the ashes of the World's Fair.

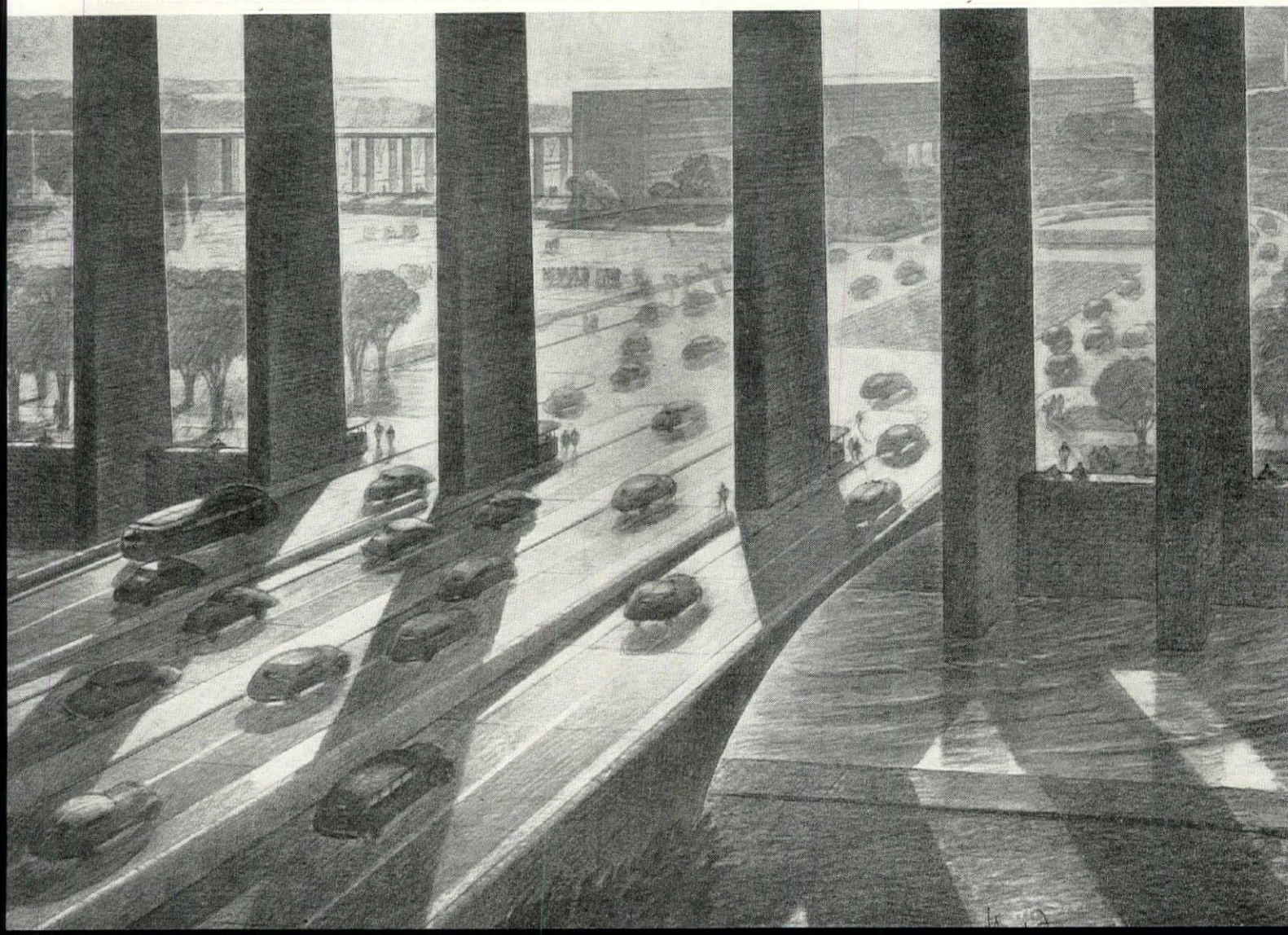
This parti and the one set forth for San Francisco (FORUM, Aug. '45) have much in common — including a guileless admiration for pageantry. Whereas the San Francisco version incorporated curves and counter curves in its site plan, the design for Flushing Meadow utilizes a formal, axial arrangement faintly reminiscent of eighteenth century pomp. The dome of the General Assembly effectively dominates the site but the architectural simplicity of the building group as a whole is robbed of its native dignity and importance when wedded to planning and planting "in the grand manner".

The theme of the United Nations is proclaimed, not by the obvious symbol of gaily fluttering flags, but by an austere row of pylons standing knee-deep in a moat-like reflecting pool. Though the solemnity of the undertaking cannot be over stressed, it seems hardly necessary to introduce the *memento mori* note struck by these masonry piers in their resemblance to a cenotaphs.



FROM MID-POINT ON CENTRAL LAGOON NEAR OLD AQUACADE SITE, BROADLY ALLEGORICAL STATUE DEPICTS WORLD PEACE

ARRIVING CARS GLIMPSE THE CAPITOL ON ENTERING MAIN GATE, THEN PROCEED TO UNDERGROUND PARKING BELOW TERRACE



CIRCULAR WAREHOUSE

evolves from study of mail order storage problems. H. K. Ferguson Co. molds six shapes around modern conveying equipment, comes up with doughnut-like solution.

Plagued by the inconvenience and high cost of handling heavy merchandise in warehouses of traditional design, one of the nation's largest mail order houses asked H. K. Ferguson Co., Engineers and Builders, to study its problem, design the "ideal" warehouse. After a thorough analysis of the business of warehousing, undertaken without preconceived ideas as to what a warehouse should look like, Ferguson produced a half-dozen designs, boldly and proudly labeled one of them "ideal." Looking at the doughnut-like project from the cold viewpoint of efficiency, the client agreed. So have Army supply experts who studied the proposal, indicated that its basic layout may be used in the construction of future supply depots. If the first such warehouse—now shelved because of high construction costs and nonresidential building restrictions—proves as efficient as Ferguson's paper work promises, the doughnut design may well revolutionize warehouse construction.

EVOLUTION OF A WAREHOUSE

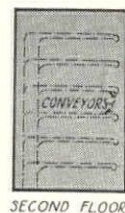
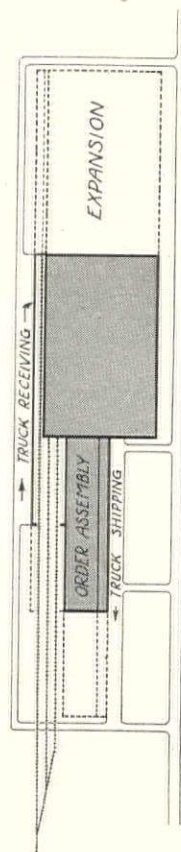
Development of the "ideal" warehouse began with the traditional rectangular shapes shown to the right and progressed through triangles, hollow squares and semicircles (p. 122) to the circle illustrated in detail on page 123. With each plan is presented a summary of its merits and disadvantages, and on page 122 is a comparative statistical analysis of the six schemes. Each design is based on the client's minimum requirements as to capacity and function and upon Ferguson's findings as to the most efficient means of internal transportation, discussed in detail below.

Client requirements. Before beginning its search for the perfect warehouse, the engineer-builders moved into the client's existing buildings, studied his problems, watched his warehousing operation. They noted that the operation was comprised of four major phases:

- Receipt of merchandise.
- Movement of similar items to one of the many "warehouse divisions" for storage.
- Movement of ordered merchandise from warehouse divisions to the "order assembly floor."
- Collection of merchandise and distribution to the various "truck loading stations" for out-shipment.

They also noted that heavy merchandise covers a wide range of sizes and shapes, including playground equipment, sporting goods, furniture, auto tires, linoleum, rugs, millwork, roofing materials, farm equipment, plumbing fixtures and kitchen equipment.

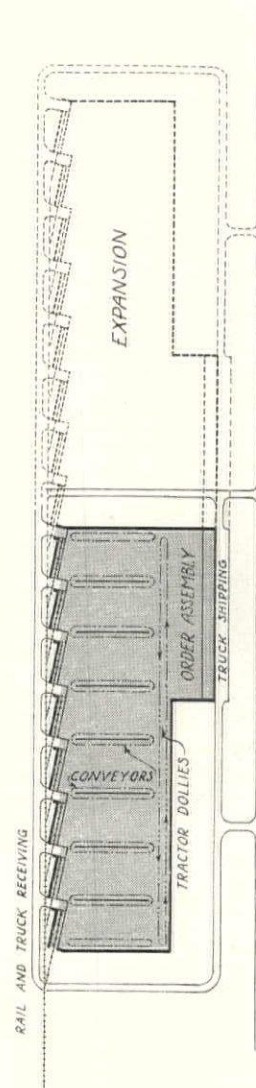
This material is received from railroad cars and trucks, is shipped by the same means—mostly by truck. For the new warehouse, the client wanted facilities for receiving 45,000 cu. ft. per day, normally half from rail cars.



A TWO-STORY RECTANGLE

The only two-story warehouse in the series, this scheme requires a comparatively small site—24-40 acres. Storage is in two distinct compartments, based on the shape of packages stored in each. Irregular and particularly heavy goods are loaded on four-wheel dollies and pulled by tractors to first floor stockpiles. Regular, smaller packages move via a belt-type conveyor to the second floor where they are distributed by branch belts to appropriate stockpiles. Similar equipment handles merchandise between stockpiles and shipping dock. Major disadvantages: 1) Segregation of incoming merchandise according to shape and size might not prove feasible, 2) expansion in small increments is impossible and 3) exterior wall construction is more extensive than in any other scheme—see comparative tabulation, page 122.

half from trucks. This meant the unloading of 15 rail cars and 45 trucks per average eight-hour day. But, to handle peak loads half again as big, which would probably arrive in 23 cars and 68 trucks per day but might be delivered wholly by car or truck, it was decided to provide for the unloading of 68,000 cu. ft. per day from either type of carrier. Truck shipping facilities of equal capacity were also required. Exclusive of these receiving and shipping areas, the warehouse proper was to contain about 500,000 sq. ft. of storage space, and lend itself to easy expansion to twice this size. Moreover, the efficient handling of merchandise demanded provision of additional



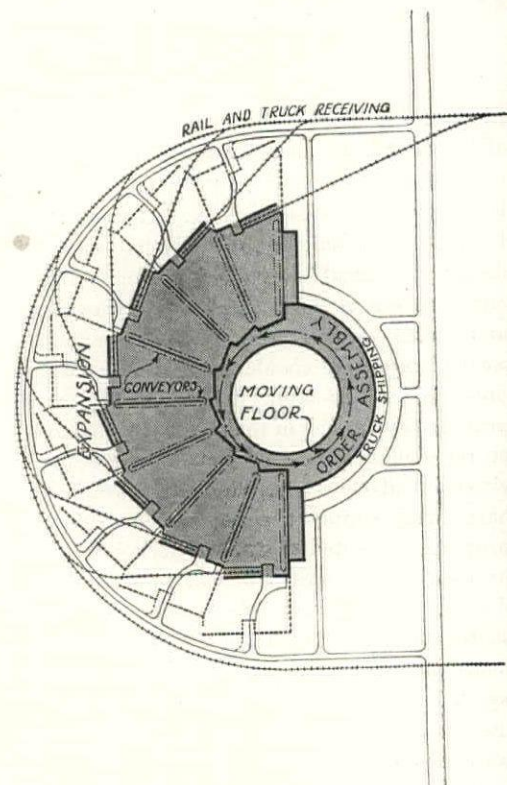
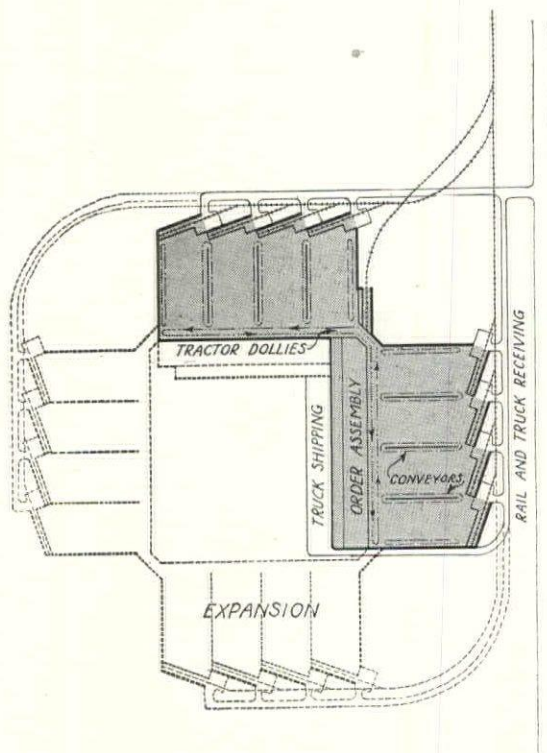
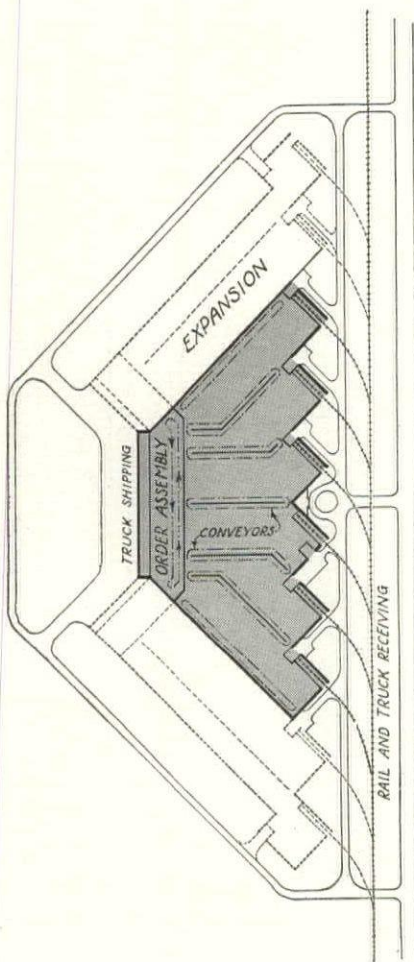
B ONE-STORY RECTANGLE

Receiving and shipping areas are better segregated in this scheme than in the two-story version, and railroad construction is minimized. However, the tremendous length of the building (3,420 ft. when expanded) requires that merchandise travel a greater distance between receipt and shipment than in any other solution. Incoming merchandise is delivered to stockpiles by tractor-drawn four-wheel dollies. In filling orders, similar dollies are hooked to a chain conveyor and moved, unattended, to the front of the warehouse where they are disconnected automatically and picked up by tractors. Once a train of these dollies is assembled, it makes a round trip at the edge of the warehouse area, stopping at various truck loading stations along the order assembly floor to transfer merchandise or drop off dollies.

facilities for examination of merchandise, control of stocks, preparation of material for shipment, filling of orders and movement of goods in and out of stock areas.

Interior traffic pattern. No elaborate research was required to determine that the receipt and storage of merchandise would be greatly facilitated if each warehouse division was provided with its own unloading or receiving facilities. Such a convenience would reduce inside transportation and assure optimum control, and therefore became one of the major requirements of the new warehouse. To meet

(Text continued on page 130)



C ONE-STORY TRIANGLE

Purpose of forming the warehouse in the shape of a triangle with receiving facilities at its base and shipping docks at its blunt apex was to reduce length of the order collecting loop—the route of the tractor-dolly trains between chain conveyors and truck loading stations. (Operations of receiving and shipping are the same as in the one-story rectangular scheme.) Although an effort was made to produce well-shaped storage areas, each area departs from the true rectangle—an undesirable feature from both warehousing and construction points of view. This warehouse requires a comparatively small site for its first six sections but makes poor use of the larger site required for the expanded project. Otherwise, it might be rated as average, for the proposal is neither the best nor the worst of the group.

D ONE-STORY HOLLOW SQUARE

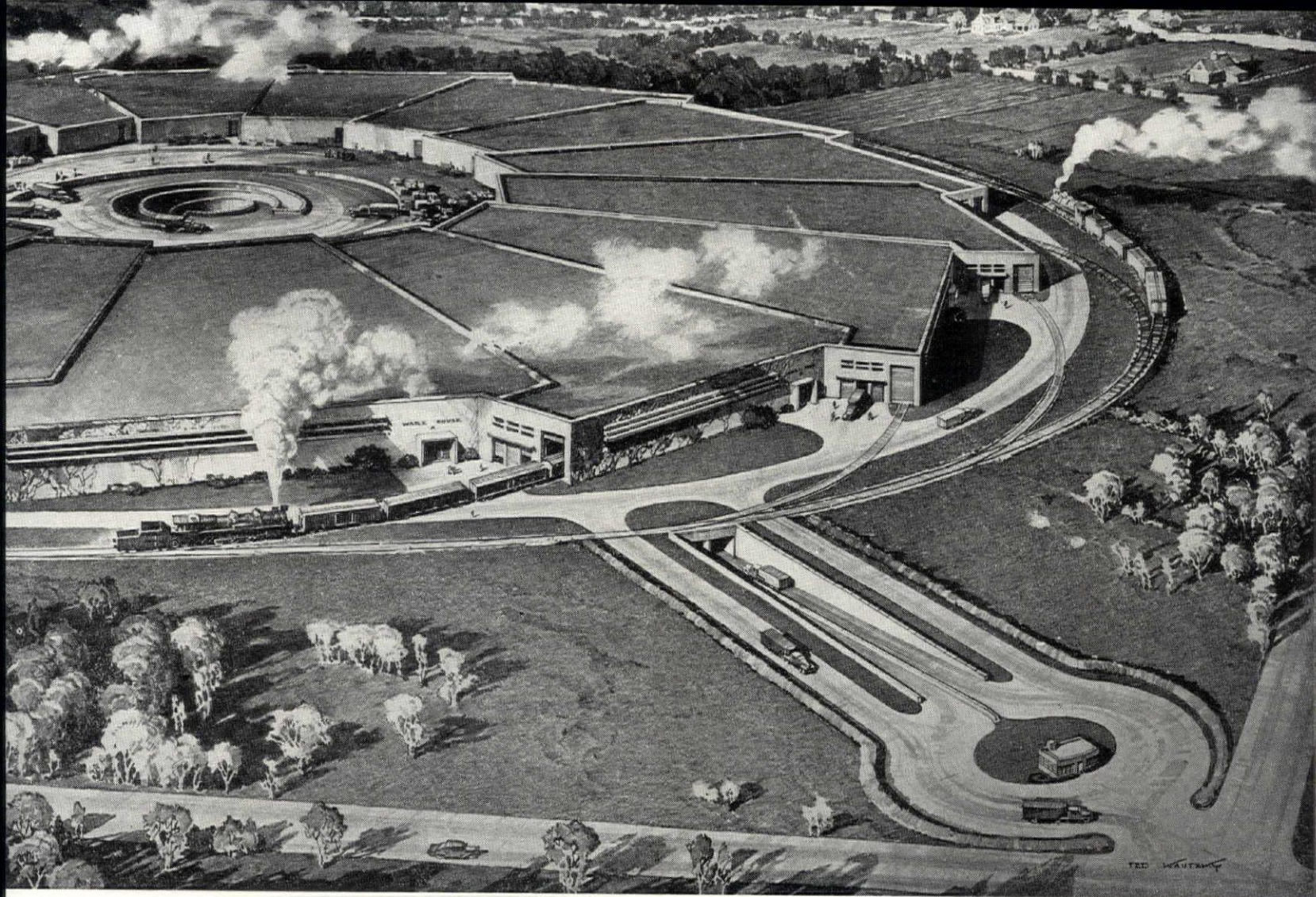
This proposal has several advantages over the rectangular and triangular plans and the circular form which it approaches: 1) Storage units are of ideal rectangular shape. 2) Length of roadways is small. 3) Expansion may be effected in increments of one storage unit with proportional increases in the order assembly floor. 4) When fully expanded, the collecting loop may become a one-way circuit—thus the average distance traveled by merchandise between receipt and shipment would be the same as in the project as initially built. Operations of receiving and order filling are like those in the one-story rectangular scheme. Major disadvantages: the project requires the largest site (94 acres when expanded), the sharpest railroad curves and a short truck tunnel under the order assembly floor, connecting truck area with road.

E ONE STORY SEMI-CIRCLE

With wedge-shaped storage sections focusing on a central shipping area, a one-way collecting loop is possible in this semi-circular scheme, regardless of warehouse size. And, since the order assembly floor is circular, the four-wheel dollies may be carried on a moving platform instead of being towed by tractors. Collection of loaded dollies would be accomplished on the inside half of the circle; distribution to various truck loading stations on the projecting half. Movement of merchandise to the collecting loop is the same as in the other plans. Major disadvantage: expansion of the project is accomplished by extending the existing storage sections, an operation which requires relocation of receiving facilities, extension of conveyors, ripping out of existing exterior walls and, most important, suspension of operations.

COMPARATIVE STATISTICS reveal that circular scheme F encloses greatest area, requires second smallest site, permits maximum efficiency.

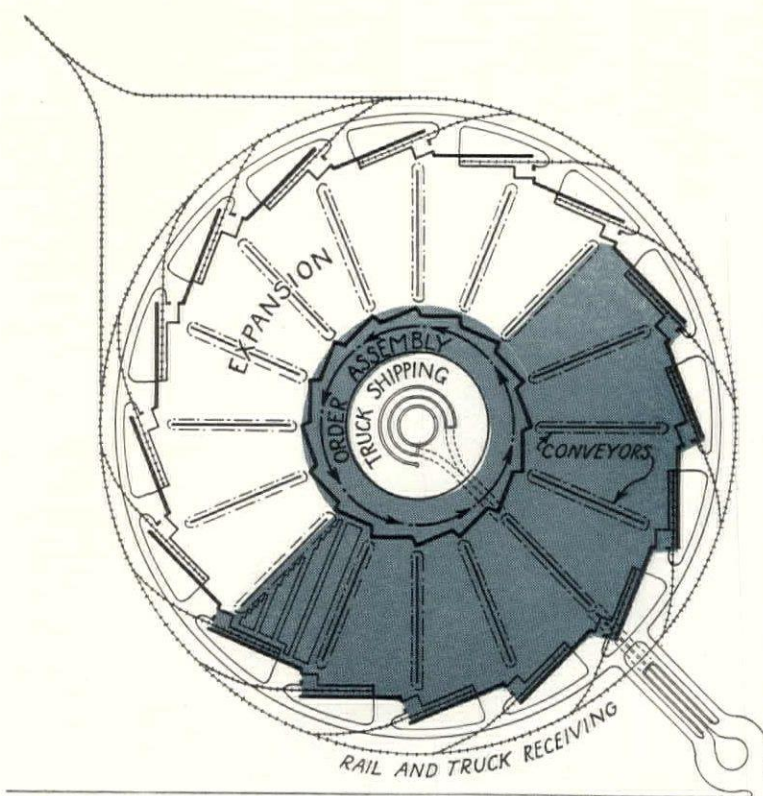
	Before A	After A	Before B	After B	Before C	After C	Before D	After D	Before E	After E	Before F	After F
	Expansion		Expansion		Expansion		Expansion		Expansion		Expansion	
Site Area—Acres	24	40	40	71	41	85	55	94	47	67	46	63
Building Area—1,000 Sq. Ft.	670	1,339	703	1,406	636	1,207	710	1,396	709	1,174	736	1,275
Warehouse Area—Per Cent	76	76	71	71	82	82	73	75	77	85	69	80
Exterior Walls—Lin. Ft.	7,140	10,400	4,362	7,294	4,100	7,175	4,940	9,920	6,874	8,000	3,831	4,583
Fire Walls—Lin. Ft.	2,400	4,800	5,212	10,764	2,930	3,530	4,700	9,260	2,625	4,025	4,415	9,580
Railroads—Lin. Ft.	4,800	5,400	4,280	8,560	6,300	8,500	5,940	11,140	6,860	7,380	6,840	12,900
Roadways—Lin. Ft.	3,800	4,800	5,440	8,784	5,900	8,100	3,470	6,930	6,410	7,040	6,823	9,503
Average Distance Traveled—Lin. Ft.												
RR Cars to Storage	420	650	300	300	500	550	200	200	315	455	315	315
Storage to Assembly Floor	500	800	300	300	500	550	270	270	290	410	290	290
On Assembly Floor	300	600	3,000	6,000	340	610	3,000	3,000	740	740	1,125	750
Assembly Floor to Truck	150	150	115	115	120	120	90	90	85	85	85	85
Total—Lin. Ft.	1,370	2,200	3,715	6,715	1,460	1,830	3,560	3,560	1,430	1,690	1,815	1,440

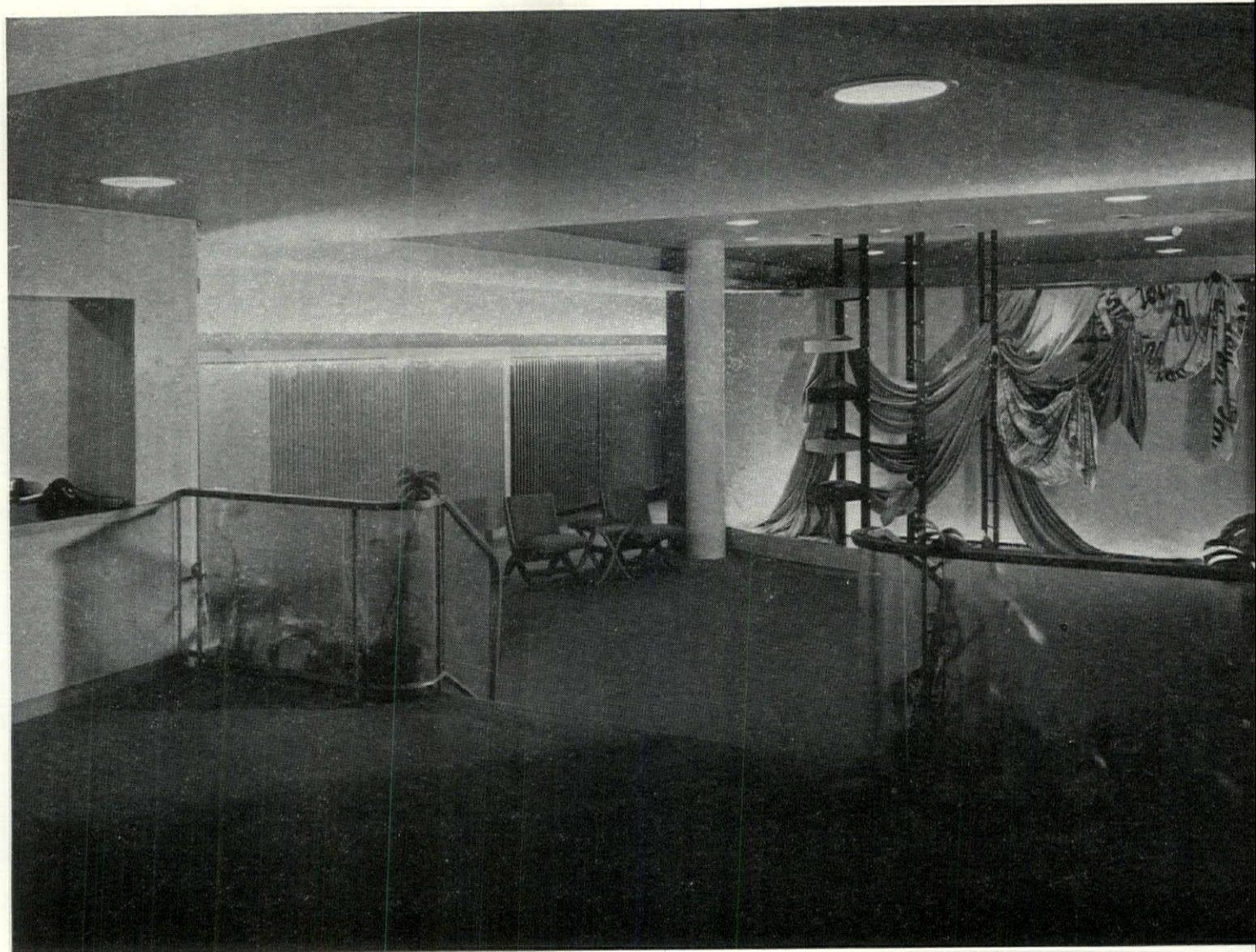


ONE-STORY CIRCLE reduces handling of merchandise, produces most functional warehouse.

Although it does not embody all of the advantages of all of the preceding schemes, the circular warehouse was judged by both designer and client to be the most efficient solution to the problem. It is a distinct improvement over the semi-circular plan with respect to ease of expansion and length of travel on the order assembly floor. Any amount of space may be added (up to the ultimate design capacity) without interfering with the function of the original building. Since the order assembly floor would be built as a complete circle at the time of initial construction and since trucks would back up to the inside circumference of this circle, the whole floor can be used for shipping. Although an extensive tunnel would be required to get trucks under the warehouse to the interior court, its cost would be offset, in part, by the fact that this warehouse involves a lesser amount of exterior wall construction than any of the others. Moreover, the average travel of merchandise between receipt and shipment is reduced to only 1,440 ft. when the warehouse is fully expanded.

Travel within the building is by four-wheel dollies hooked to tractors for the receipt-to-storage run and to chain conveyors for the storage-to-assembly-floor run. On the order assembly floor, dollies would be moved either by tractors or on a revolving platform; the latter would reduce travel and congestion on the floor and its use is reflected in the tabulation on page 122. Although not shown in the rendering above, the order assembly floor would be covered with a roof projecting over the truck parking space.



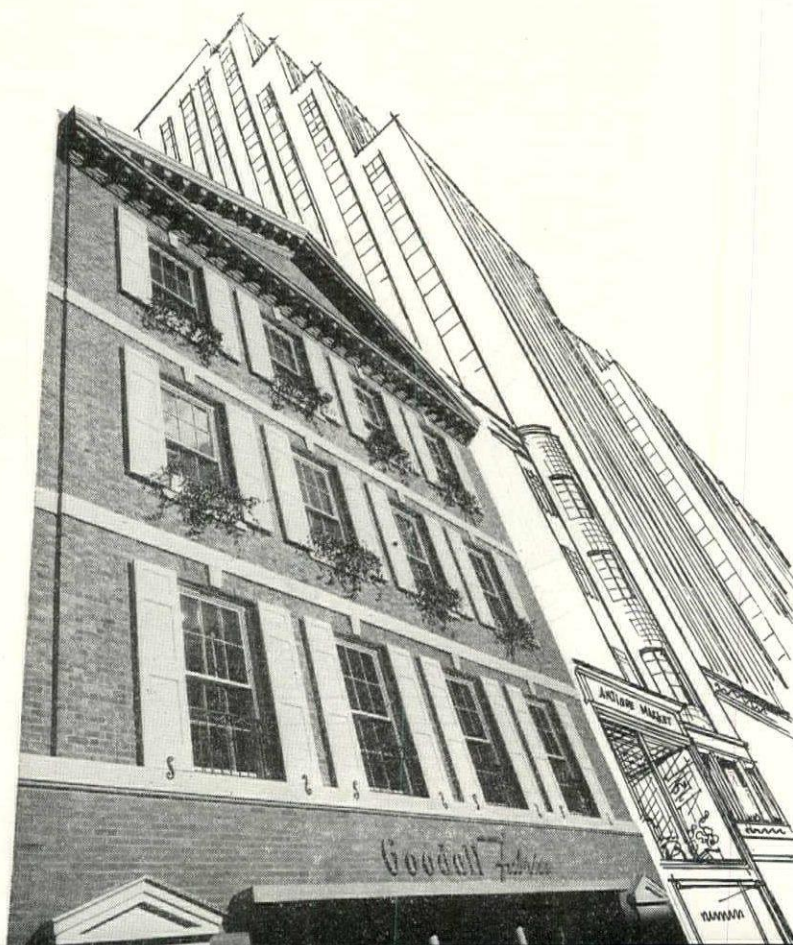


VIEW FROM FOYER REVEALS DRAMATIC "STAGE" DISPLAY IN DROPPED SHOWROOM FLANKED BY MULTIPLEX SAMPLE RACKS

FABRIC SHOWROOM merges glamour with efficiency, is a study in understatement

ELEANOR LE MAIRE, Designer

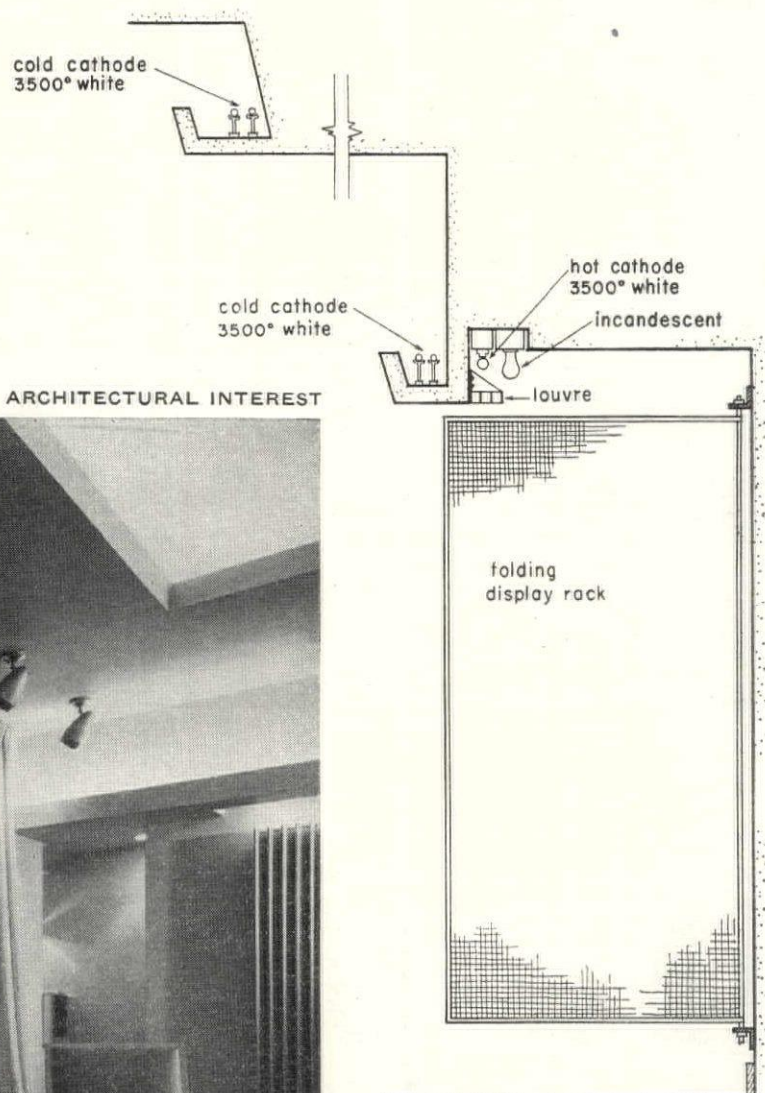
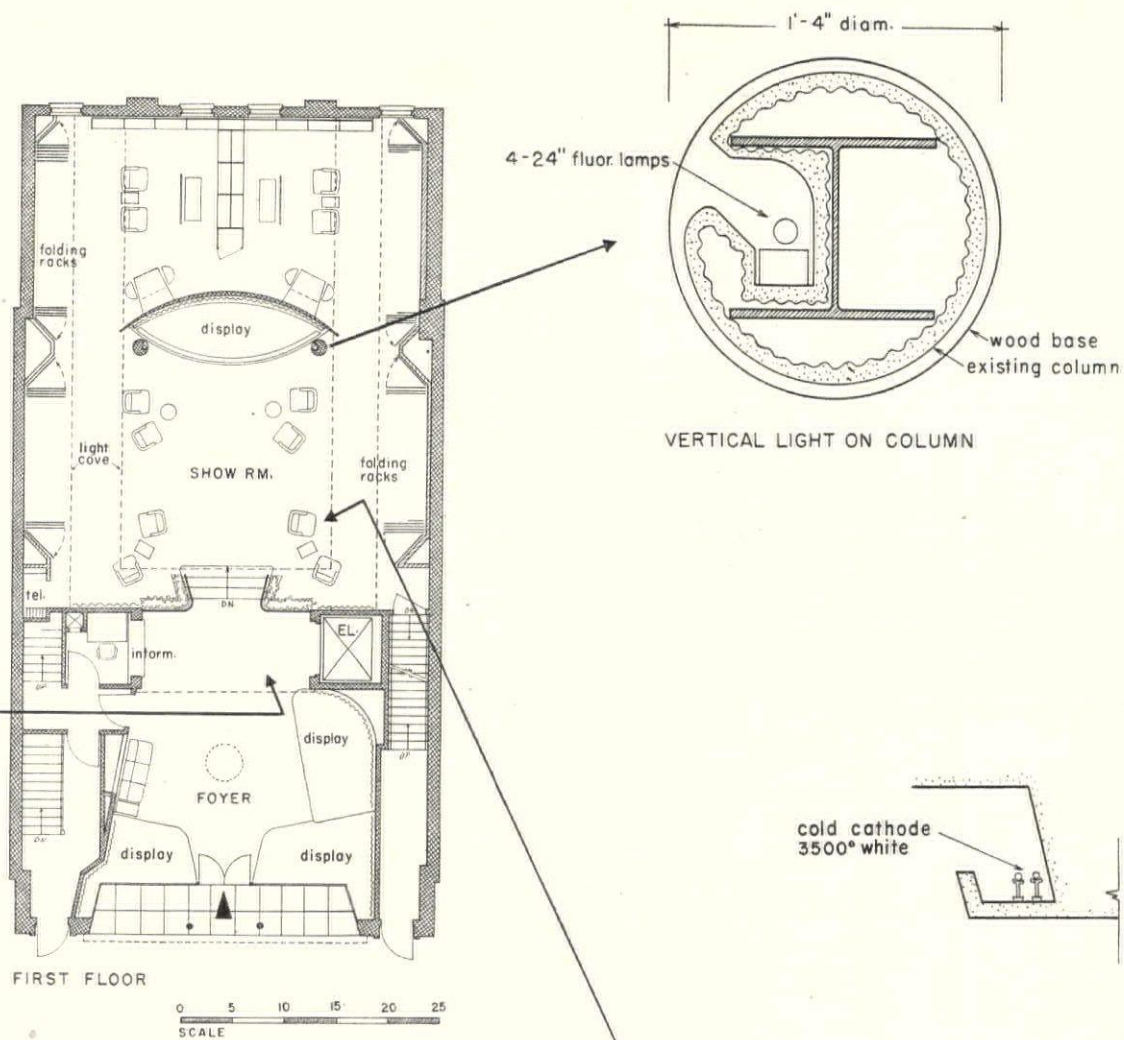
ROBERT JOHNSON, Contractor



The interior of the main Goodall showroom, subtly designed as a monotone background for dramatic fabric displays, achieves an atmosphere of smooth-flowing spaciousness through lighting, color and juxtaposition of planes. There are no dividing walls between front window displays and the selling area. Instead, the entire width and depth of the shop is visible from the street. Interest is provided by a dropped ceiling, slanted shadow box and a difference in floor level between the foyer and showroom. Flanking the connecting steps and offering the only decorative touch in a chaste design are two handsome glass balustrades and some tropical planting.

Illumination, a specialty of the designer, has been cleverly handled throughout. To approximate natural light, incandescent and cold cathode fixtures are combined above the sample racks. Switch controls allow use of either lighting type separately, thus showing fabrics under typical conditions.

Trickiest problem was the exterior of the building, an existing structure of traditional design. Since the owner wished to retain the colonial character of the facade, the designer resorted to a compromise solution, emphasizing tradition in the upper section with white shutters while creating a modern open front at street level. The necessity for this schizophrenic exterior may be regretted by purists, but expert handling of its two elements has reduced conflict to a minimum.



