

JAN. 1939

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JANUARY 1939

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JANUARY 1939

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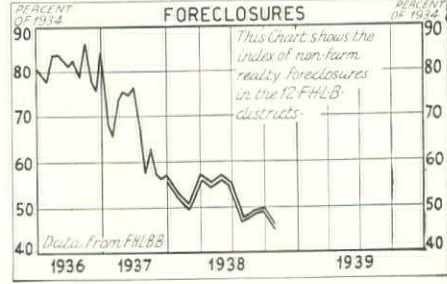
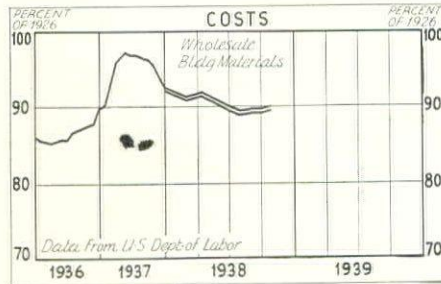
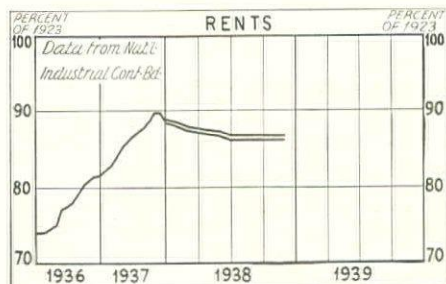
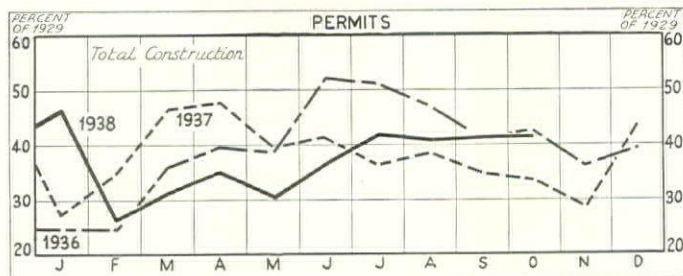
VOLUME 70—NUMBER ONE

THE MONTH IN BUILDING

PERMITS

(Source: U. S. Dept. of Labor)

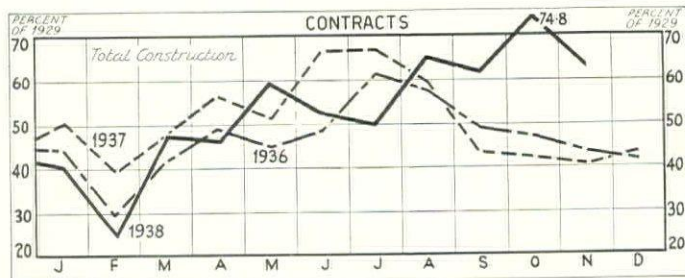
	Monthly data			First ten months	
	Oct. 1938 (millions)	Comparison with Sept. '38	Oct. '37 +68.6%	1938 (millions)	Comparison with 1937
Residential	\$ 76.9	- 9.7%		\$ 720.3	+15.7%
Non-residential . . .	55.7	+14.2	+ 3.5	449.0	- 2.0
Additions, repairs .	27.8	+ 7.8	+11.5	267.4	-14.7
TOTAL	160.3	+ 0.4	+28.9	1,436.7	+ 3.1



CONTRACTS

(Source: Moody's Investors Service)

	Monthly data			First eleven months	
	Nov. 1938 (millions)	Comparison with Oct. '38	Nov. '37 +59.1%	1938 (millions)	Comparison with 1937
Residential	\$ 95.3	-15.5%		\$ 894.2	+ 3.7%
Non-residential . . .	116.0	-11.4	+50.6	932.6	-11.0
Heavy engineering .	90.4	-20.7	+47.4	980.6	+23.2
TOTAL	301.7	-15.7	+52.0	2,807.5	+ 3.7



HAPPY NEW YEAR. At year-end Building's tabs-keepers began taking inventory of 1938's accomplishments. U. S. Department of Commerce Economist Lowell J. Chawner in his preliminary estimates, based on actual expenditures for labor and materials throughout the country, placed the volume of non-farm residential construction at \$1,285 million. His 1937 figure was \$1,393 million. Total building expenditures (excluding maintenance and work relief) likewise put 1938 behind 1937. The figures: \$5,185 and \$5,340, respectively.

Also at year-end THE FORUM sampled public opinion as to the outlook for building during 1939. And if the opinion surveyed is based more on factual reasoning than on fond hope, 1939 will overshadow not only 1937 and 1938, but every year since 1930. THE FORUM's interpretation of public opinion projects 1939 residential building volume 30 per cent ahead of Chawner's 1938 estimate and total building volume, 23 per cent ahead (see page 61).

OVERLAP. Grounds for an inter-agency jurisdictional dispute came to light last month as news trickled out of Washington that FHA had established a special division to explore the possibilities of expanding its large scale rental housing

work to include a modified form of slum clearance. Since one purpose of this new division is to cooperate with local housing authorities on projects similar to Fort Wayne's (ARCH. FORUM, Oct., 1938, p. 299), a little USHA resentment is not unexpected. In the first place, USHA is largely responsible for creation of the 200-odd local housing authorities which now dot the Nation; secondly, slum clearance and minimum housing are its rightful functions.*

Prompted by the expressed desire of a dozen other cities to undertake programs similar to that initiated by Chairman William B. F. Hall of Fort Wayne's Housing Authority (erection of prefabricated plywood houses on borrowed land), FHA's new division, as yet unnamed, will be headed by its one-time Assistant General Counsel Frank Watson. Special attention will be given to comprehensive neighborhood rehabilitation projects, which, although eligible for mortgage insurance, have been blown aside by the storm of other FHA work.

Also from Building's most popular Federal agency last month came announcement that the President had exercised his authority to up FHA's maximum insuring

power to \$3,000 million. As of December 1, FHA had insured or had committed itself to insure \$1,585 million of mortgages, thus had left only \$415 million of unobligated insuring power under its former \$2,000 million limit.

BENSON'S BLUE CHIPS. Under the leadership of First Boston Corporation, high-ranking U. S. investment banking house, Wall Street over-the-counter dealers are rapidly expanding the market for FHA-insured home mortgages. One reason for this activity is the increasing esteem which the Nation's banks hold for this type of security.

Last month, this esteem was measured as Philip A. Benson, president of Brooklyn's Dime Savings Bank and newly elected president of the American Bankers Association, completed a study which convinced him that the net return on a sizable portfolio of FHA-insured mortgages is better than can be obtained on "good" bonds at present market prices. And Banker Benson statistically proved that his conviction held water.

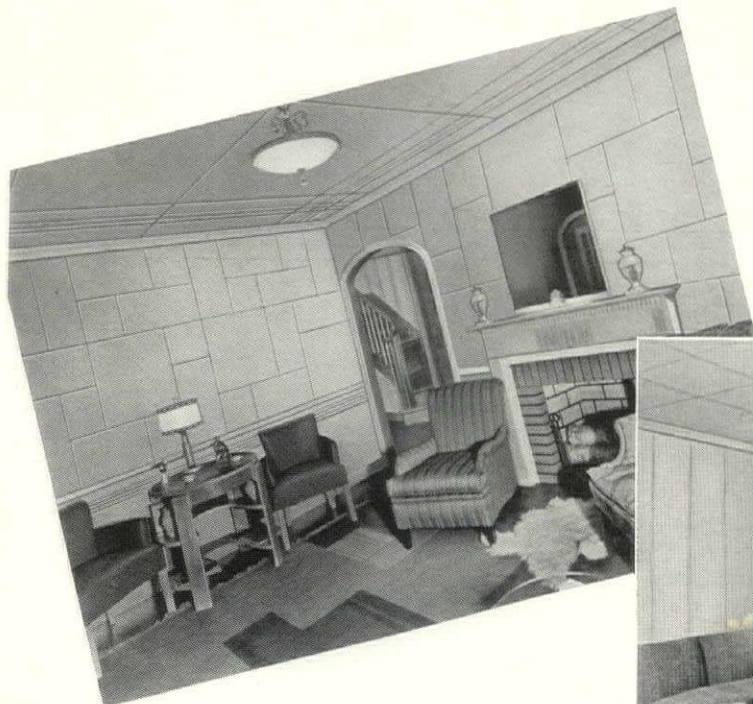
Using round numbers, it is assumed for this proof that a bank invests \$1 million in 250 mortgages of \$4,000 each and that the mortgages bear interest at 5 per cent, cover 90 per cent of property valuation and are amortized over a 25-year period.

*For a synopsis of what USHA's functions have produced to date, see page 70.

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THE MONTH IN BUILDING

It is further assumed that 10 per cent of the mortgages (25 houses) are foreclosed during the first five years of the investment program, that the foreclosure cost is \$800 per mortgage. On this basis, at the end of the five-year period, the bank will have spent \$20,000 on foreclosure costs and, having received \$236,530 in total interest, will thus net \$216,530. Expenses are equal to 8.45 per cent of the gross income (5 per cent), or 0.42 per cent. Thus, the net return on the \$1 million of mortgages is equal to 5 per cent less 0.42 per cent, or 4.58 per cent. This net return offers a highly interesting comparison with that obtainable on such blue chip corporate securities as Southwestern Bell Telephone Co. 3 per cent bonds, due 1968, and Standard Oil of New Jersey 3's, due 1961. At December 12's quotation of 102⁷/₈, the former would yield 2.86 per cent to maturity; the latter at 104³/₈ would yield 2.74 per cent. Stronger in favor of FHA-insured mortgages is the comparison of their net return with the average yield of eight U. S. Treasury bonds—about 2.06 per cent at mid-December.

It is to be emphasized that these calculations are based on the assumption that 10 per cent of the mortgages are foreclosed. That they are conservative calculations is indicated by the fact that, since the launching of FHA's mortgage program in 1935 until September, 1938, Benson's bank made 700 insured loans totaling \$4,118,392 (100 of which were originally in excess of 80 per cent of property value) and has had trouble with only two.

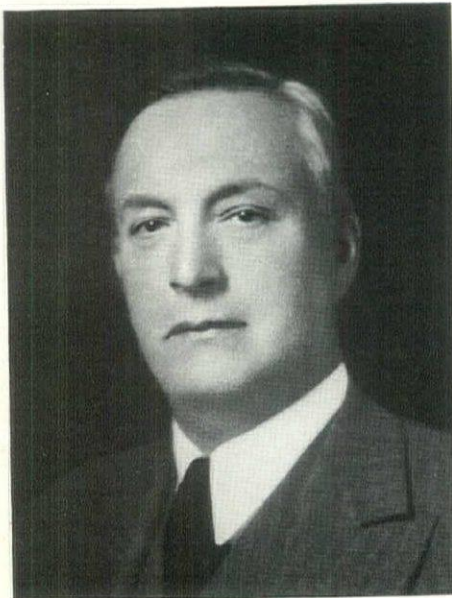
For the benefit of scoffers, however, Banker Benson carried his study one step further, found that, if half his hypothetical \$1 million of mortgages went sour, his net return would still be 3 per cent.

UP AND DOWN. From the annual convention of the Association of Life Insurance Presidents, held month ago in New York City, came many an observation of interest to Building. After an analysis of the portfolios of 49 insurance companies which hold 92 per cent of the investments of the Nation's legal reserve companies, Delegate T. A. Phillips of St. Paul announced 1) that progressively smaller decreases in the volume of farm mortgage holdings, which account for about 3 per cent of total assets, have characterized each year since 1934, 2) that there is some hope that this downward trend has about run its course, 3) that each of the last two years has seen increases in the amount of urban mortgages held, and 4) that the trend of the ratio of real estate holdings to total assets is downward.

Making way for the increase in urban home mortgage portfolios is the decrease in holdings of U. S. Government bonds.

The 49 companies surveyed currently hold about \$4.5 billion of "governments," which account for 17.9 per cent of their total investments.

WOOLLEY TO REED. Excluding the host of small fry, some 3,000 companies supply Building's parts, and to captain one of these companies as long-standing and up-standing as American Radiator-Standard Sanitary is an honor



Am Rad & St S' Henry M. Reed

that comes to few men. Recently, that honor went from Woolley to Reed. Original secretary and president-chairman of American Radiator since 1902, Clarence Mott Woolley, gray-haired, be-jowled and 75, at mid-November announced that he wanted to be relieved of his duties and responsibilities, tendered his resignation so that they might "be taken over by a younger man." Thus, the U. S. building industry officially lost its best-known executive.

The younger man elected to carry on as President and Chairman of the Board of American Radiator and Standard Sanitary Corp. is 58-year-old Henry Morrison Reed of Ben Avon, Pa. A hard-working, self-made industrialist, the genial Mr. Reed will also assume the title of Chairman of the Board of American Radiator Co., retain the title of President of Standard Sanitary Manufacturing Co.

EIGHT HOURS. Latest chapter in Labor's own version of "How to Win Friends and Influence People" was written in November, when the Essex Building Trades Council of Newark (N. J.) cast a loud and lopsided vote against chopping even a minute from the eight-hour working day. New Jersey's largest organization of skilled mechanics, the Essex Council's actions carry weight.

Reasons for its most recent action were voiced by Council leaders in the pre-voting discussion: the shorter day would put the brakes on Building with higher costs, create unemployment, and eventually lead to the speed-up system.

Said Council President Fred Scholl: "It is obvious that the prospective builder and investor will not come here (Newark and residential Essex County) if we are going to slap him with a 25 to 35 per cent increase in construction costs. We must not only protect ourselves, but we must also protect the fair and legitimate contractors who now employ our men."

In tune with the spreading general demands for shorter working days, Council carpenters (currently working seven hours) are advocating a six-hour day. With similar plans in mind, local painters wondered if the Council's action could stop them. President Scholl's reply was firm: "If you can succeed through negotiations, all well and good, but you will not get the support of this organization."

In Mr. Scholl's statement that New York City building trades leaders had counselled him to stand against shorter working days, the New York Building Trades Employers Association's *News and Opinion* found fodder for an editorial comment: "We are hopeful that leaders of New York City building labor will give the same advice to their local representatives and to their rank and file. Employers for many months past have been trying to do so without assistance."

UP. Five months ago THE FORUM looked into the price structure of Building's seven basic materials, predicted a price rise for two of them, a steady-to-upward movement for two more and a steady trend for three (ARCH. FORUM, Sept. 1938, p. 231). In making this prediction, THE FORUM went out on a limb, for during the twelve months preceding June prices had dropped steadily (see chart, page 2).

Checking up on itself, THE FORUM now finds that that limb was a strong one, that its predictions were five-sevenths correct. Only errors: a steady price trend was predicted for copper, but the movement has been upward, and steel prices went down against expectations. Comparison of the price movements between June and October (latest month for which figures are available), as measured by wholesale price indices of the U. S. Department of Labor, with THE FORUM's predictions:

Material	Prediction	Movement
Lumber	Upward	Up 1.8%
Brick	Upward	Up 0.6%
Steel	Steady-to-upward	Down 5.1%
Cement	Steady	Unchanged
Copper	Steady	Up 21.8%
Paint	Steady-to-upward	Up 1.7%
Glass	Steady	Unchanged

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Doors of Formica of a highly colorful and striking kind, have been very popular for theaters, just as more subdued effects have been widely used in public buildings, like the New Annex to the Library of Congress.

The reasons are the same in both cases: handsome modern effects, in a very durable material that is simply and easily kept clean with a minimum of toilsome polishing. The price is lower than for many types of high grade doors.

The picture shows a battery of Formica doors in the Times Theater at Rockford, Ill., Edward Paul Lewin, architect.