COVE LIGHTING AT TWO LEVELS PROVIDES SPECIALIZED ILLUMINATION, ARCHITECTURAL INTEREST



Photos:
Ezra Stoller

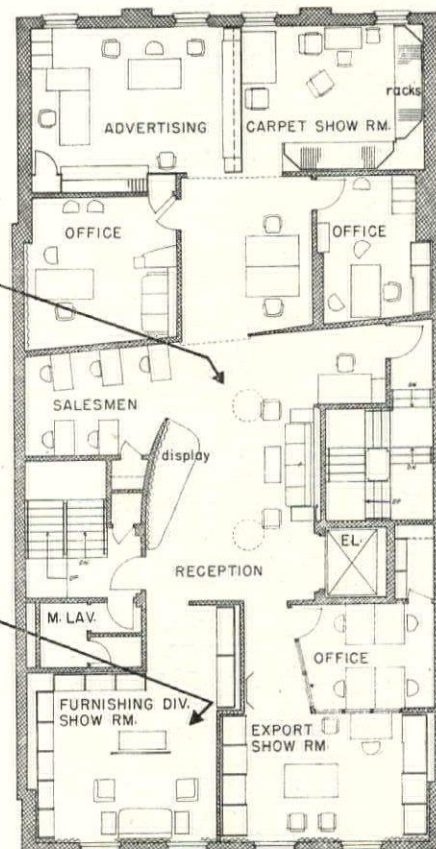
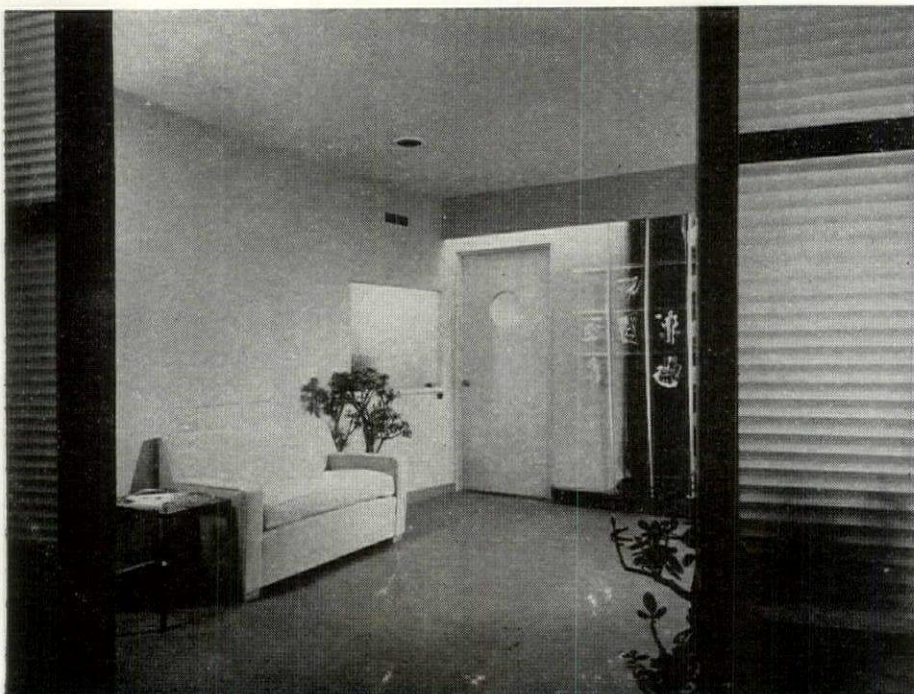


RECEPTION ROOM'S CUSTOM-MADE FURNITURE SHOWS CHINESE INFLUENCE



TYPICAL SHOWROOM GROUPS FURNITURE OPPOSITE FABRIC DISPLAY EASEL

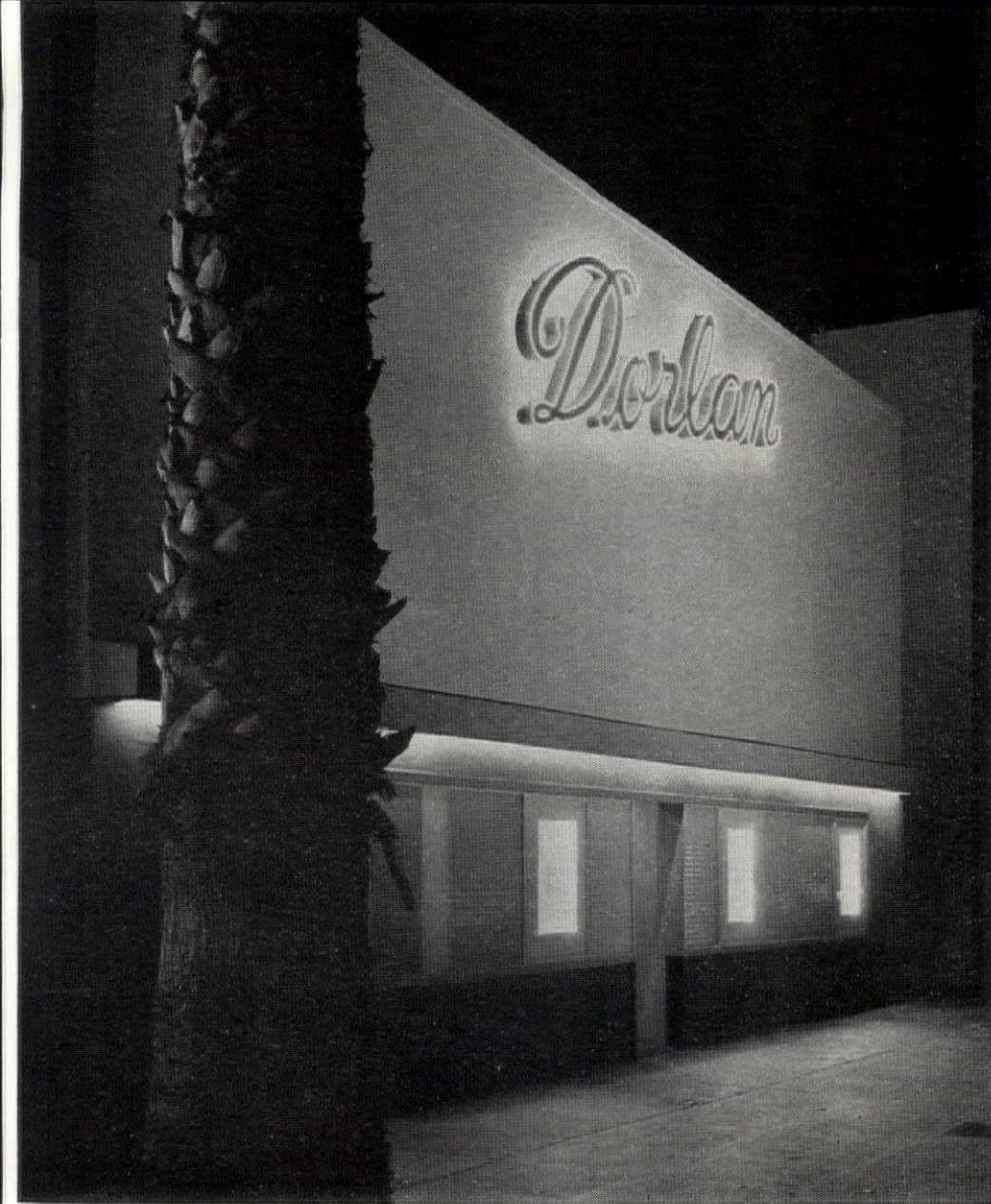
VIEW FROM EXECUTIVE OFFICE SHOWING USE OF FLUTED GLASS PARTITIONS



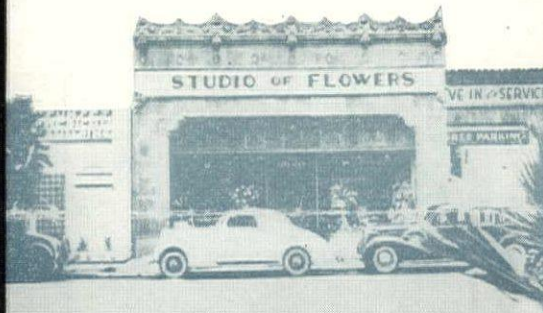
THIRD FLOOR

0 5 10 15 20 25
SCALE

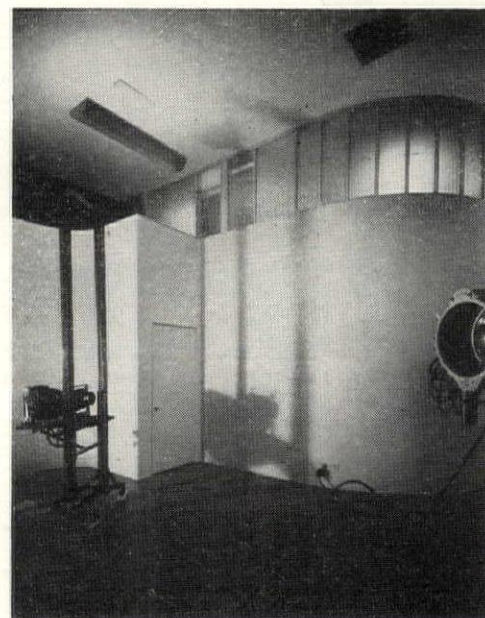
A neutral blue-gray was used throughout the main floor showroom to afford an unobtrusive background for a variety of fabrics. On upper floors, the palette has been extended to complement special groupings of fabrics and provide a change of pace. Since numerous private offices as well as showrooms were necessary, slanted glass screens have been employed to achieve privacy while retaining the effect of openness. Floor to ceiling draperies between the small windows add to the feeling of height and spaciousness. Furniture is specially designed and upholstered in Goodall fabrics.



Photos: Fred K. Dupprich



DOWDY MAYAN EXTERIOR WAS REMODELED INTO A SLEEK, TAILORED FACADE OF CEMENT AND GLASS.

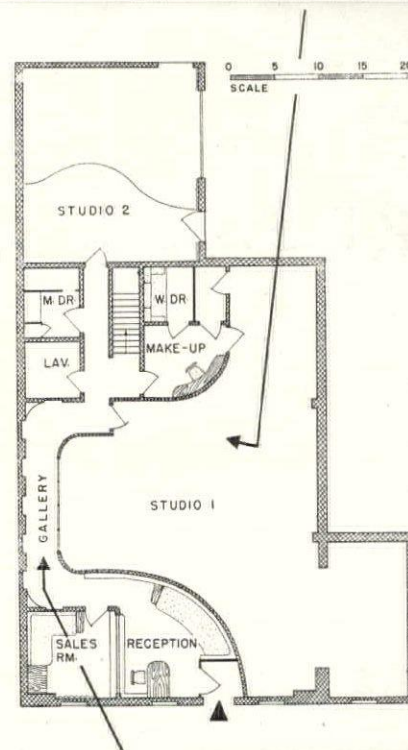


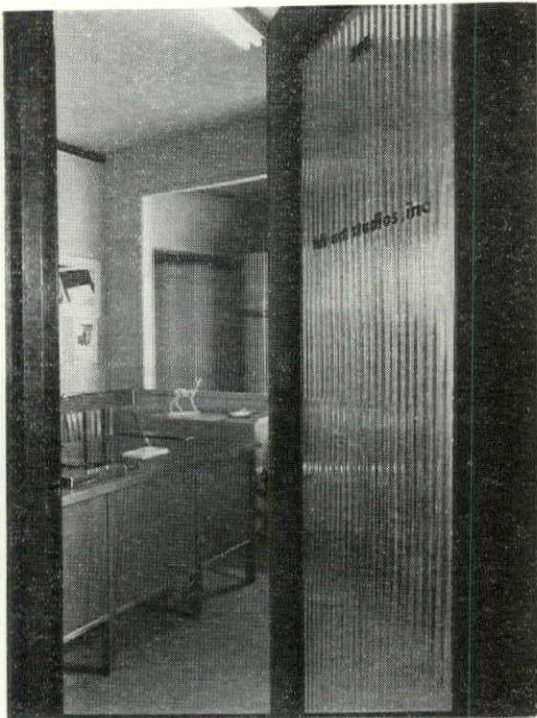
PHOTOGRAPHIC STUDIO fits 35-foot front.

ALYNE WHALEN, Designer

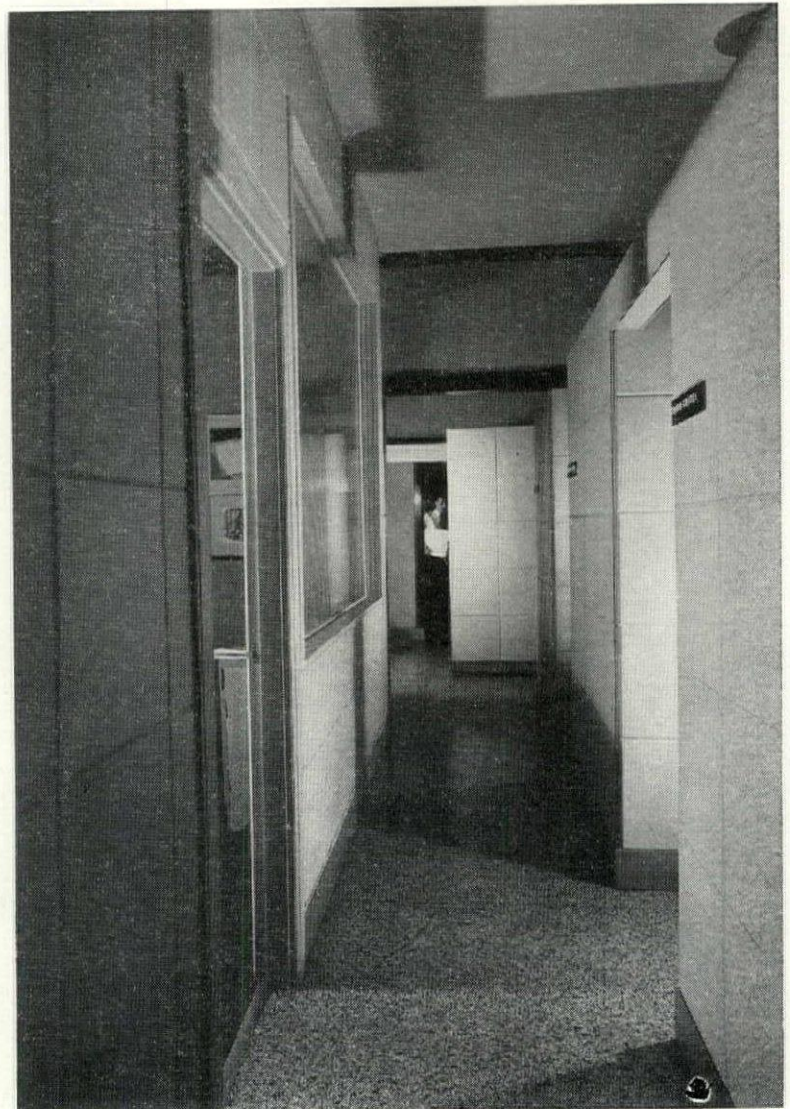
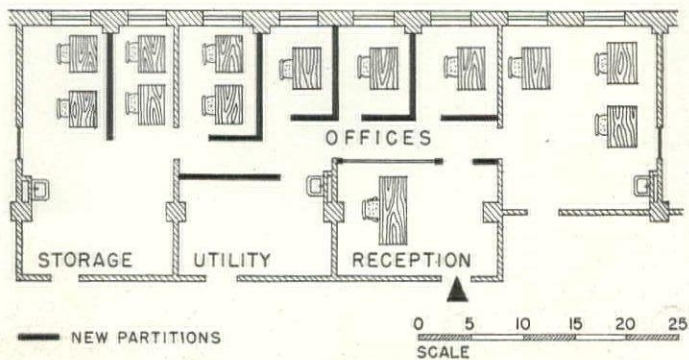
J. O. OLTMANS & SONS, Contractor

The plan for this Hollywood photographic studio was strictly limited by two owner demands: a maximum of shooting space and a completely closed front. Every trick for increasing the appearance of space in tiny reception, sales and gallery areas had to be used. A glass wall between sales and reception room helps the illusion, and a curved wall opposite eliminates the box-like feeling of a rectangular shape. Mounted on this wall is a continuous photo-mural which further increases apparent size. In the long (30 ft.), narrow (42 in.) gallery providing access to the working area, an ingenious illusion of width is achieved by setting vertical wooden strips in front of the wall studs and lighting top and bottom in the recesses thus formed (see cut, lower right). The narrowness was further relieved by chipping out the exterior brick wall to provide a series of recessed picture frames. The ceiling of this gallery was dropped to detract from the "canyon" effect and also to provide a mezzanine above, overlooking the studio proper. Here are the director's office and a hair stylist's room. Curving walls, draperies and a variety of colors in the main studio serve a functional as well as a decorative purposes since they can be used as back-grounds. The large studio is for fashion and action shots, the smaller one for portrait work. Make-up, dressing rooms etc. are convenient to both.





ENTRANCE TO STUDIO RECEPTION ROOM



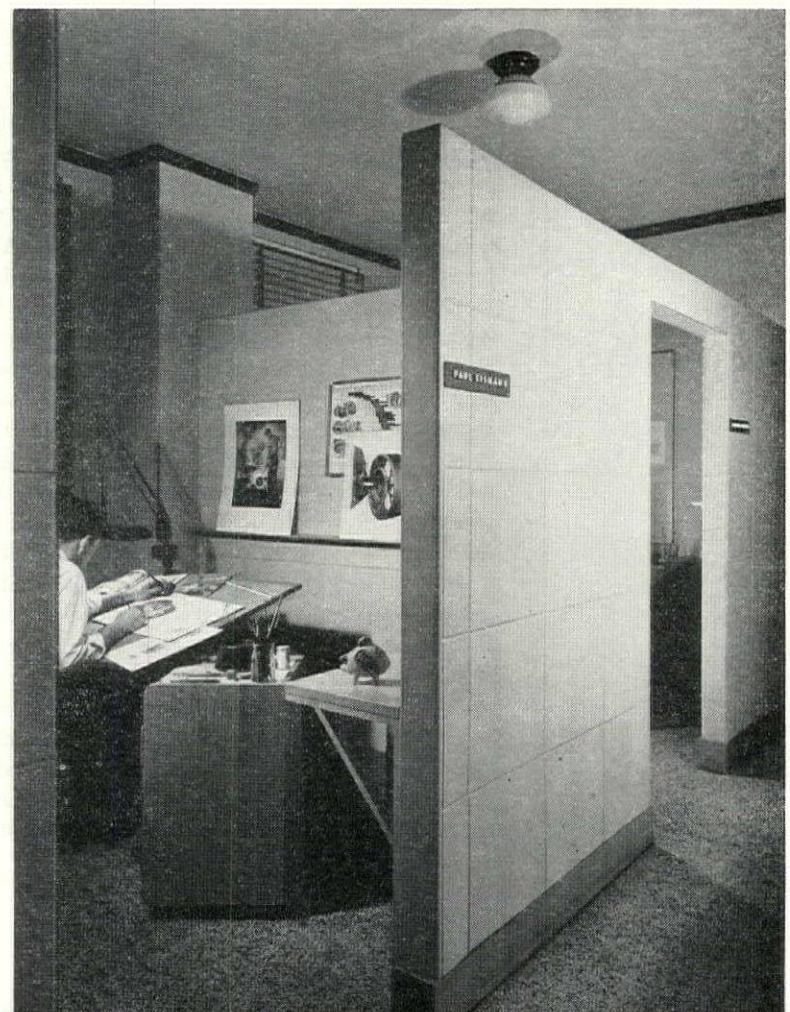
RECEPTION ROOM BORROWS LIGHT THROUGH CORRIDOR WINDOW

ART STUDIO squeezes a maximum of use from a minimum office area

W. H. HIGHMILLER, Designer

The problem of providing efficient work space for a number of persons in a small area has been ably solved in this remodeling project which converts four office rooms into semi-private studios for a staff of twelve artists. Because the original rooms were extremely wide with all windows on one side, the studios were designed as a row of cubicles next to the window area. Inner space is utilized for reception, storage and a general work room, separated from the studios by a double line of partitions forming a central hall. Since the space could be leased for only one year, it would have been a bad investment to spend much money in remodeling. Thus, the standard mahogany paneling and glass partitions used throughout the rest of the building were abandoned in favor of gypsum board and a coat of paint. The cost, including new bleached oak furniture and linen rugs, was under \$800, as against an estimated \$2,000 if standard materials had been employed.

WORKING CUBICLES ACHIEVE PRIVACY WITH SEMI-PARTITIONS



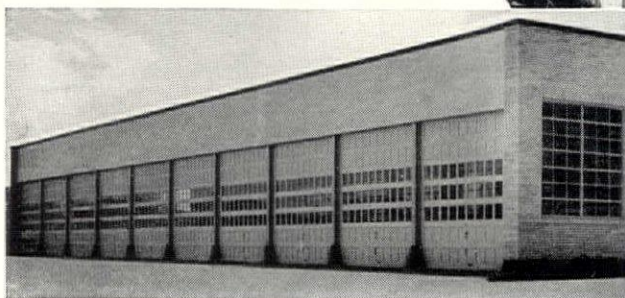
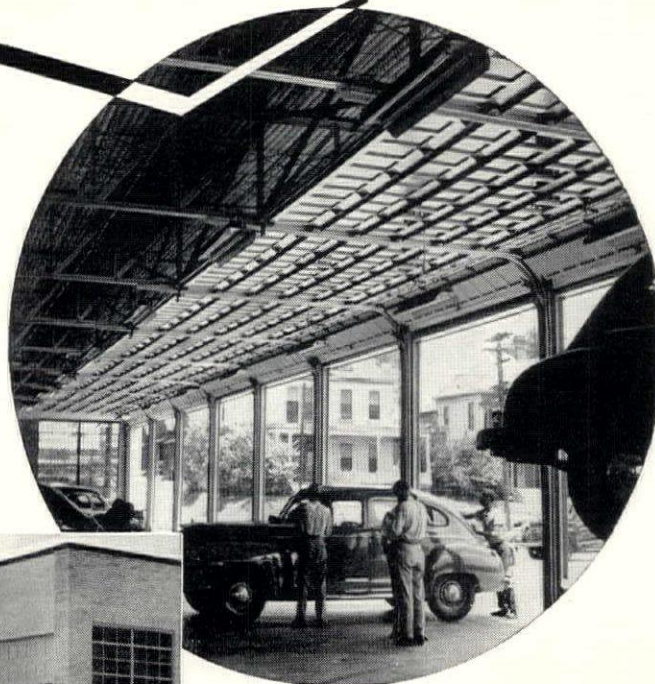
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CIRCULAR WAREHOUSE



Voorhees, Walker, Foley and Smith, New York City, Architects

Firestone LABORATORY

Last word in Laboratory Design uses Alberene Stone

FOR TABLE TOPS, SINKS, AND FUME HOODS

The recently constructed Firestone Laboratory, very last word in laboratory design is equipped with corrosion-resistant #25 grade Alberene Stone table tops and sinks. Sinks are all built with internal coved corners. The fume hood through which passes all noxious gases and corrosive fumes is Regular grade Alberene soapstone enclosed in an enameled steel shell, carrying out the movable wall construction motif of the laboratory which yields maximum flexibility. Hood shell enclosures include sliding sash and the entire hood is

designed for air conditioned laboratories.

We believe it will be to your advantage to consult Alberene the next time you have a laboratory designing or remodeling job on your boards. For more than fifty years, Alberene has been designing and installing Alberene Stone Laboratory equipment in the country's finest laboratories. Take advantage of this experience.

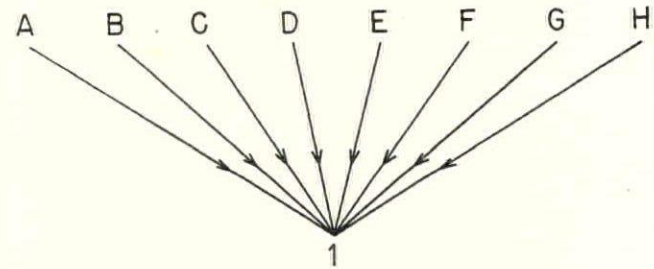
Inquiries will receive immediate executive attention.

ALBERENE STONE

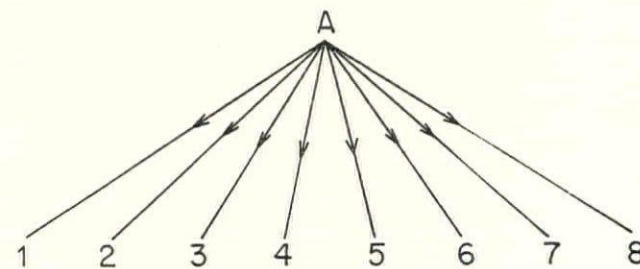
THE NATURAL STONE OF DIVERSIFIED UTILITY

it, space for three rail cars and three trucks was provided at the receiving end of each division.

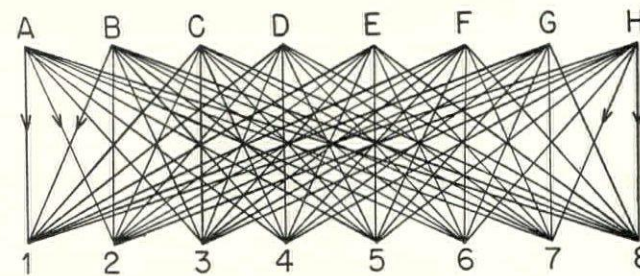
Not so simple was the problem of order filling, assembly and shipping. Most orders are shipped by truck and are classified by type of reshipment (freight or express) and by destination (local or long distance). Since it is economical to load trucks as nearly full as possible, outgoing merchandise must be accumulated at the various truck loading stations on the order assembly floor. Reduced to a highly simplified illustration, the flow of merchandise from the various warehouse divisions or stockpiles (lettered A—H) to a



single truck loading station (No. 1) creates a simple pattern. But it must be remembered that each of these warehouse divisions sends goods to all of the truck loading stations (assumed



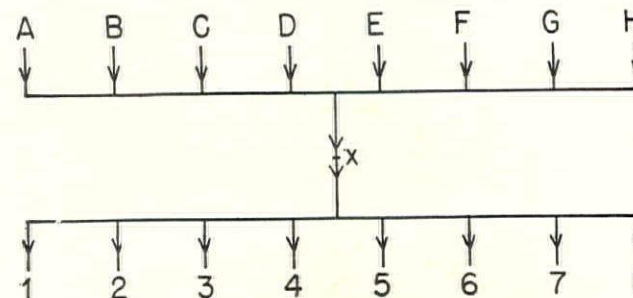
to number only eight in this illustration). When these diagrams are combined and extended, to reflect the fact that an individual item of merchandise from any division may be moved to any truck loading station, the real complexity of the



warehouse operation becomes apparent. Also apparent is the need for developing an orderly method of conveying individual items from stockpiles to trucks.

Applying the principles of centralized flow, the designers reduced the maze illustrated directly above to a relatively simple network connecting all warehouse divisions with all

(Continued on page 132)



WHY PROMINENT BUILDERS USE YOUNGSTOWN KITCHENS

"Positively lowers costs"

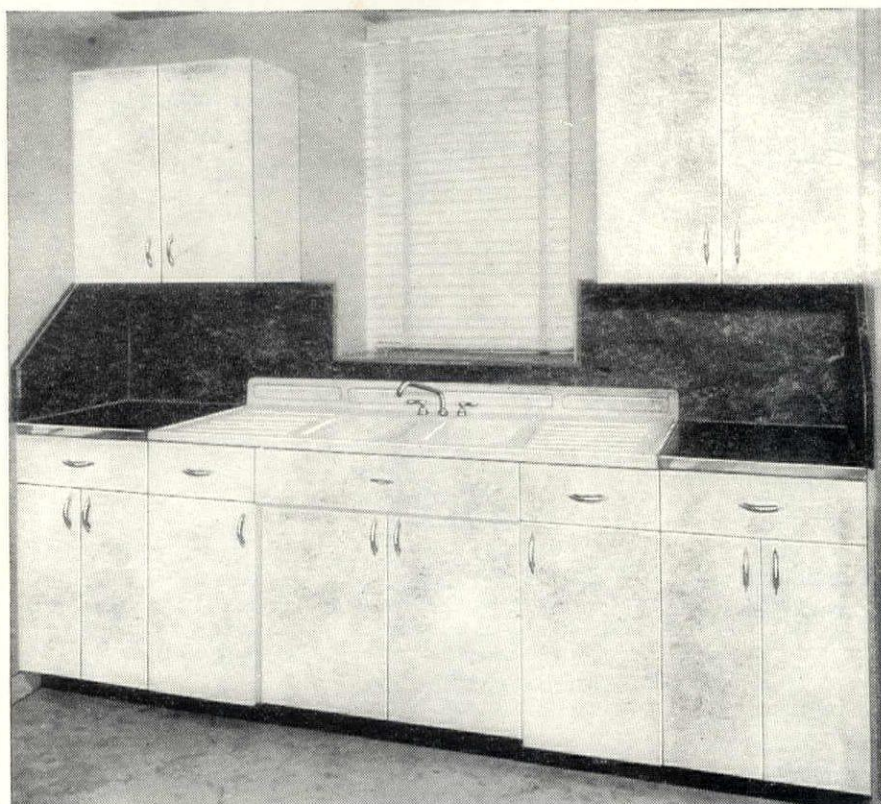
GEO. R. GILLESPIE CO., Nashville, Tenn.



J. B. GILLESPIE, President of the Geo. R. Gillespie Co., Inc., one of Nashville's largest realtors.

• • •

The Gillespie Organization has installed hundreds of Youngstown Kitchens in large developments such as this, as well as in individual homes.



"WE BELIEVE Youngstown Kitchens have contributed substantially to the sale of our homes," writes Mr. Gillespie, "and we are positive that they have lowered labor and construction costs, because they are so easily installed."

"Our experience with Youngstown Kitchens in properties we build and manage proves that your equipment requires practically no upkeep, and makes a very favorable impression on tenants and buyers."

Hundreds of large-scale builders who have used

Youngstown enameled steel kitchens share Mr. Gillespie's enthusiasm. Write for the booklet, "The Builder's Kitchen," that shows how you can use Youngstown Kitchens to advantage, and tells what other builders have done with this attractive and modern equipment.

MULLINS MANUFACTURING CORPORATION
Warren, Ohio

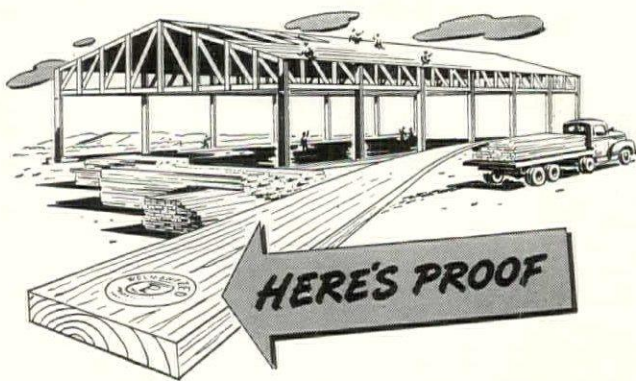
Porcelain Enameled Products • Large Pressed Metal Parts
Design Engineering Service



Youngstown Kitchens

BY MULLINS

Delivering *Protection* to the job



IT'S WOLMANIZED LUMBER*

This roof deck is going to last longer . . . they're using Wolmanized Lumber, the lumber impregnated with Wolman Salts* preservative—highly resistant to decay and termite attack.

It is recommended for use in structures exposed to:

- (1) Moisture in artificially humidified buildings
 - (2) Steam and vapor from industrial processes
 - (3) Condensed water vapor in walls, floors and ceilings of refrigerated buildings
 - (4) Soil moisture and rain water held in joints, etc., of outdoor structures
 - (5) Moisture condensed by concrete or masonry
- When you buy Wolmanized Lumber, you get *pressure-treated* lumber—the only reliable kind.

**AMERICAN LUMBER
&
TREATING COMPANY**

*Registered
trademarks

WOLMANIZING

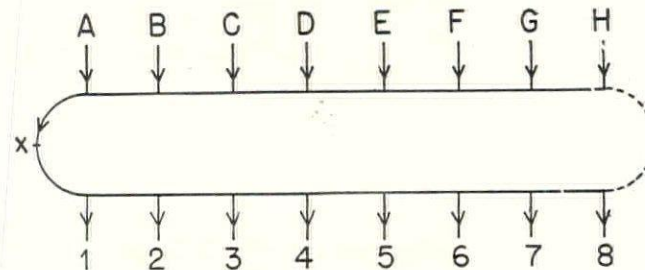
FLAMEPROOFING

CREOSOTING

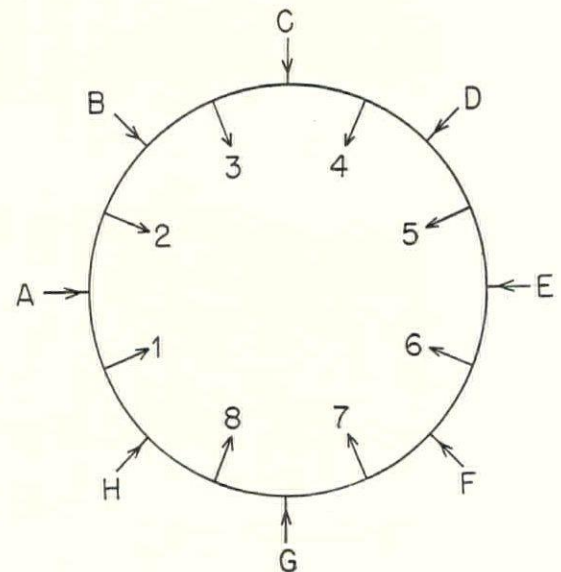
1647 McCORMICK BUILDING, CHICAGO 4, ILLINOIS

CIRCULAR WAREHOUSE

loading stations. Key to this distribution system is a common point (X) through which all merchandise must pass. To eliminate the counter flow in both the collecting and distributing phases of this system, a U-shaped scheme was developed.



oped. Still retaining the bottleneck (X), this system is easily converted into a more efficient loop by the addition of the dotted section. This improvement, in turn, suggested the circular loop with warehouse divisions located outside the circle.



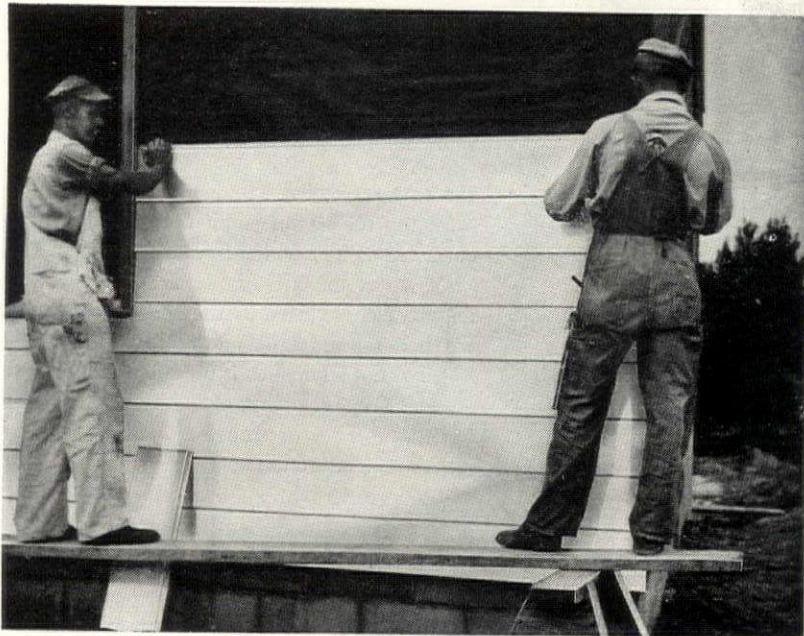
trucking stations inside. Advantages of this system, designed on the basis for Ferguson's "ideal" circular warehouse, are:

- Elimination of bottlenecks—point X has been eliminated
- Reduction of travel distance to a minimum—collection and distribution are done at the same time on the same circuit
- Reverse flow of empty carriers to warehouse divisions is accomplished on the same circuit. In the other systems, this return of empty carriers would require a separate route or two-way traffic on the collection-distribution run.

TRANSPORTATION SYSTEMS

After studying the layout of interior transportation, Ferguson engineers analyzed all types of equipment which might be used to move merchandise along the indicated routes. Major consideration was the necessity to move 45,000 cu. ft. of heavy merchandise in and out of the warehouse during an average eight-hour day—the equivalent of 96 cu. ft. per minute under normal conditions and 144 cu. ft. per minute during peak days (1½ times normal). Assuming that the transportation system would probably never be operated at more than 50 per cent of capacity and that bulk of the operation would be concentrated in four hours each day, it was concluded that the equipment must be capable of handling twice the indicated rate of flow—or 288 cu. ft. per minute for the 500,000 sq. ft. warehouse. (Continued on page 134)

HERE TO STAY!



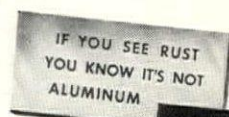
Reynolds Lifetime Aluminum Clapboard Siding going up on a typical veteran's home. Note the precision of line—with no leveling off. Note the butt joint, on the fourth clapboard from the top.

REYNOLDS *Lifetime* ALUMINUM BUILDING PRODUCTS

THERE'S *permanency* in Reynolds aluminum building products... permanence in public acceptance as well as in the material itself. Immediate availability, in this housing shortage, is only one advantage. The public knows what it means to have absolutely fire-proof, rust-proof roofing and siding—impervious to rot, vermin and termites—lightweight and structurally strong. Farmers appreciate the fact that aluminum needs no protective coating—eliminating maintenance cost. Homeowners who prefer their houses painted are finding that aluminum holds paint longer—looks better, with less upkeep. And all alike are learning the great advantage of aluminum's *radiant heat insulation*—the fact that an aluminum surface reflects up to 95% of all radiant heat, reflects it outward in summer, inward in winter.

Reynolds Aluminum is here to stay in the building products field. The car-loads now being shipped, the houses now going up, are but the forerunners of a modern trend as important for dealers as for architects and contractors. Ask your regular supply source now about Reynolds Lifetime Aluminum Building Products. Distribution is through usual building trade channels.

REYNOLDS METALS COMPANY
INCORPORATED
Building Products Division Louisville 1, Ky.



FOR ALL TYPES OF HOUSES... FOR FARM, COMMERCIAL AND INDUSTRIAL BUILDINGS



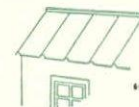
REYNOLDS LIFETIME ALUMINUM CLAPBOARD SIDING

Original development of Reynolds engineering! Each clapboard sets into flange of one beneath. Nailing completely covered! Sheet thickness .032", 8 and 12-foot lengths, exposed clapboard surface 8". Special Starter Strip, Butt Joints and Corner Caps.



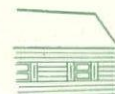
REYNOLDS LIFETIME ALUMINUM SHINGLES

Sheet thickness .027". Watertight interlocking flanges. Nails completely covered. Coverage, 8" x 14 1/2". Shadow line, 1/4". Accessories: Eave Starter, Ridge Cap, Gable End Cap, Hip Cap and Valley.



REYNOLDS LIFETIME ALUMINUM "SNAP-SEAL" ROOFING

A new Reynolds-engineered product with watertight interlock between sheets. All nails covered. Accessories: Eave Starter, End Starter, End Wall Flashing, Gambrel Joint, Ridge Roll, Formed Valley. 6, 8, 10 and 12-foot lengths, 24" coverage.



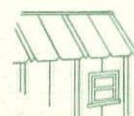
REYNOLDS LIFETIME ALUMINUM WEATHERBOARD SIDING

.027" thick sheet, crimped in simulation of 4" clapboard—which effect can be enhanced by painting. 8, 10 and 12-foot lengths. 24" coverage. Easily erected in horizontal strips, 10 feet weighing only 11 pounds.



REYNOLDS LIFETIME ALUMINUM CORRUGATED ROOFING AND SIDING

.027" thick. Either 2 1/2" x 1/2" or 1 1/4" x 1/4" corrugations. 6, 8, 10 and 12-foot lengths, 24" coverage. Accessories: Ridge Roll, Formed Valley, Roll Flashing.



REYNOLDS LIFETIME ALUMINUM 5-V CRIMP ROOFING AND SIDING

.027" thick, superior in appearance and efficiency. 6, 8, 10 and 12-foot lengths, 24" coverage. Accessories: Ridge Roll, Formed Valley, Roll Flashing.

ALSO Reynolds Lifetime Aluminum
STUDS, TRUSSES, WINDOW FRAMES,
GARAGE DOORS AND A COMPLETE
12' x 20' UTILITY BUILDING

FIAT Zephyr SHOWER DOORS

NOW AVAILABLE

The Fiat Zephyr is a high quality shower door designed for service in finest installations. Yet the moderate cost of the Zephyr permits it to be used extensively on all types of shower cabinets and built up showers.

Practical features in design and construction developed through twenty-five years' experience in building shower equipment are incorporated in the Zephyr door. For example—the water deflector with gutter prevents water dripping on the floor when door is open after taking shower, full length piano hinge, bullet type catches that eliminate possibility of door binding, and offset handles are features found only in the best type of shower door construction.

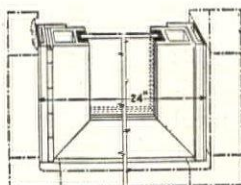
Economical manufacturing methods and volume production enable Fiat to offer to the trade a shower door of high quality at a moderate price.

CONSTRUCTION FEATURES

- Frame:** One-piece heavy aluminum alloy.
- Jambs:** Heavy aluminum alloy.
- Hinge:** Specially constructed, continuous aluminum piano hinge.
- Lock:** Two bullet catches, prevent door binding.
- Glass:** Clear glass, set into a heavy rubber "U" channel.
- Handles:** Special offset design on both sides of door.
- Water Deflector:** Made of heavy aluminum alloy with gutter to prevent water from dripping on the floor when the door is opened after taking shower.
- Grille Vent:** Horizontal aluminum bar.
- Finish:** Satin "Alumilite."

STANDARD SIZE

- The standard size (24" x 72") door is built to fit an exact opening 24 inches wide by 72 inches high. All other opening sizes require a specially built door. When ordering a door, state the size of the opening, model, hinging (either right or left when facing), and whether for tile, structural glass, marble or FIAT shower cabinet.



CONSTRUCTION DETAILS

The water deflector with gutter prevents water dripping on the floor when door is opened.



FIAT METAL MANUFACTURING COMPANY

1205 Rescoe St., Chicago 13, Illinois
21-45 Borden Ave., Long Island City 1, New York
32 S. Gabriel Blvd., Pasadena 8, California

CIRCULAR WAREHOUSE

Belts and rollers. Although they operate at relatively high speeds (200-600 ft. per minute), belt conveyors have such limited capacities that they were considered only as collecting devices within the individual warehouse divisions. Moreover, belt conveyors, like live roller conveyors, are not adapted to the handling of large irregular-shaped objects, and their installation creates permanent obstruction to pedestrian and vehicular traffic within the storage areas.

The case for dollies. There are several transportation systems involving the use of small four-wheeled trucks or dollies (32 cu. ft. capacity) which have a number of advantages:

- ▶ Such systems are highly flexible because their capacities may be easily varied by the addition or subtraction of dollies, and because the dollies do not operate on a fixed track.
- ▶ Use of dollies makes it possible to extend the transportation system to exact points of loading and unloading, thus reducing the number of transfer points between receipt and shipment to the minimum of four.
- ▶ A mechanical breakdown in one phase of a dolly system does not render the entire system inoperative—the dollies may be moved by standby tractors or manpower.

Three dolly systems are used—usually in conjunction with one another—in Ferguson's six warehouses. To move merchandise from receiving areas to stockpiles, up to eight loaded dollies are hooked to electric tractors. Orders are filled from stockpiles by loading dollies and hooking them to one of the overhead chains which make complete circuits around fire walls separating warehouse divisions. Dollies are then conveyed unattended to edge of the order assembly floor where they are disconnected automatically. Here they are collected and distributed to the truck loading stations by tractors which make continuous circuits around the order assembly floor. In the semicircular and circular schemes, it was possible to introduce a highly efficient moving floor to replace the tractors on the order assembly floor. Eight feet wide and moving at a rate of 48 ft. per minute, this merry-go-round device carries loaded dollies from chain conveyors to truck loading stations and returns empty dollies to warehouse divisions. Dollies are moved on and off by hand.