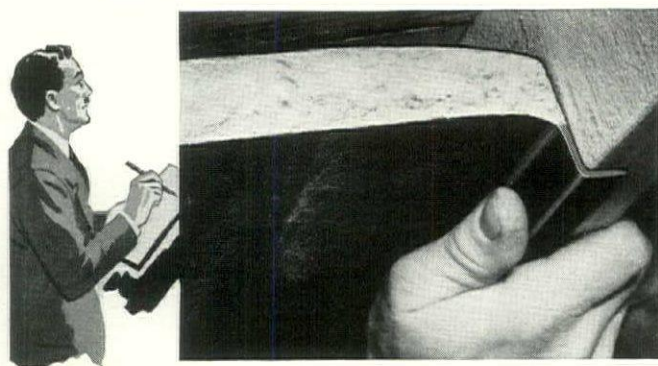
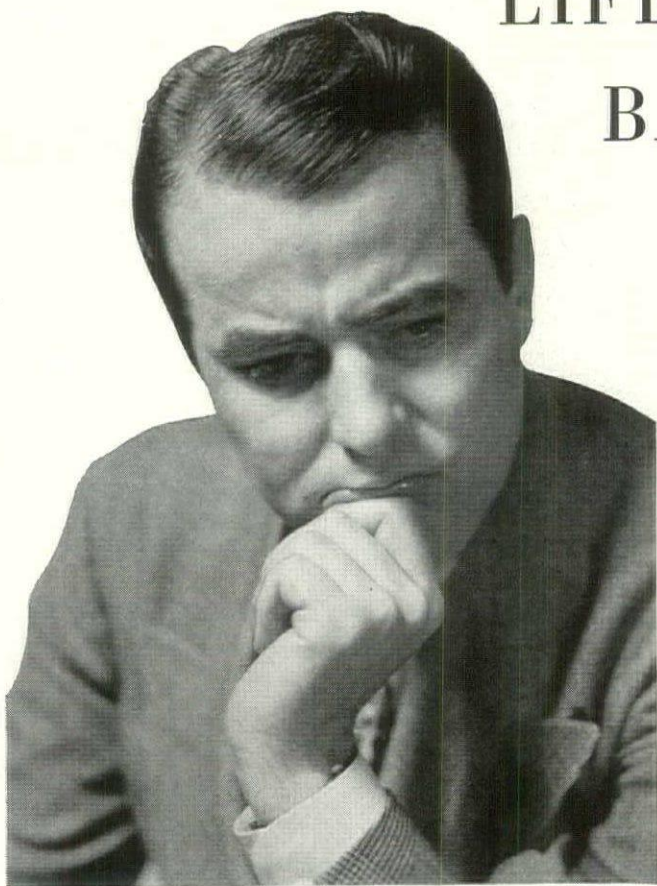
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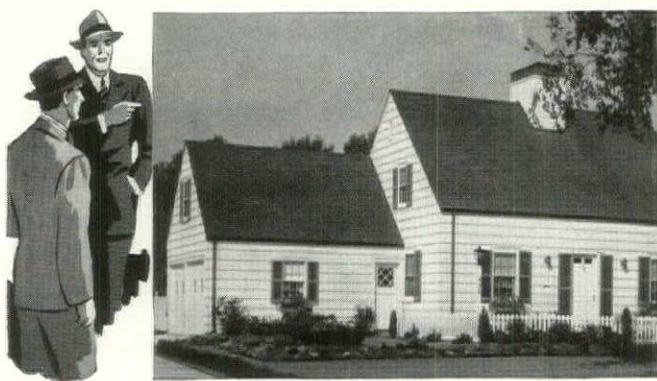
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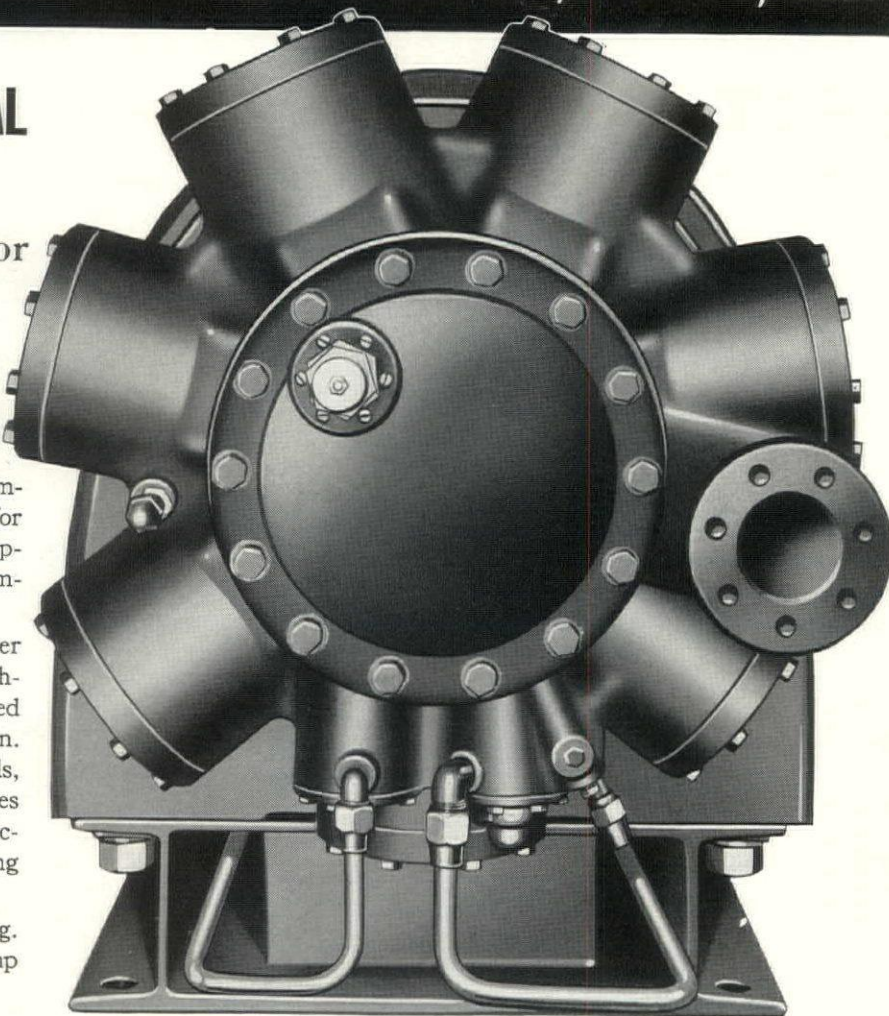
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THE PRODUCTIVE HOME ARCHITECTURAL COMPETITION

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5 Regional First Prizes of \$1,000 each

50 Regional Prizes of \$100 each

PURPOSE:

A new pattern of American life is arousing widespread interest on the part of economists, educators, and sociologists. This pattern is represented by the Productive Home located on productive land in a semi-rural community within transportation distance of the work or employment of the members of the family engaged in gainful occupations. The Productive Home, rather than employment in industry or commercial agriculture, is the source of well being in this pattern of living. The great cities created by the urban trend of the past century and a half are collapsing financially, and there are many indications that these metropolitan centers are now not only parasitic economically but also culturally decadent. A new movement landward is taking form, finding its articulate expression in the country life movement, and in the decentralization of population, government, finance, industry and housing.

The center of the new economic pattern is the family, owning a home built on a plot of land representing acreage rather than the ordinary city or suburban lots, and adding to the economic independence and security of its members through pro-

duction in the home, shop, studio, and garden. To date, however, there has been an almost negligible recognition of the specific design problems that this Productive Home implies.

The purpose of this competition is to encourage and stimulate architects in every region of the United States to the fullest consideration of the housing problem of the families developing this pattern of living. It is hoped that competitors will plan complete homes that are not only practical designs for families supporting themselves partly by employment and partly by homestead production, but indigenous to their locale, and expressive of regional values. The competition is intended to encourage unhampered research into the problem of the Productive Home. It is free of industrial subsidy or commercial implications of any kind. In order to make it possible for architects to consider the problem of the Productive Home as it should be solved for all the varied shelter environments in the United States, the broadest possible plan of competition has been devised and mandatory requirements of the contest reduced to a minimum.

SPONSORS



FREE AMERICA—A monthly magazine serving as spokesman for a group of economists, sociologists, and educators interested in the advancement of decentralization, cooperation, distributism, land conservation, domestic production, and the spread of small property ownership.



THE SCHOOL OF LIVING—A research and educational institution offering published studies in homestead economics, based on actual experiments, for home economists, political economists, sociologists, agrarian leaders, and public administrators, as well as for city dwellers who desire to establish productive and semi-rural homes.



THE INDEPENDENCE FOUNDATION—A non-profit credit institution which lends private funds for autonomous homestead communities and helps individual homesteaders to acquire land and build productive homes on a cooperative, self-liquidating basis without governmental subsidy or private charity.

Copies of the Program, to be released just prior to February 1, 1939, may be obtained by making application to:

Walter Sanders, A.I.A., Professional Adviser

TO:

**The Productive Home Architectural Competition
381 Fourth Avenue, New York City**

Please send me a copy of the complete Program.