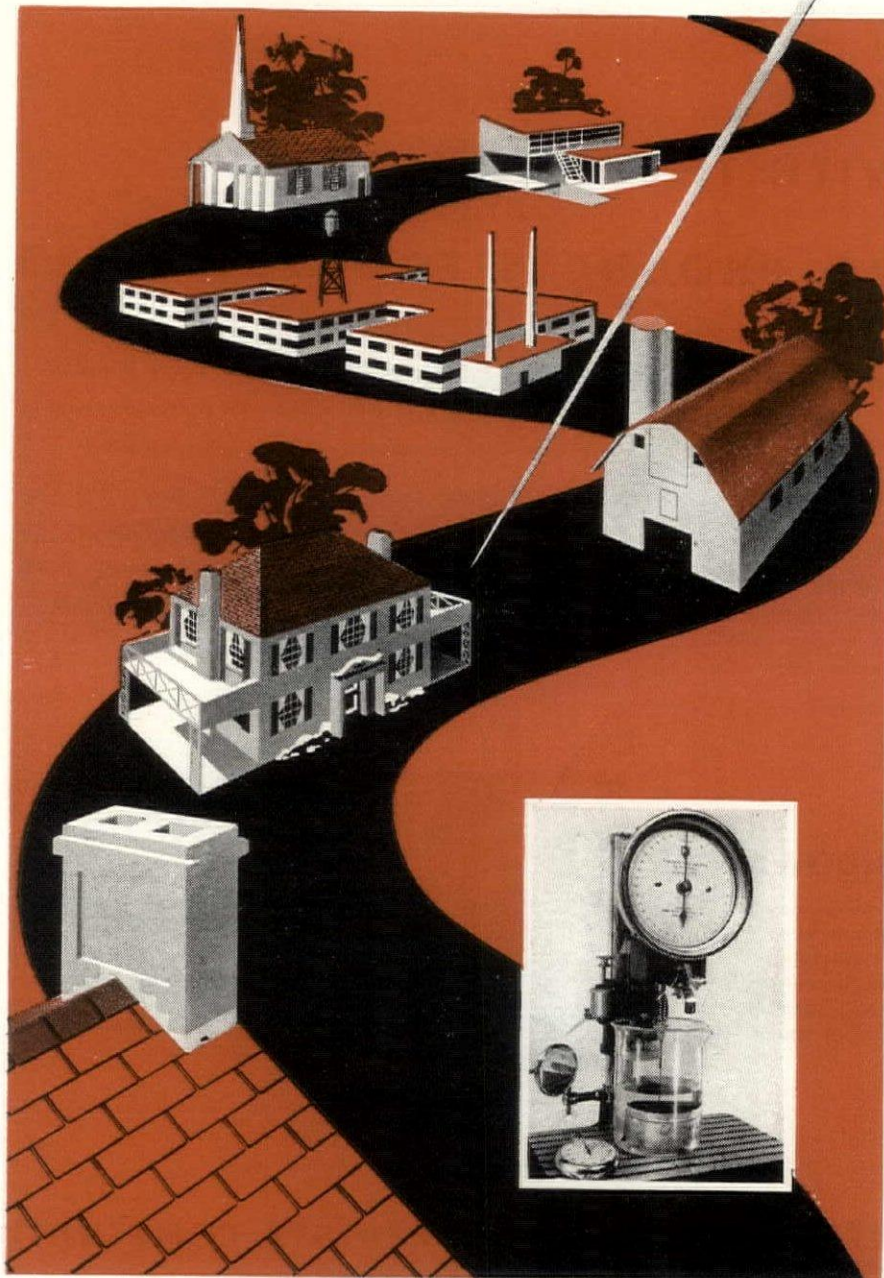
BUILDING DESIGN

Having completed their studies of warehousing techniques, layouts and conveyors, Ferguson Co. put their designers to work on the development of buildings based upon their findings and their client's requirements. Each of the six resultant designs has at least one advantage over the others. Several of the schemes are obviously unsuitable because of equally important disadvantages.

Although no effort has been made to develop the architectural features of the warehouses, Ferguson has suggested structural details common to all six. They would be steel frame buildings with concrete floors on earth fill. Interior and exterior walls would be of fireproof materials whose durable surfaces would require no paint, little maintenance. The roof would be a light fireproof structure of gypsum or formed steel unbroken by monitors or skylights—artificial light and mechanical ventilation would be used throughout. Toilet and locker rooms and other service facilities would be located on mezzanine floors in each warehouse division.

None of these service and administrative facilities are shown in the six schemes. Design effort was concentrated on the layout of the warehouse proper, in the logical belief that, once the "ideal" shape was devised, addition of accessory facilities and architectural detailing would be simple.

**Where centuries of roofing service
pass under the point of a needle...**



A needle tells the story...indicating what type of asphalts will enable Flintkote roofing products to deliver extra years of dependable service.

Soft asphalts slide in hot weather. Hard asphalts crack when the temperature drops. Thus, the softness of the asphalt used in roofing products is a critical factor in the life and service of the roof. And so, at Flintkote factories, every carload of asphalt is carefully tested with the Needle Penetrometer.

First, on arrival, to make sure it meets Flintkote's rigid specifications for raw materials. *Second*, throughout the processing operations, to be certain that the finished product will deliver extra years of service regardless of climate or weather.

The Flintkote "needle" is just one of many pieces of scientific equipment used to determine and control quality—to insure a dependable product for home owner, applicator, and distributor.

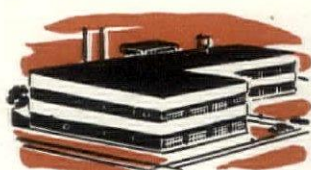
The Flintkote Company, Building Materials Division, 30 Rockefeller Plaza, New York 20, N. Y. Offices in principal cities.

FLINTKOTE

the extra years of service cost no more!



FLINTKOTE QUALITY BUILDING MATERIALS FOR MANY PURPOSES



Flintkote Cold Process Built-up Roofs go on fast, and economically, without fire hazard, when they're applied by brush or spray equipment.



Flintkote Asbestos-Cement Shingles and Siding are ideal for new construction...or for the economical modernization of existing homes.

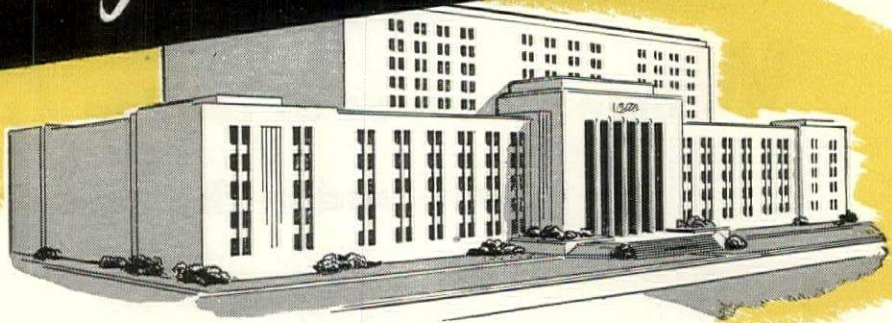


A new \$1,000,000 research laboratory, part of a \$16,000,000 expansion program, will soon bring you even better Flintkote products.



A complete line of durable thermal insulating materials...Asphalt Coated Sheathing, Insulation Lath, Roof Insulation, Insulating Wool.

Planning a Hospital?



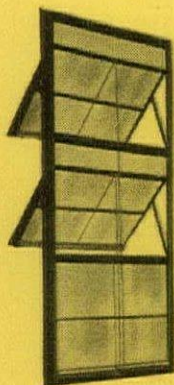
Plan well WITH THESE TRUSCON STEEL BUILDING PRODUCTS FOR HOSPITALS

● Truscon's complete line of building products affords you an opportunity to create safe, beautiful hospitals. When you plan with these time-proven units, you can be sure that your exact requirements will be met—sure, too, of fire-resistance, low installation and maintenance costs.

Check over the items listed on these pages. Every one of them is scientifically designed and factory produced.

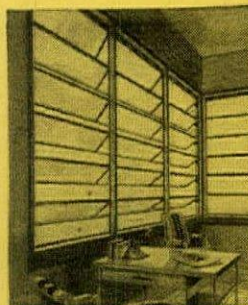
That's why buildings in which they are used have beauty and long life that enhances the reputation of architects and increases customer satisfaction.

Not all of these items are available now. But they will be soon. In the meantime for dependability, for responsibility, design Truscon Steel Building Products into all of the buildings you are now planning.



DONOVAN AWNING TYPE WINDOWS

These windows are basically practical in the correct admission of light and proper ventilation without drafts. Sturdily built of unusually heavy special casement sections, they are positively and easily operated. Assure a high quality product incorporating features not available in any other window design.



"MAXIM-AIR" WINDOWS

This window incorporates all of the desirable features of the Donovan Awning Type Window. Lighter in construction, it is lower in cost. It is suited for use in warm climates, for enclosed porches or solariums where free circulation of air is important in inclement weather as well as sunny days.

DOUBLE-HUNG WINDOWS In Two Types—Series 1380 and Series 46



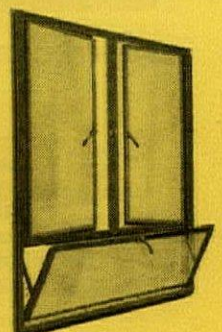
Series 1380 Windows are equipped with positive action motor-spring type balances and completely weatherstripped with spring bronze. Made from electro-galvanized steel these fabricated windows are bonderized and finished with a baked-on prime coat of paint. Available in single units or in integrally built twin, triple and panoramic window units all are available with or without sill ventilators.

Series 46 windows are of the counterweighted design. They are especially adapted for use in office and public buildings or where Underwriter's label of approval is required. Single or twin units may be had in either standard or special sizes and are available with or without sill ventilators. Made from new billet steel, electro-galvanized. Windows are bonderized and finished with a baked-on prime coat of paint.

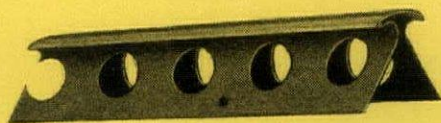


INTERMEDIATE COMBINATION WINDOWS

Incorporates side hinged casements and projected ventilators in one design. Fabricated from specially rolled steel casement sections substantially heavier than the minimum Metal Window Institute standard weights. The wide selection of sizes and designs add to the adaptability of the window to a wide range of architectural use.



CORNER BEADS



Recommended as an exposed corner reinforcement. The round nose is strongly reinforced by a deep groove which holds the plaster flush for a perfect bond. It can be wired, stapled or nailed to any kind of wall construction without the use of clips.

METAL CASINGS



Meet a definite demand for an artistic, sanitary method of trimming around doors and windows. Afford many architectural effects. Metal casings are fire-resistant, vermin proof, easy to maintain and do not shrink or warp.

FERROBORD STEELDECK ROOFS



Truscon Ferrobord provides a fire-resistant, economical roof deck for all new construction or replacements. Covered with insulation and waterproofing, it weighs approximately 5 pounds per square foot.

FLOODLIGHT TOWERS

Made in a wide selection of heights, they offer a firm, long-lasting floodlight tower for auxiliary lighting in parking areas, etc.

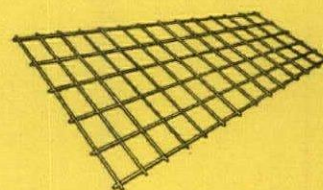


CONCRETE REINFORCING BARS



A special rolled section of high grade steel, with a series of longitudinal and diagonal ribs, so designed to provide the maximum bond with the enclosing concrete.

WELDED STEEL FABRIC



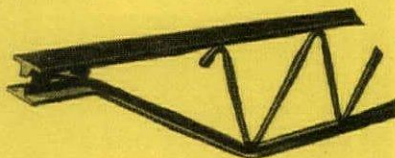
Truscon Welded Steel Fabric is made in various sizes for concrete reinforcing in all types of structures. Each joint is electrically welded for permanence.

CURB BARS



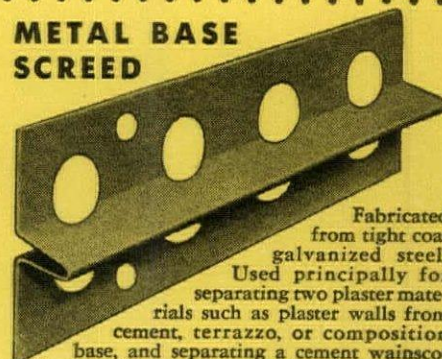
Protect exposed corners of concrete curbs, walls, steps, etc. Designed to give positive anchorage into the concrete. Plate surrounds and protects the corner without splitting concrete into two portions.

OPEN TRUSS STEEL JOISTS



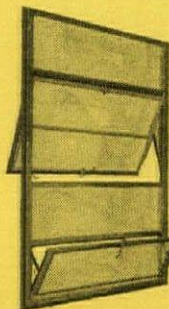
Truscon developed the open truss steel joists to meet the demand for economical, light weight, fire-resistant floors in hospitals, and other light-occupancy buildings. They are easy to install. Completely shop fabricated, they reach the job ready for placing.

METAL BASE SCREED



Fabricated from tight coat galvanized steel. Used principally for separating two plaster materials such as plaster walls from cement, terrazzo, or composition base, and separating a cement wainscot from ordinary plaster. Another function is to give a permanent straight edge to which both trades work.

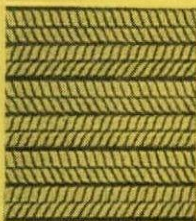
ARCHITECTURAL PROJECTED WINDOWS



Attractive in appearance and convenient to operate. Provide maximum daylight, ventilation and freedom from drafts. Heavy one piece case-ment type sections in ventilator assures rigidity. Hardware is solid bronze. Screens and underscreen operating hardware are available for all ventilators.

METAL LATH

There is a Truscon Metal Lath for every plastering requirement. Flat laths for ceilings and sidewalls; rib laths to reinforce concrete floors or plaster ceilings; expanded laths for stucco reinforcement; Corner Beads and Cornerite, to protect outside and inside corners.



HOLLOW PARTITION STUDS

Truscon hollow partition studs assure permanence, rigidity and economy. They are fire-resistant, provide excellent heat insulation, and sound resistance, are rodent and termite proof. They will not swell or warp and will resist impact, vibration or plaster cracking.

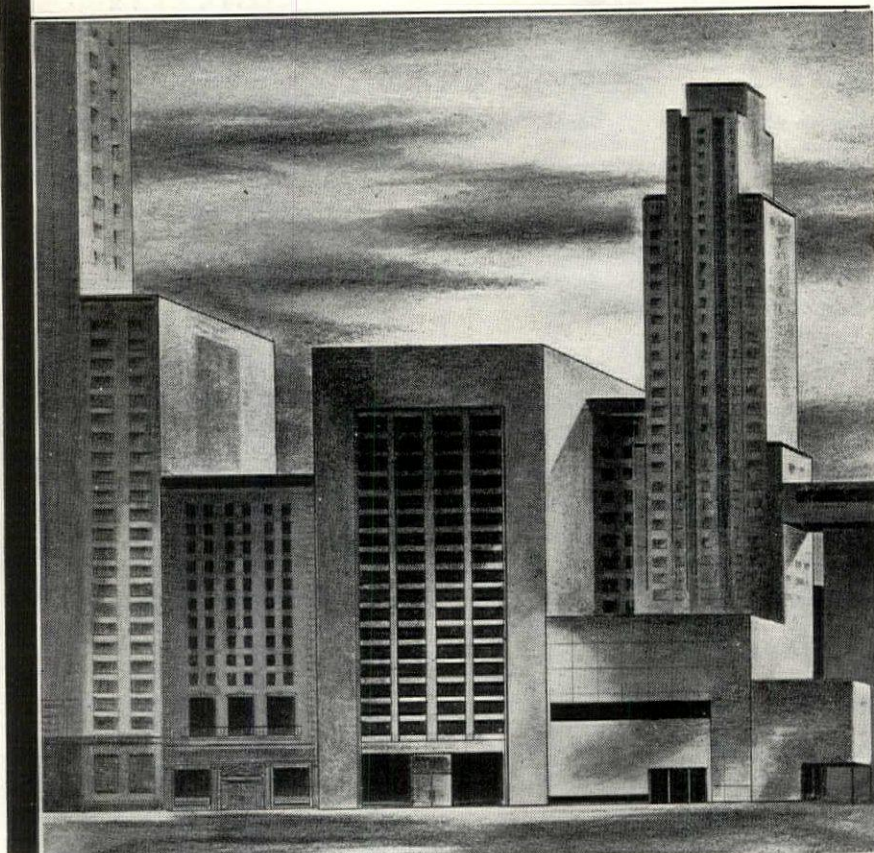


TRUSCON STEEL COMPANY

Reg. U. S. Pat. Off.
YOUNGSTOWN 1, OHIO • Subsidiary of Republic Steel Corporation

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

Tomorrow's Air Conditioning for Today's Buildings



- New or old, any multiple-room building can now have the ideal comfort of Carrier's revolutionary new Conduit Weathermaster air conditioning. It's a scientific year-round system . . . space saving, time saving and money saving.

Carrier Weathermaster is entirely new in principle and design. It's the first air-conditioning system to provide effective control of weather in

individual rooms. It's the first to supply outside air continuously without the need of recirculation. And it's the first to use space-saving conduit instead of bulky ducts.

This dramatic new air conditioning can be installed in existing buildings without costly cutting, patching and furring of corridors and ceilings. In new buildings, it's so compact you can actually plan extra floors without

increasing the over-all height an inch.

The Carrier Conduit Weathermaster air-conditioning system is produced by the organization that created air conditioning. Carrier engineers will be glad to supply any help you need to plan buildings with the air conditioning of tomorrow. They've worked with architects and consulting engineers for over 40 years. Carrier Corporation, Syracuse, New York.



{ AIR CONDITIONING
REFRIGERATION
INDUSTRIAL HEATING

MORE WOMEN COOK ON
Magic Chef
THAN ON ANY OTHER RANGE

★
2 to 1 PREFERENCE
FOR
Magic Chef

**Your Clients Can Cook with
 Gas Wherever They Build**

● If they live beyond the gas mains, they still can enjoy Magic Chef cooking. Investigate "Pyrofax" Gas in eastern or central states; other "LP" (bottled or tank) gases elsewhere. Send for our Kitchen Planning Data—AIA File 35-C-12.

★
**TO ARCHITECTS
 AND BUILDERS
 THIS MEANS...**

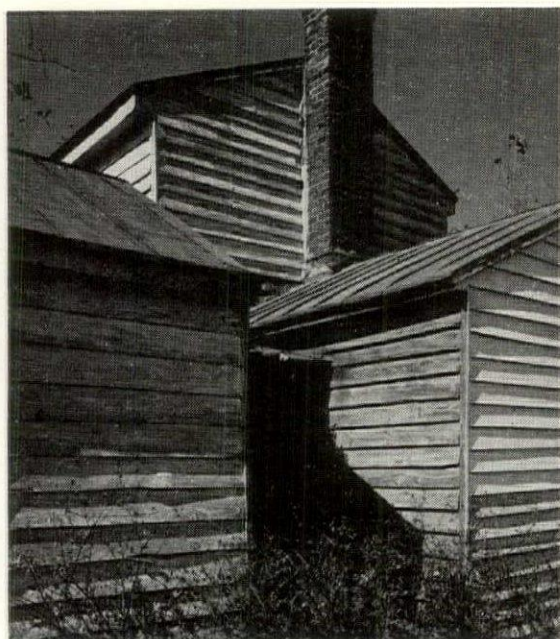
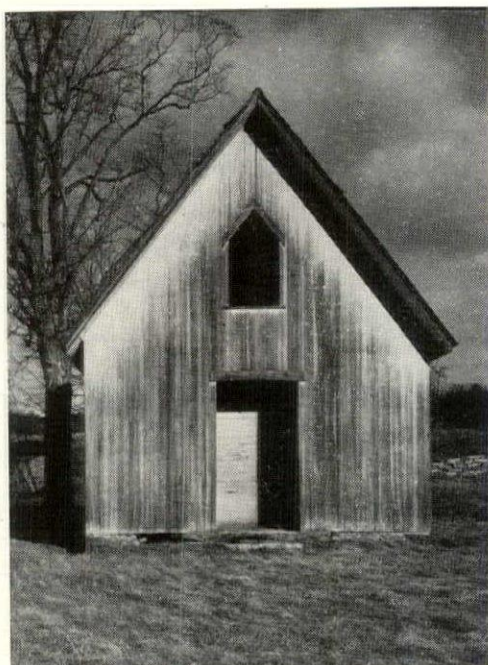
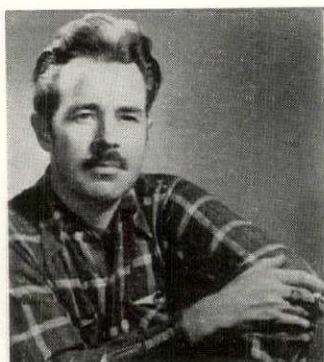
Magic Chef will add prestige to any kitchen you plan because it is the Range that most consumers know and use.



YOU SPECIFY THE BEST WHEN YOU SAY *Magic Chef*

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REVIEWS



BOOKS

THE INHABITANTS. Photographs and text by Wright Morris. 105 pp. (unnumbered). Illustrated. 9 1/4 in. x 11 1/4 in. \$3.75.

This book has a paradoxical title, for no people are pictured. It is a photographic record of some of America's buildings, but not of their living inhabitants. Beautiful pictures present the empty, stark skeletons and artifacts of folk architecture throughout the land. The photographs (see cuts) convey an excellent documentation of bone-bare buildings left by simple people who have moved on, and the impression is one of classical austerity. Most historical picture-books present the rich flowering of the colonial "style;" but here there is a much-needed extraction and clarification of a trend other than the lush and elaborate "styles," sprawled so profusely across the land.

The text, written by the photographer, is a somewhat mystical report of the ghostly voices he senses lingering in these abandoned buildings. "In all my life," he commences in the caption opposite the first photograph, "I've never been in anything so crowded, so full of *something*, as the rooms of a vacant house . . . An Inhabitant is what you can't take away from a house. You can take away everything else—in fact, the more you take away, the better you can see what this thing is." These stenographic records of hypothetical ghost-talk continue from page to page; however, the text is not necessarily identified with the adjacent photograph. Evidently, documentary films have had an influence in the use of this running commentary of folk-talk to be read as one turns the pages from photograph to photograph. And the publishers believe (as expressed on the bookjacket) that this book stands "as preface to a new technique, the fusing of camera and word, rather than the previous attempts to make one form illustrate another."

Integration of text and pictures is an increasingly important problem in these days of quick visualization—and The Forum itself has experimented in this complex graphic art form. However, to our way of thinking, the success of picture story interrelation in this book may be a matter of individual taste. It is true that picture words follow the same theme. But whether the two media are not parallel rather than integrated—one running in one track and one in another—is a matter of question.

Be that as it may, architects—who depend strongly on visualization—will gain understanding from this interesting book. E.B.

CITY & REGIONAL PLANNING PAPERS by Alfred Bettman. Edited by Arthur C. Comey. Harvard University Press, Cambridge, Mass. 294 pp. 7 1/4 in. x 10 in. \$4.50.

This collection of papers by the late Alfred Bettman, covering a period of almost thirty years, is a dry yet forceful reminder of work necessary to consolidate the position of planning, both legislatively and juridically. Himself a lawyer, Mr. Bettman entered the field almost accidentally. As City Solicitor of Cincinnati during a reform administration, he first became aware of the need for comprehensive city planning to reduce the social and economic waste of planless urban growth. He participated as a "friend of the court" in several famous cases which served to establish the constitutionality of municipal zoning regulations. He took an active part in numerous campaigns for state and

(Continued on page 144)

SANTOPHEN 20*

long-lasting protection

against insect attack and decay

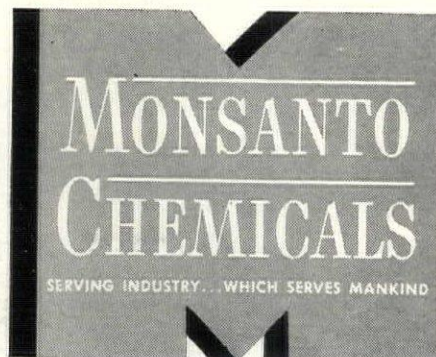
Santophen 20 — Monsanto's pentachlorophenol, technical—possesses outstanding toxicity to wood-rotting fungi, termites, and wood-boring insects. It is stable to light, summer and winter temperatures, soil acids and alkalies, and because of its relative insolubility in water is not easily removed from wood by leaching. These qualities of Santophen 20 assure long-lasting protection to wood that is properly treated with correct formulations of this preservative.

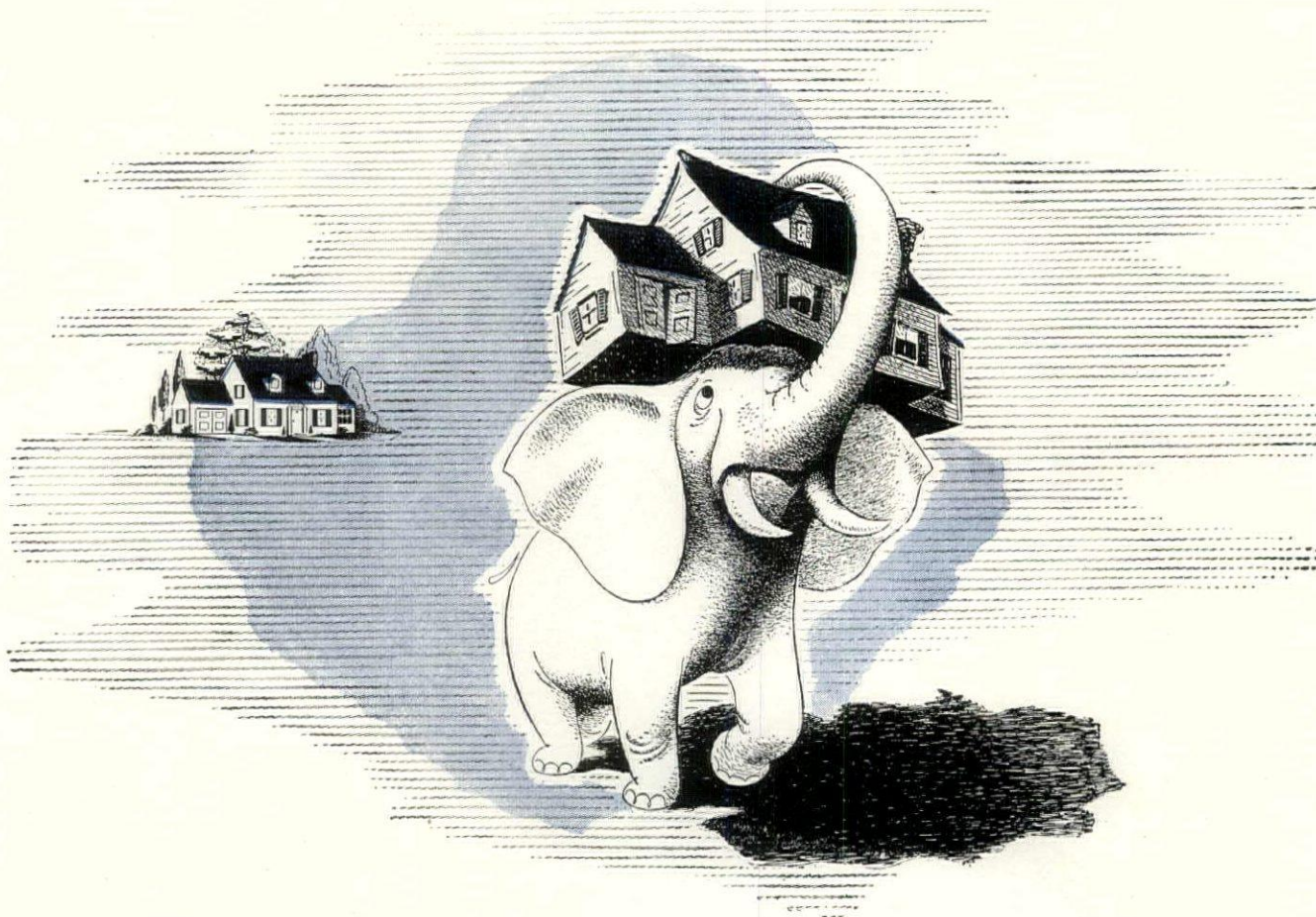
Whenever you use wood for building, guard against the cost of avoidable repairs and replacements—specify Santophen 20 for all types of wood preservation...Further information will be supplied by MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Missouri.

When correctly formulated and applied, Santophen 20 is recommended wherever wood needs protection—lumber, heavy timbers, finished mill work, plywood, cellulose wallboard and

cellulose insulation—in industrial buildings, railway rolling stock and right-of-way, highway and public utility products.

*Reg. U. S. Pat. Off.





white colonial, 1946

white elephant, 1956

don't let today's dream home become tomorrow's disappointment . . .

because of inadequate wiring

Right now, your job as an architect or builder bears an important new responsibility. With costs of new homes limited, it's up to you to keep a "skimpy" electrical system from limiting their livability and future value. At the same time, you'll be protecting your own income and future reputation.

Today, a small, unpretentious house requires more thorough electrical planning than any house of the same type ever required before. It will be bought and occupied by people who are counting on electrical conveniences to make up what it lacks in space and elaborate architecture. They'll want plenty of outlets, wired to handle everything from toasters to television. They'll want lighting to make small rooms look spacious.

By working with local electrical contractors now, you can verify the fact which General Electric has already emphasized: that adequate wiring adds more value per dollar to a home than any alternative use of the same few extra dollars.

To aid you, G.E. has prepared hard-hitting booklets for homebuilders. You can use them to stave off electrical "skimping" . . . to sell the combination of better wiring materials and a better wiring job. Just write for *Adequate Wiring Help* to Section AW15-1126, Appliance and Merchandise Department, General Electric Company, Bridgeport 2, Connecticut.

GENERAL  ELECTRIC



**"No Maintenance Required
with an
ADLAKE ALUMINUM WINDOW!"**

THAT'S RIGHT—other than ordinary washing and cleaning, there's *no maintenance required* with an Adlake Aluminum Window!

Because Adlake is built to last—*and last!* An exclusive combination of nonmetallic weather stripping and serrated guides gives finger-tip control, eliminates excessive air

infiltration, allows no warping or sticking, cuts maintenance problems to the bone! What's more, Adlake is beautifully designed for lasting architectural appeal.

Before specifying or detailing *any* window, why not get full information about Adlake Windows? We believe you'll find it well worth while.

THE ADAMS & WESTLAKE COMPANY

Furnishers of Windows to the Transportation Industry for Over 30 Years

ESTABLISHED 1857

ELKHART, INDIANA

NEW YORK • CHICAGO

IT'S AN ILL WIND THAT JUST BLOWS

In an automatic coal stoker a wind that just blows is, indeed, an ill wind. Both you and your tenants or buyers know that the air supply of the stoker must be properly *controlled* in order to get fullest heat out of the coal you buy.

Whiting engineers, with 51 years of combustion research behind them have developed an air supply system that delivers tops in burning efficiency. From dynamically balanced fan to pressure chamber to pre-heating chamber to the exclusive one-piece burner head and into the fire, the air supply of the Whiting is under constant, precise *control*. But that's just one of many special features that give you greater **FIRE-POWER** with a Whiting stoker.

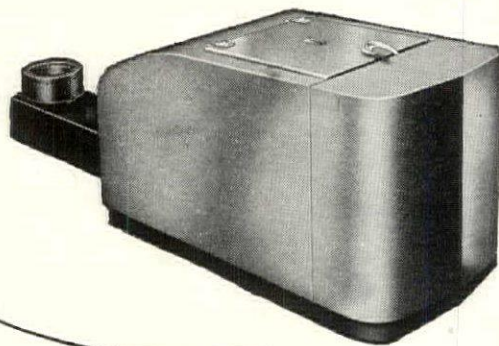
Our interesting new booklet, "How to Choose a Stoker," explains stoker design and operation in easy-to-read fashion—and shows how correct stoker engineering can help you get maximum returns from your stoker investment. Write for your copy of "How to Choose a Stoker" today. It's free.

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A Division of

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Suite 2501, 11 So. LaSalle St., Chicago 3, Ill.



WHITING

COMPETENT REPRESENTATION
IS NEAR YOU

Stokers

national planning. And he remained an active member of the American Institute of Planners until his death.

These collected papers, covering many years of Bettman's activity, are of mainly historical interest today. They often deal with dead issues and are not always easy reading. Yet they are admirable for the consistency of their logic which—despite its legal cost—is often surprisingly humane. All in all, these papers are a valuable addition to the City Planning Studies of the Harvard Press. J.M.F.

PUBLIC HOUSING DESIGN U. S. Government Printing Office. 283 pp. illus. 8 in. x 10½ in. \$1.25.

A review of experience in low-rent housing issued jointly by NHA and FPHA, this book is a practical and illuminating guide for anyone connected with either public housing or private community development. It presents, for the first time, the wealth of information garnered from actual experience with nearly 400 low-rent projects built during the last decade. These projects have been occupied for a sufficient length of time to provide an accurate estimate of their operating efficiency, economy and livability. Most important, the book has not been issued as a nostalgic pat on the back for public housing, but as an honest discussion of the lessons learned through mistakes as well as successes. As such, it should help future housers to avoid pitfalls.

The book deals exhaustively with such important aspects of housing as site selection, site planning, project layout and density, the dwelling plan, community and service facilities, site engineering, structural design, utility selection, mechanical and electrical design, lawns and planting. Unlike the *Minimum Physical Standards and Criteria for Planning and Design of FPHA-Aided Public Housing Projects*, published in 1945, it does not deal with legislative requirements, nor does it include data of the type found in standard housing textbooks. Instead, it concentrates on the technical aspects of project design with emphasis on cost-reduction—an approach which hardly needs recommendation in these days of spiraling prices. M.M.

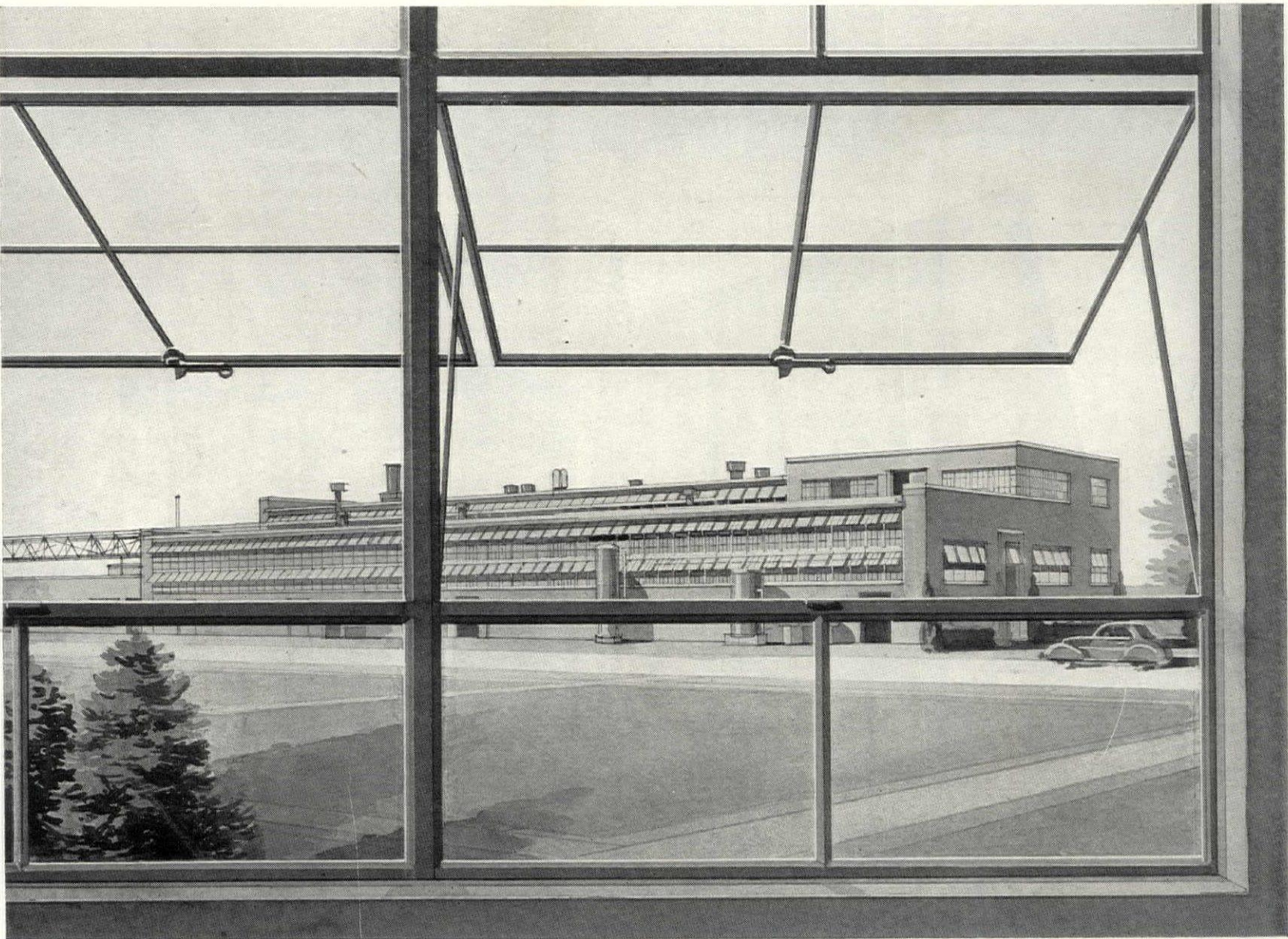
ARCHITECTURAL MODELS by Robert Forman. The Studio: London & New York. 64 pp. Illustrated. 6¾ in. x 5 in. \$1.

This latest in a series of "make-it-yourself" manuals should appeal particularly to the growing number of laymen who have become interested in planning their own houses. Although rather elementary for architectural students, it covers with surprising thoroughness (considering its small size) the basic materials, tools and working methods useful in model construction. Valuable pointers are given on such related problems as shipping, storing and photographing the finished product. Text and diagrams are clear without being over-technical. S.K.

EXHIBITS

"France Comes Back" is an exhibition currently on view at the American Museum of Natural History in New York City, soon to be seen in other cities throughout the U. S. Organized and directed by Jean Carlu and prepared under the auspices of the Provisional Government of the French Republic, it is presented mostly in panel form for shipping. There are a few supplementary models and some interesting publications of the French Resistance. Step by step, the exhibit consists of a section devoted to an historical résumé of the democratic background of France; an area given to the

(Continued on page 148)



Recent Lupton Metal Window installation at the research and development laboratories of the Socony Vacuum Oil Company at Paulsboro, N. J. Architect: Frederick G. Frost, N. Y. Contractor: Skinner, Cook and Babcock, N. Y.

Daylighting requirements vary widely from one factory-type building to the next—refinery, manufacturing plant, warehouse or power plant. That is why the Lupton experience in industrial window applications is so important. There are three basic types of Lupton Windows for industrial buildings—continuous windows, pivoted windows and projected windows—each offering positive assurance of improved working conditions and increased working efficiency through abundant daylighting and controlled ventilation. Write for the 1946 Catalog or see our Catalog in Sweet's.

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LUPTON

METAL WINDOWS

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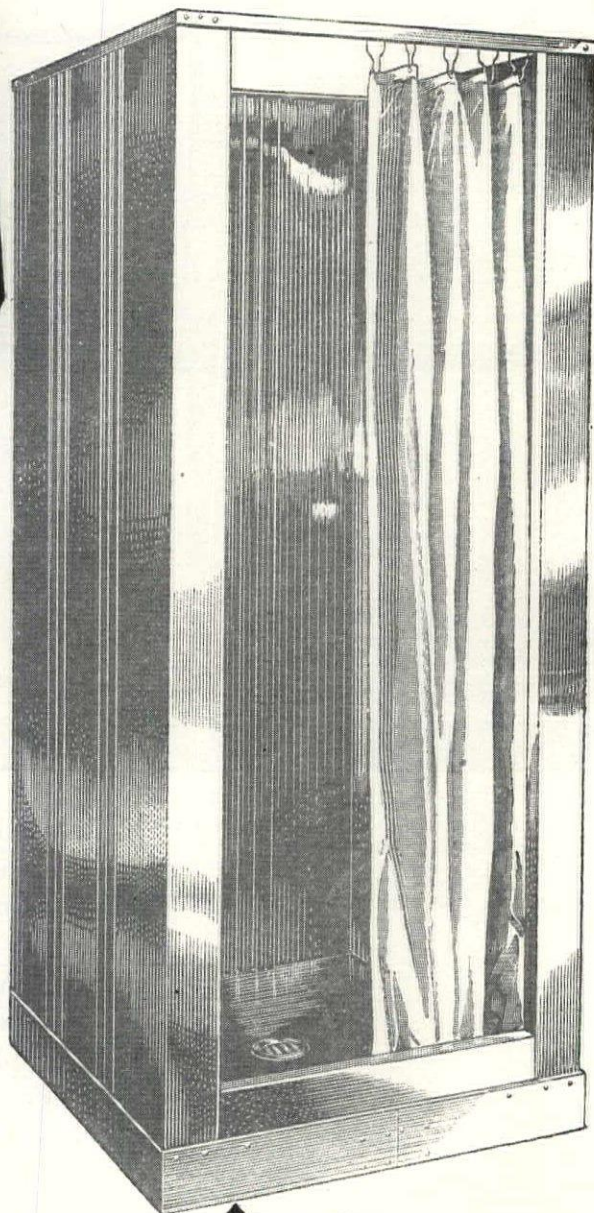
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LIGHTER ... Total shipping weight only 63 pounds.

BETTER LOOKING ... Handsome design and gleaming aluminum finish blend harmoniously wherever installed.

DURABLE ... Never any refinishing or repainting. Silver-Spray's aluminum finish can't rust.

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Every Silver-Spray
Shower Cabinet
includes these
accessories:

- Non-skid aluminum receptor
- Chrome-plated brass drain
- Chrome-plated hot and cold shower valves
- Chrome-plated water-saver showerhead
- Soap dish
- White plastic shower curtain with pins

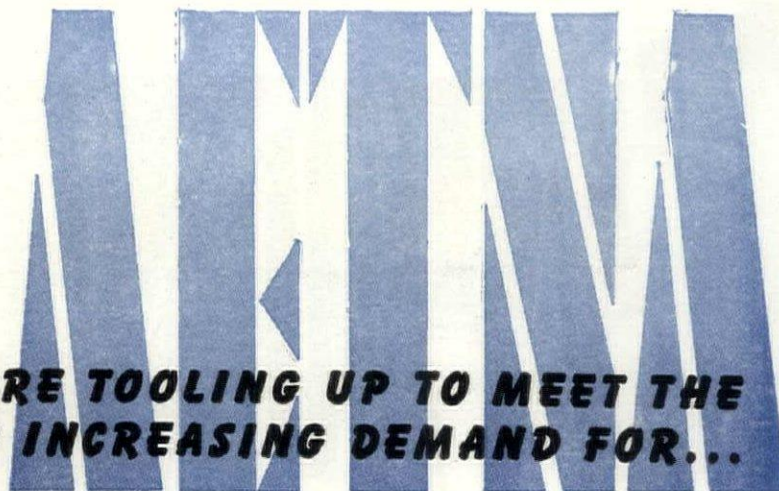
QUICK, EASY INSTALLATION

ALL YOU NEED IS A SCREWDRIVER — AND TWENTY MINUTES!