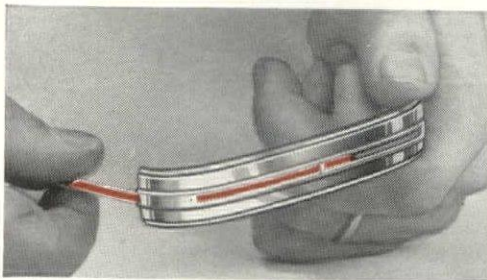
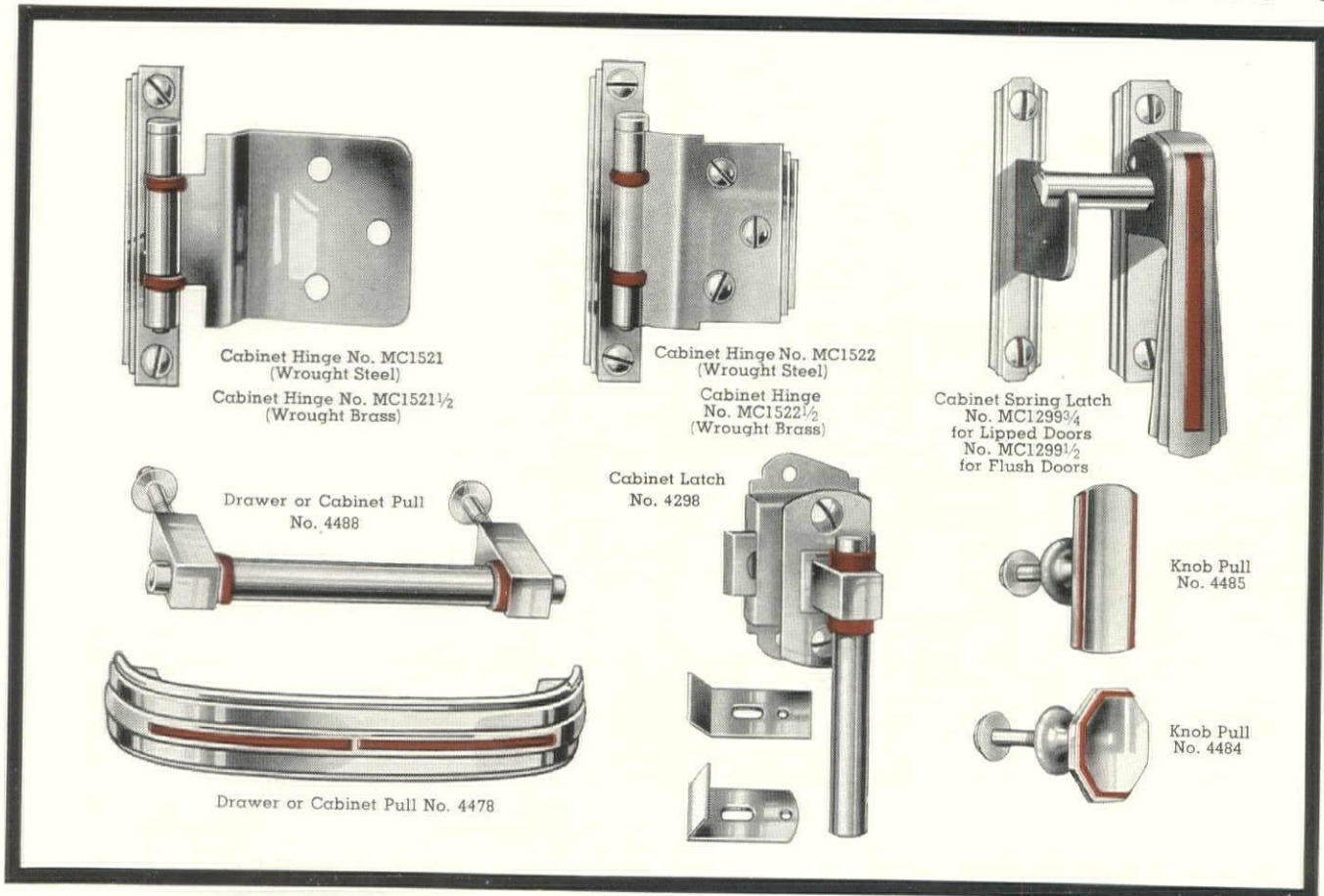
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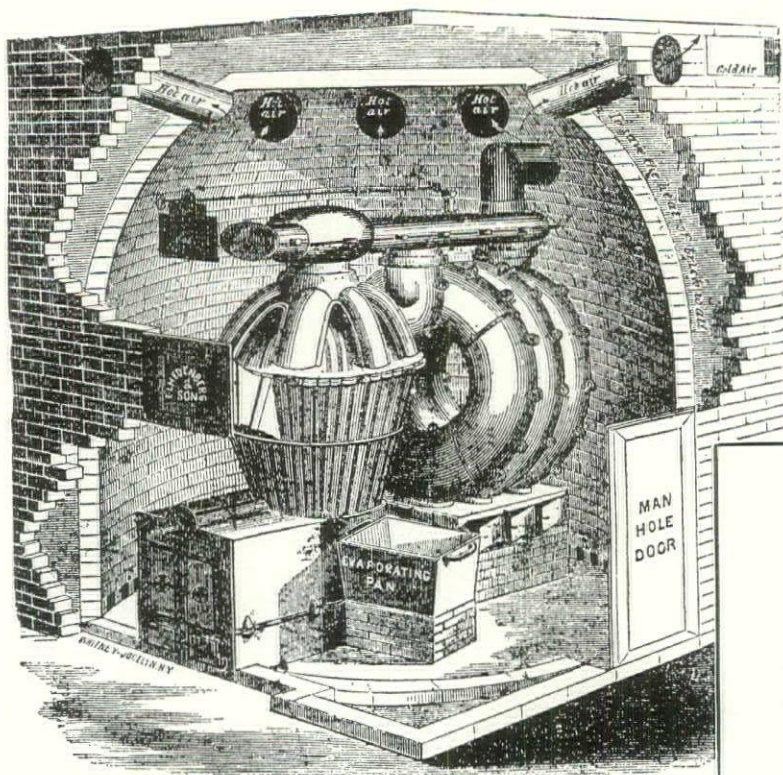
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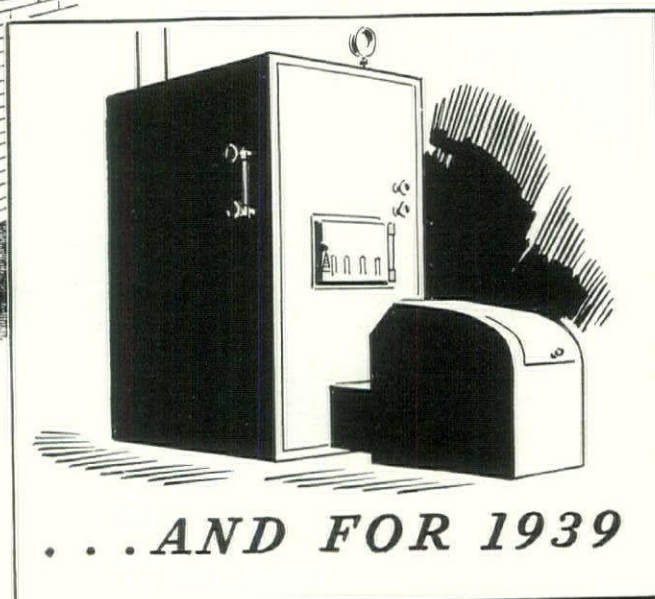


CIRCA 1850

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THE ARCHITECT'S WORLD

LOUIS SULLIVAN STUDIES ARCHITECTURE—AND ARCHITECTS

By Hugh Morrison

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An excerpt, by permission, from the author's "Louis Sullivan," published by The Museum of Modern Art and W. W. Norton & Company, Inc.; Copyright 1935 by W. W. Norton & Company, Inc.

Toward the end of his first year in high school, Louis was left alone at South Reading. In April, 1871, his grandmother died and his grandfather and his uncle Jules broke up their home on the farm and went to live in Philadelphia. For the next two years Louis made his home with a next-door-neighbor at South Reading, John A. Thompson.

George Thompson, the son, was slightly older than Louis, and was studying railroad engineering at the Massachusetts Institute of Technology. Through him Louis became interested in going to "Tech" for his architectural education. At George Thompson's instance he essayed the entrance examinations at the end of his second year in the English High School, passed them with ease, and accordingly entered M.I.T. in September, 1872, at the age of sixteen, to take the course in architecture.

The school was in Rogers Hall, near the corner of Boylston and Berkeley Sts., with pleasant study rooms, a long drafting room, library, and lecture room. It was the first architectural school to be established in this country, and was comparatively new at the time, having been opened in 1865. It was directed by Professor William Ware, of the firm of Ware & Van Brunt. Professor Ware, in Louis' description, was "a gentleman of the old school; a bachelor, of good height, slender, bearded in the English fashion, and turning gray. He had his small affectations, harmless enough. His voice was somewhat husky, his polite bearing impeccable and kind. He had a precious sense of quiet humor, and common sense seemed to have a strong hold on him. Withal he was worthy of personal respect and affection. His attainments were moderate in scope and soundly cultural as of the day; his judgments were clear and just. The words amiability and quiet common sense sum up his personality; he was not imaginative enough to be ardent. . . . The misfortune was that in his lectures on the history of architecture he never looked his pupils in the eye, but by preference addressed an audience in his beard, in a low and confidential tone, ignoring a

game of spitball under way. Yet a word or a phrase reached the open now and then concerning styles, construction, and so forth, and at times he went to the blackboard and drew this and that very neatly."

His assistant was Eugene Letang, a recent graduate of the *Atelier Vaudremer* of the Ecole des Beaux-Arts in Paris, and winner of the *Grand Prix de Rome*. He was about thirty, sallow and earnest, with a long and lean face and no professional air, but patient, and a student among the students. Of the latter, there were about thirty, all told—some already university graduates, almost all older and more worldly wise than Louis. He found among them agreeable companions, however, and thoroughly enjoyed the space and the freedom of the drafting room intercourse. Under their influence he "began to put on a bit of swagger, to wear smart clothes, to shave away the down and to agitate a propaganda for inch-long side whiskers. A photograph of that date shows him as a clean-cut young man, with a rather intelligent expression, a heavy mop of black hair neatly parted for the occasion, a pearl stud set in immaculate white, and a suit up to the minute in material and cut."

Early in his career at "Tech" Louis saw from its very beginnings the famous Boston Fire of November, 1872. His description of it bears repetition. It began with a small flame "curling from the wooden cornice of a building on the north side of Summer St. There were perhaps a half a dozen persons present at the time. The street was night-still. It was early. No fire engine came. . . . All was quiet as the small flame grew into a whorl and sparks shot upward from a glow behind; the windows became lighted from within. A few more people gathered, but no engine came. Then began a gentle purring roar. The few became a crowd, but no engine came. Glass crackled and crashed, flames burst forth madly from all windows, and the lambent dark flames behind them soared high, casting multitudes of sparks and embers abroad, as they cracked and wheezed. The roof fell,

the floors collapsed. A hand-drawn engine came, but too late. The front wall tottered, swayed and crumbled to the pavement, exposing to view a roaring furnace. It was too late. The city seemed doomed. Louis followed its ravages all night long. It was a magnificent but terrible pageant of wrathful fire before whose onslaught row after row of regimented buildings melted away. . . ." For two nights after the fire Louis served as a guard in the M.I.T. volunteer battalion. He was thus not unacquainted with the disorder and desolation caused by a great conflagration when he went to Chicago the next year.