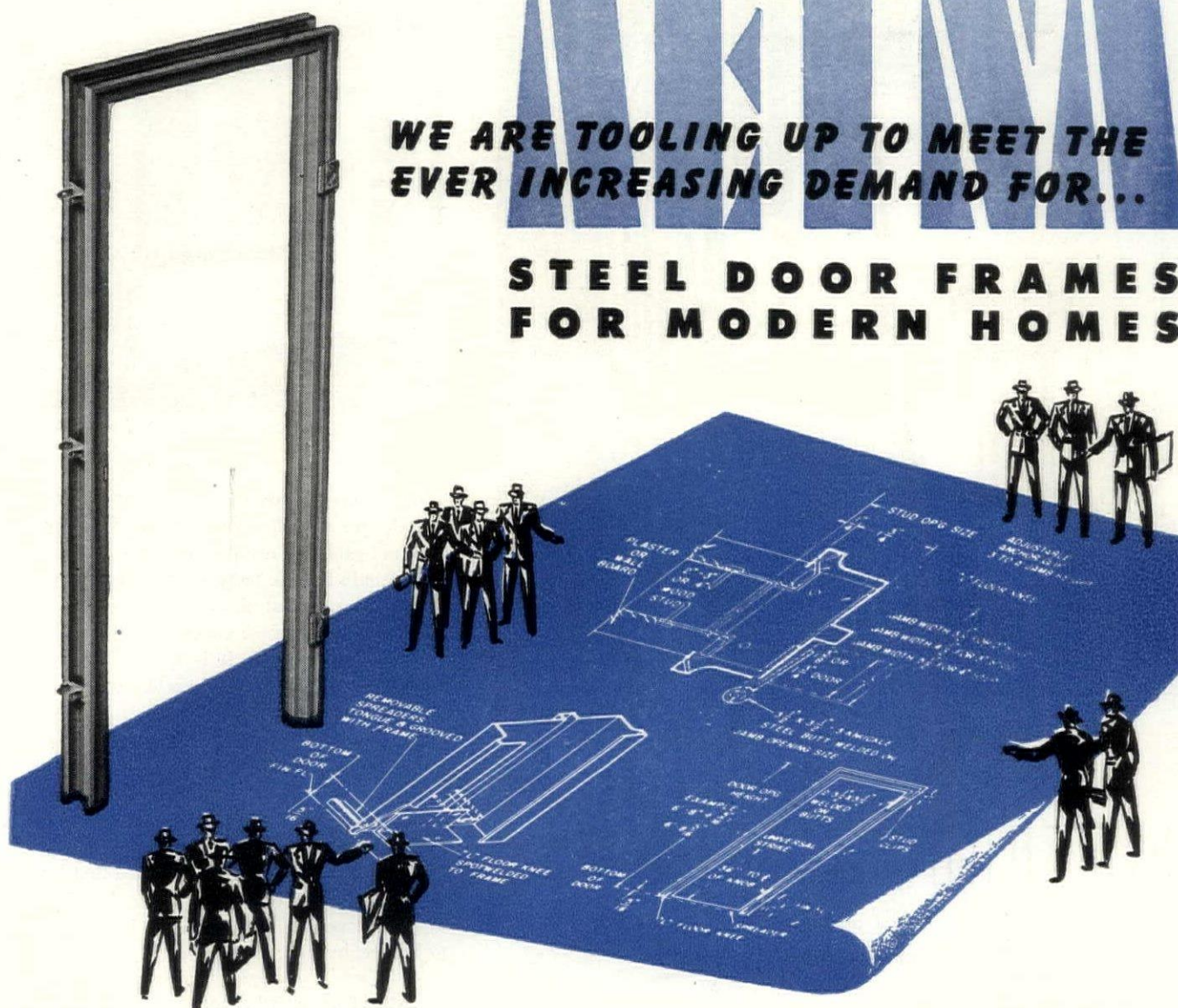
AMERICAN SANITARY PARTITION COMPANY, INC.

GOOD NEWS FOR 1947!



**WE ARE TOOLING UP TO MEET THE
EVER INCREASING DEMAND FOR...**

**STEEL DOOR FRAMES
FOR MODERN HOMES**



THESE ADVANTAGES ACCOUNT FOR THE GREAT DEMAND

- **STRENGTH**—Welded to form a complete integral unit of jamb, head, and two sides trim; resulting in great strength.
- **RIGIDITY**—Being one complete integral unit, they will not warp or crack, and mitres will not open. Aetna Frames will not absorb moisture and swell, thus the size of the frame will not change.
- **SIZE**—Designed for 1 1/2" and 1 3/4" standard size doors.
- **PERMANENCY**—Will not chip or damage, eliminating costs and inconvenience of repairs.

• **FINISH**—Prime coated at the factory, saving one coat of paint.

• **HARDWARE**—Hinges are welded to frames at the factory, saving the cost of a pair of hinges and application. They are spaced to fit virtually all prefabricated doors. Bronze strike plate is furnished to fit most standardized bit key and tubular locks and latches.

• **LOW COST**—Cost less than wood jambs and trim installed.

Aetna Steel Door Frames, like many modern improvements in the construction field, will serve as a stimulant toward building activity. Aetna Frames are easy to erect requiring less handling at the building site, offer you mass production economy and simplify your supply problems.

SEND FOR NEW AETNA STEEL DOOR FRAME FOLDER.



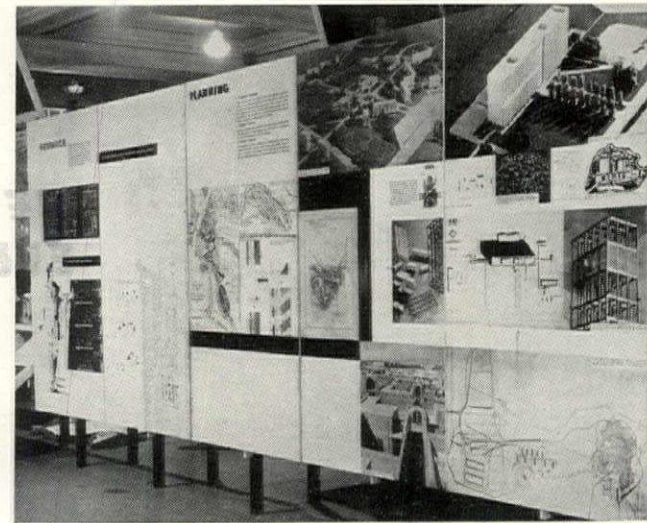
AETNA STEEL PRODUCTS CORPORATION

EXECUTIVE OFFICES: 61 Broadway, New York 6, N. Y. • PLANT: Pottsville, Pa.

REVIEWS

effect of the German occupants; a much more interesting section on the work of the Resistance; a large space showing the economics of the effects of war illustrated with photographs of the damage; exhibits of planning and building education, public health, and other aspects of proposed reconstruction.

French Press Information Service



LAYOUT OF TOWN PLANNING PANELS IS WELL DONE

Somehow the exhibition is disappointing. But American expectations of what the French can do are based on prewar knowledge, and the very lacks and disorganization evident here are probably results of a devastation of which we Americans should become more aware. There is much material, but when trying to relate it, one receives an impression almost of chaos. However, since chaos undoubtedly plays a large part in French life today, it is a realistic impression to leave. Some of the panels are excellently designed—particularly those on town planning (see cut), prefabrication, etc.—but their content is not so interesting. There is more meat in some of the other exhibits, but it would be an overwhelming task to assimilate it. To architects and builders looking for actual examples of reconstruction and methods adapted to an emergency situation such as now exists in France, there is little to see—which conveys the idea that little has been done other than dream of vast impractical city planning unrelated to present needs. This, however, is a condition not peculiar to France, but the war-heritage of the entire world. E. B.

Pepsi-Cola Company's National Art Competitions in previous years have not been too impressive. But the third annual exhibition just leaving New York's National Academy of Design for circulation in the leading museums through the country is far more representative of the newer and bolder artists. There has been much argument over the prize-winning awards; but although the jury may have made their selections with tongue in cheek, they were aware of new problems in the world. First prize of \$2,500 was given to Boris Deutsch for a dour painting called "What Atomic War Will Do To You."

Advancing American Art is another traveling exhibit of paintings assembled by the U. S. State Department for showing in South America and Europe, currently at New York's Metropolitan Museum. Comparable to the Pepsi-Cola exhibit in presenting the artists' idea of the American scene, it was selected by one man rather than a jury. There is a good range of oil paintings by 41 artists, all the way from John Marin to Stuart Davis. E.B.

Your Clients Will Appreciate...

The Beautiful Design
The Melodious Tone
The Fine Engineering
of Chimes by

RITTENHOUSE

Modern in feeling, these beautiful products fit well into any decor—from extreme functional to authentic period.

The quality of the tone is such that your client will know that you have thoughtfully banished for him those "door-bell nerves."

The most important development ever made in chime engineering is the Rittenhouse "Floating Percussion" unit used in all models.

When working up your detail-plans, you may desire definite information on the several models we are now producing. Write for our illustrated brochure and mechanism sheets.

THE RITTENHOUSE COMPANY, INC.

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Honeoye Falls, N. Y.



On roofs where water may collect and stand,
my orders are **"Tar and Gravel"**



War Department Technical Manual 5-617, a bible on roofing and re-roofing for U.S. Army Engineers says: "Built up roofs are particularly adapted to relatively flat slopes because they furnish a continuous membrane, built up on the job from layers of bitumen and bituminous-saturated felt. When properly constructed they require little maintenance. *Coal Tar Pitch built-up roofs should always be used on decks where water may collect and stand.*"

Too often during the war U.S. Army Engineers were faced with a critical shortage of materials. They had to erect their buildings in a hurry . . . with whatever labor, whatever materials they had on hand. Fortunately their buildings were of a temporary nature. But on flat roofs, subject to damage from water, *tar and gravel roofing are first choice.*

You aren't in a temporary business. You don't want a temporary roof. The roof of yesterday . . . with 20,

30 and 40 or more years of satisfactory service . . . is still the best today. That roof is tar and gravel.

If you are contemplating a new building or planning to re-roof an existing structure insist on Koppers Old Style Pitch and Koppers Approved Tarred Felt. Koppers Company, Inc., Pittsburgh 19, Pennsylvania.

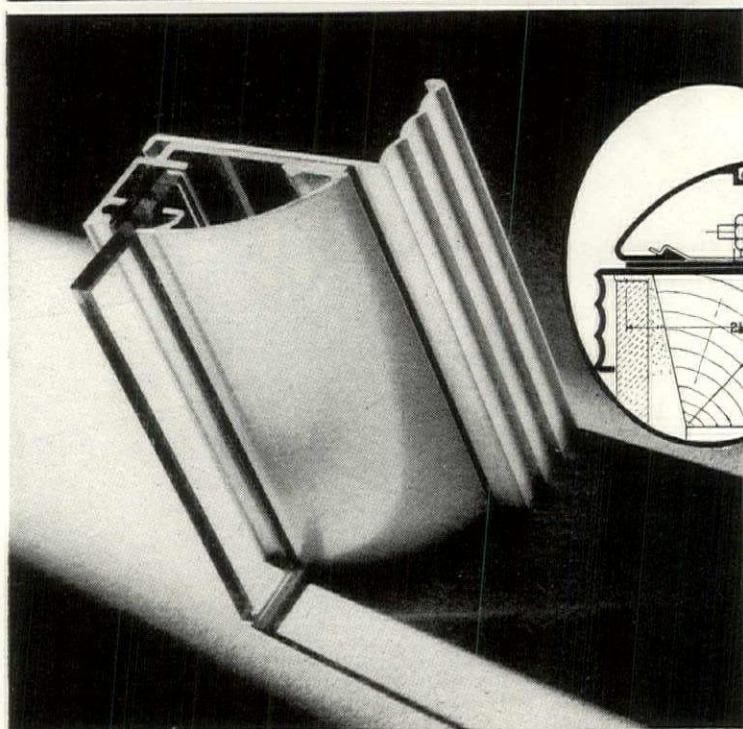
Refer to your Sweet's Catalog or write us for complete specifications.



THE INDUSTRY THAT SERVES ALL INDUSTRY

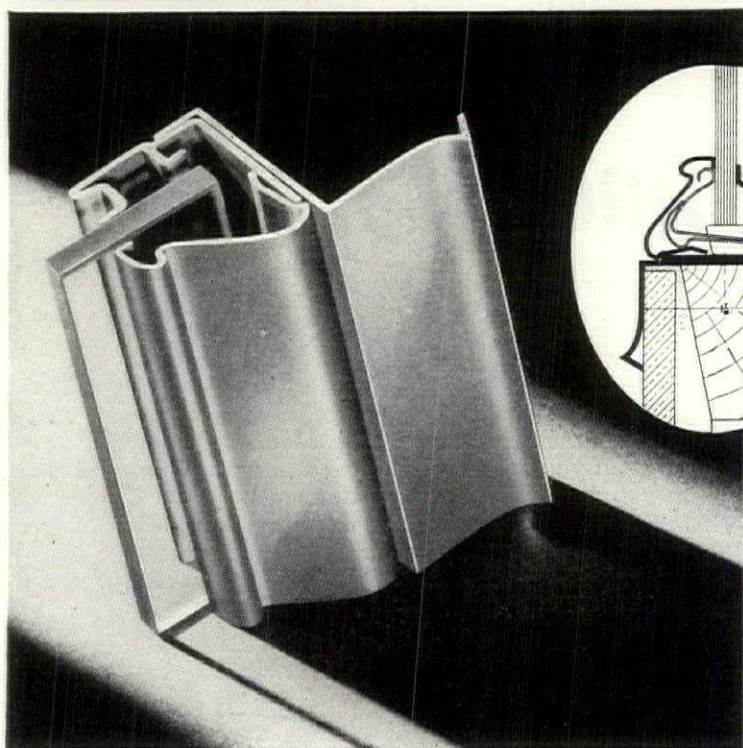
For BEAUTY...use Pittco Metal

YOUR CHOICE OF TWO OUTSTANDING LINES



PITTCO **DE LUXE**

Imaginative styling and planned harmony between members are two factors which help to account for the continued popularity of De Luxe Store Front Metal. Pittco De Luxe offers the architect a wide choice of distinctive pieces with which to create sales-winning store fronts. The extruded process of manufacture assures clean, sharp profiles, sturdy strength, perfect color and finish. Pittco De Luxe is intended primarily for high quality work. In the varied bars, mouldings and sash of the De Luxe line, the architect has a pleasing and impressive solution to many problems of modern store front design.



PITTCO **PREMIER**

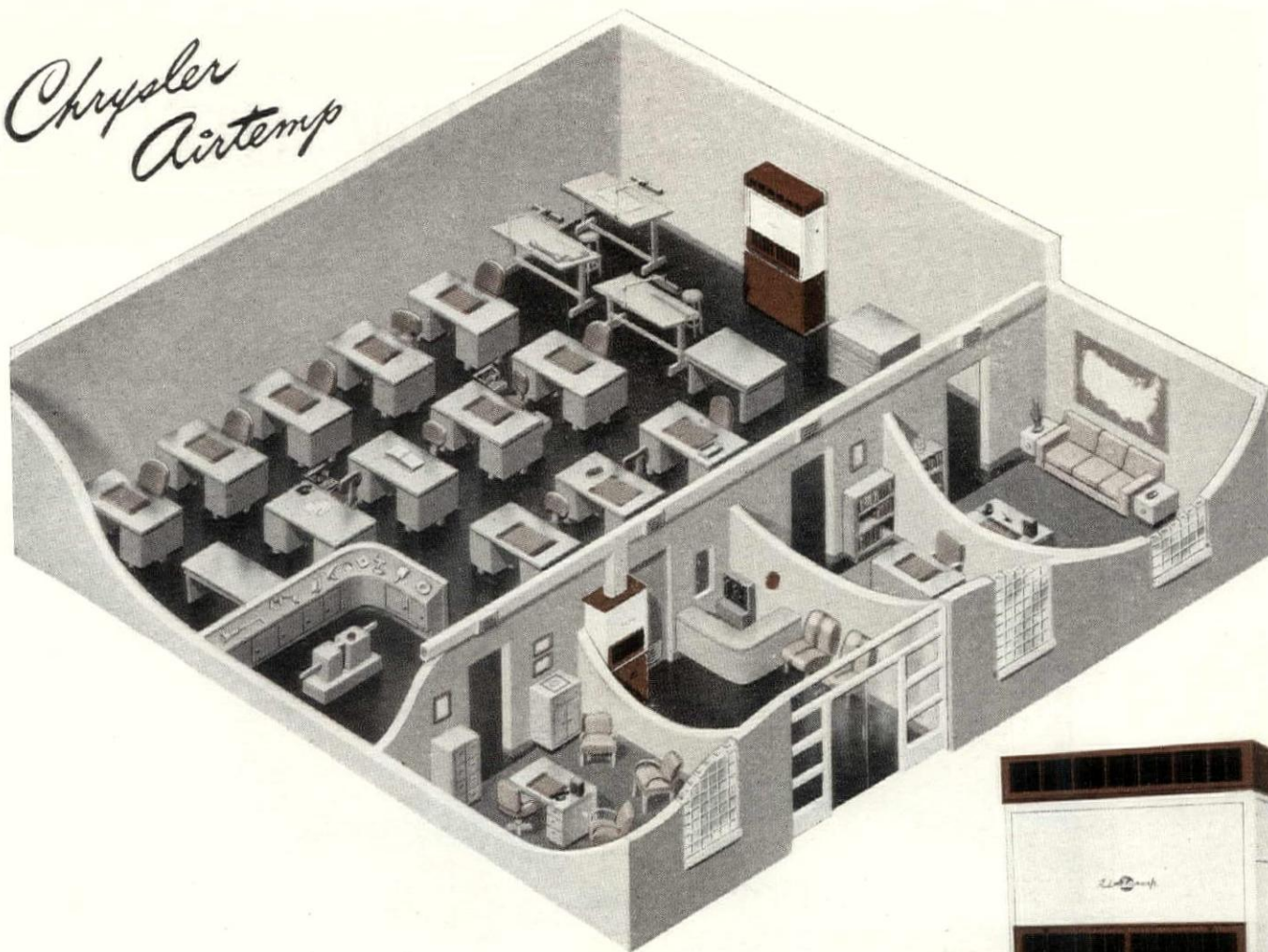
A high degree of architectural symmetry is one distinguishing mark of the new Pittco Premier line of store front metal. Like Pittco De Luxe, Pittco Premier was designed as a unit . . . each piece styled to complement and heighten the beauty of the other members with which it may be used. Pittco Premier construction can be set more quickly and easily, with greater safety to the glass than other metal constructions. The sash is self-adjusting to various glass thicknesses, yet always maintains a firm grip on the glass. All setting operations are done from the outside and effect a substantial savings in setting time. Pittco Premier is moderately priced, is light in weight, and provides a shallower reveal for show windows than its distinguished companion line.



PITTCO STORE FRONT METAL
PITTSBURGH PLATE GLASS COMPANY

"PITTSBURGH" stands for Quality Glass and Paint

*Chrysler
Airtemp*



Design for Greater Human Efficiency

The value of air conditioning in increasing efficiency, lowering absenteeism and improving employee relations has been proven over and over again. Today, air conditioning is considered essential for offices and shops, as well as stores of all kinds.

Air conditioning has been simplified by Chrysler Airtemp with its famous "Packaged" Air Conditioners. They fit well into any plan, as illustrated in the above isometric of a practical office arrangement. "Packages" can be installed singly or in multiple,

occupy a minimum of floor space, are easily moved and are noted for long, dependable life at low operating cost.

Behind these Chrysler Airtemp "Packaged" Air Conditioners is Chrysler Corporation with its reputation for outstanding engineering and quantity production skill.

Architects are invited to write for detailed mechanical information. Airtemp Division of Chrysler Corporation, Dayton 1, Ohio. In Canada—Therm-O-Rite, Ltd., Toronto, Ontario.



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The ideal form of air conditioning for practically any purpose. A heating coil can be installed right in the "package" for year-around air conditioning. The existing steam or hot water supply can be used, or a new Chrysler Airtemp boiler can be added.

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HEATING • COOLING • REFRIGERATION

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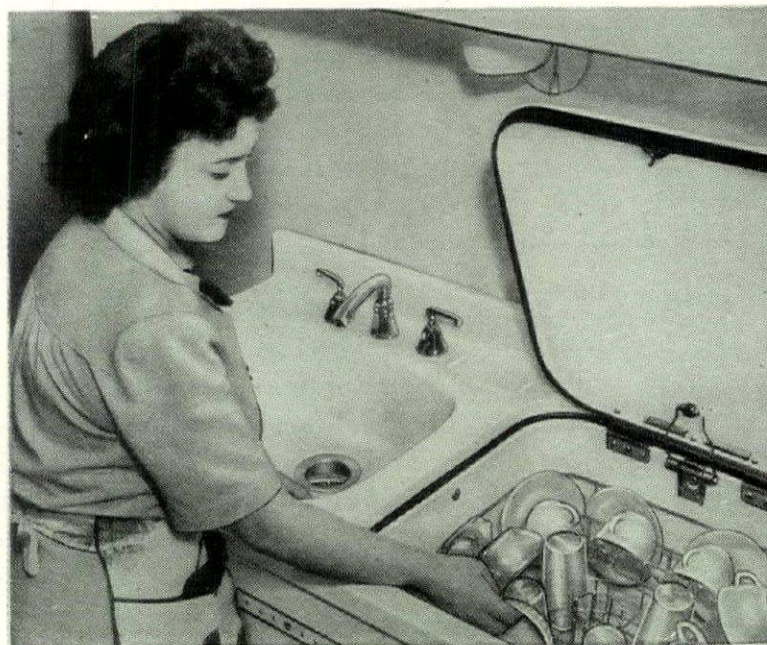


• Masontown, Pa., site of 110 homes being built under the direction of the George C. Brown Co. of Pittsburgh. Architect,

William C. Young. Contractor, Mellon-Stuart. This is the first in a series of the George C. Brown Company developments.



G-E EQUIPPED HOMES



• New owners are enthusiastic about better living, electrically. Mrs. E. C. De of 18 Cumberland Ave., Masontown, Pa., is especially proud of her G-E Dishwasher and Disposall. But, like other Masontown homemakers, she has found that *all* her appliances—Range, Refrigerator, Steel Cabinets, Washer, and Water Heater—help make housework easier, living pleasanter, in her new all-electric home.

For an ALL-ELECTRIC HOME?

**"Only about \$3.00 a month!" — says the
George C. Brown Company of Pittsburgh... and proves it
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Here's what George C. Brown, president, has to say about his company's postwar homes at Masontown, Pa.

"These homes are the first fulfillment in this region of the ease and convenience which housewives have been promised since before the war.

"Standard equipment in every home includes the *all-electric kitchen* with G-E Range, Refrigerator, Steel Cabinets, Dishwasher, and Disposall,* as well as a G-E Washer and Water Heater.

"But most important is the fact that these homes with G-E equipment cost the owner only about \$3.00 a month more than the same homes would cost without any equipment."

"So don't tell us it's impossible to include the best electric

appliances in new homes, and still keep the cost down... we're doing it!"

In Pittsburgh, Denver, Kansas City, St. Louis—all across the country, architects and builders are planning new homes, *designed for better living, electrically!*

From a cost angle: they know it doesn't cost them a dime extra to include all the dependable G-E Appliances. And that there's only a minor increase in cost to the buyer, usually less than \$3.00 a month on his mortgage payments.

From a sales angle: they know that today's homeowner wants, and expects, a completely equipped, up-to-date home; that a home with no extras to buy is always a fast seller.

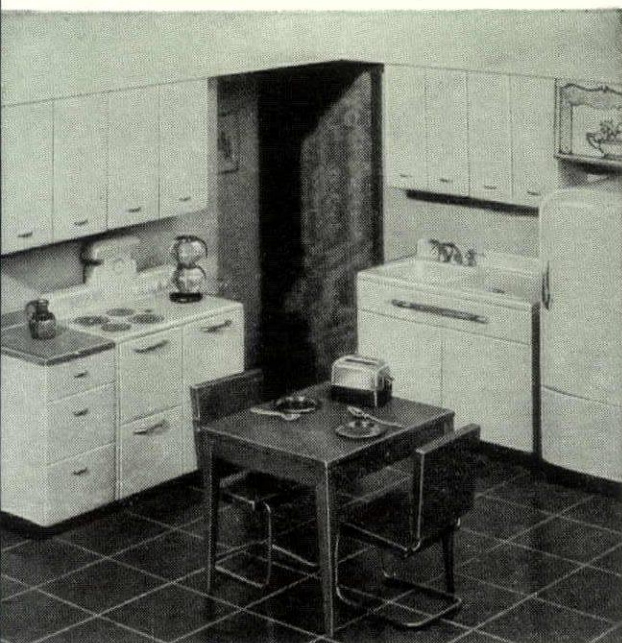
From a quality angle: they know that selling complete, all-electric homes will bring them a reputation as *good builders*—and a good reputation is going to be mighty important as competition gets stiffer.

Most women want G. E.

In planning your new homes, keep this in mind too: *recent national surveys showed that 53 per cent of all women prefer G.E. to any other appliances!*

This preference, and the record of G-E appliances for *dependable performance*, are good reasons why so many builders and architects are specifying G-E appliances as standard equipment.

Let us help you plan your 1947 program. For complete information on all-electric homes, with special emphasis on the kitchen and laundry, write to G-E Home Bureau, General Electric Company, Bridgeport 2, Conn.



can cost less to live better in these new homes, financed by the Housing Mortgage Corporation of Pittsburgh. Inclusion of G-E equipment in the mortgage makes only a minor difference in the initial cost. Economical operation and maintenance, and the long life of G-E appliances, more than offset the slight increase in monthly payments.

THE APPLIANCES MOST WOMEN WANT MOST

GENERAL  ELECTRIC

*Trade-Mark Reg. U. S. Pat. Off.

G.I. JOBS

The Customers always WRITE.

Here's what one distributor writes
us about ADIRONDACK'S new "H"
Pre-Fabricated house.

A. LOVELACE STARLIPER AGENCY
Real Estate, Insurance, Mortgages, Pre-Fabricated Houses
HOBOKEN BUILDING - 206 WEST KING STREET
MARTINSBURG, W. VA.

September 20, 1946

Mr. Harry Levey, President
Adirondack Log Cabin Company, Inc.
145 East 45th Street
New York, New York

Dear Mr. Levey:

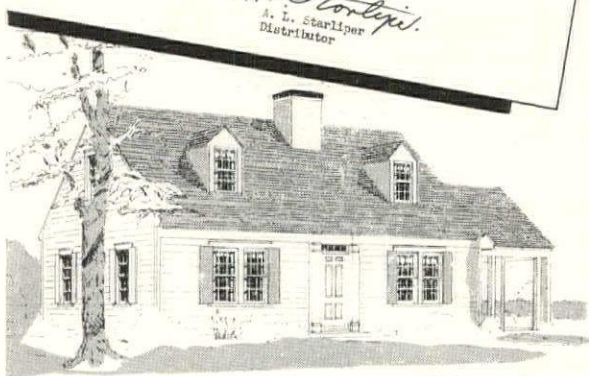
Congratulations to you on the splendid job you have done in getting out the new "H" series house—I have looked over the plans with much interest and, even though I have found that the "H" series houses are splendid and still have a job to do, I feel that the "H" house is a very definite improvement; and I look forward to the time when we shall be able to market them as well as build them and sell them ourselves.

I sent you to know that I am very enthused—in fact, our whole force is enthused here—over the prospects of our doing a nice business for Adirondack. You will, perhaps, be interested to know that we have appointed two present business men, brothers, incidentally, to handle our line in Winchester, Virginia; and we are appointing one of the outstanding real estate brokers in Hagerstown, Maryland. We have also appointed a dealer in Front Royal, Virginia, and one in Harrisonburg, Virginia. All of these fellows are anxious to complete the completion of our first two houses over here, and each of them plan erecting a house or several houses themselves as soon as they can get organized.

You will also be interested to know that our 1430G house has been received; and it is, at this writing, being put under roof. We are very pleased with it; and we are looking forward to receiving the 2428FC house, which will, perhaps, arrive in a day or two.

Many thanks for your splendid cooperation, and kindest regards to you.

Sincerely,
A. Lovelace Starliper
Distributor



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Eligible for Veteran Priority.

Pre-Fabricated Homes of 4½-5 or
6 Rooms—To retail from \$1850.

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This month marks the end of the FORUM's G. I. JOBS service. Established in July, 1945, to help bring building's war-dispersed men and jobs together, this department has handled hundreds of applications. Many of these, we know, resulted in successful contacts for both employers and employees. Our thanks to those employers who cooperated to assure the veteran his rightful place in the postwar building industry.

POSITIONS WANTED

INSURANCE SUPERVISOR—Graduate engineer, 20 years experience, 12 as insurance engineer. Age 43, married, one child. Qualified to establish and supervise insurance department for utility, engineering, management, manufacturing or commercial concern. Expert on fire and casualty insurance. Can furnish excellent references. Now employed but anxious to make new connection having greater opportunities. Box E-307.

MANUFACTURERS' OR DISTRIBUTORS' AGENT—Civil Engineer, 33 years old, architectural and sales experience. Ex-Lt. Col. AAF supply and engineer officer desires to represent technical products and building material manufacturers of basic or special lines in Pacific Northwest area. Will also act reciprocally as purchasing agent in that area for lumber or other local products. Can furnish limited capital and excellent references. Box E-308.

NAVY ENGINEER—Former CEC officer with Navy "Seabees," married, one child. B.S.C.E. from University of Texas, 2 years subprofessional construction experience, 3 years engineering experience in structural design and testing and construction. Desires position as design or testing engineer with established company, preferably in or near Texas. Will consider Mexico or South America. Charles S. Matlock, 3306 Tom Green St., Austin 21, Texas.

ARCHITECT—45, tired of the vicissitudes of private practice, desires position or association away from N. Y. area. Good at design, thorough knowledge of general construction, experienced at meeting people, some teaching, lecturing, writing, member A.I.A., looking for responsibility, hard work, good income. Box E-309.

CONSTRUCTION SUPERVISOR & FOREMAN—Vet, 32, married, 10 years construction experience and blueprint work. Ranging from West Coast to Midwest. Know oil field and refinery construction, road work, building and elevator work. Speak Spanish. Prefer to locate in Southwest, Central or South America, but will consider any place. Excellent references. Box E-310.

MECHANICAL ENGINEER—Ex-Major, Ordnance Dept., U. S. Army, 34, single. M. E. Cornell University, '34. 8 years manufacturing and product development experience. Desires product research position with prefabric. housing or building materials manufacturer. Box E-311.

ARCHITECTURAL DRAFTSMAN—29, married, discharged Army pilot, now employed as draftsman in well-known architect's office. Wants job in industry allied with architecture and aviation, preferably in Denver area, but will go anywhere in the West. Salary secondary to chances for advancement on personal merit. Experienced as airport engineer, architectural draftsman and technical material researcher. Night school training in architectural and industrial design, AAF Specialized Flying Schools. Box E-312.

APPRENTICE DRAFTSMAN OR ARCHITECT—Desirous of position in architect's office for practical experience prior to attending college next year. Progressive, adaptable. Also capable of lettering, layout, paste-ups. Prefer NYC. Robert Fleury, 359 West 47th St., New York 19, N. Y.

ARCHITECTURAL DRAFTSMAN—3 years experience, 4 years schooling. Good samples. Training on the job preferred. Permanent and hard work required. Employed. Box E-313.

ARCHITECT—Recent graduate of accredited architectural school would like position with firm specializing in commercial work in or around New York. 8 months experience previous to war. Box E-314.

REGISTERED ARCHITECT—10 years experience on commercial and residential construction and planning. NYU School of Architecture, AAF vet, married, willing to travel. Desires position with an organization that offers a good future for an ambitious person. Box E-315.

ARCHITECTURAL DRAFTSMAN—Vet, 25 years old, married, two children. B. S. in Architecture, 1 year pre-war experience. Desires permanent position with opportunity for advancement. Can go anywhere. W. S. Downing, Jr., Profit, Va.

CIVIL ENGINEER—38, Practice 15 yrs. Desires position that has something to do with civil engr. line in the way of surveying, field engr. of construction, mapping, concrete products manufacture, hydraulic goods manufacture, material estimating, costing, city planning or city engr. Backed by experience as Asst. Plant Mgr., Asst. Plant Supt., Office Mgr., Production Control Supvr., Asst. Supvr. of Tools and Methods. Prefer small industry offering partnership or profit-sharing based on productive improvements. Box E-304.

MEN WANTED

ENGINEERS, ARCHITECTS, CONSTRUCTION SUPERINTENDENTS, CONSTRUCTION FOREMEN, DECORATORS—Interested in joining large cooperative organization to prefabricate, sell and erect small houses in Southern California. An investment of \$2,500 will be required, to be held in trust by large banking institution until entire organization can meet and elect officers to make disbursements. Box R-259.

DELINEATOR & BUSINESS MANAGER—Progressive architectural office on the West Coast, established 25 years, has opening for two men, one with delineating ability, one with business ability, both with ambition to carry on and extend established practice with an eventual interest as a goal. Write full details in first letter. Box R-260.

ARCHITECTURAL DRAFTSMAN—Grad. of architectural school. At least one year's experience in an architect's office. Wanted by architectural firm in Louisiana. Box R-255.

ARCHITECTURAL ASSISTANT—A busy Canadian office offers an opportunity to an experienced progressive architectural assistant to participate in the industrial development of a rapidly expanding country. Must have had sufficient experience since graduation to take charge of production of working drawings. Box R-261.

ARCHITECTURAL DRAFTSMAN—Experienced architectural draftsman, capable of developing final working drawings from preliminary sketches of educational and commercial buildings. Permanent position for right man looking for place to settle down and make his home. Non-industrial, cultured community of 50,000 with two 4-year universities—Illinois Wesleyan and Illinois State Normal. Address Schaeffer, Hooton & Wilson, Architects, Peoples Bank Building, Bloomington, Illinois.

ASSISTANT MANAGER—With experience in negotiating agreements and doing collective bargaining in the building industry. Also engineering background, civil and structural, if possible. State full qualifications and starting salary expected. Box R-262.

DESIGNER, ENGINEER OR ARCHITECT—Long established engineering and construction company wants man able to develop design of industrial and commercial buildings from sketches. Will pay straight salary first year and adjust to ability. Submit all personal data and complete experience record with application. Will pay expenses for interview. Location Eastern Pennsylvania. Box R-263.

ENGINEER-MANAGER. A young engineer to become general manager of an outstanding midwestern brick and tile company. Should be well qualified, with belief in own ability. Supplemental training will be furnished the right man. Present manager retiring account of age after long, successful career. Applicants desired in 25-40 age group, 30-35 preferred. Give complete history, qualifications, record in first letter. Box R-264.

ARCHITECTS—Staff openings for several registered architects with ideas backed by sound training. Experience in transportation terminals and flair for sensible modern helpful. Large program nationwide. Box R-265.

SALESMAN—Sales opportunity with excellent future. Aggressive, personable young man wanted (25-35 yrs. of age) by large national mfr. of non-ferrous bldg. products. Must have had arch. trng. Bldg. constr. exper. preferable. Job involves some traveling; Michigan, Ohio, Indiana. Hdqtrs. at Detroit with pleasant associates and working conditions. Send brief self-sales letter with resume of background for appt. Box R-244.

ARCHITECTURAL DRAFTSMEN—A well-established firm specializing in the design of school and college bldgs., requires the services of additional architectural draftsmen. Location Michigan. Box R-258.

BUILDER—Young man wanted with building experience and interest in modern architecture to build modern residences under direction of architect. Send experience and data to Paul Beidler, R. D. 4, Easton, Pa.



Look Into These Facts:

- **Initial Cost Economy:** A hand-fired coal furnace is the least expensive of all central heating plants. And, with no trouble at all, it can be converted to automatic.
- **Automatic Heating:** The cost of a quiet, odorless stoker-fired coal furnace is no greater than any other kind of heating plant over a period of time. Fuel economy is the saving. Today's bin-fed, ash-removing stokers offer the ultimate in cleanliness, comfort and convenience.
- **Clean, Smokeless Fuel.** Today's coal is sized, cleaned and dustproofed at the mine.
- **Inexhaustible supply.** There is a 3,000-year coal reserve. Other fuels may be depleted soon. Coal is here to stay.
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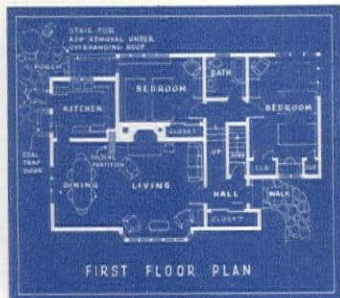
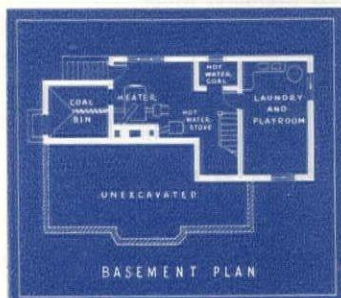
Millions of home-seeking young couples are coming to you for help. They'll say, "We want a home we can be proud of . . . we want a comfortable little home . . . but we don't have a lot of money to spend."

You CAN help them. The basement YOU design will go a long way toward solving their home problem.

Let's look into this basement. In this design, you can offer a fully automatic heating plant. Automatic coal heating is as good as money can buy. Initial cost is no greater than any other plant. And, operating cost is LOWER than all other types. Extra basement space can give your client a combination laundry and playroom—added sales appeal and owner satisfaction.

As an alternative, you can save your client even more money and still achieve satisfactory heating if you specify a modern, thermostat controlled hand-fired furnace. This type of plant can be converted to automatic at any time. ONLY a coal heating plant can be converted to all other types of heating.

When they look to you for help, give them a low cost home with high market value, sales appeal and owner satisfaction . . . a home with a basement built for better living, better heating . . . built for coal.