The architectural training given at "Tech" was quite according to rule. Louis learned how to draw expertly—for him, we can imagine, an easy task. He learned the classic orders as the fundamentals of architectural design. He learned the historic styles. Architecture, he could see, was neatly pigeonholed in the files of the past. The classic style was something that had columns and pediments; the Gothic style had pinnacles and crockets; all of the styles were considered as vocabularies of detail rather than as modes of building. All of the styles, too, he found, were sacrosanct; it was only through them that architectural beauty could be achieved in the present. "Louis learned about diameters, modules, minutes, entablatures, columns, pediments, and so forth and so forth, with the associated minute measurements and copious vocabulary, all of which items he supposed at the time were intended to be received in unquestioning faith as eternal verities. . . . Thus passed the days, the weeks, the months, in a sort of mishmash of architectural theology, and Louis came to see that it was not upon the spirit but upon the word that stress was laid. . . . But the sanctity of the orders Louis considered quaint; the orders were really fairy tales of long ago, now by the learned made rigid, mechanical and inane in the books he was pursuing, wherein they were stultified, for lack of common sense and human feeling. . . . He began to feel a vacancy in himself, the need of something more

nutritious to the mind than a play of marionettes. He felt the need and the lack of a red-blooded explanation, of a valiant idea that should bring life to arouse the cemetery of orders and of styles. . . . Moreover, as the time passed he began to discover that this school was but a pale reflection of the Ecole des Beaux Arts; and he thought it high time that he go to headquarters to learn if what was preached there as a gospel really signified glad tidings."

Louis made up his mind that he would leave M.I.T. at the end of his first year. He was aggressive and impatient; he knew what he wanted. He determined at that time to go to the Ecole, but before this he wanted a year or so of actual experience in an architect's office—to investigate the practice as well as the theory of architecture. This decision was a very important one, as it gave him a certain hard-headed knowledge of building that stood him in good stead when he later encountered the glamour and the superficial brilliance of the Ecole training.

Louis said good-bye to "Tech" at the end of his first year, and headed for Philadelphia to live with his grandfather and uncle. On his way he stopped off in New York for a few days. He met Richard Morris Hunt, then in his middle forties but already successful. Hunt, first of American architects to study in Paris, told Louis stories of life at the Ecole in the good old days of 1845, and of his work in the *atelier libre* of Hector Lefuel, and later of the great work on the New Louvre in which he had assisted Lefuel. Hunt patted the enterprising youth of sixteen on the back, and encouraged him in his aspirations. Louis went on to Philadelphia.

Once established at his grandfather's, he went out to look for work in his own way. It was not his method to comb the architects' offices to see which one would take him. Rather he combed the streets looking at the work of architects to see which office he would take. It was characteristic of his taste that the building which most appealed to him—a large residence being completed on South Broad St.—was by one of the freest and most original architects of Philadelphia in that day, Frank Furness. Louis accordingly presented himself at the office the next day, and informed Mr. Furness that he had come to enter his employ. Mr. Furness inquired as to his experience, and when informed that Louis had just come from the Massachusetts Institute of Technology, exploded, blowing up in fragments all the schools in the land and scattering the professors headless and limbless to the four quarters of earth and hell. Louis, he said, was a fool; a fool and an idiot to have wasted his time in a place where one was filled with sawdust, like a doll, and became a prig, a snob, and an ass. Louis was warmed by this fire; to hear his own sentiments so elo-

quently expressed reinforced his determination to work for this Frank Furness. He agreed that he knew little or nothing, but said that he was capable of learning, told of his discovery of the house on Broad St. and how he had followed "from the nugget to the solid vein," said that here he could learn, that here he was, and that here he would remain. By this time Louis was capable of something of a Celtic eloquence himself, and it ended in his being taken on at \$10 a week. "Come tomorrow morning for a trial," said Furness, "but I prophesy you won't outlast a week." Louis entered the office. At the end of that week he said, "You may stay as long as you like." His first job was to retrace a set of plans for a Savings Institution to be erected on Chestnut St.



"Frank Furness was a curious character. He affected the English in fashion. He wore loud plaids, and a scowl, and from his face depended fan-like a marvelous red beard, beautiful in tone with each separate hair delicately crinkled from beginning to end. Moreover, his face was snarled and homely as an English bulldog's. . . . The other member of the firm was George Hewitt, a slender, mustached person, pale and reserved, who seldom relaxed from his pose. It was he who did the Victorian Gothic in its pantalettes, when a church building or something of the sort was on the boards. With precision, as though he held his elements by pincers, he worked out these decorous subtleties of inanity, as per the English current magazines and other English sources. . . . Louis regarded him with admiration as a draftsman, and with mild contempt as a man who kept his nose in the books. Frank Furness 'made buildings out of his head.' That suited Louis better. And Furness as a freehand draftsman was extraordinary. He had Louis hypnotized, especially when he drew and swore at the same time."

John Hewitt, George's younger brother, helped Louis a great deal with his draftsmanship. Louis worked hard day and night. At first he lived with his grandfather and uncle in West Philadelphia, but soon moved into town to be nearer the office. The summer was hot, and he frequently walked through Fairmount Park (before it was landscaped for the Centennial Exhibition) and up the small valley of the Wissachickon on a Sunday. The offices of Furness & Hewitt were on the top floor of a four-story brick building at the corner of Third Street and Chestnut. From this vantage point, on a hot September day, Louis looked down into the streets on the mob scenes attendant on the closing of Jay Cooke & Company's office, a few doors down the street, that inaugurated the bank runs and historic panic of 1873. His first architectural experience was to be short-lived.

Furness & Hewitt, like every other firm, was hit by the depression. They finished up commissions already undertaken, but in November work was running dry, and since Louis had been the last to be taken on, he was the first to be released. He left the office with regrets and warm best wishes of Frank Furness.

Within a week Louis took the train for Chicago to join his parents. He arrived through miles of disheartening shanties and the dirty ruins of the Great Fire. It was the day before Thanksgiving, 1873. The city was still largely in ashes, but the ambition of recovery was in the air. Building was extremely active. In the first years after the fire, 1872 and 1873, the output of the more important architects' offices was actually measured by the mile. John M. Van Osdel designed over 8,000 ft. of "first class" front during the eighteen months after the fire; Carter, Drake & Wight did five miles; W. W. Boyington over three. Less important then, but to become big names in the world of architecture during the next generation, were the firms of Jenney, Schermerhorn & Bogart (William LeBaron Jenney began practice in Chicago in 1868); Burling & Adler (established in 1871); and the promising young firm of Burnham & Root (established 1873).

The seventeen-year-old youth was fascinated by the city. "Louis thought it all magnificent and wild; a crude extravaganza, an intoxicating rawness, a sense of big things to be done. . . . The elevated wooden sidewalks in the business district, with steps at each street corner, seemed shabby and grotesque; but when Louis learned that this meant that the city had determined to raise itself three feet more out of the mud, his soul declared that this resolve meant high courage; that the idea was big; that there must be big men here. The shabby walks now became a symbol of stout heart. . . . The pavements were vile, because hastily laid; they erupted here and there and everywhere in ooze. Most of the buildings, too, were paltry. . . . But in spite of the panic, there was stir; an energy that made him tingle to be in the game."

Louis followed his Philadelphia procedure in looking for a job. In the course of his explorations, he especially admired the Portland Block, a new building at the southeast corner of Dearborn and Washington Sts. He inquired as to the architect, and was given the name of Major LeBaron Jenney. He forthwith applied at the Major's office, and was taken on immediately, as more help was needed. During his six months in Major Jenney's office, Louis formed his first acquaintance with the many interesting personalities of the architectural world in Chicago. Major Jenney was the first of these, and Louis has left a classic description of him. "The Major was a free-and-easy cultured gentleman, but not an architect except by courtesy of terms. His true profession

was that of engineer. He received his training at the Ecole Polytechnique in France, and had served through the Civil War as Major of Engineers. He had been with Sherman on the march to the sea. He spoke French with an accent so atrocious that it jarred Louis' teeth, while his English jerked about as though it had St. Vitus' dance. He was monstrously pop-eyed, with hanging mobile features, sensuous lips, and he disposed of matters easily in the manner of a war veteran who believed he knew what was what. Louis soon found out that the Major was not, really, in his heart, an engineer at all, but by nature and in toto, a *bon vivant*, a *gourmet*. He lived in Riverside, a suburb, and Louis often smiled to see him carry home by their naked feet, with all plumage, a brace or two of choice wild ducks, or other game birds, or a rare and odorous cheese from abroad. And the Major knew his vintages, every one, and his sauces, every one; he was also a master of the chafing dish and the charcoal grill. All in all the Major was effusive; a hail fellow well met, an officer of the Loyal Legion, a welcome guest anywhere, but by preference a host. He was also an excellent *raconteur*, with a lively sense of humor and a certain piquancy of fancy that seemed Gallic. In his stories or his monologues, his unique vocal mannerisms or gyrations or gymnastics were a rich asset, as he squeaked or blew, or lost his voice, or ran an arpeggio down deep bass to harmonics, or took octaves, or fifths, or sevenths, or ninths in spasmodic splendor. His audience roared, for his stories were choice, and his voice, as one caught bits of it, was plastic, rich and sweet, and these bits, in sequence and collectively had a warming effect."

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Many stories attest to the kindliness and generosity of the Major, and his abilities as a teacher are indicated by a list of some of the men who got their start in his office. Besides Louis Sullivan, there were, at one time or another, Martin Roche, William A. Holabird, John Edelmänn, Irving K. Pond, Howard Van Doren Shaw, James Gamble Rogers, and Alfred Granger. If the Major liked a student in his office, or a draftsman, he would stop his work and spend an hour or two teaching, instructing, explaining.

At the time Louis entered the office John Edelmänn was foreman. They became close friends, and Louis conceived an admiration for John which lasted the rest of his life. Edelmänn was twenty-four at the time, "brawny, bearded, unkempt, careless, his voice rich, sonorous, modulant, his vocabulary an overflowing reservoir. . . . By nature indolent, by vanity and practice very rapid. He was a profound thinker, a man of immense range of reading, a brain of extraordinary keenness, strong, vivid, that ranged

in its operations from saturnine intelligence concerning men and their motives to the highest transcendentalisms of German metaphysics.

"There was enough work in the office to keep five men and a boy busy, provided they took intervals of rest, which they did. In the Major's absences, which were frequent and long, bedlam reigned. John Edelmänn would mount a drawing table and make a howling stump speech on greenback currency, or single tax, while at the same time Louis, at the top of his voice, sang selections from oratorios, beginning with his favorite, 'Why Do the Nations So Furiously Rage Together?'; and so all the force furiously raged together in joyous deviltry and bang-bang-bang. . . . The office-rat suddenly appears: 'Cheese it, Cullies: the Boss!' . . . Sudden silence, sudden industry, intense concentration. The Major enters and announces his pleasure in something less than three octaves. Thus the day's work comes out fairly even. . . ."

With John Edelmänn Louis went every Sunday afternoon through that winter to hear Hans Balatka and his orchestra play Wagner in Turner Hall, on the North Side. Wagner was the first of his great enthusiasms. He saw in him a mighty personality, a great free spirit, who had created a domain of his own out of his

imagination and his will. He responded to the power in Wagner as he later responded to the unbounded power of Michelangelo. Louis and John Edelmänn also frequented the gymnasium together, and in the spring lived for a time in the latter's boathouse in the preserves of the "Lotus Clubs," on the Calumet River.

As the spring months wore on Louis decided that his experience in the offices of Furness & Hewitt and of Jenny had given him that taste of architecture as it is practiced which he had desired as a part of his training, and that it was now time for him to fulfill his resolve to go to the fountain-head of architectural education—the Ecole des Beaux-Arts. He took the train East, and on July 10, 1874, sailed from New York on the *Britannic*. The boat called at Queens-town, where Louis got a glimpse of the high hills of the coastline, his only view of Ireland, and landed at Liverpool. He remained in Liverpool a day or two, and in London two weeks, then took the Dover-Dieppe Channel boat for France. He arrived in Paris after nightfall, and went to the Hotel St. Honoré. After a few days there he found himself permanent quarters on the seventh floor of a rooming hotel at the corner of the rue Monsieur le Prince and the rue Racine, in the Latin Quarter.

DEAN WALTER McCORNACK

By R. H. Shreve

THE daily press of late November carried the announcement that "Walter R. McCornack, Cleveland architect, will become Dean of the Massachusetts Institute of Technology's School of Architecture. . . ."

"Dean of the School of Architecture!" What manner of man is suggested to one's imagination by that title? To whom do we entrust direction of the school training of our future professionals? For what are these leaders chosen?

If the educational purposes of the several schools were examined, if the emphasis placed by each on some particular phase of training were noted, would it be possible by this study, through synthesis, to produce "deans" peculiarly fitted to the tasks which the respective schools have set themselves? Or if, per contra, one were to undertake to indicate a fitting type by analysis of the qualifications of those now holding deanships in the recognized schools, or if, from such analysis, one were to construct a composite, would there be much of definition in the resultant?

"Now, Huxley from one bone could make
An unknown beast; so if I take
This course of teaching, and from thence
Construct a dean by inference. . . ."

(and with apologies to Oliver Herford)
What would he be?

A pedagogue, a scholar, an administrator?
A student of the Fine Arts, or a constructor?
Practicing architect, landscape engineer,
planner or
Theorist?

On all sides one finds a bewildering assortment of talent and types, until the conclusion is forced that "circumstances" control the expression of choice by the ordaining power.

Comes now Walter McCornack, to be Dean of M.I.T.'s school.

What manner of man is he? What "circumstances" lie back of his choice.

Born in Illinois and nurtured there during his preparatory education, he must in that day have seemed a representative of the far West when he came to Boston to enter the School of Architecture of the Massachusetts Institute of Technology.

But Boston, and New England elsewhere, found him helpful in various architectural problems before he moved once more westward to find more pressing commissions in the study of Cleveland's schools. Even broader fields opened in the study and consultation he gave to the Southern School Building and Industrial College Program of the Julius Rosenwald

Fund, and in his work as a member of the Commission of five architects appointed to study the school building problems of New York City.

It is not surprising that with this broad background, filled in with more personal commissions in architectural practice Walter McCornack should have come in recent years to an intense interest in the problems grouped under that much used term, "Housing." A working member of President Hoover's Conference on Home Building and Home Ownership, a civic worker through membership on Cleveland's City Plan Committee and its Building Code Committee, he has acquired poise in academic fields as well by virtue of his teaching and lectures in educational centers throughout the upper easterly section of the nation.

He has found time too for an active part in the local and national problems of his profession as Director of the American Institute of Architects. Professional standards of the highest type have ever been his—soundness, fairness, honesty of purpose, resistance to abuse and racketeering, a social devotion to recognition of the needs of those with whose problems he had to deal.

To many of us who have worked with him it has seemed that his great contribution to his profession has been made through his effort to bring to the architects of the nation the problem of participation in the creation of the small houses which are now built so largely without their aid, and his urgent message that they should study the social problems which lie behind the question mark—"Housing." One may picture an altogether "fortuitous concourse" in the coincidence of McCornack's appointment to M.I.T., with his background of a wide understanding of the national quest in the domain of Shelter, and the simultaneous announcement of the initiation of plans for extensive research by the Department of City Planning to determine broad, long-range principles of public housing in relation to planned communities.



His future colleagues and his students will find in Walter McCornack human qualities without which no capability could bring success in an educational field—approachability, friendliness, loyalty, conscientious application to duty, leadership and direct speaking.

Whether by force of circumstance, by wisdom of the ordaining power or by unanimous choice of a jury of his peers, Massachusetts Institute of Technology has been given as Dean of its School of Architecture a man whom you would gladly place in charge of a boy's study, your son's—one who is certain to build in his students those ideals, those qualifications most to be desired in the architect of today—and tomorrow. It is this combination of the man of human qualities with

the skilled technician in architecture that promises success for Walter McCornack and the School of Architecture under his direction.



THEY SAY—

"Most sculpture is cheese."—Louis Saint-Gaudens.

"All things fear time but time fears the pyramids."—An Arab chronicler of the thirteenth century.

"I consider the education of our senses and our emotions rather more important than the education of our ideas."—Lin Yutang.

"I think that artists in general should be suppressed or diverted. By force if necessary. The more obstinate could be locked in padded studios and well paid for keeping their works under cover. Whatever they did of their own volition could be stored for the next generation to sort over and choose from. . . . Life is short and art is a pain in the neck."—Paul Saint-Gaudens.

PAIRED

Parallels of Criticism: The Lincoln Memorial

Not one of the neo-classic buildings of our time possesses that command over our spirit without which there can be no genuine architecture . . . not the peristyle of the Lincoln Memorial. These are the death masks of a culture long disappeared from the earth and whose soul, for good or evil, is beyond recall. . . . Henry Bacon surrounded his Lincoln Memorial with Greek columns as accurate in delineation and attitude [as the painter David reproduced the Greek heroes on Napoleonic canvasses] and shattered them by an intrusion of a realism that is at once sugary and harsh.—JOSEPH HUDNUT in "Architecture Discovers the Present," *The American Scholar*.

Suppose that this memorial had been built at some time in the recent past when some slight and passing fashion was in vogue? What if it had been Victorian Gothic like the Connecticut State Capitol, Romanesque like the old Washington Post Office, or *art nouveau*, or in the Mission style, or as coldly cubic as the Lenin tomb in Moscow? What then? My considered opinion is that had any one of these horrid things happened, by this time it would have achieved the fate justly impending over the Romanesque Post Office. Eternal verities do not submit themselves to clever experimentation.—RALPH ADAMS CRAM in a letter to the editor of *The American Scholar*.

CHICAGO: TIME FOR ANOTHER FIRE

By Milton S. Mayer

Excerpts from the author's article in *Harpers Magazine*, November, 1938

Serious groups of little thinkers have been gathering all over Chicago the past couple of years. They order the blue-plate luncheon and proceed to tell one another that Chicago is ripe for reform. These good people are all amateurs. They know that their city is the world's champion sinkhole, but they don't know why, and they don't know what to do about it. So they form a committee and, after the third luncheon, the committee falls apart.

Reformers can't reform Chicago. What has always wrecked reform in Chicago is the nature of reformers, reformers everywhere. They don't know what they want, they don't know why they want it, and they don't know what to do with it when they get it. So it is stolen from them by men who know what to do with it.

The present reform movement is the first in forty years. It is a movement leaderless, bodiless, directionless, of the only people who can reform a city. It is a movement among the Bohunks. The Bohunks feel,

very vaguely, that something is happening in other cities and not in Chicago, and that maybe they are the reason.

Something is going to happen.

Not today. Not tomorrow. Chicago, if you want to know what has happened to it since Insull, has merely grown a little worse. Taxes are higher. The poor are hungrier. The blighted area, fifty square miles of the city's two hundred, hasn't been touched. The schools have the highest non-instructional expenditures in the country. The streets are full of holes, and the garbage is disposed of by kicking it round until it gets lost.