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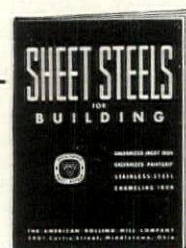
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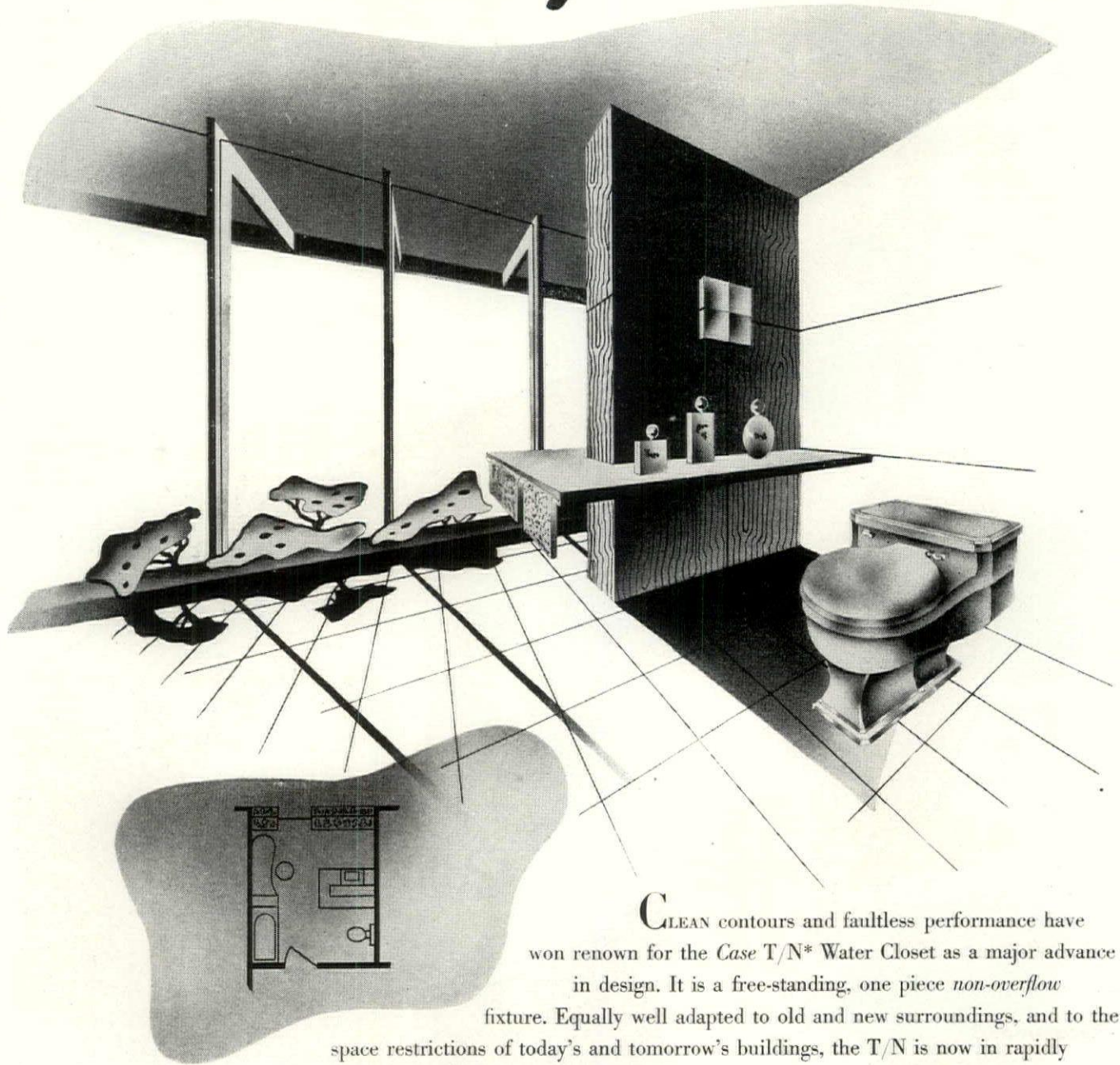
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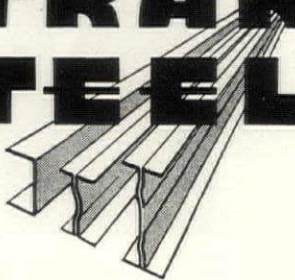
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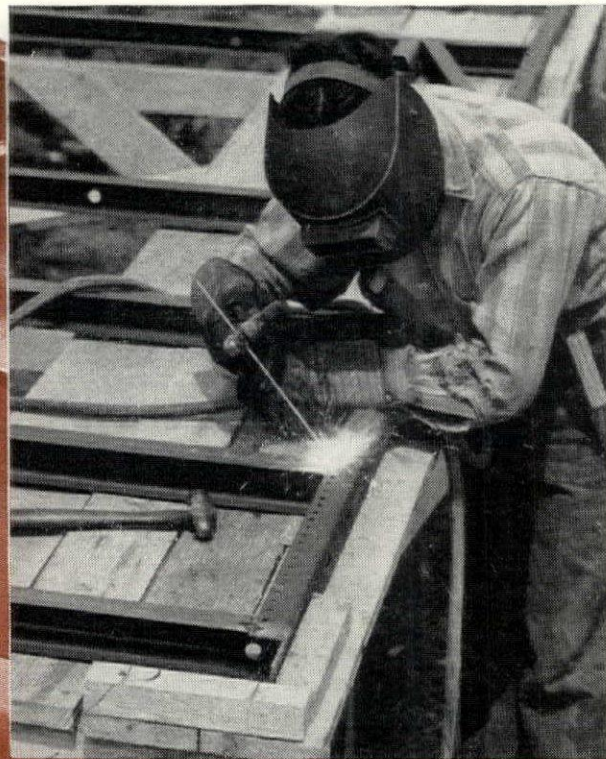
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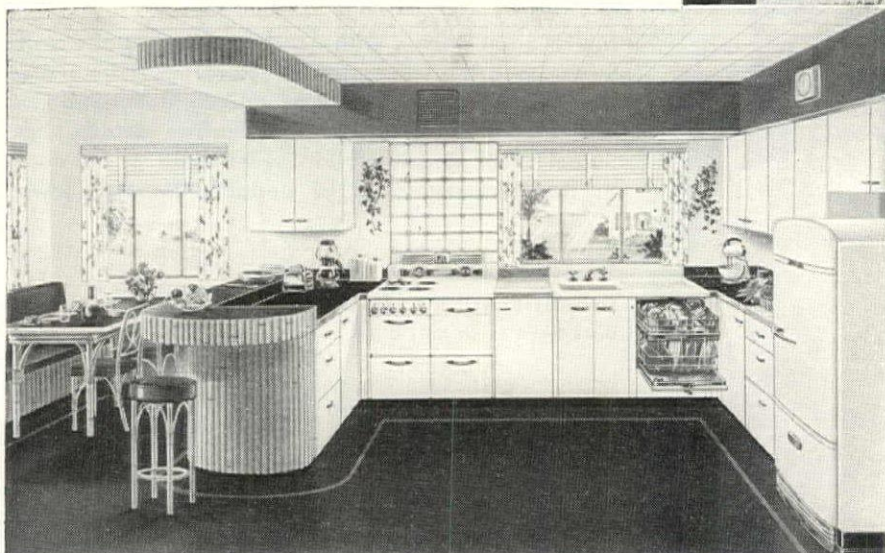
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PRODUCTS AND PRACTICE

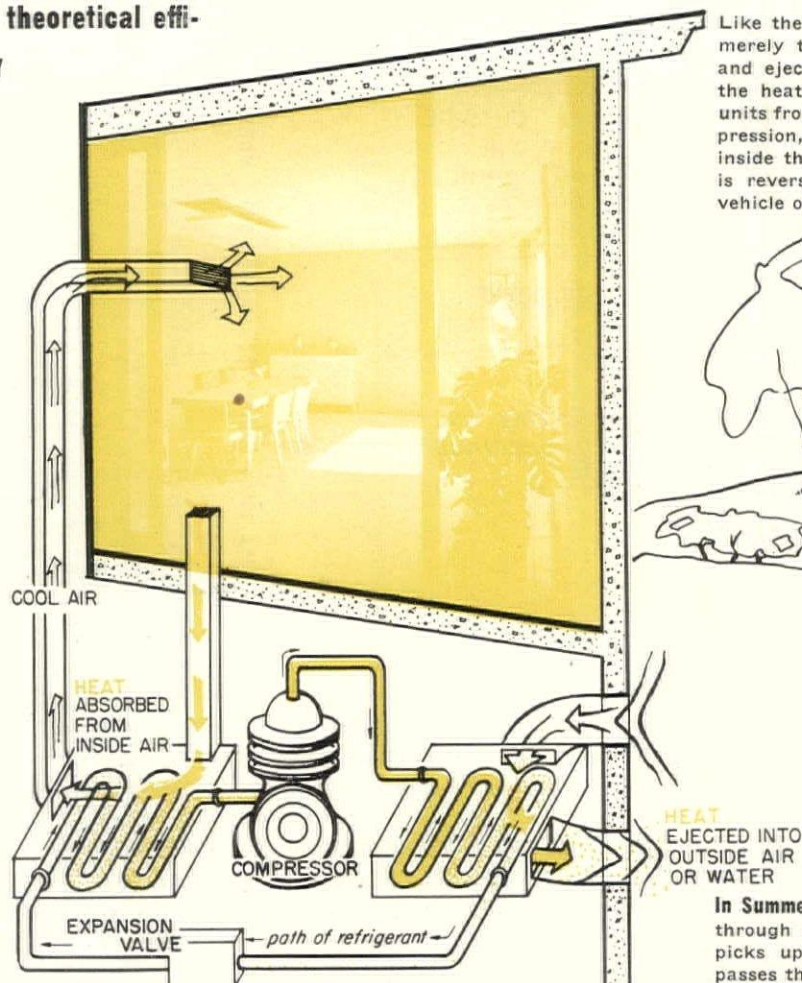
THE HEAT PUMP—long known for its theoretical efficiency—today is proving its practicality in year-round air conditioning.

In 1854, Lord Kelvin, the father of modern mechanical refrigeration, referred to the heat pump as "tomorrow's method of heating." Tomorrow, for Lord Kelvin at least, never came, but the heat pump—also known as reverse cycle refrigeration—has remained the biggest "if" in heating. Its potential is greater today than ever before, for recent developments in engineering have made it a practical source of heating and cooling for both large buildings and small houses. And, although the theory of reverse cycle refrigeration has not changed in the ninety-odd years since Lord Kelvin made his prediction, today's requirements have altered to a degree that again brings the heat pump into prominence. Perhaps that first proponent of its unique ability asked too little of the heat pump when he expected it only to heat buildings; reverse cycle refrigeration is most practical when called upon to cool as well as heat them—all in one quiet, automatic, fuelless operation. Conceivably it may be used to power every utility in a small house but the kitchen stove—heating and cooling system, hot and iced water, food refrigeration.

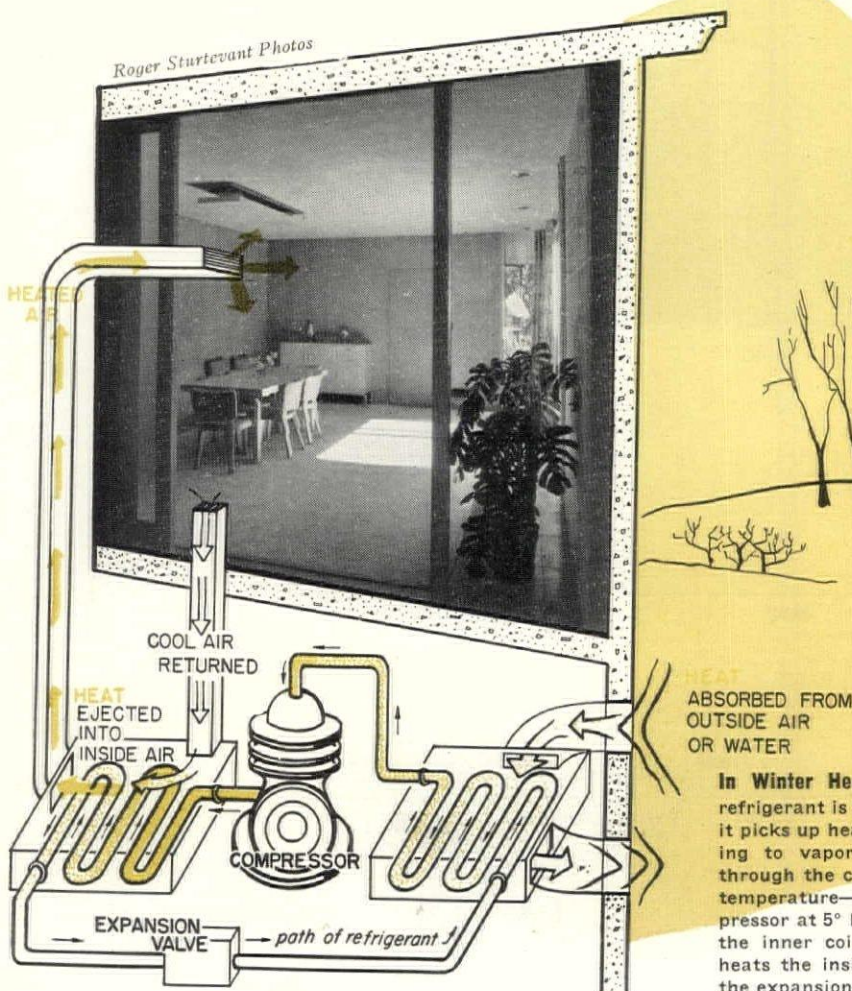
The heat pump operates exactly the same as the household refrigerator, with essentially the same elements, and with exactly the same cycle. However, instead of utilizing only the "cold" of the refrigerator—and throwing away the heat thereby generated—the heat pump also utilizes the heat gain of the cycle. In fact, as a heater only, it is more efficient than the refrigerator inasmuch as the heat of the compressor may be added to the output, to the advantage of the heat pump. Since the cycle of the heat pump is the same as the cycle of ordinary refrigeration, the same equipment may be used for both heating and cooling, with adjustable valves determining which function the unit performs. Like the household refrigerator, the heat pump uses no fuel in the ordinary sense. For each unit of electrical energy required by the compressor it "borrows" two units of heat from a primary source—such as well or city water at 50°, or outside air down to 32° F.

If reverse cycle refrigeration is a practical way of heating homes, it may seem odd that it hasn't been extensively used up to now. The reasons lie deep in the economies of power generation and transmission. Considering the economy of the heat pump against other fuels, it has been almost invariably found that, although very efficient, it is at a fundamental disadvantage. All electricity, with the important exception of hydro-electric power, is generated from some fuel such as coal, oil or natural gas. The electrical energy so generated has to be controlled, transformed, distributed

Like the household refrigerator, the heat pump merely takes excess heat units from one spot and ejects them into another. In cold weather the heat pump removes the thinly-spread heat units from outside air or well water and, by compression, packs them more tightly into the air inside the building; in hot weather, the process is reversed. In either case, refrigerant is the vehicle of heat transfer.



In Summer Cooling the cold refrigerant is passed through a coil in the air conditioner where it picks up excess heat from the inside air. It passes through the compressor into an outer coil which is bathed in outside air or water. Here the refrigerant gives up much of its heat. The cycle is complete when the refrigerant is passed through an expansion valve, where its temperature drops sharply. It is now ready to move another load of heat units.

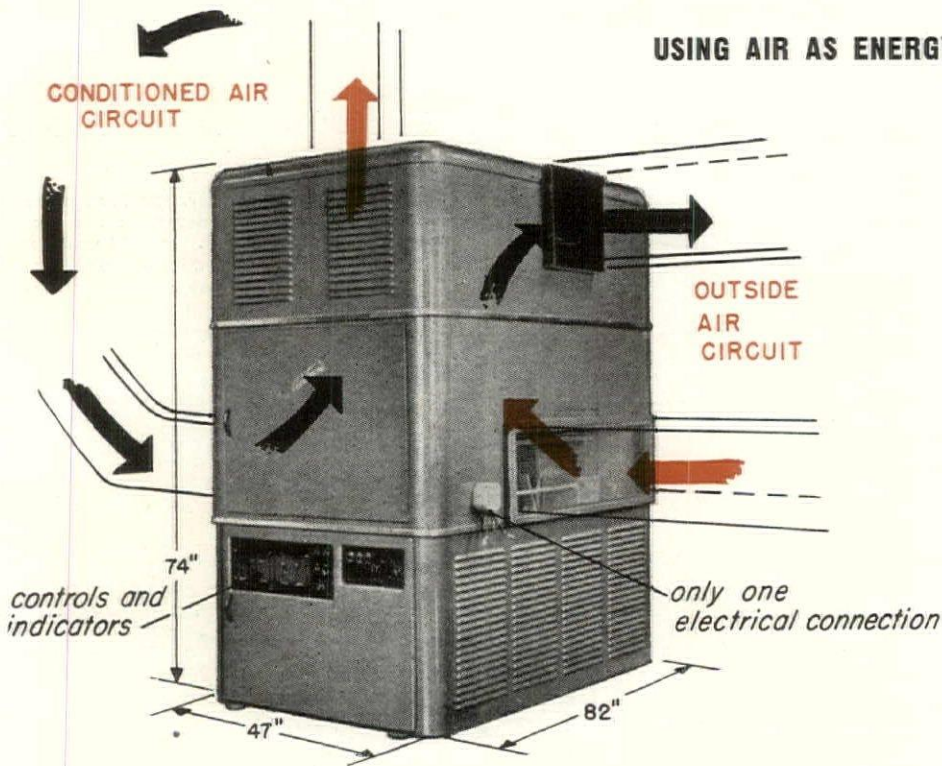


In Winter Heating the cycle is reversed. The refrigerant is forced through the outer coil where it picks up heat from outside air or water. Turning to vapor in the process, it then passes through the compressor which sharply raises its temperature—a refrigerant entering the compressor at 5° F. may leave it at 120° F. Entering the inner coil in the air conditioner proper, it heats the inside air. From there it passes into the expansion valve and on back to the outer coil.

USING AIR AS ENERGY SOURCE, Drayer-Hansen of Los Angeles produces a line of heat pump air conditioners for moderate climates

AIRTOPIA CAPACITY TABLE

	HEATING CYCLE				COOLING CYCLE			
	Outside Air Temp.	Speed	Capacity BTU/HR	KW Input	Outside Air Temp.	Speed	Capacity BTU/HR	KW Input
MODEL 300	30	Full	34,600	2.90	70	—	—	—
	60	Full	46,000	3.31	80	Full	38,000	2.90
MODEL 500	30	1/2	31,000	2.80	70	—	—	—
	60	Full	58,000	4.80	80	Full	63,100	4.73
	60	1/2	43,000	2.81	100	Full	60,000	5.75
MODEL 750	30	1/2	46,500	4.25	70	—	—	—
	60	Full	87,500	7.32	80	Full	96,000	7.10
	60	1/2	65,000	4.25	100	Full	91,600	8.62
MODEL 1000	30	1/2	62,000	5.60	70	—	—	—
	60	Full	116,000	9.60	80	Full	126,000	9.46
	60	1/2	86,000	5.62	100	1/2	78,000	7.38
		Full	154,000	11.20		Full	120,000	11.50

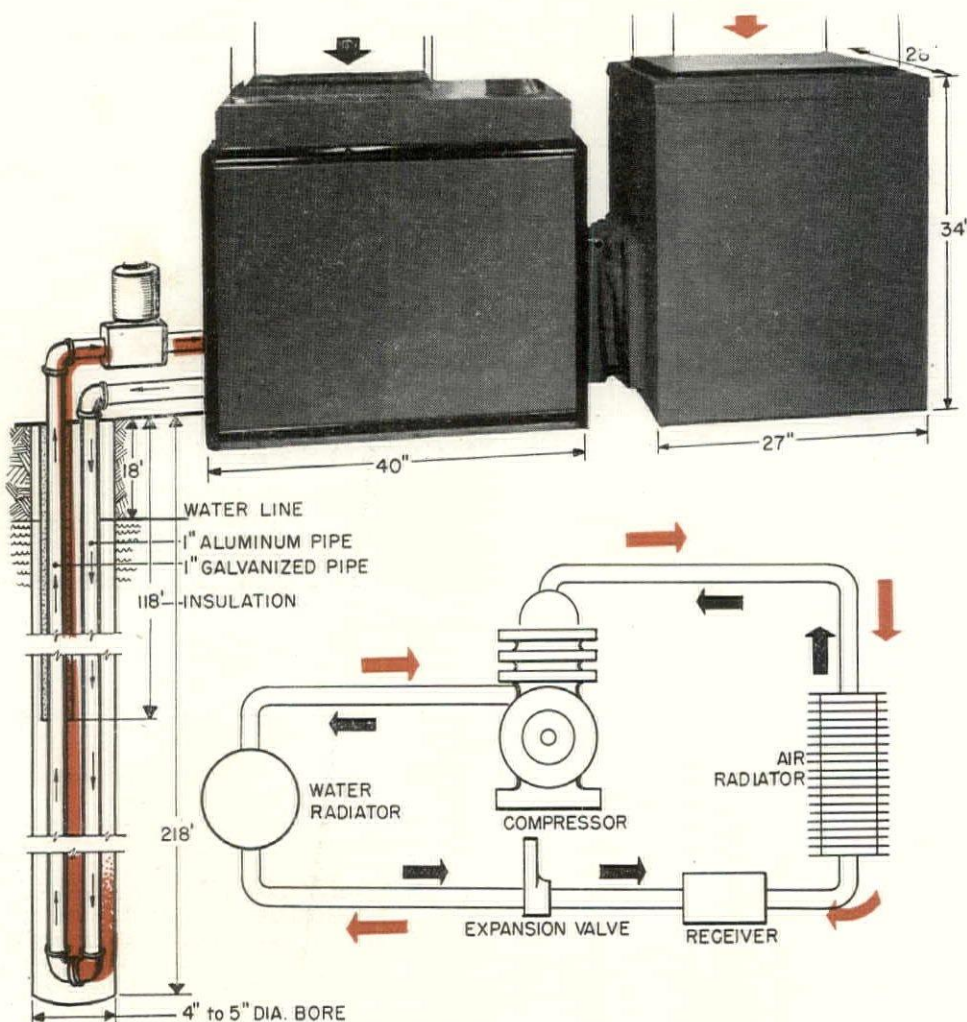


Result of six years' production in southern California, the *Airtopia* is a packaged air-to-air heat pump offering complete air conditioning—heating, cooling, dehumidification, filtering and circulation. Separate heat exchange equipment for the heating and cooling functions of the unit has been especially designed to use the full potentialities of each side of the cycle, rather than merely rely on the same equipment for all functions. Nonethe-

less, those parts which can be the same, such as the compressor, receiver, etc., are used for both heating and cooling. The *Airtopia* uses outside air as a primary heat source and thus faces the disadvantage of any air system—i.e., in cold weather the pump has less heat to take from the air and must also supply more heat to overcome the differential. To offset this disadvantage an ingenious air preheater has been incorporated into the design which, by reduc-

ing the temperature of the liquid (Freon 12) from the receiver to the evaporator, increases the temperature of the incoming air about 11° both effects being desirable from an efficiency standpoint. Next year, however, a unit using water as a primary heat source will be produced for colder climates. The *Airtopia* is completely automatic, requiring only one electrical connection and no attention from one year to the next.

INGENIOUS BURIED WATER COIL acts as heat source and heat dissipator for Muncie Gear Works' new line of air conditioners



Another new entry in the reverse cycle air conditioning field is the *Marvair*, produced by the Muncie Gear Works. This is a packaged unit offering year-round automatic conditioning. It uses a water-to-air heat transfer, but instead of depending upon either wells or water mains as a means of gaining or ejecting heat the *Marvair* has a novel "heat exchanger" buried in the earth. This consists of a single closed loop of 1 in. water pipe which is submerged in a 5 in. drilled well to a minimum depth of 200 ft. Through this loop, water for condenser and evaporator is continuously circulated. Since no water is pumped out of the well, there is no waste water to be disposed of; even more important, there is no lowering of the water table so that the system is adaptable to closely built-up areas.

The *Marvair*, currently produced in two sizes, uses a single system of piping, condenser and evaporator for both heating and cooling cycles. Two pairs of solenoid valves accomplish refrigerant reversal, operating in a definite cycle to prevent overloading and avoid valve chatter. The cost of the 60,000 BTU capacity unit, complete with well, is estimated at around \$1,600.

MARVAIR SPECIFICATIONS

Motor Size	Weight	Heating Capacity @ 50° Water	Cooling Capacity @ 75° Water
3 H.P.	932 lbs.	60,000 BTU	32,000 BTU
5 H.P.	1,162 lbs.	100,000 BTU	54,000 BTU

(Text Continued From Page 161)

over long distances and retransformed before it reaches the home. Throughout the process there are power losses which detract from its overall efficiency. Thus it has been found cheaper to use coal, oil or natural gas directly rather than their electrical counterpart. This is the basic reason that the heat pump has not been used extensively for heating. However, certain factors may upset the old economics.

For one thing, one cannot compare a unit which heats and cools with a simple boiler or furnace which only heats. Furthermore, the higher operating costs of the heat pump may be more than offset by the distinct advantages of a purely electrical system. Fuelless operation will be a persuasive argument with many owners, as there are no chimneys to build, nothing to burn, no ashes to carry out. Important, too, is the absence of any fire or explosion hazard. The only possible hazard might be an electrical short circuit. Its space requirements are smaller and installation simpler than that of conventional equipment. One further advantage stands out: the increased emphasis on sensitive and accurate controls places an electrical system far ahead of its competitors. Unquestionably, the heat pump will respond more quickly and to closer tolerances than heating systems now in use.

Today the heat pump is in an extremely controversial position. Some engineers point to the fact that, although it is very well known, it has been relatively seldom adopted in the past ninety years. There is another group of engineers, however, who protest that the very similarity between reversed cycle refrigeration and straight refrigeration has been a hindrance to the development of the former. They argue that the heat pump has always used the evaporators, compressors, condensers and heat exchangers developed for an opposite purpose, and that if equipment were designed to take particular advantage of the unique capabilities of the heat pump it could stand on its own feet.

It looks as if the controversy may be decided shortly. To begin with, many of the nation's utility companies are now actively interested in promoting the heat pump on a commercial basis. All across the country, in all sorts of climates, utility company offices are being completely air conditioned by reverse cycle refrigeration: their efficient performance leaves no doubt that, mechanically, the heat pump has come of age. At least two manufacturers have announced production of year-round air conditioners, using the reverse cycle for both heating and cooling. Other firms are developing similar equipment. As competition asserts itself, further improvements may be expected.

In their end-product of conditioned air distributed through duct work, both of these new units will compete with air conditioning equipment using more conventional heat sources. Most of the power company installations are of this type. However, there is no reason to suppose that the heat pump cannot be used in connection with radiant or

panel heating systems also. In fact, because of the necessarily lower temperatures achieved by the heat pump, it seems especially adapted to radiant systems, with their lower temperature requirements. In theory, the heating medium could be either air, circulated through cellular floors or ceilings, or water circulated through pipe coils. To date, there are several installations of the first type and only one of the second in this country—that in the house of Mr. C. E. Boggs at Boise, Idaho (p. 164). Here a heat pump circulates a refrigerant (not water) through a system of copper tubing embedded in the plaster walls. Although reversible, the Boggs system has so far been used only for heating.

The greatest field for the heat pump in heating and cooling entire buildings appears to be in moderate climates, where the heating load in winter would approximate the cooling load in summer. This is more a question of economics than of physics, however, since it merely guarantees the full year-round operation of the heat pump. It is not necessary to balance exactly the heat gain on one side of the cycle with the heat loss on the other. But the installation so balanced would be obviously more economical when amortizing initial costs.

The choice between outside air and well water as a primary source of "borrowed" heat depends upon the winter and summer temperatures in a given locality. Water seems best for all except the warmest regions, for the heat pump using air is at an obvious disadvantage in cold weather. Also, the building's need for heat is greatest at the very time when available heat in the outside air is at its lowest. Thus, the Ohio Power Co. found that water-to-air heat transfer was preferable to air-to-air, even though both were practicable.

In first cost, the commercial versions of the heat pump promise to equal—if not to undercut—conventional air conditioning equipment. Although understandably cagey about pricing a brand new product in today's market, the heat pump manufacturers estimate that a unit whose cooling capacity is 32,000 BTU and heating capacity is 60,000 BTU will cost about \$1,500. As one manufacturer puts it: "You buy the refrigeration and get the heating free."

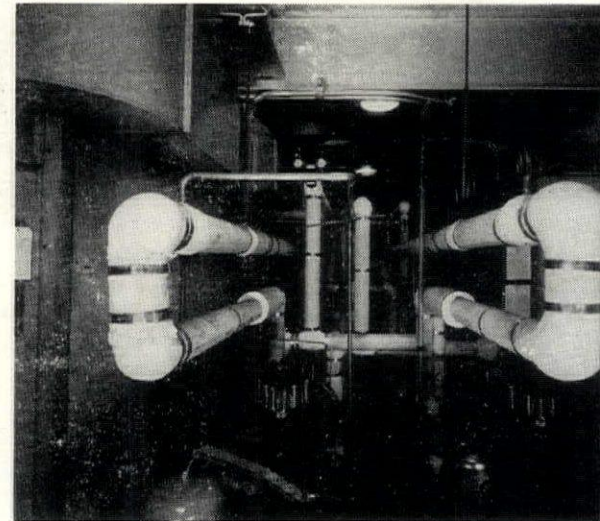
Operating costs present a much more hazardous prediction. While it remains doubtful if the heat pump will ever compete directly with other fuels on a dollar-for-dollar basis, it is obvious that, as the cost per kilowatt of electrical energy is reduced, the heat pump becomes a stronger contender in the heating field. And the heat pump can enjoy rates lower than prevail with conventional electrical appliances.

Since certain intermediate climate areas in this country have the additional advantage of low power rates (in the TVA district, for instance), there would seem to be a large potential market for reverse cycle heating and cooling today. It might also be considered in the Pacific Northwest, where electrical resistance heating already plays a large part, due to the low cost of electricity.

Of course, the relative cost of electricity in any given area depends largely on the amount used and on the times at which it is



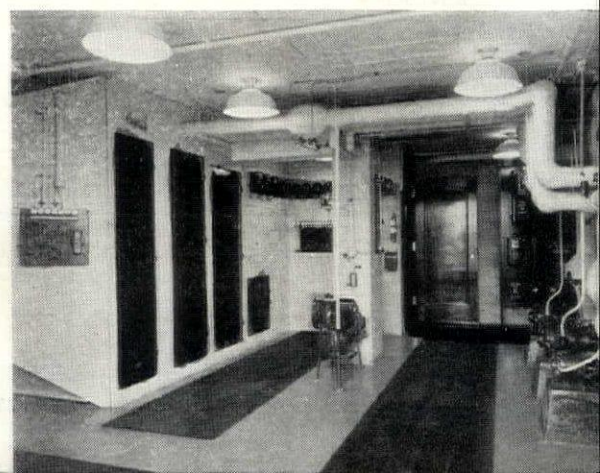
WATER-TO-WATER heat pump system heats and cools 169,000 cu. ft. building at Coshocton, Ohio.



USING EXCESS ELECTRICITY of the Ohio Power Co., these new buildings are two of many public utility plants now being conditioned by reverse cycle installations. Although both systems have been operated successfully in the same climate, it was found that the one using water as a primary heat source (above) was distinctly preferable to that using air (below)—at least for the latitude of Ohio.

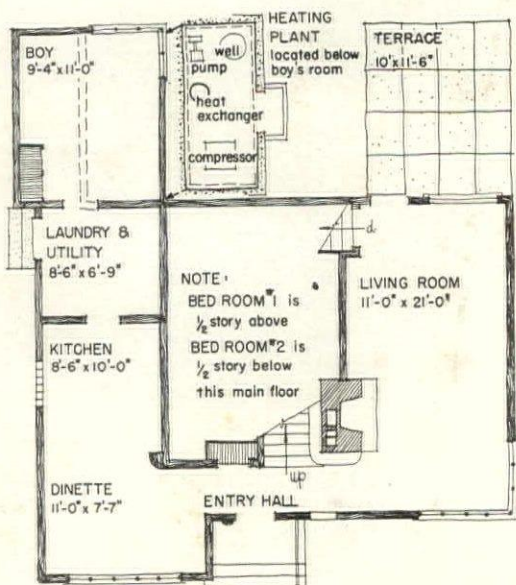
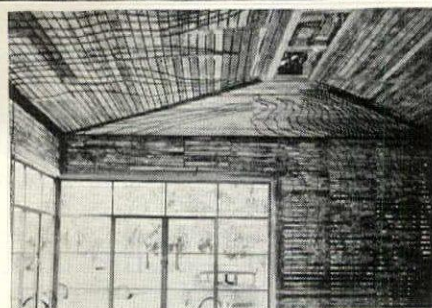


AIR-TO-AIR heat pump brings year-round comfort to 213,000 cu. ft. building at Portsmouth, Ohio.

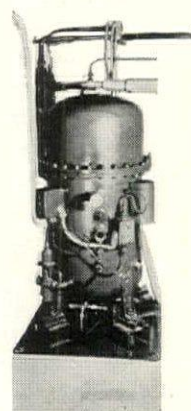




Johnson & Son



REFRIGERANT is circulated directly through coils embedded in plaster walls and ceiling. With well water as heat source, the system is for heating only.



USING A WATER-TO-REFRIGERANT cycle, this Idaho heat pump has a seven-year record of efficiency and surprisingly low "fuel" bills.

Assembling his own reverse-cycle system out of standard refrigeration components, Engineer C. E. Boggs made this water-to-Freon installation in his own home in Boise, Idaho seven years ago. It has several novel features, including a storage tank for "off-peak" heating; radiant heating by means of $\frac{1}{8}$ in. ID copper tubing embedded in the plaster; and the circulation of the refrigerant itself (rather than water) in the copper tubing. A careful cost record has been kept (see table below): over a seven-year period, for heating only, the system has annually averaged 6231 KWH. By

installing a storage tank, Boggs estimates that he can use "off-peak" current (at 83 cents as against peak rates of \$1.66 per KWH) to bring his annual heat bill down to the price of coal. However, the system has never been used for cooling and—when used for heating alone—its annual amortization seems exorbitant when compared to conventional media. What the system does demonstrate is the practicality of the heat pump in extremely cold climates, where well water at 55° F. is the primary heat source and panels are the means of heat distribution.

COMPARATIVE COSTS—Heat Pump vs. Conventional Heating

Cost of Equipment	Hot Air Coal		Hot. Water Oil		Elec. Room Heaters		Elec. Storage		Electric Heat Pump City Water Well Water		Combination Storage & Heat Pump City Water Well Water	
	\$700	\$700	\$1,000	\$1,000	\$400	\$700	\$1,550	\$1,700	\$2,050	\$2,200		
Fuel or Electricity	44	58	44	58	222	148	80	80	44	44		
Auxiliary Elec. Serv.	12	12	6	6	0	3	6	12	3	6		
City Water Investment Amortized at 5%	60	55	75	70	20	50	93	100	122	130		
Total Annual Cost	\$116	\$125	\$125	\$134	\$242	\$201	\$213	\$192	\$193	\$180		
% above Hot Air-Oil	7%	—	—	7%	93%	61%	72%	54%	54%	44%		

PRODUCTS & PRACTICE

required. The heat pump, being a potentially large consumer of current, will naturally get the benefit of reduced rates per kilowatt. As to the time requirement, the heat pump has a unique feature which enables it to utilize current when current is cheap. With a small storage tank, it can generate heat at any time and store it for future use. This storage feature allows the use of current during those periods when the utilities are not supplying their maximum output. Such current—known as the "off-peak" demand—is sold at cheaper rates. Thus Mr. Boggs, using "off-peak" storage and well water, was able to reduce his annual electric heating bill to \$44—the same as coal and \$14 less than oil. While this case is an isolated one, it serves to indicate that a canny cutting of corners might bring the heat pump into direct, dollars-and-cents competition with the coal- or oil-fired furnace.

Breaking down the heat and cold requirements (apart from air conditioning) of the ordinary house, some interesting possibilities for the heat pump appear. Perhaps the first application which suggests itself is in domestic hot water heating. Why this hasn't been tried before is difficult to understand, since the heat pump will use from one-quarter to one-third less current than the usual resistance-coil type of electric water heaters. It is reliably reported that several manufacturers are now developing such a heater under sponsorship of the public utilities.

Carrying the idea one step further, it is conceivable that the same machine could handle the refrigeration (water cooler, household refrigerator and frozen food compartment) as well as the hot water heating. It might be possible to use a slightly larger machine to fully air condition one room, probably the kitchen, along with the rest of its duties. Another use for the cooling side of the machine might be as a dehumidifier only, drying the air in humid weather by condensation. In any event, the best way to utilize the full potentialities of the heat pump would be to set up a list of heat losses against one of heat gains throughout the house, and design the equipment to meet the needs of each.

Another field lies in such special purpose buildings as dairies, where both heating and refrigeration are simultaneously necessary the year around. And offices requiring combined heating and air conditioning might well consider the heat pump's compactness and freedom from servicing and fueling worries.

Today, the refrigerator and the frozen food locker each has its own little compressor, the domestic hot water supply its own heating coil, and the boiler its own firebox, while for most people complete air conditioning remains but an outside hope. The trend toward combining all these disparate elements in one package is already well under way, as illustrated in the Borg-Warner Utility Unit (FORUM, Feb. '46). Here the heat pump should have a real place, for it has the versatility to meet practically all the thermal requirements of the home.



Whether you run a business, supervise a store or plan an airport, if you're interested in figures you'd better meet Kentile—the floor that lasts longer, looks better—costs less!

KENTILE
Asphalt Tile
Trade Mark Reg.



Consider these facts when you consider your flooring:



GREASEPROOF KENTILE
costs only slightly more than regular Kentile—and can be used only where needed. It's made in 16 regular Kentile colors.

IS IT HANDSOME? With Kentile you can have your own floor design. Kentile true-color squares are laid in the color combinations and patterns *you* decide will serve you best!

IS IT PRACTICAL? And how! It shows no scars, absorbs no moisture. Kentile cushions sounds, is resilient underfoot, and sure-treaded.

WHAT'S THE UPKEEP? Practically none! Kentile cleans with soap and water mopping, and colors stay true. When floor plans are altered or replacements needed, all you do is add new squares—without ripping up the floor.

WHAT'S THE COST? Kentile is asphalt tile—the lowest cost long wearing resilient tile flooring sold, foot by foot, every time. Installation is so easy it costs less installed. And because it wears longer it is incomparably cheaper.

THE WHOLE STORY!

Altogether, Kentile offers 15 different advantages. They're all told in the new, richly illustrated full-color catalogue that shows all the Kentile colors and some of the countless patterns possible—plus full-color pictures of Kentile in actual use. Send for your copy today—no obligation.



DAVID E. KENNEDY, Inc.
80 Second Avenue, Brooklyn 15, N. Y.
208 Bona Allen Bldg., Atlanta 3, Ga.
2000 Ulloa Street, San Francisco 16, California
30 No. Michigan Ave., Chicago 2, Illinois
452 Statler Bldg., Boston 16, Mass.
614 Olympia Road, Pittsburgh 11, Pa.
1211 National Broadcasting Co. Bldg., Cleveland 14, Ohio

ALUMINUM TILE for wall and ceiling application features ease of installation.

Altico Tile, made from pure aluminum and originally designed for kitchen and bathroom walls, is finding wide application in ceilings and walls of laundries, nurseries, lobbies, store fronts, restaurants, etc. An individual tile $4\frac{1}{4}$ in. sq. Altico may be applied over any existing smooth-painted surface to provide a water- and fire-resistant wall. In new buildings, it has been found especially suitable for dry construction, installation readily being made over sheet rock partitions. A mastic cement, applied $\frac{1}{16}$ in. thick, permanently seals the tiling to the wall. This ease of installation accounts for the cost feature,



which is said to be $\frac{1}{3}$ to $\frac{1}{2}$ less than installed ceramic tile. Altico comes in 16 colors, is rustproof, noncorrosive, does not crack or craze. Corresponding trim—consisting of chair rails, corner beads, feature strips and cove bases—is available. *Manufacturer: Alloy Tile Corp., Rahway, N. J.*

PLASTIC WALL TILE is lightweight, versatile, easily applied.

Plastic Tile, a wall material for home, commercial or industrial applications, is available for new construction or remodeling. Light in weight (1 sq. ft. equaling $5\frac{1}{3}$ oz.) the individual tile is easily applied with mastic cement. Installed over existing surfaces, it can easily be fitted and adapted to all corners, borders and wall bases. Made of pure plastic, it will not crack, chip, peel, break, sweat, stain or rust. It can be cleaned with a damp cloth. The individual tiles come in a variety of nine non-fading colors, solid and marbelized, measure $4\frac{1}{4} \times 4\frac{1}{4}$ in., half tiles for cap— $2\frac{1}{8} \times 4\frac{1}{4}$ in. According to the manufacturer, kitchens, bathrooms and recreation rooms can be remodeled with Plastic Tile at an amazingly low cost. Other uses for the material include industrial kitchens, cafeterias, dairies, washrooms, stores, etc. *Manufacturer: Plastic Tile Co., 620 Penn Ave., Wilkesburg, Pa.*



ESSENTIALS OF AUTOMATIC CONTROL

ROOM THERMOSTATS... Designed to grace any type of home, the attractive White-Rodgers Room Thermostats are the first essential to automatic home heating.

PRIMARY CONTROLS... Diaphragm gas valves • Solenoid gas valves • Stoker timers • Damper motors

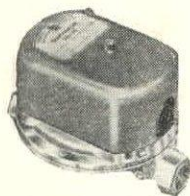
LIMIT CONTROLS... Warm-air limit controls • Hot-water limit controls • Steam-pressure limit controls.

FAN & CIRCULATOR CONTROLS... Fan controls, one and two-speed types • Hot-water circulator controls • Combination limit controls with fan or circulator controls.

Every home needs White-Rodgers Controls

Better-looking controls please the woman of the house. Better operating, more-dependable controls please the man of the house.

White-Rodgers controls are more dependable and, because they are readily adapted to the individual heating problem presented by each house, they insure more satisfactory heating.



ROOM THERMOSTAT
Series 120—Modern in design... finished in ivory and chrome to harmonize with any scheme of room decoration. Efficient and reliable in performance.

GAS VALVES

Series 2630—Smooth operating high capacity diaphragm valve. May be operated manually in case of power failure. Also available with built-in limit control.

LIMIT CONTROL

Series 400—Warm air type Hydraulic-Action, provides positive protection of furnace and home against excessive temperatures.



Write today for heating catalog and installation data.



WHITE-RODGERS ELECTRIC CO.

ST. LOUIS 6, MISSOURI

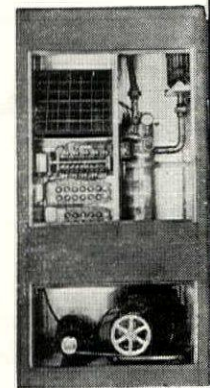
Controls for Refrigeration • Heating • Air Conditioning

ELECTRIC VAPOR HEATING UNITS for comfortable, clean, automatic central home heating.

Vap-O-Lec electric vapor heating units combine tested scientific principles, quality workmanship and materials to produce comfortable, healthful heat with convenience and efficiency. Utilizing steam vapor generated by electricity to produce heat which retains all natural humidity, the central heating unit is fully automatic, clean, dust free and noiseless. In operation, fresh air is drawn into the unit, passed through filters and finally channeled through a bank of sharp multi-spined copper fins which discharge the electrically-generated steam-vapor heat into the air under Moduflow control. Heart of the unit is its heavy copper, hermetically sealed generator which contains emersion-type low voltage heating elements encased in copper tubes with a small quantity of water sealed-in under reduced pressure. To produce super-heated steam-vapor under close tolerances, it employs a percolating action which draws water into orifices at the bottom of the tubes. Heated by the low voltage elements, super-heated steam vapor erupts from the top of the tubes and circulates through multi-spined fins or copper heat transfer coils. Thousands of sharp spines discharge the super-vapor heat into the air stream, while the heat-producing vapor, as condensed, flows back into the generator for reuse. There is no heat loss and the entire operation is continuous and automatic. Pressurestat control of ultra-sensitive mercury switches automatically limits the flow of energy in the coils, thereby controlling the supply of electric current to the fewest number of heating elements required to insure constant air flow for the desired temperature. This, according to the manufacturer, reduces cost of operation, which is said to be comparable to other better types of automatic heat.

Manufacturer: The Cronholm Mfg. Co., 3500 S.E. Hawthorne Ave., Portland, Ore.

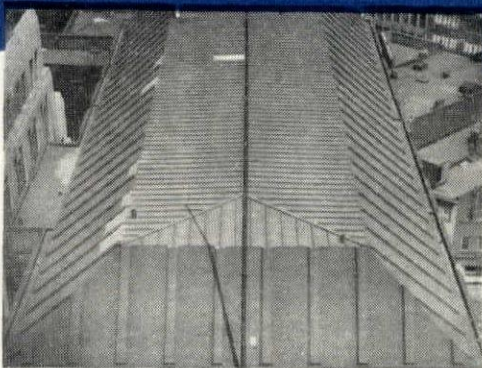
(Continued on page 170)





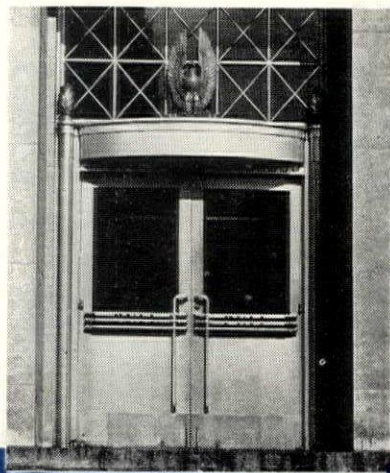
Aluminum shows up to advantage in hidden places, too. Take ducts, for example. Aluminum ducts are easy to fabricate and light in weight.

When you consider aluminum for decorative purposes, remember, it is made in every form and shape.



As a maintenance saver, aluminum takes top honors. Roofs, copings, skylights and cornices of Alcoa Aluminum will never rust, rot, or warp.

Inside or outside, it's all the same with aluminum. Outside, these windows are weather-resistant. Inside, they improve appearance.



TAKE YOUR CHOICE OF 212 WAYS TO USE

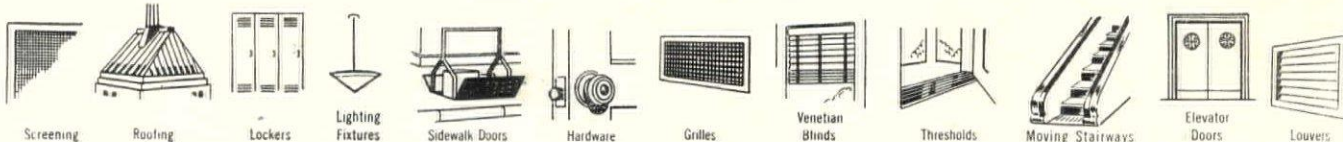
Alcoa Aluminum

The whole conception of aluminum as a building material has changed. Its use is no longer limited to a few selected applications. Its economy and advantages have extended its use to more than 212 places in building construction. Some of these are familiar—some not so familiar.