Chicago has been hustling since the day it was born. It has been a boom town and a crash town, a speculator and a card-sharp, a continuous pay-night in Leadville for every one of its hundred years. It is this that is unique about Chicago. Boston and Philadelphia, New Orleans and St. Louis are cities with a past. In such cities, as in New York, there are values of leisure. In

Chicago there are none. In Chicago the rush is on, it is always on, and it is on from top to bottom.

The only thing that counts is front. Chicago had always had the front. Between God and the Commercial Club it has built a lake-front swimming in sunlight, with a park all along the length, the paper-thin length, of the city. You must see the parks and the lake-front and the skyline, and you must say, with the late William Bolitho: A noble and a spacious city.

The City Beautiful. The Burnham Lake-Front Plan was drawn up in 1909. It gave the world the goal of the City Beautiful. But since 1909 the City Beautiful has become less important, to some people, than the City Livable. Everything Chicago has, has gone into that rim around the lake, and the whole thing, park and sky-line and water, is a Hollywood set, creating the illusion of non-existent depth. Behind the City Beautiful lies the Chicago that neither the visitor nor the suburbanite knows or wants to know. This is the City Monotonous, the Chicago of cottage-tenements thrown up hurriedly, flimsily, after the Fire of '71. Here live the Bohunks, the people without the heart or the carfare to see the lake. Here buildings come down when they fall down, and buildings never go up.

Twenty-five per cent of the vast area of Chicago is officially slums. There has never been any money in slum clearance. The "temporary" slums of the '70s remained. When the New Deal decided that slum-clearance was public business it turned to the cities and asked them for their plans. Plans? What would Chicago be doing with plans? It had none. It has none now. Its Planning Commission, an unofficial body of 350 citizens described at its inception as "hard-boiled business men" who would "make Chicago attractive to visitors from all parts of the world," meets once a year and changes personnel when somebody dies. It is interested in a lake-front airport, in a subway serving the downtown department stores. It is not interested in the relation of traction to highways, in the rehabilitation of blighted areas, in a land-use survey preliminary to government housing.

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Chicago didn't need a plan. The people who run Chicago, in and out of government, had their own plan for government housing. Over the most extortionate handicaps, three federal projects have been completed. After five years of sabotage, in and out of the courts, a single project for Negroes is ready to go up. The business interests have fought them all. And the last session of the State legislature, with the Republicans voting with the Chicago delegates, refused to permit the necessary tax exemption for \$50,000,000 of federal housing money offered Illinois for further projects. Private enterprise and the slums were saved.

Planning? There hasn't been any time for planning. Chicago, doubling its wealth

and its population every time the census man stuck his head in, has been rushing and roaring forward for a century, stumbling over its dead, hiding its debris, shooting and shouting and grabbing and sky-scraping, hoping it will last forever, saying it will and knowing it won't, beating the gun, beating the lights, beating the law. Chicago hasn't heard the voices that in much less than a hundred years come to trouble cities. Who is there in Chicago to take time to hear them, to listen for them above the noise of men and pigs and forges?

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PAINTED STONWORK

From The Architect and Building News, London

Those gay subalterns whose Stonehenge exploit was front-page news some weeks ago are not the only advocates of painted stonework. The annual Report of the Society for the Protection of Ancient Buildings, which has just come out, contains,

among other things, an instructive note on the subject. It appears that an ancient tradition sanctions the use of oil and paint for the protection of masonry, and that no less an architect than Wren specified three-coat work for the interior surfaces of St. Paul's.

The whole of this preservative skin was mercilessly peeled off in 1872, when it was thought, presumably, that Wren's immortal hand would never have committed the blasphemy of painting stonework. But the clearest evidence, in black and white, is to be found in the St. Paul's building accounts, which the Wren Society has been publishing in summarized form, and the final installment of which appears in the Society's recently issued Volume XV.

No less than £1,936 was paid for painting the whole interior of the Cathedral between December, 1709, and December, 1710, and there had been an earlier payment of nearly £600 for painting the apse in imitation marble and gold. Our almost superstitious reverence for naked masonry is thus shown to be a comparatively recent acquirement.

COMPETITIONS

By H. S. Goodhart-Rendel

PRESIDENT, ROYAL INSTITUTE OF BRITISH ARCHITECTS

An excerpt from the inaugural address at the R.I.B.A., London, November 7, 1938

Nevertheless, good as the buildings were at Glasgow, good as they promise to be at New York, we could wish that the designs for both had been the subjects of open competition. The year of presidentialship that I have already enjoyed has shown me more plainly than ever before both the necessity and the difficulty of the Institute's policy of urging that open competitions be held upon all important occasions. Its difficulty is sometimes real, and is always feared and exaggerated by the timid layman who hopes for little better in his architect than a man of whom he already knows the worst. Its necessity is perceived only by those to whom the constant advancement of our architecture is an obligation due to our national pride.

What the timid layman would really like best would be to go into a shop full of buildings, as he goes into a shop full of furniture, to buy one, and to have it re-erected by the man who for many years has served him well in looking after his drains and small repairs. He would then have chosen the building he fancied and the man he trusted, and need fear no unexpected result. If he were a regular, rather than an occasional builder, he would like to have at his hand some trusty designers so well trained in his preferences that he could safely leave them to themselves.

Now is not all this very natural? Quite good buildings are already mass-produced

by routine, and it may not be long before quite good mass-products can be ordered from the architectural departments of big shops. It is not impossible that such mass-production may eventually absorb the major part of our country's architectural activity, and it will then be the duty of this Institute, even more than it is at present, to mold such mass-production into elasticity and into being accessible by new ideas. When that state of things is in being it may be hard indeed to persuade our timid layman that it is his duty to plunge into the unknown by promoting an open competition. At present, however, we can assure him that the dangers he fears are less than those of which he is unconscious; we can warn him that the safe man among architects is as often as not the tired man; that the building he likes and wishes to reproduce may be out of date before his production is finished, and that if he tries his hand at home architecture with his trusty man of drains, he is laying himself open to unforeseen perils as real as those of home carpentry and home medicine.

I make no apology for preaching at all seasons and in all places the Institute's gospel of competitions, because I think that a great many people, while believing it, do not realize its paramount importance. The days of enlightened patronage are almost over, and the number of lay-

men that can pick a good architect is as small as the number of those that can pick a good portrait painter. On the one hand, you have a body of employers that normally go for their architecture to the men they like meeting at golf clubs or at city dinners; on the other, you have a body of brilliant young men who are mostly better at architecture than at "mixing" or feasting. The work produced by the good mixers and the good feasters may often be all that its occasion requires, but it is fairly certain to miss opportunities that for the general good of architecture ought to be taken. Now, the competition, as things are, is the only door that can always be left open to the unknown man who has something to give that the world of architecture needs. If we wish our art not to degenerate into a genteel branch of commerce we must see that this door stands wide.

Architecture cannot thrive without a constant supply of ideas, and the most fertile ideas will often be found in the heads of young and unknown men. Architectural ideas cannot be materialized—cannot be fully born without opportunities—and I think the Institute ought to be a sort of Queen Charlotte's Hospital for providing what is necessary for their delivery. As is

generally known, the President of the Institute is sometimes asked to nominate architects for particular undertakings, and occasionally is able within the limits of his knowledge to tap new veins of ore, to point the way to unexploited talent. Almost always, however, he is asked not who would do the job best, but who has done most jobs of the same kind. I always wonder why architects are commonly supposed to be like the baker in *The Hunting of the Snark*, who "could only bake bride-cake," or the butcher who "could only kill beavers." In trade such specialization is convenient; it would, no doubt be unreasonable to ask a greengrocer for a string of sausages, and I daresay that a good many commercial portrait painters would run aground if they were to tackle seascapes. There are, moreover, some kinds of buildings in which specialized skill can only be acquired by experience, but there are not many. Nevertheless, it is often impossible to convince the authority wishing to build a branch library or a market that any architect can possibly do it who has not built many libraries or markets before. If such authorities only would hold a competition with a specialist as their assessor, both they and he might learn a great deal.

THE PUBLIC SERVICE BUILDING CORPORATION

By Paul D. Angell

VICE PRESIDENT, CHICAGO REAL ESTATE BOARD

Excerpts from an address before the Illinois Society of Architects, September 27, 1938

Just as the State has granted franchises to toll bridge, drainage, river levee, gas, water, power and electric light corporations, it may find good and valid reasons to issue a franchise to Public Service Building Corporations to perform a public service in removing and rebuilding the slum and blight districts of Chicago and other towns and villages in Illinois.

The initial step requires an act to be passed by the State Legislature. This act should define specifically what constitutes a blighted area; it might be well that the act actually describe, by boundary, the blight area now existing in cities of over 150,000. The preamble should further recite that the demolition of the area, or any part of the same, and the rebuilding thereof, in accordance with the provisions of the act, *would constitute and be of a public use and benefit.*

Generally speaking, the act must mold the Public Service Building Corporation after the pattern of the existing public service companies. Its organization and control should be such as to render it acceptable to the general public as a medium for investment of capital.

The activities of the corporation would be restricted to blight clearance and its

rebuilding, subject to a master plan of the city or village, relating to zoning and building restrictions, street layouts, parks and playground facilities.

No limitation should be imposed by the act in reference to the cost of building improvements, nor as to maximum rentals to be charged or dividends earned. In the absence of monopoly, the law of supply and demand may be depended upon to operate to the advantage of the people.

There should be a provision in the act allowing for the construction of commercial buildings, provided, however, such building structures form an integral part of the development of the district, in accordance with the master zoning plan.