If you have not checked the uses of Alcoa

Aluminum recently, write today for a copy of the booklet "Aluminum Applications by Industries". You will find this booklet a helpful reference when working on your plans for future buildings. ALUMINUM COMPANY OF AMERICA, 2166 Gulf Building, Pittsburgh 19, Pennsylvania. Sales offices in principal cities.

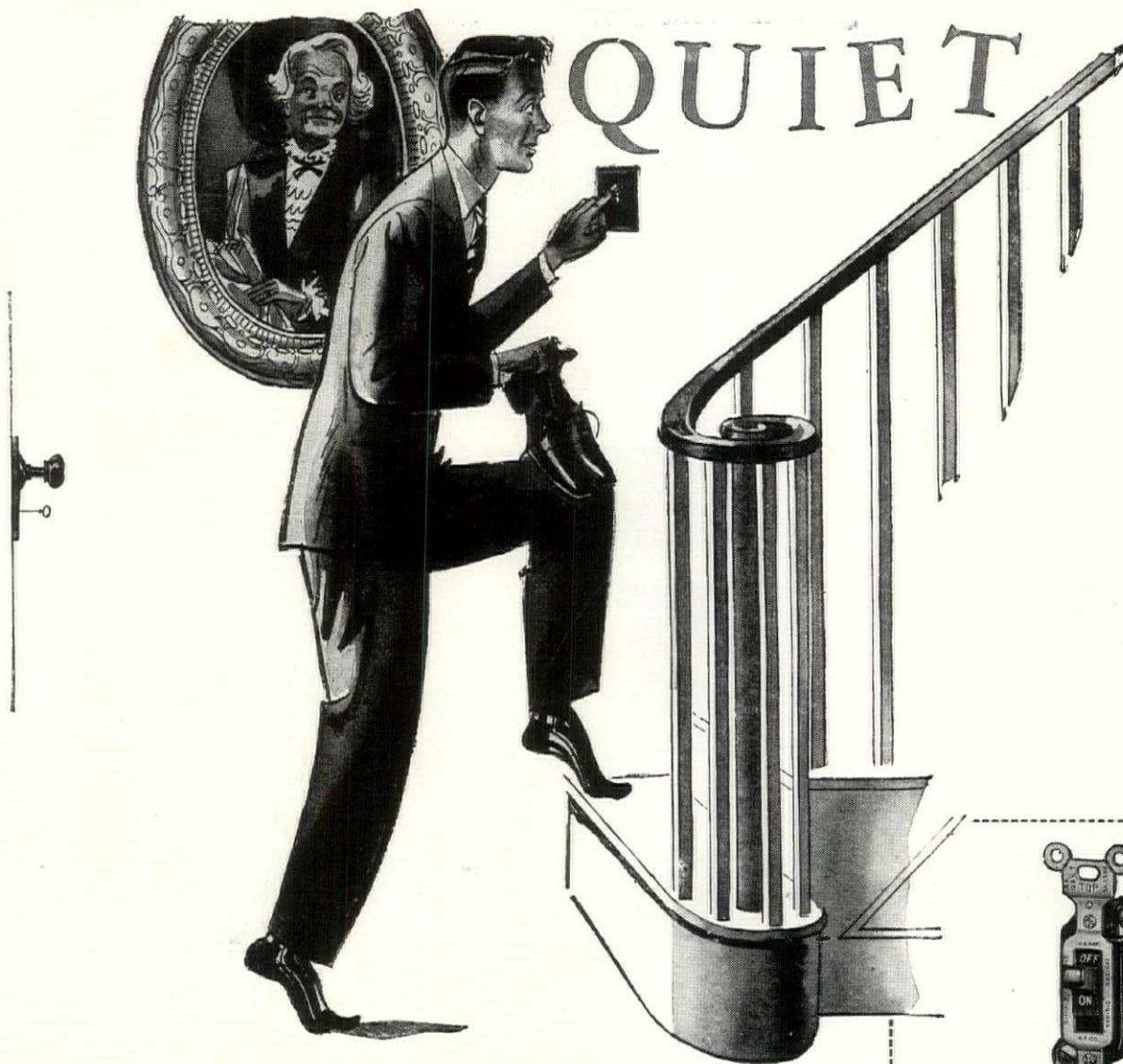
THE MOST VERSATILE OF ALL BUILDING MATERIALS



ALCOA FIRST IN **ALUMINUM**



IN EVERY COMMERCIAL FORM



G-E Silent Switches... Mean Happier Homes for Your Clients!

Nothing can compare to the noiseless operation of the new G-E silent mercury switch wherever quiet and tranquility are desirable—in bedrooms, nurseries, studies, and many other locations.

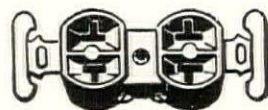
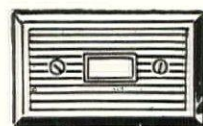
Few services that you can render your clients will be as thoroughly appreciated as the specification of these aids to comfortable living.

You'll be gaining good will in another way, as well, because G-E silent switches are built to last for many years of service. Conventional blades and springs have been eliminated. The hermetically sealed "mercury button" actuates the make and break at the flick of a finger. There are fewer moving parts to wear out.

Choice of brown or ivory handles and matching wall plates helps you to specify switches that harmonize with various interiors.

G-E Silent Switches Are Only Part of a Full Line of Wiring Devices

When you plan electric installations, don't overlook the many other reliable, high-quality G-E wiring devices. They include flush switches, convenience outlets, lampholders, plugs, fluorescent accessories, cord sets, and fuses. For information on this high quality line, see your local G-E Merchandise Distributor, or write Section D16-1126, Appliance and Merchandise Department, General Electric Company, Bridgeport 2, Connecticut.



G-E wiring devices are built to assure the perfection of detail that helps make installation easy. For industrial and commercial installations, as well as homes, the use of G-E devices means a long-lasting job throughout. Available from your local General Electric Merchandise Distributor.

GENERAL  **ELECTRIC**

A cup of coffee from a Water Heater?

From *this* water heater, why not?
Its tank—mirror-smooth and sparkling blue glass-fused-to-steel—is sanitary as a glass coffee-maker.

Permaglas

WATER HEATER

Fresh coffee *has* been served from a *Permaglas* Water Heater just to demonstrate how it supplies *clean* hot water . . . "packaged-in-glass" . . . pure as the source itself.

No matter *what* kind of water goes into it, the *Permaglas* tank **CAN-NOT** rust or corrode. It puts an end to tank rust that ruins clean laundry, corrosion dirt that discolors the bath.

NOW YOU CAN SPECIFY CLEAN HOT WATER

Specify *Permaglas*—the one automatic storage water heater that meets *all* demands for complete service, great convenience, long life . . . and *clean* hot water.

Find out about it today. Write the A. O. Smith office nearest you for "The Inside Story of Permaglas."



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VACUUM DRAFT OIL BURNING FURNACE eliminates need for standard chimney as draft-creating device.

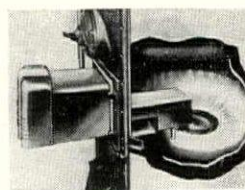
The Norge-Heat vacuum draft oil-burning furnace is designed to create its own draft through the use of a suction fan which pulls rather than pushes air through the combustion chamber. A completely controllable fire results, and the ordinary chimney generally necessary for draft creation may be replaced by an exhaust vent. The new furnace is equipped with a drum-shaped, stainless steel fire chamber surrounded by a hollow cylinder. A vacuum draft pulls the hot gases through center drum then through hollow cylinder, and out the chimney. Cold air, which is drawn into the furnace by a blower mechanism, is forced over these heated surfaces, which have several times the surface area of those found in conventional oil burning furnaces. Thus, the maximum amount of heat is extracted from the furnace. Other advantages of the new unit include an

electric ignition, air filters, an oil pressure pump and a single motor which operates the vacuum fan, the blower and oil pressure pump. According to the manufacturer, the new unit has proved economical and reliable under all weather and climate conditions. Compactly designed, it is available in three models, the largest of which develops 120,000 BTU bonnet output. The other models, designed for small homes, provide 90,000 BTU and 80,000 BTU—the smaller of the two being adapted for either gravity or forced-air circulation.

Manufacturer: Norge-Heat Div., Borg-Warner Corp., 574 E. Woodbridge Ave., Detroit 26, Mich.

GAS CONVERSION BURNER offers easy installation, efficient operation, cleanliness, low-cost investment.

This Fuel Door Conversion Burner is designed so that one model will handle the gas heating requirements of 90 per cent of all houses. It fits into the fuel door of the furnace, thus eliminates the necessity of removing grates, or costly changeover expense. Operation is clean and efficient. A simple adjustment varies the input from 50,000 BTU to 200,000 BTU, and



the unit is adaptable to both furnaces and boilers. According to the manufacturer, any existing furnace or boiler in good working condition can be converted to automatic gas heat with the new burner in a couple of hours. The unique design of the burner head causes hot gases to travel the side walls from the bottom up. This assures delivery of a maximum amount of heat through the fire box walls without heating the front. The unit has been tested by A.G.A. Laboratories.

Manufacturer: Handley-Brown Co., Jackson, Mich.

AIR CONDITIONING UNIT utilizing vapor pressure differential provides cooled, dry, healthful air.

The Amcoil Comfortaire Conditioner for homes, offices, shops, etc., embodies a new development in air cooling: the utilization of the vapor pressure differential created by a cold coil inside of an enclosure. This patented feature removes moisture from the air by vapor pressure difference, thereby eliminating the need to lower air temperature to the dew point. Controlled by a Humidistat for cool, damp days and a thermostat on hot, dry days, the unit automatically adjusts to the constantly varying relations between temperature and humidity. The operating principle is based on the law of physics that vapor pressures equalize themselves. A cooling coil inside an enclosure creates a low vapor-pressure area. Air with moisture in the form of vapor enters the unit and circulates downward around this enclosure. Moisture is attracted to the low pressure area through small openings in the coil enclosure where it is condensed into water and drained off. Air relieved of its moisture content flows past the enclosed coil without contact and mixes below the coil with such small amounts of cooled air as entered the coil chamber by molecular attraction with the original vapor. This mixture emerges into the room at a comfortable degree of both sensible and latent heat. Since it is not necessary to lower air to the dew point to effect removal of moisture, the new unit employs a smaller condensing unit using less horsepower than conventional air conditioning units. Two floor models are available for manual control, or complete with thermostat and humidistat for automatic control.

Manufacturer: American Coils Co., 25-27 Lexington St., Newark, N. J.

(Continued on page 174)



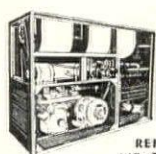
usAIRco Evaporative Condensers

**More Efficient Condensing
of Refrigerants PLUS Big
Water Savings . . .**

The evaporative condenser is a "packaged" unit in that it incorporates all the desirable features of the conventional shell and tube condenser, water cooling tower and water pump in a single, compact piece of equipment.

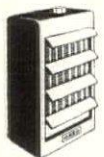
Savings up to 95% in water costs are possible with the use of evaporative condensers for refrigeration or air conditioning applications. They also eliminate waste water disposal problems, and pumping costs are much lower than those of a conventional cooling tower installation.

usAIRco Evaporative Condensers are designed for maximum economy and efficiency in operation. Complete design and engineering information may be had on usAIRco Evaporative Condensers by requesting a copy of special bulletin.

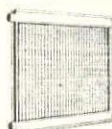


REFRIGERATED
AIR CONDITIONING
UNITS

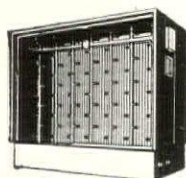
HEATING &
COOLING COILS



UNIT &
BLAST HEATERS



BLOWERS & FANS



AIR WASHERS

United States Air Conditioning Corporation

COMO AVENUE S.E. AT 33RD
MINNEAPOLIS 14, MINNESOTA





THE SHOP AND WHAT IT MAKES - - BOTH BUILT OF

Galbestos



The thing to note is—this protected metal, Galbestos, can be fabricated in a sheet metal shop with only ordinary equipment.

Galbestos has no rival among roofing and siding materials for resistance to extremes in weather, corrosive fumes or industrial heat. But—in addition, Galbestos is perfect for hoods, ducts and such fabricated units which call for bending, crimping or rolling. You can really work it!

Galbestos is sheet steel with asbestos literally fused to it. This is its most unique feature, the source of its unexcelled durability. The method of fusing is an exclusive development by Robertson research. Galbestos was used before the war but the excessive demands

made during the last few years proved its undeniable superiority. The record of what a beating Galbestos stood up under is post-war building news worthy of your close attention.

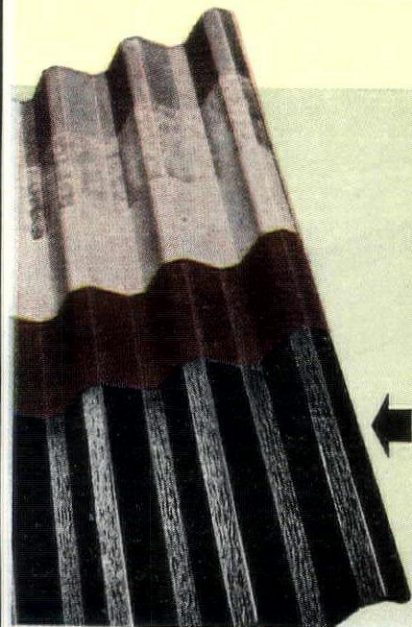
Incidentally, the Vertical Lift Doors in the illustration, also Robertson products, can be sheathed in Galbestos. For information on these disappearing doors, or for samples of Galbestos, call your Robertson representative. H. H. Robertson Company, Pittsburgh, Pa.

H • H • ROBERTSON CO.

2408 Farmers Bank Building
Pittsburgh 22, Pennsylvania



Offices in 50 Principal Cities
World-Wide Building Service



Lock your fingers like this picture. It will give you an idea of how asbestos fibers are locked into the very core metal of Galbestos. We call this bond the Galbestos Grip. It is a unique development of Robertson research.



Asbestos is fused to sheet steel by a metallic alloy. The myriad rock-born fingers are literally imbedded in metal. The asbestos is impregnated with asphalt and waterproofed.

So inseparable is the bond that Galbestos can be worked on ordinary sheet metal shop equipment. By worked we mean crimped, rolled, sheared, bent and riveted like unprotected metal.



Galbestos comes in standard roofing and siding sheets up to 12 feet by 36 inches; maroon, aluminum or black finishes; flat or in several corrugations; for use over structural framework. Would you like to see samples?



PREWAR TESTED FOR POSTWAR CONSTRUCTION

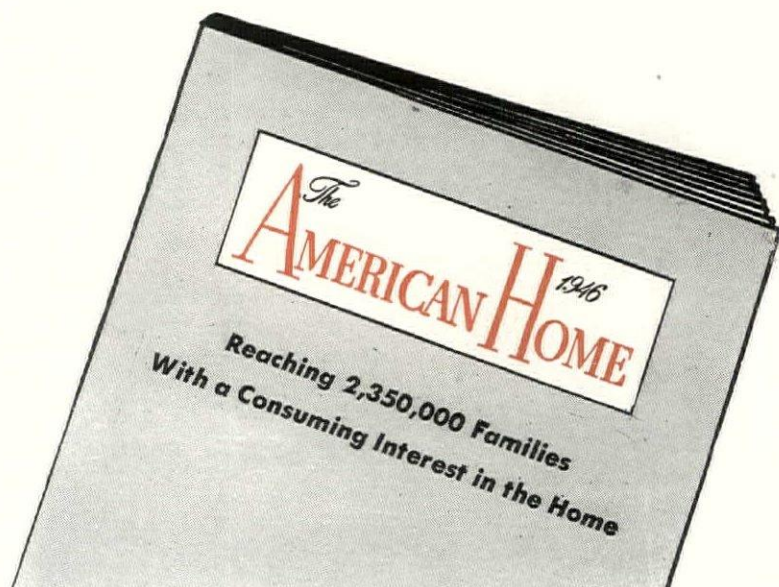


YOU'RE GOING TO HEAR MORE ABOUT THESE BUILDING IDEAS

American Home families are going to start a building boom all of their own, as soon as materials are available. Many of them have already bought the real estate. Now, while they're marking time, they're planning these new homes—clipping suggestions from *American Home Magazine*, their text book on building.

When the time comes to build, you'll find they talk your language. They have ideas on that play-room basement—and that glass-walled sun porch. They've been dreaming about these things ever since they saw them pictured in *American Home Magazine*. They even have ideas on the type of flooring and the kind of glass to use.

That's why it's good business for you to check *American Home Magazine*. You'll find a more ready acceptance among your clients for building materials advertised in this magazine.



foundations like these...



mean faster, better construction

UNI-FORM Panels formed these smoother, better foundations in $\frac{1}{2}$ the time at $\frac{1}{2}$ the cost, because they erect faster and strip easier.

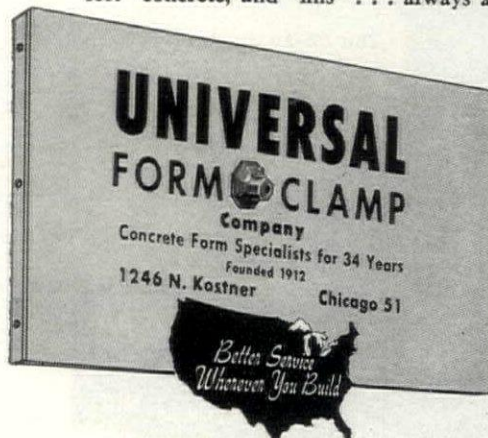
Smooth-surfaced walls, sharp, accurate corners like these, add beauty and utility with even greater economy to every house you build.

UNI-FORM Ties lock the Panels into a tight, rigid, accurately spaced assembly which prevents grout seepage, "lost" concrete, and "fins" . . . always assuring smooth

walls of uniform thickness at top and bottom.

MATERIAL: The UNI-FORM System of foundation panels costs less than 3¢ per square foot. You can use the Panels from 75 to 100 times before replacement of the plywood. Rigid, all-steel frames are indestructible.

LABOR: Actual cost studies of forming with UNI-FORM Panels on widely varied projects, indicate forming costs to be as low as 2¢ per square foot of form area.



Investigate the time and money saving advantages of the UNI-FORM System today. They mean many more homes to meet today's housing crisis.

**WRITE FOR THE NEW
UNI-FORM BULLETIN
IT'S FREE!**



Ready to use..Story height forms..No nailing..No bolting..Just set them up

BUILDING REPORTER

**Now YOU Can Make
ACCURATE DRAWINGS**

Anywhere... Any Time...
with the new

**JIFFY SKETCH
SCALE DRAWING PAD**

Save precious time!
No drafting board, ruler or T-square!

With this amazing pad you can quickly make scale drawings wherever you may be—in your office, in the shop or in the field.

It's easy! Just select the scale you wish to use and place one of the tissue sheets over it. Make your drawing with the aid of the printed scale which shows through the tissue.

Each pad is equipped with 6 different scales—inch, tenth, eighth, quarter, half, and isometric with 1/8 inch scale. The scales are clearly printed on cover flaps. They positively cannot slip out of position; can't get lost.

BETTER THAN GRAPH PAPER. Your drawing can be blue-printed. No ruled lines on tissue to confuse your drawings. You get all the advantages

of ruled paper, with none of the disadvantages.

"JIFFY SKETCH is indispensable," say Engineers, Designers, Draftsmen, Field Men, Sales Engineers, etc. Large firms send repeat orders.

Size: 8 3/4" x 12". Securely bound in stiff cover. 75 sheets of fine quality tracing tissue. \$1.65 each (6 or more, \$1.50 each). On sale at most dealers.

SPECIAL OFFER—\$1.00

Money-back Guarantee! Send a dollar bill for sample JIFFY SKETCH Scale Drawing Pad. See for yourself how quickly and easily you can make properly proportioned drawings. Save 33 1/3% on this Introductory Offer. Send for your JIFFY SKETCH today!

JIFFY SALES CO.

1850 East 37th Street, Cleveland 14, Ohio

A real time saver for busy men who wish to convey their ideas quickly and accurately.

FOOT CANDLES TALK!

with

***COLOVOLT**

*** Cold Cathode—Low Voltage Lighting**

and here's what they say:

"Lower maintenance cost—longer maintenance of a given foot-candle level—greater dependability because of guarantee (One year of light guaranteed, except for failure due to breakage)—instantaneous starting—no flickering—continuous line lighting."

These extra advantages are available to commercial and industrial users of light when installations are made with COLOVOLT Cold Cathode, Low Voltage Fluorescent Lamps and Fixtures.

Write for illustrated material and technical data.

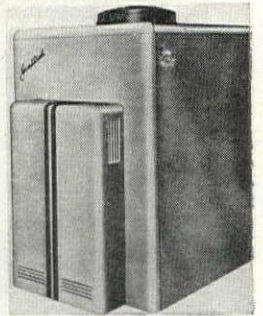
* Trade Mark Registered U. S. Patent Office

GENERAL LUMINESCENT CORPORATION

622 S. FEDERAL STREET CHICAGO 5, ILLINOIS

GAS FIRED GRAVITY FURNACE designed for efficient and economical operation.

Designed for combustion efficiency and economical operation, the new Janitrol Series GC S-64, gas-fired, gravity furnace is made in two sizes, 75,000 and 100,000 BTU. Both units feature an all-welded, 18 gauge special steel combustion chamber and radiator assembly that, according to the manufacturer, has no hot spots which would create stresses in construction. Operation is quiet and automatic controls maintain even temperature. A flame-retention type burner with alloy flame diffuser and an accurately proportioned venturi to insure proper mixture of air and gas are included as standard equipment. A fixed orifice, centered in relation to the venturi, measures input, and a burner air duct directs secondary air to the burners. Controls include a V-835 low voltage magnetic valve and transformer, T81 thermostat, quick-acting automatic pilot, adjustable gas pressure regulator, pilot cock and tubing with fittings. The units have an easily accessible, positive lock-type primary air adjustment, adjustable without tools, and return air connections can be made at sides or rear of the unit. Pilot has a self-contained alloy compensating element, a factory-fixed setting and a platinum pilot igniter coil to assure long life. Positive ignition of the pilot gas is obtained by a separate ignition transformer which supplies constant voltage.



Manufacturer: Surface Combustion Corp., 2375 Dorr St., Toledo, Ohio.

(Continued on page 178)

EVOLUTIONARY IN ENGINEERING
REVOLUTIONARY IN DESIGN

COOLSTREAM CAPACITY CLIMBS

Rising above original estimates—
Delivering more than promised—

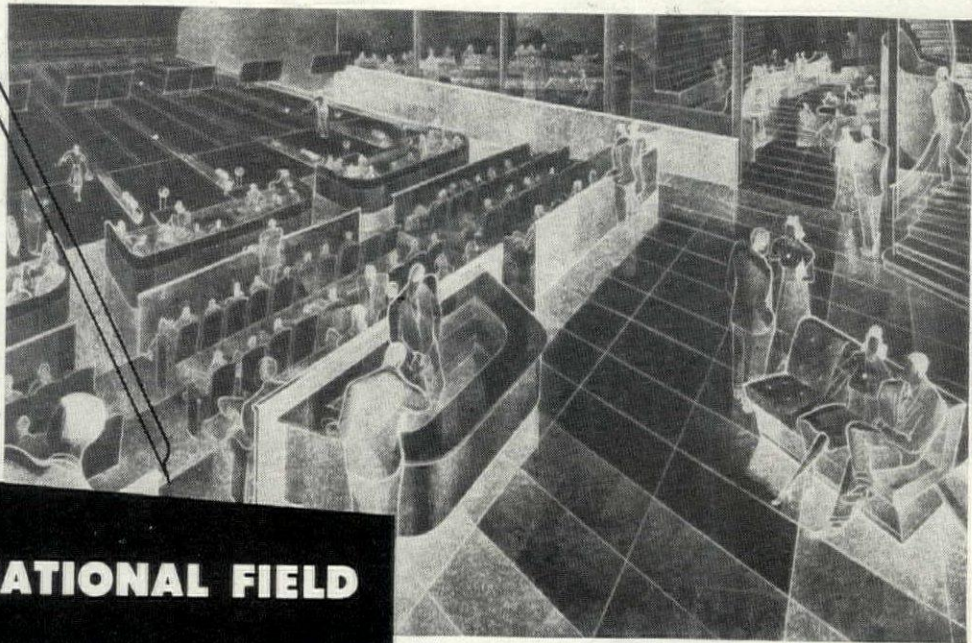
Coolstream Electric Water Coolers
Exceed Expectations and
Surpass Specifications

The CP-10 is delivering more
than the charted 10 gallons—
The CP-10 is breaking
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Edgar Lynch, Architect, directs activities of the new Brunswick Architectural Research Department. In practice since 1929, he interrupted a noteworthy career as architect and consultant to outstanding Chicago and New York business and realty firms, to collaborate with Donald Desky Associates on the original concept of this Brunswick service.

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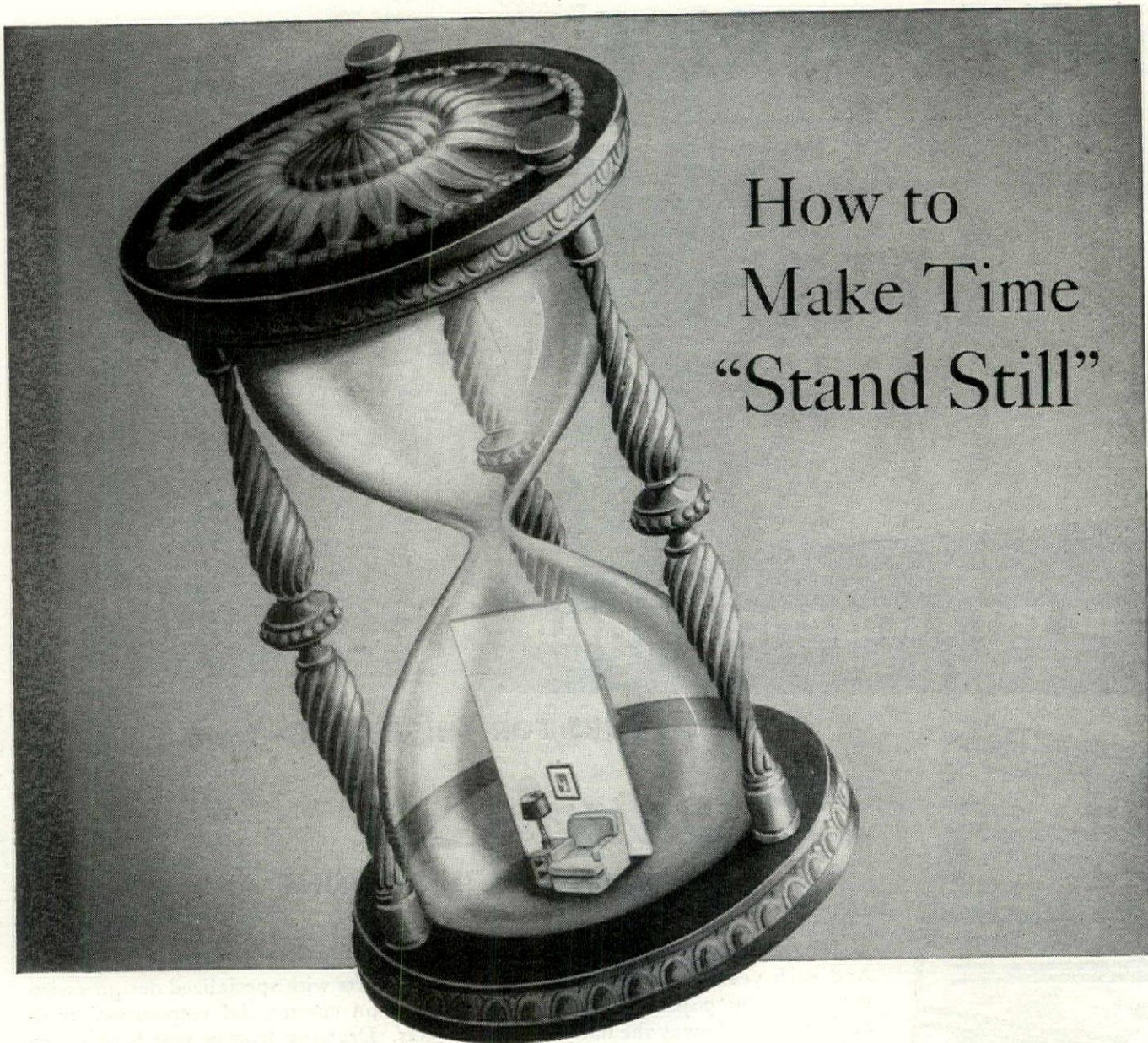
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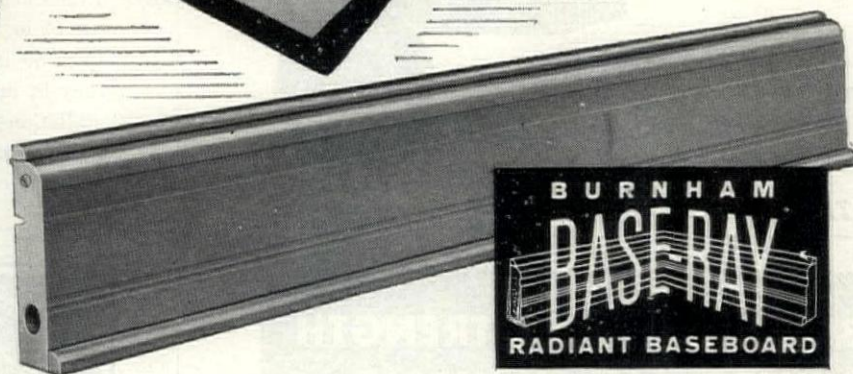
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Yes, here's a *proven* idea that accomplishes in one stroke two major design improvements. BASE-RAY* radiant heating makes possible cold weather comfort never before attainable at such low cost, and design opportunities that only uncluttered floor space can provide.

The design advantages of BASE-RAY will be obvious to you. Its practical advantages are fully as important. BASE-RAY heating units are installed in place of baseboards on outer walls and can be used with any type hot water, two-pipe steam or vapor system. Sectional units make them highly elastic in application. No changes from orthodox construction methods are required. Specifications are simple and your heating contractor can do a good installation job. BASE-RAY achieves heating uniformity never before possible — a floor-to-ceiling differential of only 3° even in zero weather.

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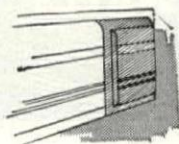
Export Department

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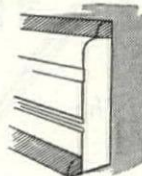
CONCEALED VALVES

This neat metal enclosure shaped like the heating unit itself, is attached to each end of BASE-RAY, thus completely concealing all valves and controls.



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To provide an even more realistic baseboard appearance and to compensate for irregularities sometimes found in walls and floors, regular wood moldings are added at top and bottom of "Standard" BASE-RAY and at top only of "Hy-Power" units.



Write today for this FREE Booklet, which gives ratings and installation data on BASE-RAY Radiant Baseboards.

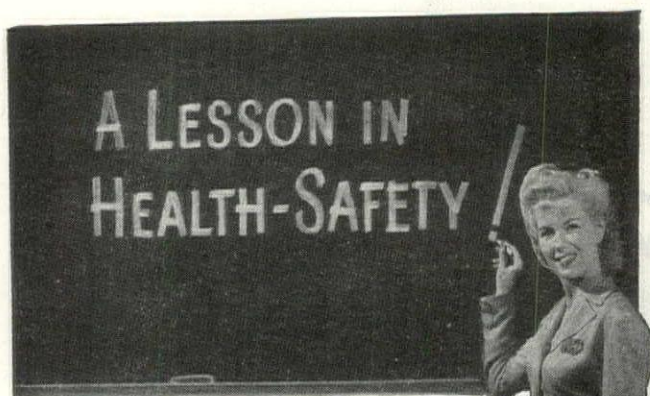
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Schools have learned the lesson of health-safety. Architects and school officials know there is one solution to the problem, insofar as drinking water is concerned...

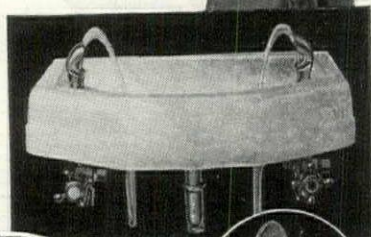
Halsey Taylor Drinking Fountains.

There is a type for every need, each with the original patented automatic stream control and two-stream projector. Write for catalog illustrating and describing the complete Halsey Taylor line for school installations.

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DRINKING FOUNTAINS



A-3

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Copperweld

WALL TIES

**The ONLY Ties Combining
The STRENGTH of STEEL and The
PERMANENCE of COPPER**

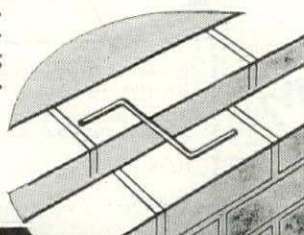
• Copperweld Wall Ties resist corrosion—and provide sustained high strength in cavity walls for the life of the structure.

These ties are made of high tensile alloy steel wire permanently protected with a heavy covering of copper by the Copperweld Molten-Welding Process. Leading architects are specifying these strong, non-rusting ties for their cavity wall jobs.

Write for Detailed
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THERMOSTAT incorporates electric eye to give picture of damper adjustments.

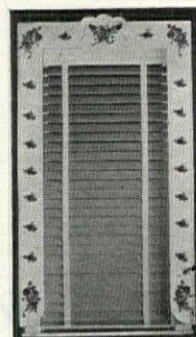
Use of an electric eye signal in the new Tempmaster Thermostat gives a true picture upstairs of damper position at all times, and even warns if basement switch is in wrong position. The signal, located inside the thermostat at top center, is visible through a thin red shell which glows from off to bright red with damper adjustments. When dampers are closed completely, the signal is off. A dim light advises when motor is in operation during process of changing dampers and a bright red light means dampers are open. Another feature of the thermostat are new snap-action contact points enclosed away from air flow and dust to promote operating efficiency. A five-year guarantee accompanies the product.

Manufacturer: Crown Controls Co., New Bremen, Ohio.

ADJUSTABLE WINDOW FRAMES for decorative uses.

Wooden Windo-Frames, painted or decorated with decals, wallpaper, chintz, etc., have a wide variety of applications:

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Manufacturer: Robb-Hill Inc., 826 Broadway, New York 3, N. Y.

(Technical Literature, page 184)

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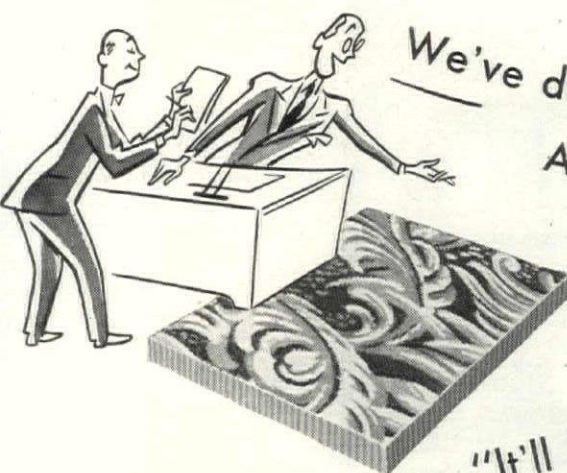
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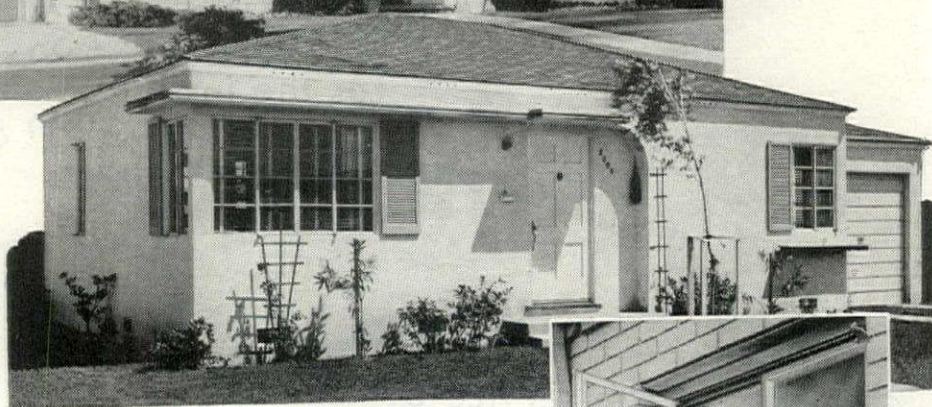
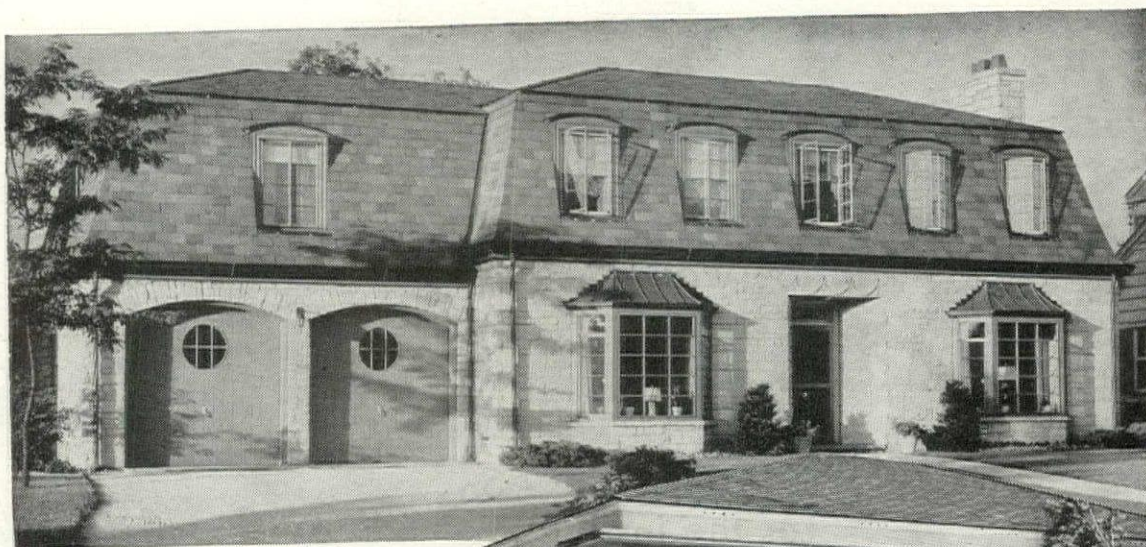


...it'll pay to wait a bit!

Most men are agreed. Bigelow carpets have the right combination: beauty and long wear. Production is approaching normal again and you'll be taken care of... you'll agree that waiting was worthwhile. Right now, ask our Carpet Counsel to help you plan.

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METAL WINDOWS?

Notice the ease with which metal windows can be washed from within.



All over America architects, engineers, contractors and builders are planning ahead today for the homes of tomorrow—and in the homes of tomorrow they know there must be new features to add to the beauty and the utility of those homes. One feature every home should have is steel windows. They not only offer greater utility but add to the beauty and lasting appearance of any home. Consider the advantages Ceco metal windows offer:

- 1** Tighter weather seal—precision engineering keeps out cold, dust, rain; keeps heat in.
- 2** Gives more light—affords from 20% to 60% greater light area.
- 3** Lowest initial cost installed—metal windows cost less than any other type of windows installed . . . initial cost is the final cost.
- 4** Easy to install—no weather stripping necessary. Minimum labor in installing hardware. No planing or fitting.
- 5** Controlled ventilation—up to 100% . . . catches stray breezes . . . controls drafts.
- 6** Easier operation—always fit . . . no sticking, warping or swelling.
- 7** Fire safety—Ceco metal windows are fire resistive.
- 8** Easily washed from inside—both sides of window can be washed from within.

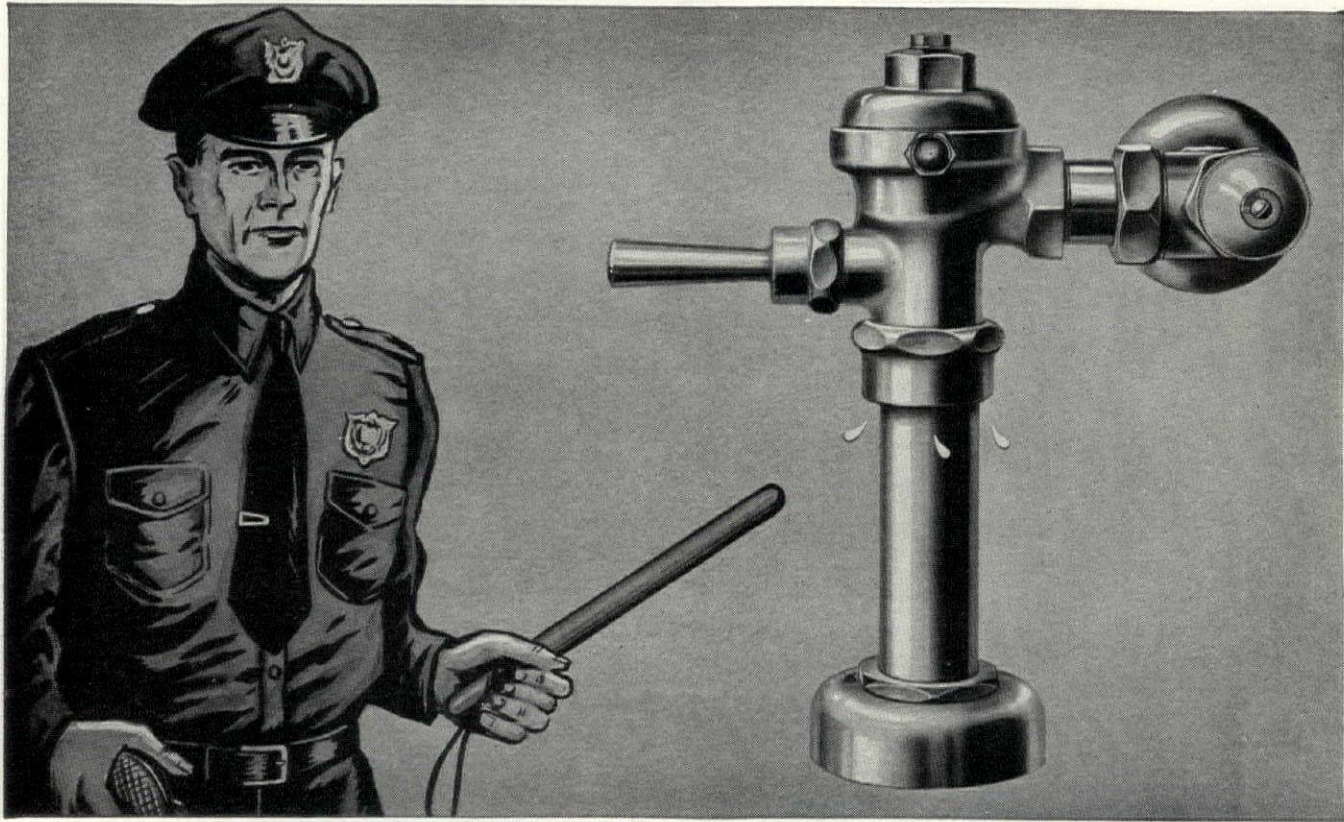
Partial list of other Ceco Products: Aluminum Frame Insulating Storm Panel for Metal Casements • Meyer Steelforms • Reinforcing Steel • Metal Frame Screens • Metal Weatherstrips • Steel Joists • Metal Lath and Accessories

CECO STEEL PRODUCTS CORPORATION

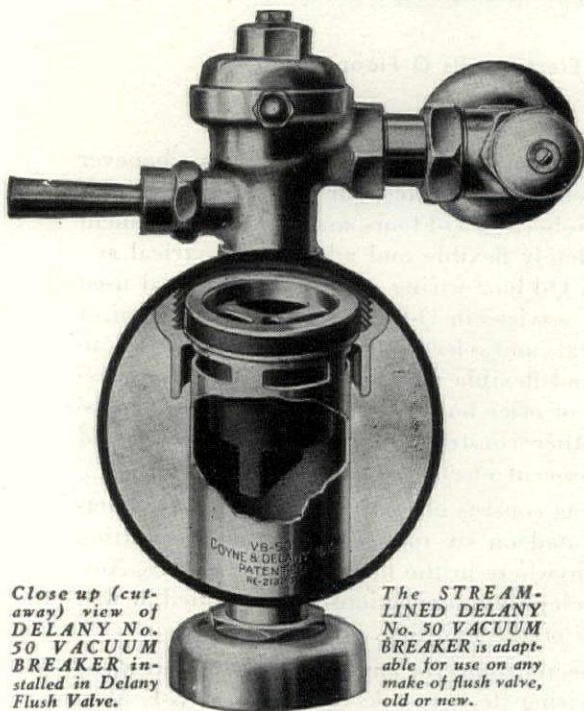
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SELF POLICING against back-syphonage!



Close up (cut-away) view of DELANY No. 50 VACUUM BREAKER installed in Delany Flush Valve.

The STREAM-LINED DELANY No. 50 VACUUM BREAKER is adaptable for use on any make of flush valve, old or new.

The DELANY No. 50 VACUUM BREAKER in design and functional operation eliminates any necessity for inspection to ascertain if protection against back-syphonage is constantly provided. It's self policing.

Should a DELANY No. 50 VACUUM BREAKER become defective through fair wear and tear, sabotage, or faulty installation, such a condition will be made known to the user by the spilling of a small amount of water through vents of this vacuum breaker each time the valve is operated. This obviates the "usual" daily inspection.

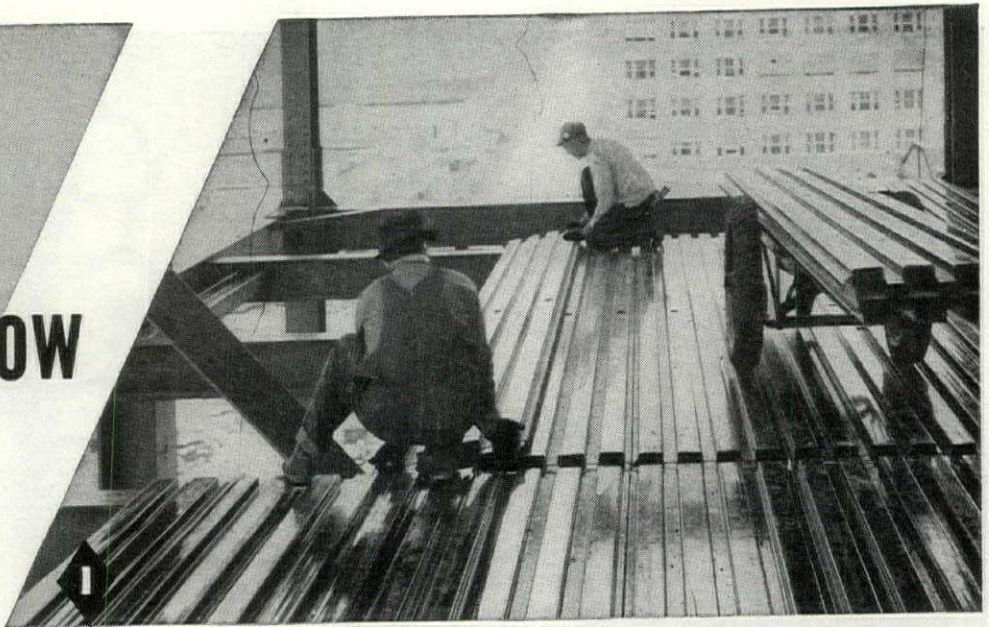
And moreover, should any fault or stoppage occur and repair be delayed, the unit is fully capable of preventing back-syphonage should a vacuum develop while in a defective condition. This is the essence of full and constant protection — and why we call the No. 50 "Self Policing."

We know of no other similar device that has this most important feature.

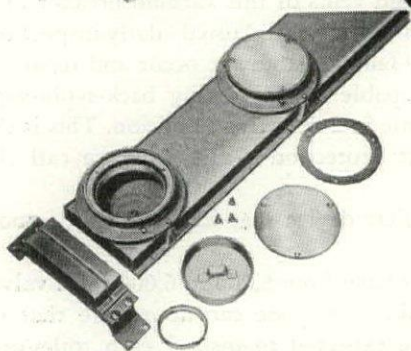
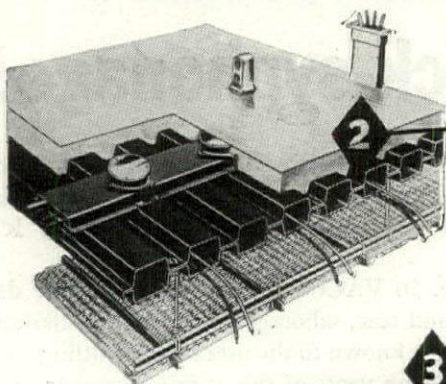
Some Government projects have from 5,000 to 6,000 flush valves equipped with vacuum breakers. Anyone can appreciate that no maintenance force should be expected to inspect each toilet-unit each day—it is physically impossible. Therefore the preference for the exclusive "Self Policing" feature of the DELANY No. 50 VACUUM BREAKER cannot be denied.

SINCE 1879
Coyne & Delany Co.
 BROOKLYN N.Y.

Do you know



these 3 important facts?



- 1 Robertson Q-Floors are the starting point for wiring that's fully adequate
- 2 Q-Floor wiring is the only way to make the job complete
- 3 Only General Electric sells Q-Floor wiring

It will pay you to remember these important facts whenever you consider the electrical needs of your clients. The cellular steel members of Robertson Q-Floors make ideal permanent raceways for completely flexible and adequate electrical systems. Patented G-E Q-Floor wiring is the only material used to install electrical services in Q-Floors. The combination of these two structural and electrical systems results in an extremely simple and flexible method of supplying the electrical requirements of office buildings, banks, hospitals, industrial plants, and other construction requiring a number of services and 100 per-cent electrical availability.

G-E Q-Floor wiring consists of easily installed header ducts with floor cells located on six inch centers, thus permitting the use of outlets anywhere in the floor every six inches. New power, signal and telephone connections can be added at will throughout the life of the building.

Before writing specifications for any job involving raceways, building wire or wiring devices, ask your nearest G-E Merchandise Distributor for information on the complete G-E line, or write to Section C8-1126, Appliance and Merchandise Department, General Electric Company, Bridgeport, Conn.

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G-E Fiberduct underfloor raceways provide full electrical adequacy and flexibility when masonry or wood-type construction is used. Outlets can be preset at the factory or can be added later at any time.

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SEC. 8
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AN ADDITION WITH A FLAT ROOF**

CORNICE DETAIL
SCALE 1/8" = 1"

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No. 4

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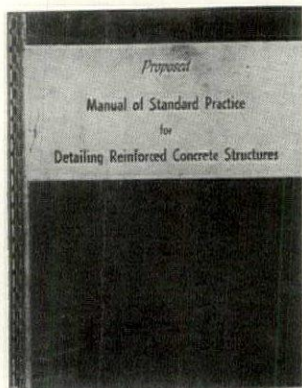
WOOD CONVERSION COMPANY

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Please send me set of Balsam-Wool Application Data Sheets.

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ADDRESS.....
CITY..... STATE.....

TECHNICAL LITERATURE



REINFORCED STEEL. Proposed Manual of Standard Practice for Detailing Reinforced Concrete Structures. American Concrete Institute, New Center Bldg., Detroit 2, Mich. 55 pp., 9 in. x 11¼ in. Price \$2.50.

This manual includes full instructions and data for the designing, detailing and fabricating of reinforcing steel in all types of reinforced concrete structures and structural elements. Based on extensive research by ACI Committee 315, the manual conforms to the best standards now operative for preparation of reinforcing drawings, and is liberally illustrated with charts, diagrams and model drawings.

STEEL FLOOR PLATE. "A.W." Rolled Steel Floor Plate. Alan Wood Steel Co., Conshohocken, Pa. 16 pp. 4 in. x 9½ in.

This informative booklet describes "A.W." Rolled Steel Floor Plate for industrial, transportation and marine use. It features complete data on the four "A.W." Rolled Steel Floor Plate

patterns, illustrating them with life-size photographs and listing tables of weights and sizes for each. Advantages, uses and maintenance of the material, which is designed for maximum slip and skid resistance, are illustrated and discussed.

MAGNESIUM. Magnesium, The Light-Weight Metal For A Multitude of Uses. Revere Copper & Brass, Inc., 230 Park Ave., New York. 18 pp. 6 in. x 9 in.

This booklet is designed to stimulate public interest in the development of magnesium products. Describing magnesium as a lightweight metal for a multitude of uses, it elaborates on the metal's characteristics, advantages and potential uses in many fields. Emphasizing the fact that public demand stimulates the introduction of new materials, it suggests ways and means to create a demand for magnesium products so the public may enjoy the benefits they offer.

WOODWORK. Architectural Woodwork by Curtis, Design Book No. 505. Curtis Companies, Inc., Clinton, Iowa. 190 pp. 8½ in. x 11 in.

Architectural Woodwork Design Book includes information on new Curtis designs, old favorites and certain universal standard items. Among the designs illustrated are those especially suitable for the small home and others specifically created for larger homes. Contents cover: entrances, exterior and garage doors; screen goods; exterior woodwork, blinds, porch work; interior, French and flush doors; moldings and trim; mantels and cabinet work; kitchen units; stair work; Silentite window and door frames; Silentite windows; prefit stormsash and screens; Rotovents; Silentite casement units; Miterite trim. Complete catalog information on the many items is included.

CEMENT PAINT. How To Use Color on Concrete Block. The Reardon Co., 2200 N. 2nd St., St. Louis, Mo. 6 pp. 3½ in. x 6½ in.

The use of Bondex Waterproof Cement paint for adding color to concrete block construction is featured in this folder. Examples of various colored concrete buildings are illustrated to show possible color combinations for walls, roof and trim.

TILE. Kraftile Glazed Structural Wall Units, Acid Brick, Swimming Pool Overflow Gutters, Modular Dimensioned. Kraftile Co., Niles, Calif. 12 pp. 9 in. x 11 in.

This catalog contains dimensioned isometric drawings of Kraftile's line of modular size glazed structural units, acid brick and swimming pool gutters. Detail drawings of suggested applications are also included.

ASPHALT SHINGLES. Choose Your Roof for Rain and Shine. The Asphalt Roofing Industry Bureau, 2 W. 45th St., New York 24 pp. 8½ in. x 11 in.

Prepared for new home builders and remodelers, this booklet is devoted to the merits of asphalt shingle roofs. It features their durability, weather and fire resistance, easy application, low cost, interesting textures and patterns, attractive color, adaptability to roof shapes and architectural styles. Many colorful sketches adapted from well-known architects' designs focus attention on the use of colored roofs.

WINDOW HARDWARE. Getty Hardware for Casement Windows. H. S. Getty & Co., Inc., 3204 N. 10th St., Philadelphia, Pa. 8 pp. 8½ in. x 11 in.

Getty's entire line of internal and external casement window operators and accessory hardware for both metal and wood casement sash are illustrated and described. Advantages, specifications, sizes, finishes, etc., are covered. Clear-cut drawings illustrate installation. (Continued on page 188)

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HARD WATER doesn't have to be a problem in your clients' homes! No matter how poor local water conditions are, a Permutit* Home Water Conditioner will "tame" hard water and make great savings—on household work, linens, soap costs, fuel bills and plumbing repairs.

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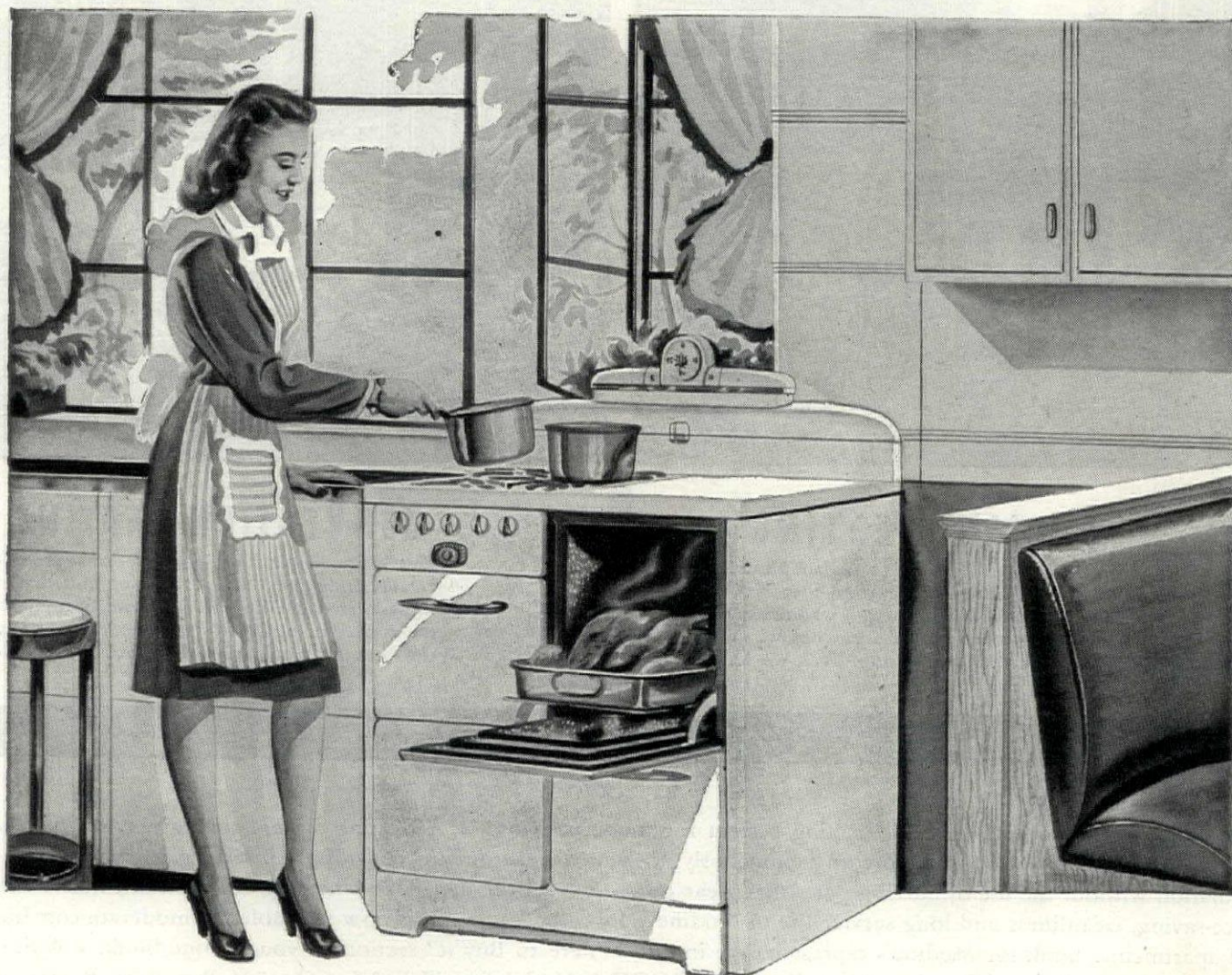


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radiant heat

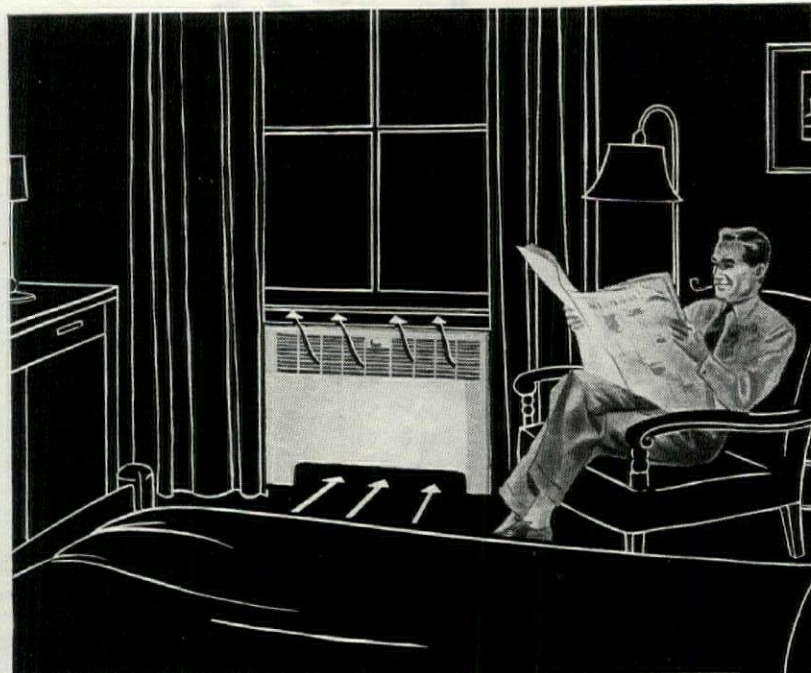
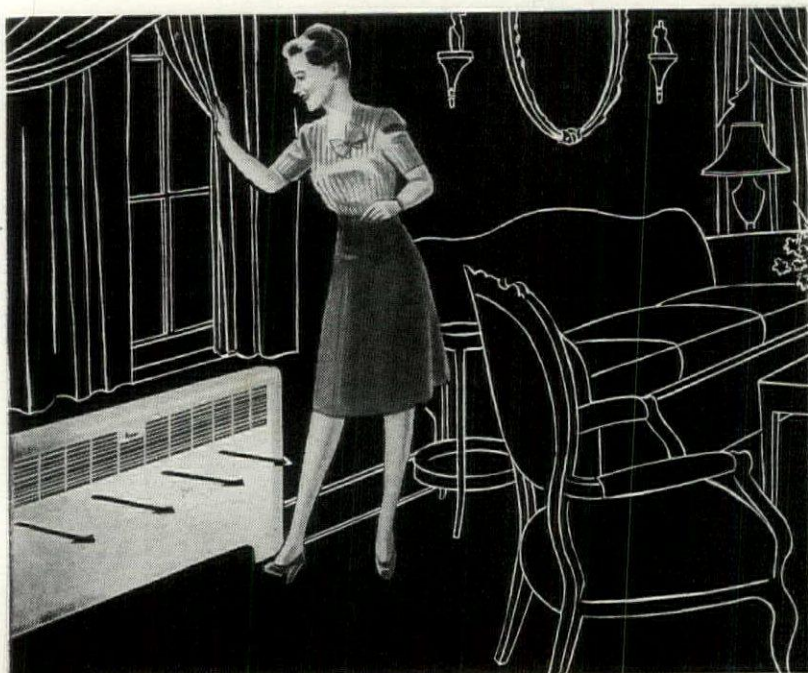
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1

RADIANT HEATING

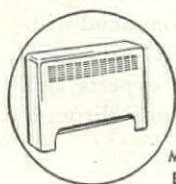
Notice those arrows? That's radiant heat . . . mild radiant heat coming from that Modine Convector Panel in just enough quantity to offset heat loss from window areas. But we don't stop with just *radiant* heating. To it we add—

2

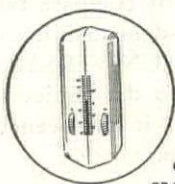
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Convection heating. The hot water or steam circulates through the copper heating unit, draws the cooler, floor-line air into the bottom of the convector where it's warmed, rises, and is then gently circulated throughout the room.

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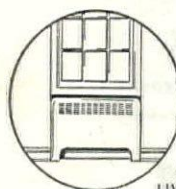
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EASY TO
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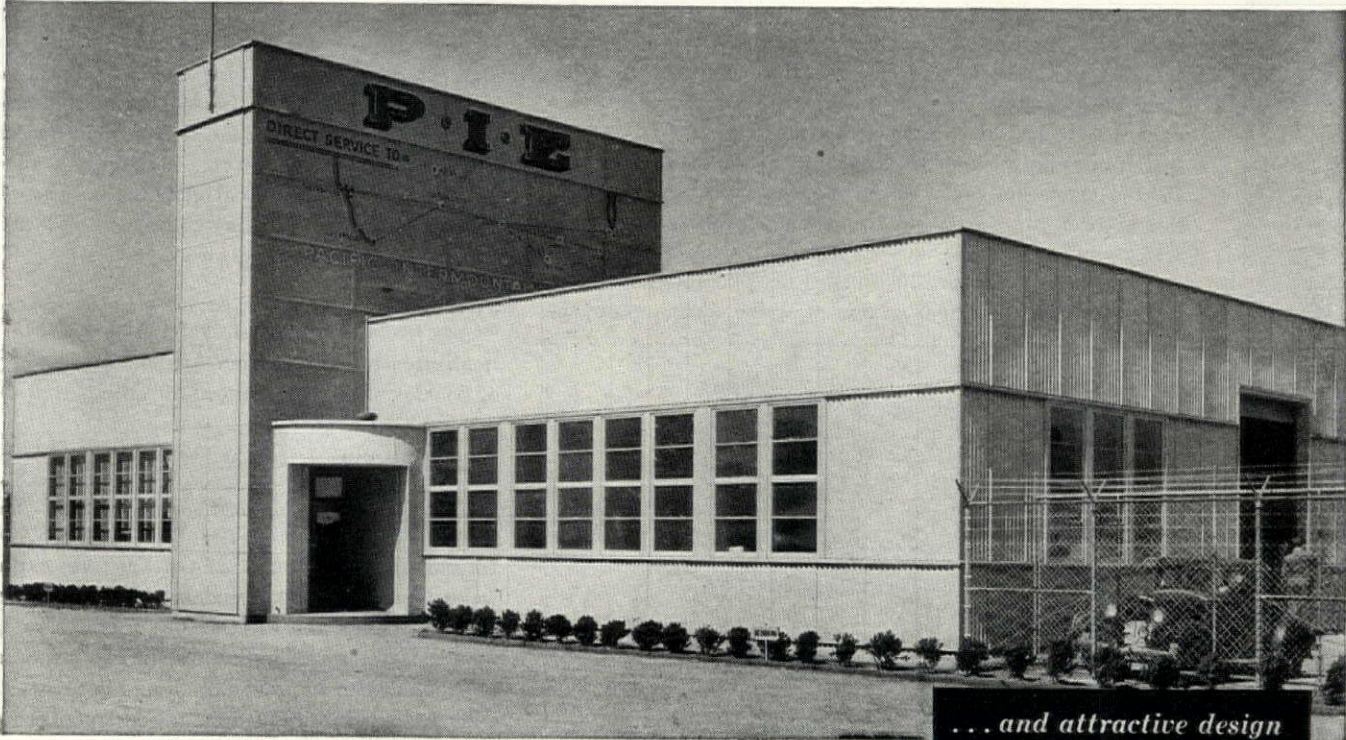


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CORRUGATED TRANSITE* ... for functional simplicity

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TAKE ADVANTAGE of Johns-Manville Corrugated Transite to streamline and beautify your construction design.

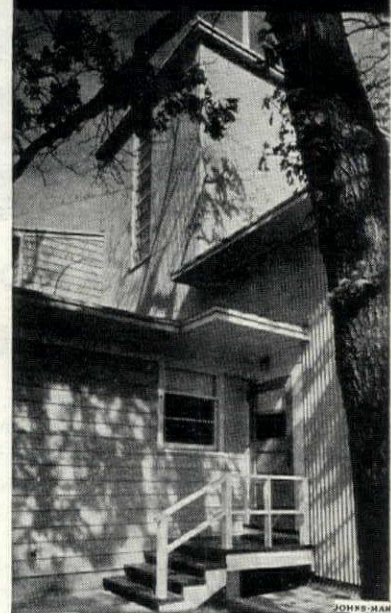
Low in cost and adaptable to every type of modern building, Corrugated Transite offers a way to save money both on construction and maintenance.

The large fireproof sheets—with their unusual strength increased by corrugations—permit a minimum of framing. Quickly installed,

they require little or no upkeep. They're made of asbestos and cement, practically indestructible materials.

Attractive stone-gray in color, Transite can be used alone or in combination with other building materials. And when need for alterations arises, the sheets are practically 100% salvageable.

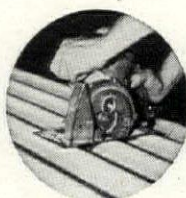
For more facts, send for brochure. Johns-Manville, Dept. AF-11, P. O. Box 290, New York 16, N. Y.



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EASY TO SAW



EASY TO DRILL



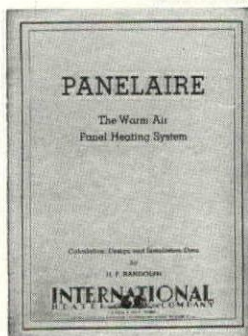
EASY TO NAIL TO WOOD

Johns-Manville

Asbestos

CORRUGATED TRANSITE

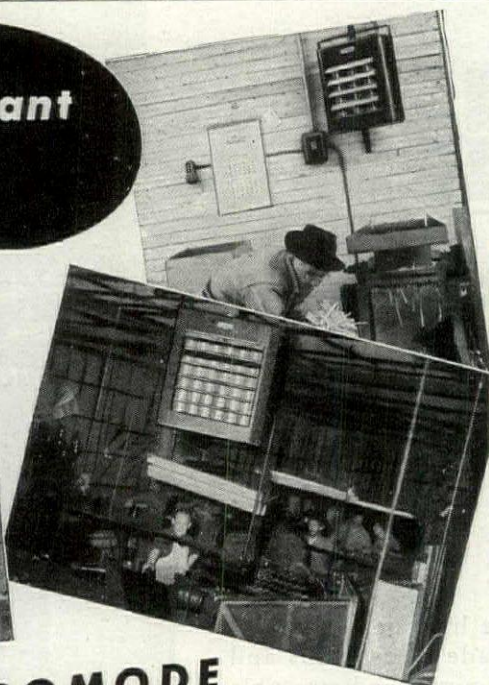
TECHNICAL LITERATURE



RADIANT HEATING. *Panelaire, The Warm Air Panel Heating System—Calculations, Design and Installation Data*, by H. F. Randolph. Sheet Metal Publication Co., 45 W. 45th St., New York. 36 pp. 8½ in. x 11 in. Price \$1.

This working manual gives design and installation data for a Panelaire radiant heating system, a system whereby warm air is circulated above a suspended ceiling. It lists the procedure for calculating and designing in ten steps: (1) determine the heat loss and (2) panel temperature, (3) design panels, (4) make line drawing of piping layout, (5) measure length of supply run, (6) determine cu. ft. of air required, (7) determine equivalent length of each supply run, (8) select size of riser pipes, (9) size trunk and branch piping, (10) select equipment. It includes all necessary tables. Installation is fully discussed and illustrated with photographs, plans, piping layouts, etc. Other sections describe advantages of the

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Cost-saving heat—anywhere in the plant—in factory, stockroom, office, warehouse, is possible with the installation of Electromodes. Wherever circuit wires can be run,—to isolated buildings, or beyond central heating system range,—efficient Electromodes can furnish clean, safe, heat economically.

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Standard capacities, from 1.5 KW to 60 KW. Ask your Electrical Wholesaler to suggest appropriate sizes. ELECTROMODE CORPORATION, Rochester 3, New York.

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Send for latest Bulletin 45-U and Heating Analysis Form.

International Heater Co.'s system, precautions to be exercised, estimating materials, and suggested specifications.

LIGHTING. *Pittsburgh Permaflex Lighting. Pittsburgh Reflector Co., Oliver Bldg., Pittsburgh, Pa.* 126 pp. 8½ in. x 11 in. Pittsburgh Permaflex Incandescent Lighting Equipment for every type of commercial, institutional and industrial application is herewith presented. Profusely illustrated, it includes descriptions, detailed light distribution charts, installation diagrams, details, etc., for asymmetric and symmetric silvered-glass Permaflexors; interior spot and flood lights; indirect, mercury and dual units, as well as a complete line of luminaries, stage-lighting equipment, industrial floodlights, knock-out strips and accessories.

SWIMMING POOLS. *Paddock Engineering Co., 9060 Santa Monica Blvd., Los Angeles, Calif.* 92 pp. 8¾ in. x 11¼ in.

Inadvertently omitted from August's issue was price (\$1.00) of booklet. Free to architects in Calif., Ariz., Nev., and Ore.

FILM REVIEW

ARC WELDING. *Design For Arc Welded Structures. The Lincoln Electric Co., 12818 Coit Rd., Cleveland, Ohio.*

Informative color-sound motion picture explains how arc welded design permits freedom of planning, simplifies detailing, fabrication and erection of structures, and reduces steel tonnage. It gives examples to show how structural shapes can be combined to improve design and cut costs. The film also explains possibilities of tubular construction and rigid frame design for efficient use of materials and improved appearance. Running approximately 15 minutes, 16 mm. prints are available for transportation charges.

REQUESTS FOR INFORMATION

BROTHER ANDREW C.S.R., architect-builder, St. Josephs Rectory, Box 1814, Grande Prairie, Alberta, Canada requests information on construction methods and equipment for churches, schools, hospitals and houses.

RAY FAULKNER, head of Art Dept., Stanford University, Calif., desires information on home planning and furnishing.

DAVID P. FOULKES-TAYLOR, Black Boys', 8 Esplanade, Cottesloe, Western Australia requests information on prefabricated homes, housing, interior decoration, furniture, lighting and plastics.

VASANTRAI GOVERDHANDAS & BROS., manufacturers' representatives, Dandia Bazar, Karachi 1, India desires information from paint, hardware, electrical and electronic equipment, and plumbing fixture manufacturers with a view to introducing their products to Indian markets.

RAYMOND A. LEWANDOWSKI, 131 St. Louis Ave, Buffalo 11, N. Y. desires information on windows, floors, steel joists, brickwork, store fronts, kitchens, bathrooms, heating and lighting.

ROBERT H. SCOTT, architect, 870 Chelsea Ave., Bexley 9, Ohio desires information on frozen food locker and powerhouse equipment.

HOLMES HINKLEY WELCH, Manchester, Mass. desires information on wind and water powered generators and electric house heating units.

EDWIN ZIEGFELD, head Dept. of Fine and Industrial Arts, Teachers College, Columbia University, New York 27, N. Y. desires information on home planning and furnishing.

RONALD WARD, architect, 33 St. George's Drive, London S.W.1, England desires information on hospitals and hospital equipment.

(Continued on page 192)

Buildings of Character



SEAMEN'S BANK FOR SAVINGS, NEW YORK. BENJAMIN W. MORRIS, ARCHITECT



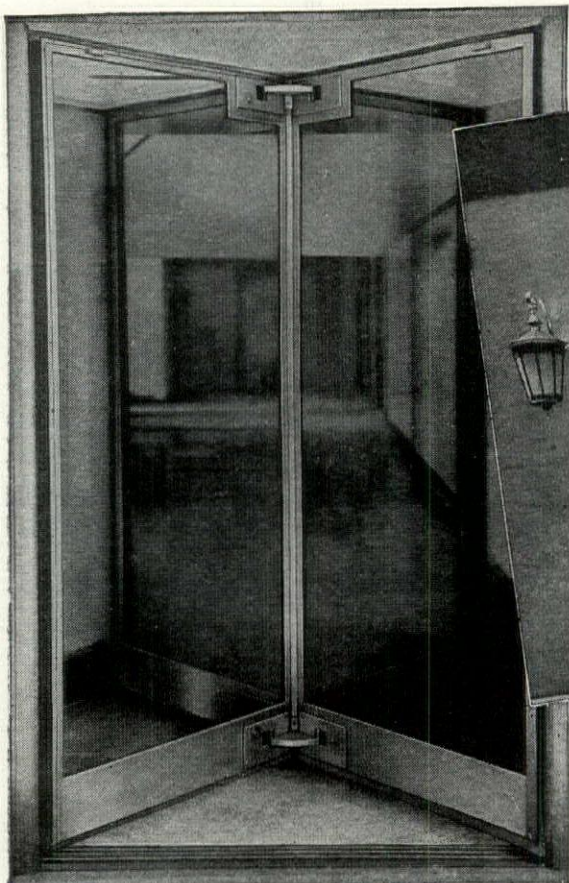
FROM A CENTURY OF BUILDERS

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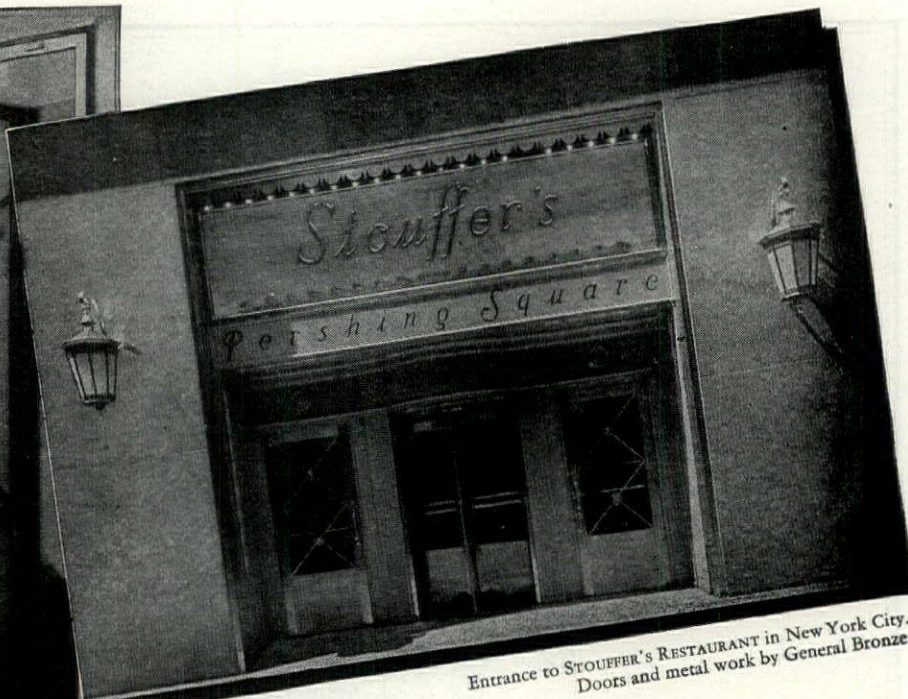
WILLIAM L. CROW CONSTRUCTION CO.

NEW YORK 17

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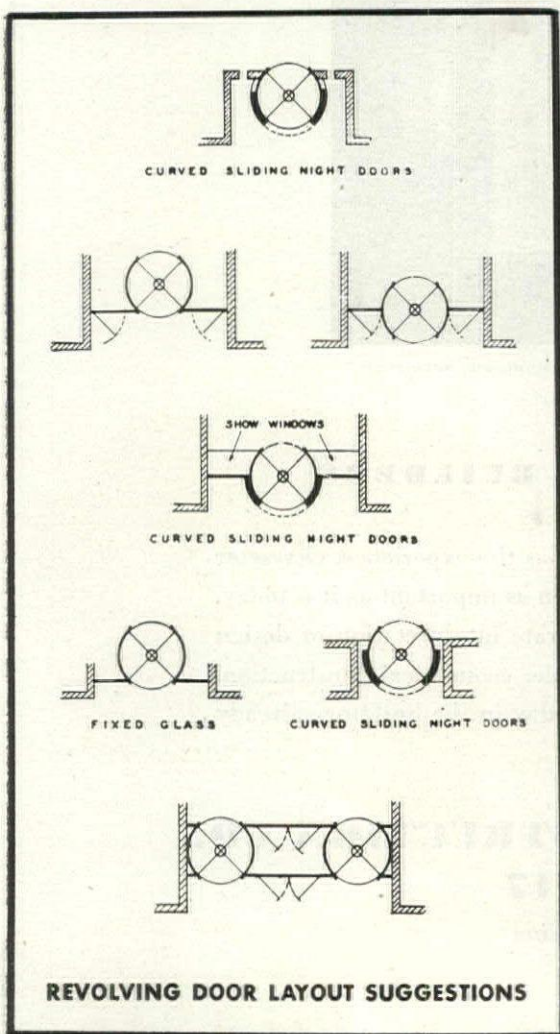


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Doors and metal work by General Bronze.

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GB revolving doors are a worthy addition to your finest buildings. These handsome, easy-operating doors embody features developed in thirty-five years' experience in fabricating non-ferrous metal products for the building industry. They are engineered to meet modern requirements and can be detailed to harmonize with the architectural treatment of the entrance.

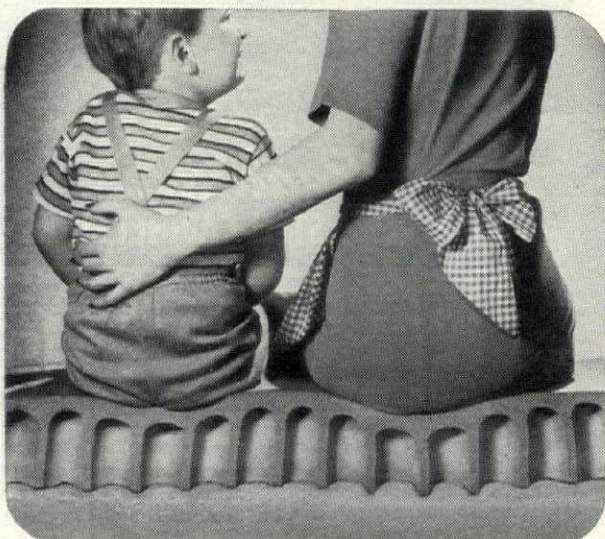
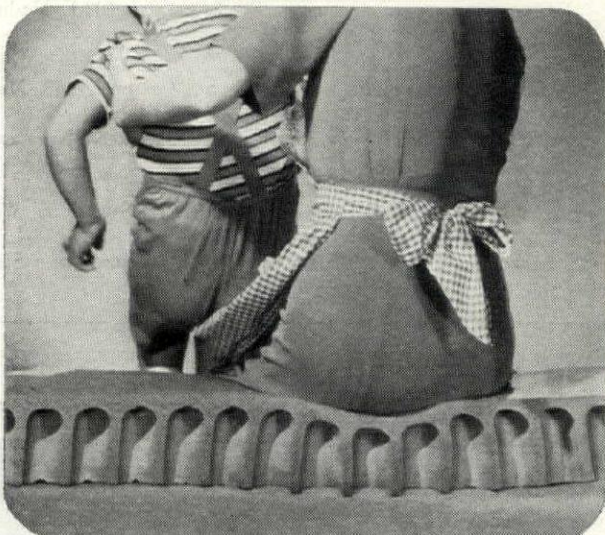
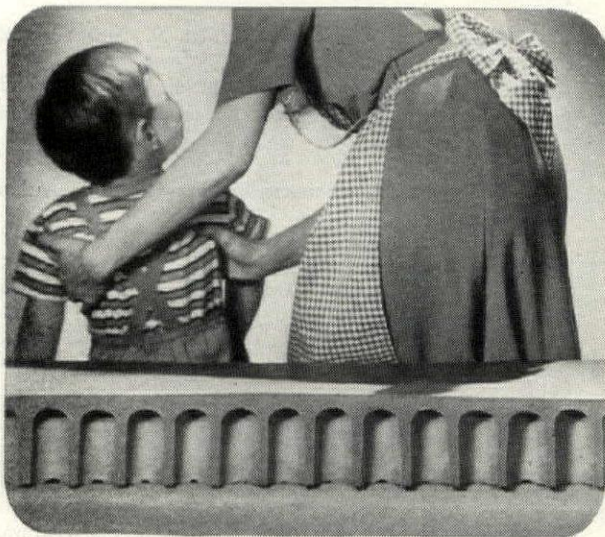
GB revolving doors have been specified by many of the country's foremost architects for their finest buildings. Hundreds of installations in notable buildings all over the United States are constant reminders of their excellence. As you design new structures or the remodeling of old ones plan to use GB revolving doors. Write today for our catalog or consult Sweet's.



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*Comfort Engineered
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It "Gives"

only where you touch it!

Did you ever plunk down on a sofa next to someone...only to find him "falling" toward you, off balance?

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As you can see from the pictures, Koylon Foam provides *independent suspension*... "gives" only where you touch it. You can credit Koylon's amazing air-buoyancy for this.

Actually Koylon is 85% air. It "breathes"... absorbs air in millions of tiny, interconnecting cells of resilient latex—releases it on contact with the body.

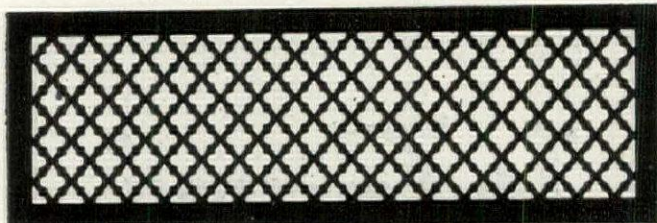
Here's foolproof evidence of the resilience that gives Koylon Foam its *matchless comfort*. And it's another reason why we say: If you sell "seats"—or "sleep"—better sell Koylon Foam!



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UNITED STATES RUBBER COMPANY

Decorative Utility

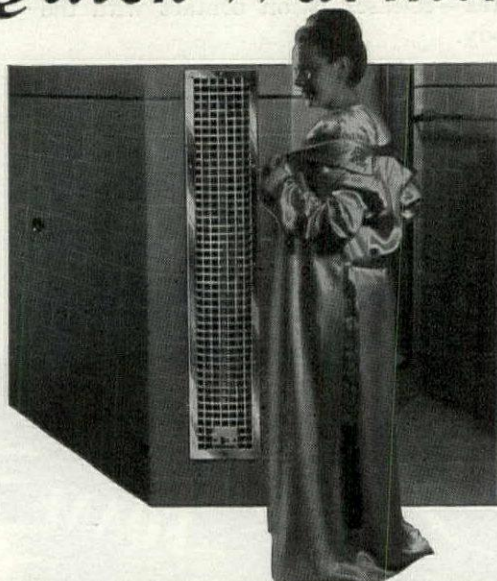


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The grille illustrated is the Gothic Clover Leaf. Write for information on the hundred other distinctive patterns.

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Thermador Electrical Mfg. Co., 5119 District Blvd., Los Angeles 22

REQUESTS FOR LITERATURE

MARVIN AFFRIME, architectural student, 411 S. 63d St., Philadelphia, Pa.

FELIX AUGENFELD, architect, 119 E. 57th St., New York 22, N. Y.

ROBERT W. BLACHNIK, instructor, Dept. of Architecture and Architectural Engineering, Iowa State College of Agriculture and Mechanic Arts, Ames, Iowa.

BODIN & LAMBERSON, architects, 827 Forsythe Bldg., Atlanta, Ga.

GEORGE D. BOOTH, 1007 9th Ave., Laurel, Miss.

LEON M. CIRCLE, landscape architect-engineer, 5445 S. Woodlawn Ave., Chicago, Ill.

PHIL GERSHON, mortgage loans, 3938 El Cajon Blvd., San Diego, Calif.

ERICH GNANT, 3331 West Lisbon Ave., Milwaukee, Wis.

THEODORE HARTMAN, architect, 1518 11th St., Monroe, Wis.

KENNETH H. HESS, architect, 32 South Oak St., Ventura, Calif.

IKTINOS CHAPTER of Alpha Rho Chi Fraternity, 608 E. Madison St., Ann Arbor, Mich.

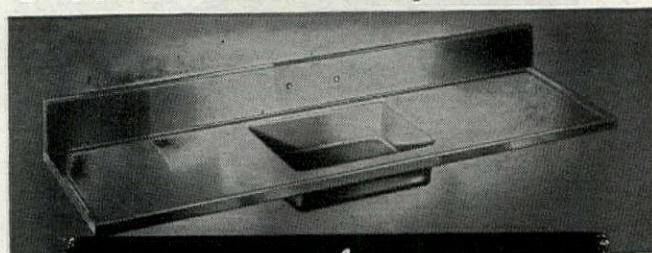
J. D. MCCLURE, architect, 5 Linden St., Cambridge 38, Mass.

SCHOOL OF ARCHITECTURE, University of Oklahoma, Norman, Okla. Okla.

A. V. PETERSON, architect, 14081 23rd N.E., Seattle 55, Wash.

SHERWOOD, MILLS & SMITH, architects, 4 South St., Stamford, Conn.

TWO WAY Improvement



DOUBLE-PITCH plus ANTI-SPLASH
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STAINLESS STEEL CABINET SINKS

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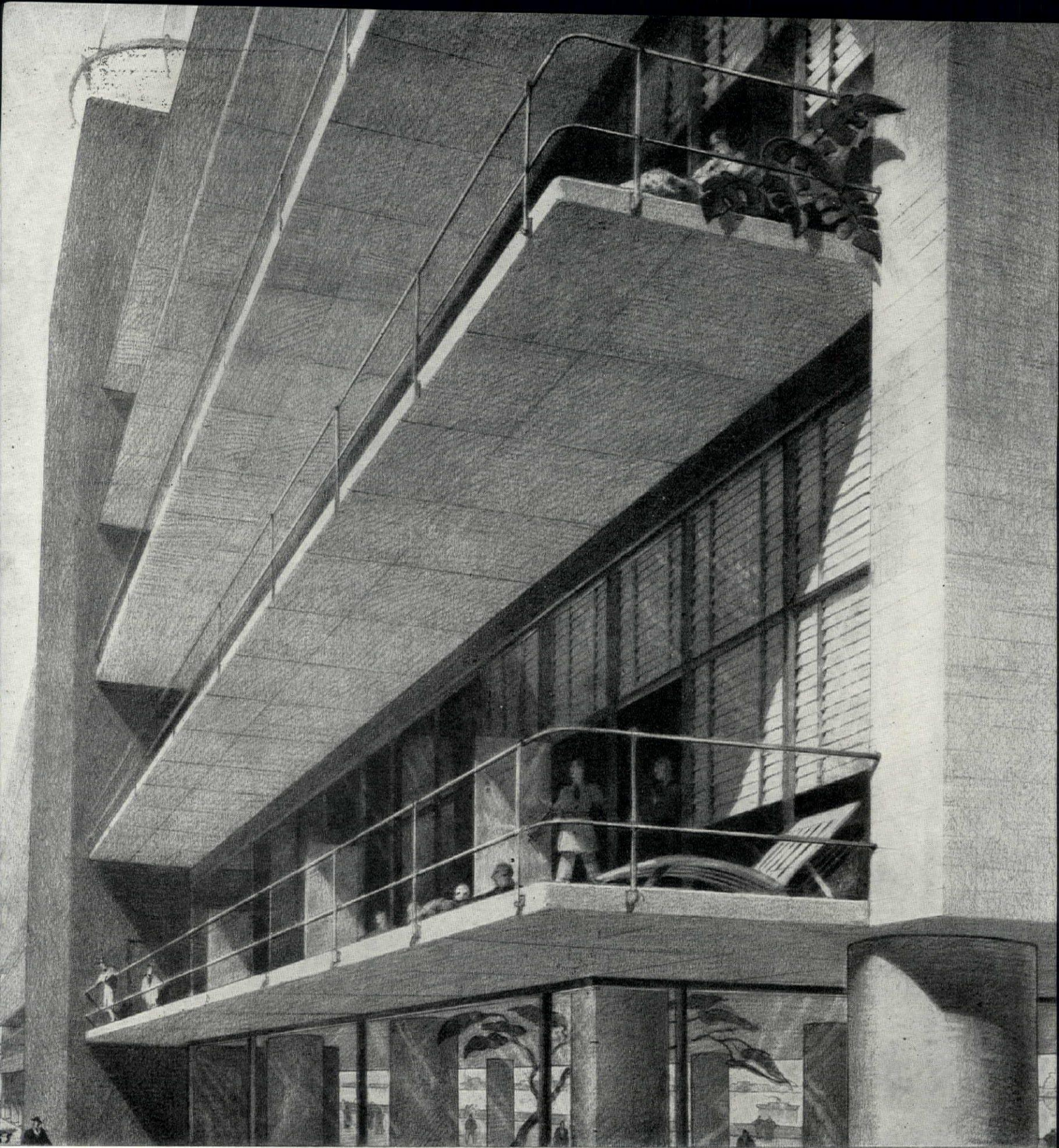
2. IN-BUILT ANTI-SPLASH RIM ON BOWLS—Top of bowl is curved slightly inward and joined to the sink top in a seamless welded joint, polished to a smooth, satin finish. This forms an anti-splash rim around the entire perimeter of bowl.

NEW FREE BULLETIN describes Radiiluxe Sinks with single or double bowls, with or without drainboards; straight, "U," or "L" types...standard sizes or custom-fabricated to your specifications. Write today.



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ARCHITECTURAL CONCRETE

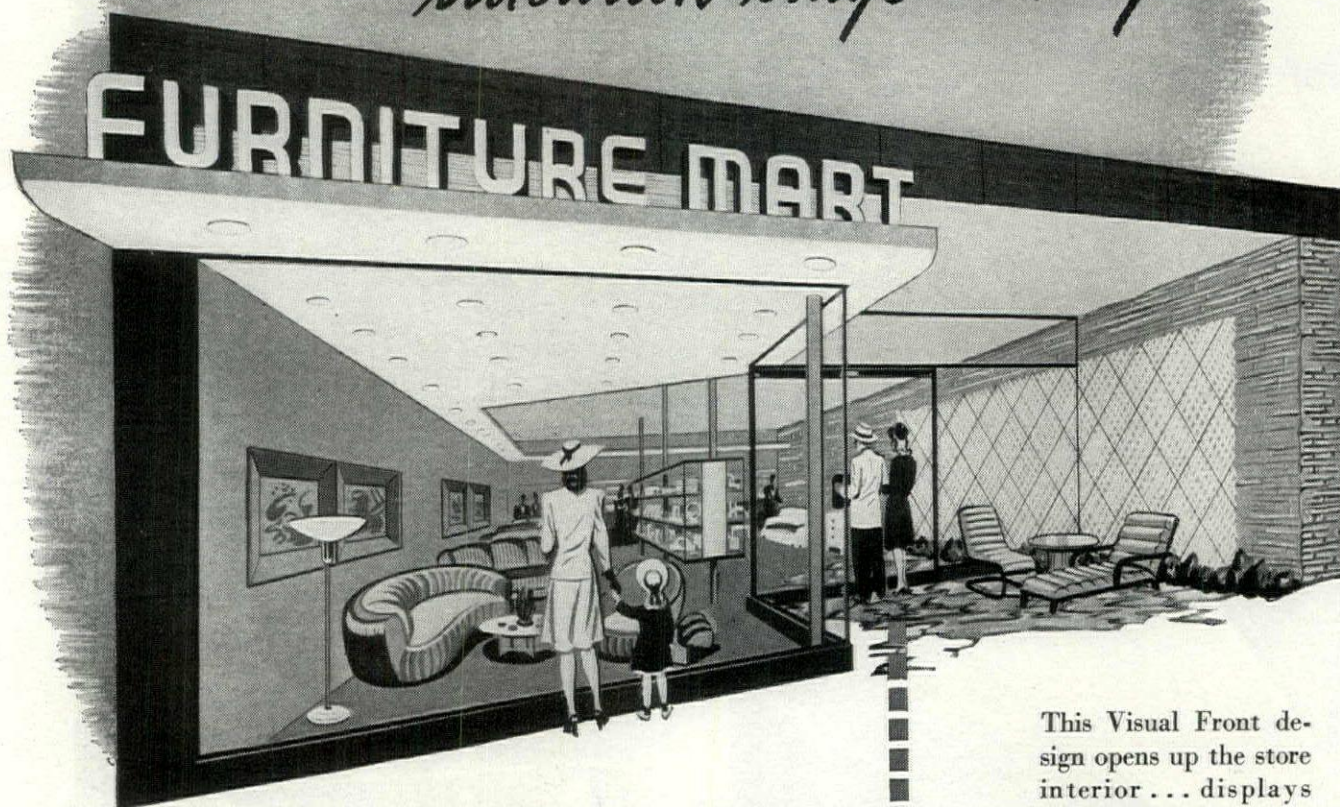
How Architectural Concrete combines architectural and structural functions, is shown in this Hugh Ferriss drawing of cantilevered concrete balconies. It is the third in a series of modern designs demonstrating the adaptability of Architectural Concrete for apartment houses, hotels, hospitals, schools, or industrial buildings.

PORTLAND CEMENT ASSOCIATION

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

Create a sidewalk stage setting...



for a storefront that attracts more business!

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.

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*.

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, 16116 Nicholas Building, Toledo 3, Ohio.

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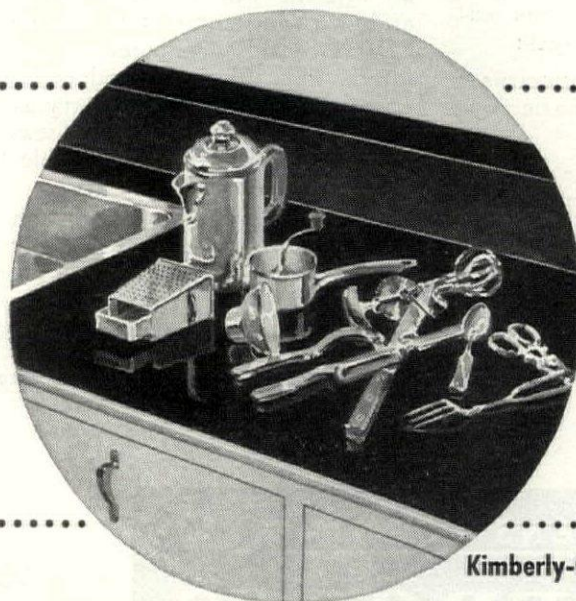
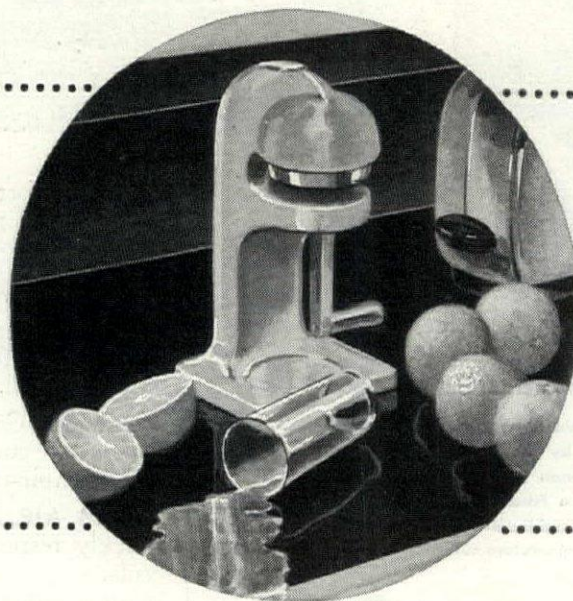
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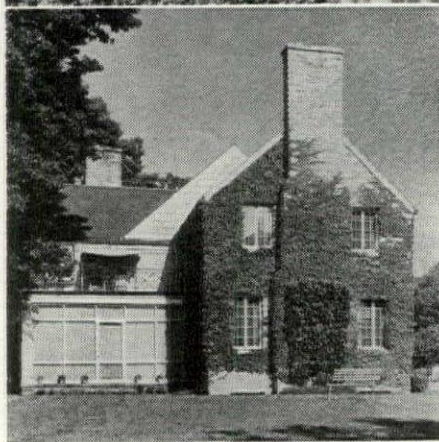
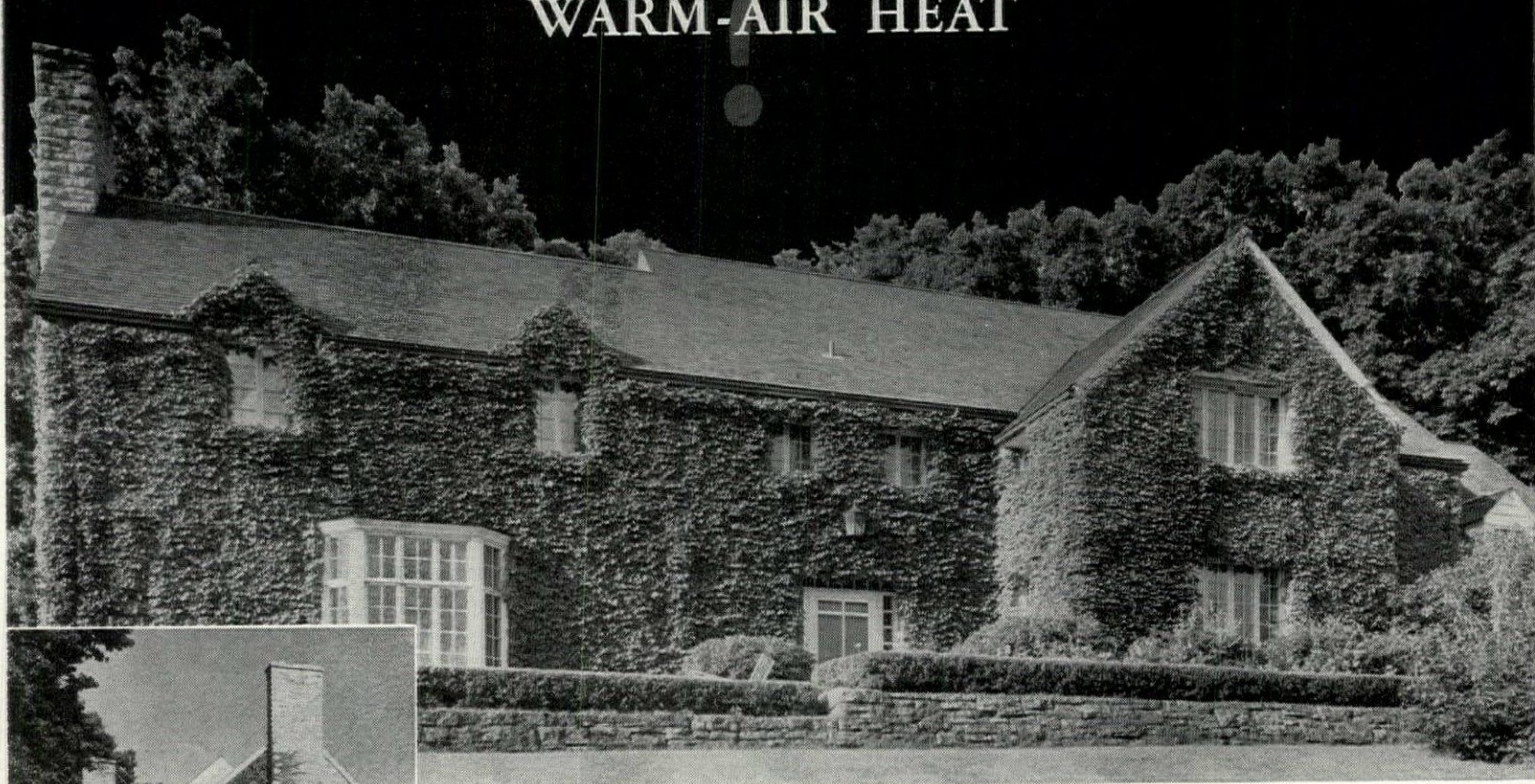
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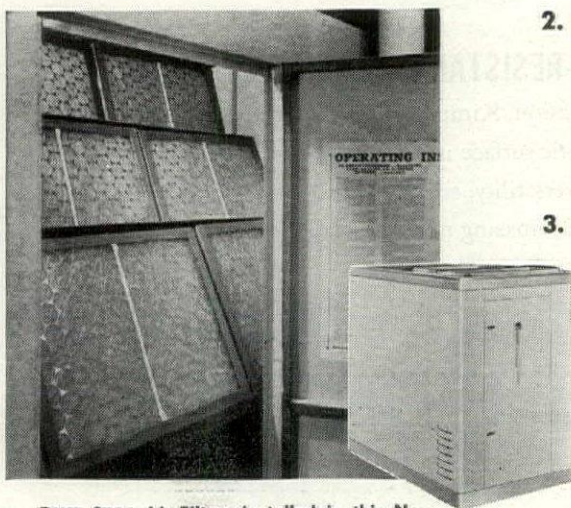
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*TRADEMARK

Why the preference for WARM-AIR HEAT



This Cedar Rapids, Iowa, home was designed and built by the McKay Construction Company. Clean air, filtered through DUST-STOPS—a Fiberglas product—circulates to upper and lower floors, each zoned for separate temperature control.



DUST-STOP Air Filters installed in this No. 300 Lennox oil-fire furnace, as in many other makes, assure that the mechanically circulated air will reach all parts of the house, free from nuisance dusts, lint and most airborne bacteria.

THE comfort and conveniences and economy of modern warm-air heat are already well known to hundreds of thousands of American families. In recent surveys, majorities of home planners have expressed preference for this form of heating system for the homes they intend to buy or build.

Winter Air-Conditioning systems provide indoor comfort through this exclusive combination of advantages:

1. **WARM AIR**, with room temperatures quickly responding to automatic controls.
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3. **MECHANICALLY CIRCULATED AIR**

keeps warm air fresh and clean while providing the proper number of air changes per hour.

4. **HUMIDIFIED AIR** affords greater physical comfort at lower room temperatures.

Architects and builders may specify these modern warm-air units with the satisfaction of knowing that the function of air filtering will be performed efficiently and with economy for the owner by "DUST-STOP"* replacement type air filters. This Fiberglas product is the outstanding choice of the industry as original equipment. DUST-STOPS for seasonal replacements are readily available through dealers in every community.

For complete information on DUST-STOPS, see Sweets' Files, or write: Owens - Corning Fiberglas Corporation, Dept. 830, Toledo 1, Ohio. Branches in principal cities. *T. M. REG. U. S. PAT. OFF.

In Canada: Fiberglas Canada Ltd., Toronto, Ontario



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As an architect, you've probably asked that question more than once. The obvious answer is quality—*built-in quality* which makes one asphalt tile look better, cost less to maintain, and last longer than another.

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The proof, of course, lies in the performance record of Tile-Tex Asphalt Tile, which speaks for

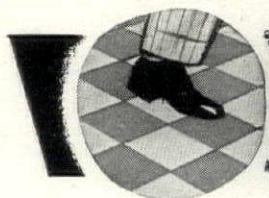
itself and is recognized everywhere by discriminating architects. The same passionate devotion to quality will always be the prime objective of Tile-Tex production engineers. For the best in asphalt tile, specify Tile-Tex.

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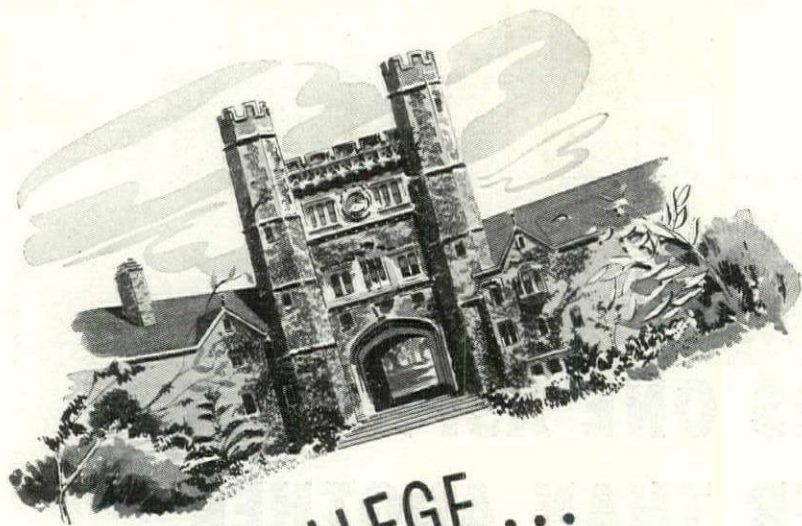
THE TILE-TEX COMPANY, Inc.

Asphalt Tile Mfr. Subsidiary of The Flintkote Company
Chicago Heights, Illinois • 220 E. 42nd Street, New York City

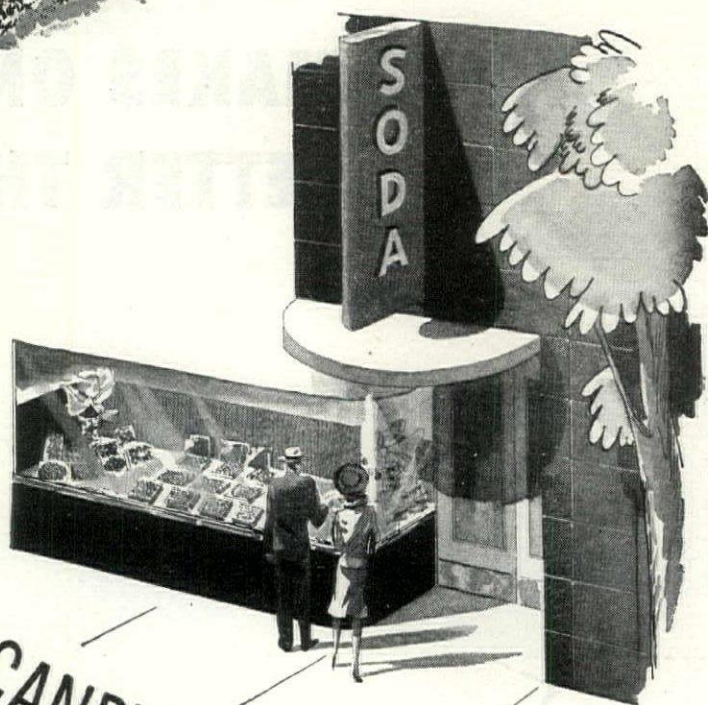


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Complete Air Conditioning

AN UNUSUAL WATERPROOFING PROBLEM:

Holding Back a 4^{ft.} High Tide IN AN ELEVATOR PIT!

The PROBLEM:

To control water seepage in the elevator pit of the Barnum Garage, Bridgeport, Conn. Located directly over an old river bed, the pit daily filled with water up to four feet when the tide came in. Continual seepage caused

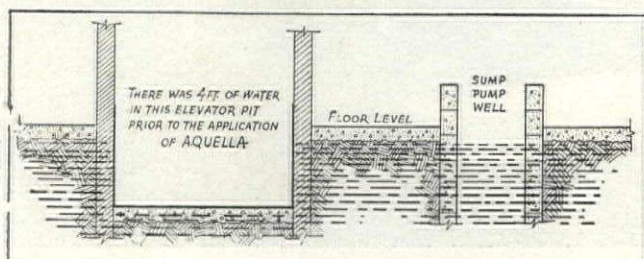
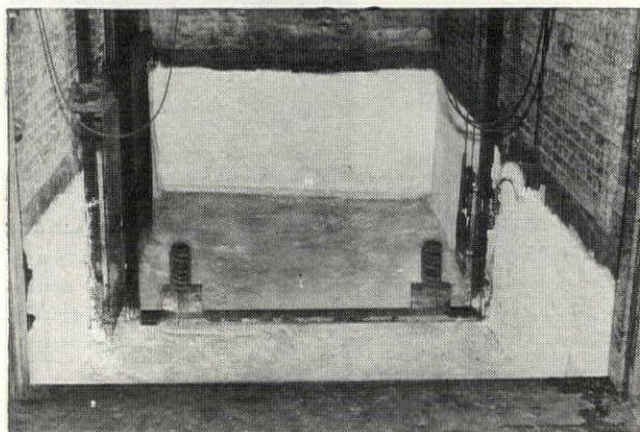


Diagram illustrating the problem.

cables and mechanism to rust; breakdowns were frequent. After so-called "waterproofing paints" were proven ineffective, a three-foot-in-diameter sump pump well was installed with an oversized pump, having a two-inch main. The pump worked constantly; literally it was pumping a river. But even this did not work, because of mechanical and electrical failures.

The SOLUTION:

The application of AQUELLA



The elevator pit after it was treated with Aquella in January, 1945. According to L. Levitt, garage operator, it hasn't leaked since it was Aquellized 20 months ago.

The RESULT:

As Mr. L. Levitt, operator of the garage, describes it: "Since January 1945, when the elevator pit was Aquellized, we have had the sump pump disconnected—even though the water in the sump pump well rises up to the cellar floor level. This proves that the floor and walls of the pit are surrounded by water held back by Aquella."

The REASON

for Aquella's effectiveness in holding back a 4-ft. high tide in this elevator pit centers around the

entirely new principle on which it works...a principle that distinguishes it in *three ways* from the so-called "waterproofing paints."

First, the ingredients of which Aquella is composed are so *finely ground* that they penetrate the masonry *intensely* to fill and close the most microscopic pores. Second, Aquella



The sump pump well is no longer used. Pump was disconnected months ago. Water still rises to the floor level as can be seen in the above photograph—proving that the floor and walls of the pit are still surrounded by water held back by Aquella.

is scrubbed into the face

of the masonry—not just "brushed on" to coat the outside surface. Third, Aquella has an exclusive chemical property which causes it to expand and set up a harder, firmer bond when water contacts it.

As it cures, Aquella leaves a beautiful white finish that does not powder, peel, flake or rub off, and can be painted over with any color.



Photographic enlargement of a small, sawed-away section of a concrete masonry unit showing the way Aquella penetrates to fill and close the pores of the surface.

Specify AQUELLA

for the treating of all porous masonry surfaces, such as brick, concrete, light weight masonry units, stucco or cement plaster.



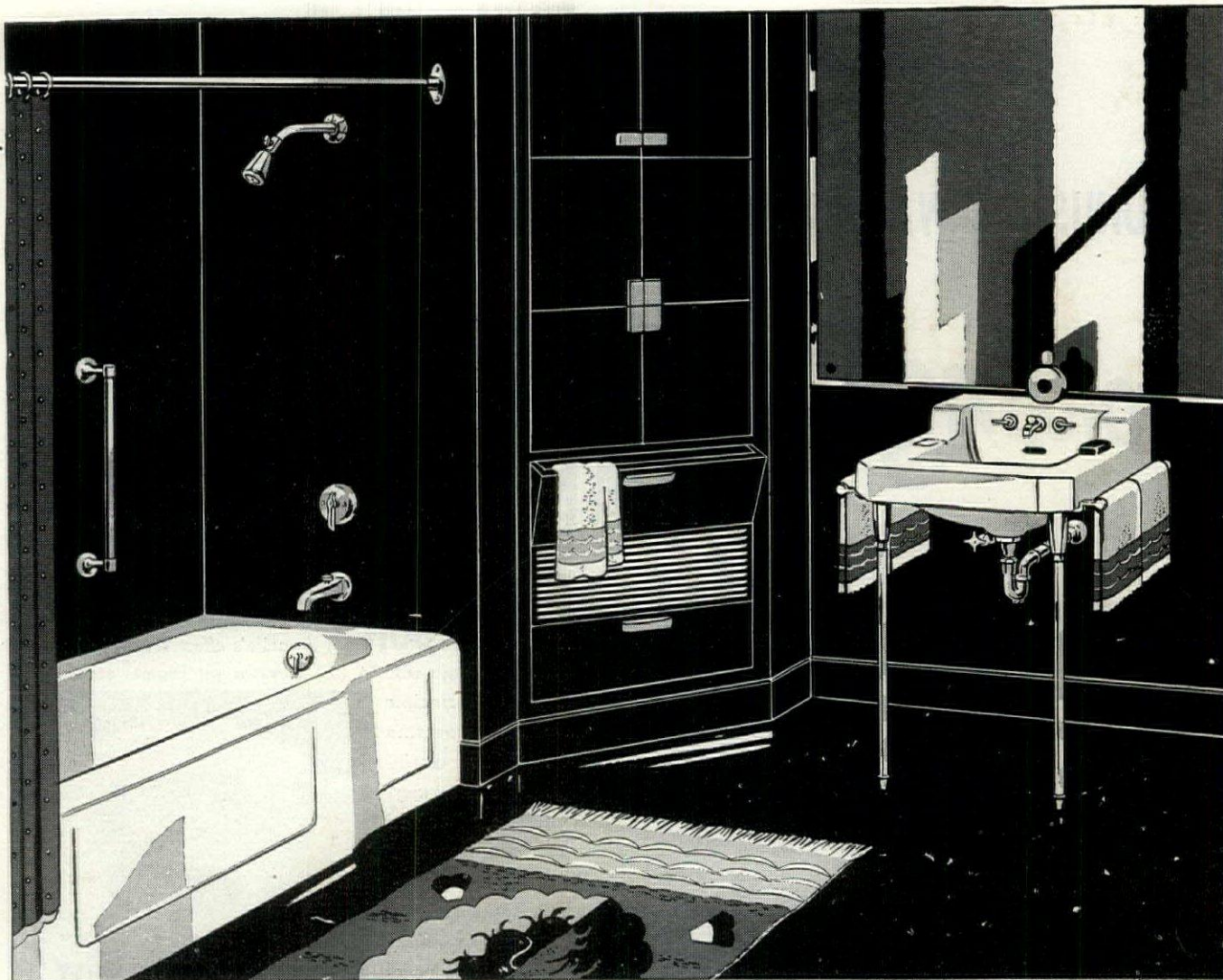
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FREE Write today for your copies of "Aquella and Concrete Masonry Construction," and the "Key to Aquella Specification Types!"

AQUELLA



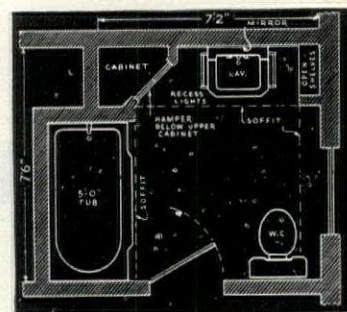
Right for today's practical planning ... a KOHLER bathroom

WHEN you specify Kohler plumbing for a new or remodeled home you provide the right combination of what every home owner wants in his fixtures and fittings—attractive appearance with matching designs; efficient sanitary protection; convenient, durable working parts; and lustrous, easy-to-clean surfaces. There is sound investment value, too, in the fact that the name “Kohler” is a recognized symbol of first quality—for it will add to the future ease with which a home can be rented or sold.

Kohler fixtures and fittings shown in the illustration above are the Gramercy vitreous china lavatory (available in sizes

22x18" and 24x20") with built-in fittings and roomy shelf; the Cosmopolitan Bench Bath, made with durable, gleaming enamel on time-tested, non-flexing cast iron—and equipped with the efficient Triton shower mixer; and the quiet, smooth-functioning Wellworth close-coupled closet.

All Kohler fixtures and fittings now being produced embody the same high degree of excellence, in design, workmanship and materials, that has built the 73-year-old tradition of Kohler quality. Production, at Kohler, is centered in one plant, with unity of supervision. Write for information on products now available. Kohler Co., Dept. 11-AF, Kohler, Wis. Established 1873.

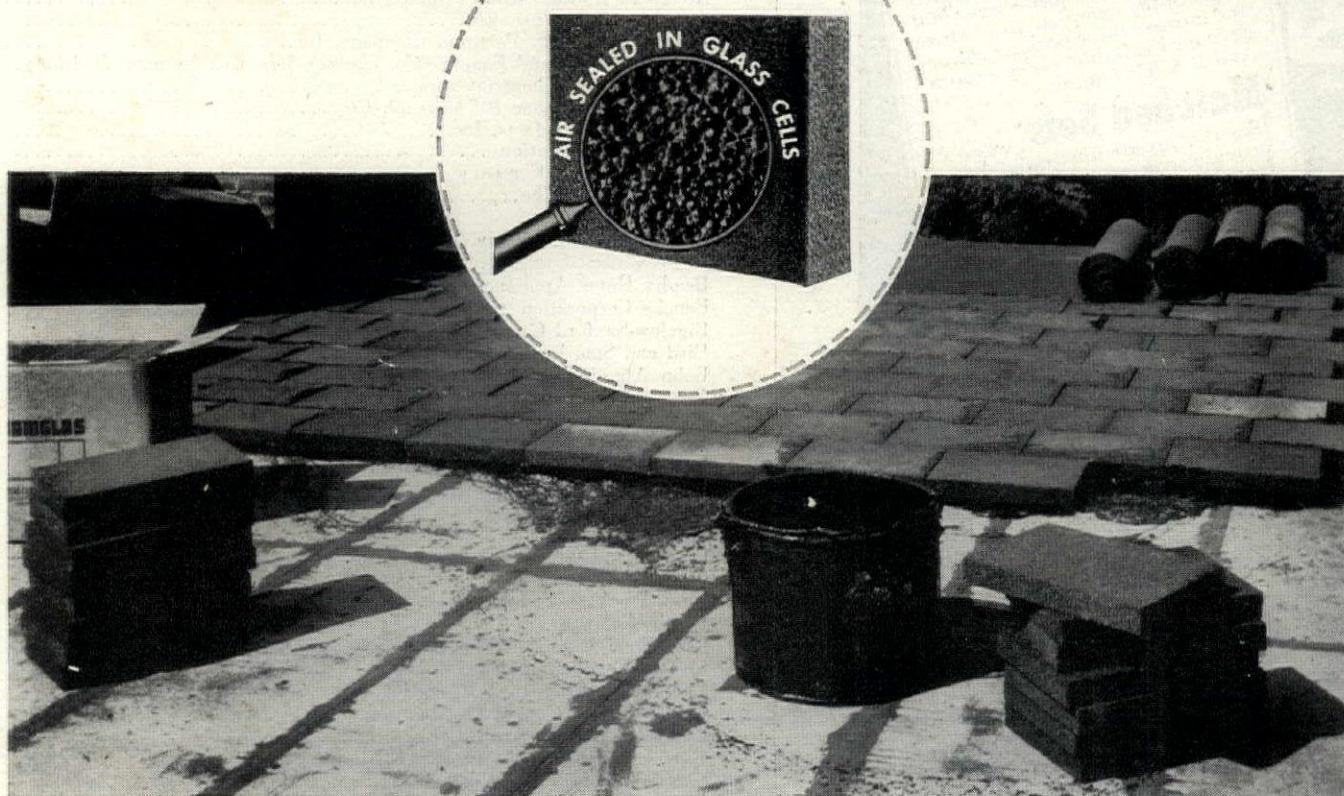


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The advertising pages of FORUM are the recognized market place for those engaged in building. A house or any building could be built, completely of products advertised in THE FORUM. While it is not possible to certify building products, it is possible to open these pages only to those manufacturers whose reputation merits confidence. This FORUM does.

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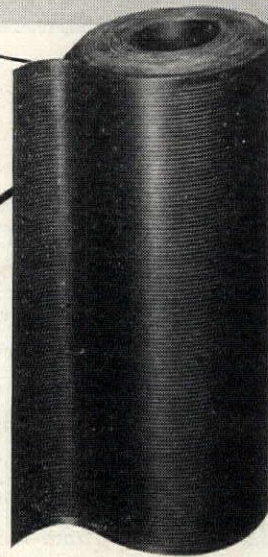
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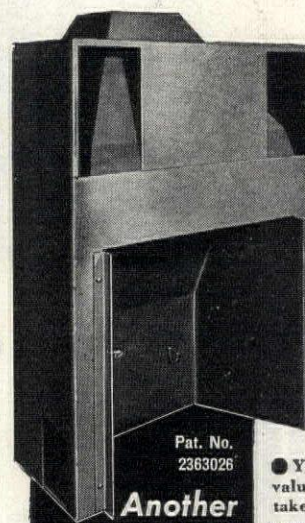


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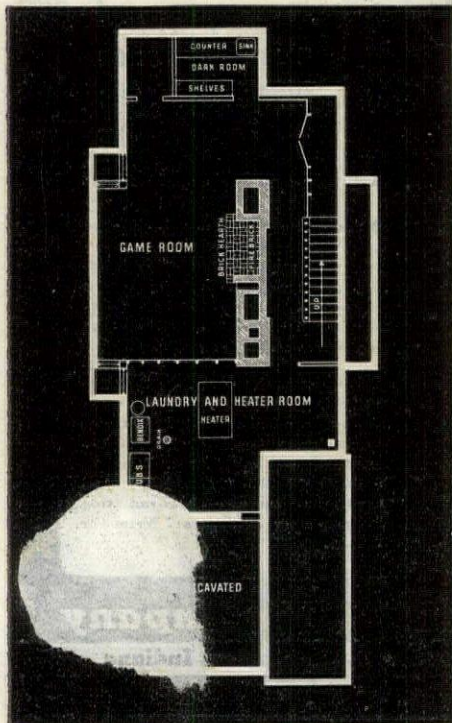
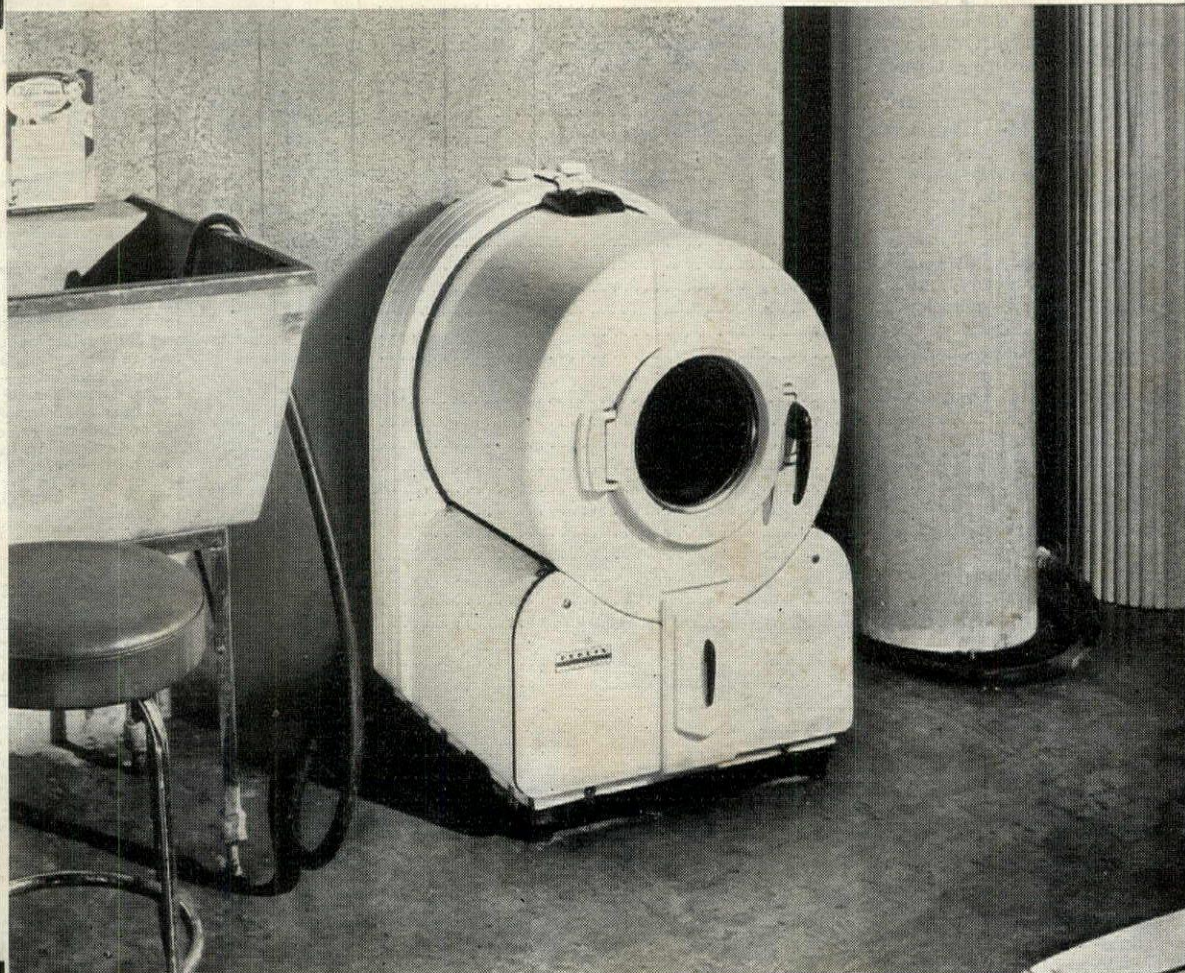
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