The act should not restrict the alienation of any property within the area after the work of reconstruction of the area, or any part thereof, has been completed. This condition is necessary in order to induce private capital participation in the rebuilding and development of the blighted districts.

The act should provide for the methodical and regulated demolition and rebuilding of the blighted area, not from the standpoint of providing low cost housing for the low income groups, but for the purpose of removing a cancerous growth affecting the entire community.

The law would provide for the creation of a board or commission, in whom would be vested the authority to determine the financial responsibility of the respective corporations, the adequacy of the financial plans, the methods of financing, the plans of demolition and reconstruction of the area involved, and such other supervisory authority as is reasonably necessary to protect the interest of the investing public and the community.

Visualizing briefly the administrative requisites of the law, we may consider the following procedure. Upon the incorporation of a Public Service Building Corporation, such corporation would have the right to petition the Board for the allocation to it of a certain area; such petition to be accompanied by written plans and specifications for the rehabilitation of the area described therein, together with an estimate of the cost of demolition and reconstruction.

The Board would be empowered to allocate the area affected by such approved plans and specifications to the corporation submitting the same, provided said corporation should furnish a bond for the faithful performance of the enterprise.

The service corporation would acquire the exclusive right to purchase any and all parcels of real estate included in the area, and in the event it would acquire by purchase the title to a fractional percentage of all property in said area within one year from date, it would thereupon have the right to acquire the title to the balance of the real estate by the exercise of the power of eminent domain in the manner provided by the general laws of the State.

The chief constructive feature of the proposed Public Service Building Corporation Act would be the fact that large districts will be contemporaneously affected by demolition and rebuilding on a competitive basis. It is not inconceivable to suppose that within a few years from the passage of the act, the slum districts, usually located in the heart of the city, enveloping and smothering, as it were, the so-called downtown retail districts, may be transformed into healthy residential communities. If the cities assist in the re-planning, re-zoning, landscaping and otherwise remodeling their very best locations, the resultant social and economic values will more than justify the experiment.

Should the proposed Public Service Building Corporation be created by an act of the State Legislature tomorrow, the question will still remain as to its constitutionality. To grant to private corporations the right to invoke the power of eminent domain, automatically places such a grant under the necessity of judicial interpretation. The proposed corporation obviously faces the same difficulties which other private public service corporations had to face in our history. The courts did not quickly approve the idea of granting the use of eminent domain by private corporations.

THE DIARY

Henry W. Saylor

Wednesday, November 16.—Show us what a man draws or paints, and we can tell you just how crazy he is. That is the theory on which mental patients in Bellevue Hospital are being examined by the psychiatrists with the help of the WPA Federal Art Project. There's an idea here. Possibly we could have the same combination put to work on architectural drawings.

Thursday, November 17.—Sherley W. Morgan, director of the Princeton School of Architecture, was the first of a number of educational leaders who will tell us from time to time what the schools are doing. Speaking at the League today, he quoted Albert Edward Wiggam in connection with a vocational intelligence scale. The scale, I believe, was devised by James Barr of Stanford University in collaboration with a number of other educators. It takes more intelligence, for instance, to be a traveling salesman than it does to be an undertaker. Assuming that the scale starts at zero with the hobo, and extends up to 2,000 representing an intellectual genius like Thomas Edison, where does the architect fit in? Barr and his 30 collaborating educators score the architect at 1628, which is just under the physician's at 1671, and also slightly under the university professor, who scores 1781. It is somewhat deflating personally to find that an editor rates only 1284, but that picture is brightened by the fact that the high-grade journalist goes above both architect and physician to 1691.

Monday, November 21.—Architects, decorators, and the press turned out for a preview of the Pittsburgh Glass Institute Competition entries and awards this afternoon in Pedac Galleries. It is not only a good show in itself, but, as one visitor remarked, "Even aside from the subject of better use of glass, it is a first-class exhibition of photography." Among those who came to have an early look was Julian E. Garnsey, who is painting the New York World's Fair with brushes of comet's hair. He was telling me that Jesse Stanton, colorist of the San Francisco Fair, is a very good friend of his. Stanton, on a visit recently, was recalling that most fairs that run into a second year are repainted by someone else. Possibly an excellent scheme would be for Garnsey and Stanton simultaneously to entrain for the opposite coasts and swap jobs in 1940.

Tuesday, November 22.—At a dinner of the New York Chapter tonight I was struck by the fact that the younger generation has climbed into the saddle. Time was, not so long ago, when the younger men sat quietly and respectfully while a few of the elder statesmen expressed opinions which were thereupon immediately adopted as the sense of the meeting. Tonight the older statesmen were conspicuous by their absence, but lest we reach too hastily a conclusion, it must be set down that an important announcement by Robert Moses was being delivered at the Museum of Natural History regarding the City's future plans for housing. Apparently every architect who thought he might possibly get a job had gone up there instead.

★

Wednesday, November 23.—Robert Moses certainly must have taken to heart the oft quoted dictum of Daniel H. Burnham—"Make no small plans; they have nothing in them to stir men's souls." The Commissioner came out last night with the suggestion that in this matter of slum clearance and low rental housing, the city might well fish, cut bait, or go ashore. With a clearly envisioned problem ahead of us, the steps now under way are merely a drop in the bucket. If we really mean to rebuild America on a new standard of decency, why not tackle the job as if we meant it?

Specifically he suggested that the City embark upon ten slum clearance projects costing, together with the necessary public improvements, \$200,000,000, and also five low-cost housing developments to be undertaken by limited dividend companies. His suggestions are not merely large, they are also specific. As to what we should use for money, Mr. Moses suggested that an additional one cent tax on cigarettes will finance \$140,000,000 worth of new housing. One well established tradition in connection with a great municipal program—the feeling that selection of sites should be carried on under cover—he knocks in the head with: "You can't buy land to clear slums as though you were shopping for basement bargains." Again he points out the folly of attempting to make this new housing pay for itself by ascending tax appraisals over the years, which of course would defeat the low rental goal. The taxes on slum clearance areas he feels should be based on the assessed valuation

of the land and buildings at the time of acquisition.

This is not the place to go into the administrative and other financing details, about which we shall probably hear plenty, but merely to accent the fact that "where there is no vision, the people perish."

Saturday, November 26.—"Grumblethorpe" in Germantown, Pa., otherwise known as "John Wister's Big House," seems to be in danger of destruction in the interests of so-called progress. John Wister's place was just across the creek from James Logan's "Stenton" and Charles W. Peale's "Belfield." The year 1744 saw it built of local stone, and oak timbers from John Wister's woods. Originally it was a two and a half story house, its rather steeply pitched roof unbroken by dormers. Across one end and the front, what has been called a pent roof or Germantown hood marked the line of the second floor. It was broken by a balcony over the main entrance. The old house, now on the main crowded thoroughfare of Germantown, is not what it then was. Along about 1808 the family carried out some major alterations. Dormers appear in the front roof, the Germantown hood and balcony have disappeared and, perhaps most unfortunate of all, the stonework on the front was covered with pebble-dash. Nevertheless, what is left to us in "John Wister's Big House" is certainly deserving of preservation as a historic monument. Miss Frances A. Wister, Mrs. Frank Miles Day, Fiske Kimball, H. Louis Duhring, and Mrs. Clarence C. Zantlinger are in an imposing list of those who have been banded together as The Grumblethorpe Assn., 5267 Germantown Ave., Philadelphia, Pa. in the hope of preserving the old house.

Friday, December 2.—The murals for the big rotunda, Oregon State Capitol, are just about to be sent West. I stopped in at the studio to see what Frank H. Schwarz and Barry Faulkner had done for Oregon. The first and last impression of these murals is that here are pictures of real people, the pioneers along the Oregon Trail, led by Lewis and Clark. Frank Schwarz tells me that their only instructions were, "nothing symbolical." Here then are trappers, woodsmen, Indians, loggers, and all the rest of those who opened up the great Northwest, not vague

conventionalized figures, but real portraits that bring much closer those hardy forbears of ours.

★

Monday, December 5.—There was a hint in the air, when Robert Moses sprang his ambitious plans for low rental housing in New York City, that the project was not so simple as it appeared in his glowing recommendations. The hard-boiled housers are now bringing in their findings. The Citizens Housing Council, under whose sponsorship Mr. Moses launched his suggestions, finds a number of snags: high land costs, the payment for parks and schools out of housing funds, the method of buying land, tenant selection turned over to the Department of Welfare, and his cigarette tax proposal. Another group of men who have been closely associated with the housing movement—Aronovici, Ballard, Churchill, Feiss, Lescaze, Mayer, Mumford, and Ralph Walker—attack the cost of land, the density of development, the use of what is purely a consumer's tax, and the use of relief labor. All agree that Robert Moses, as usual, has performed a valuable public service by starting the ball rolling, but the direction in which it rolls needs study and careful control.

Tuesday, December 6.—Apropos of a visit to the Bauhaus preview in The Museum of Modern Art: I used to think I knew what those fellows were trying to do. Gropius put it clearly enough in his early writings. The scientific approach to a knowledge of materials, light, sound, heat—as a proper basis for design—seemed obviously justifiable. Early data compiled in Bauhaus efforts carried conviction as to its authenticity and value as planning tools. Between that period and the present show lies a gap in which the meaning of the effort has, for me at least, disappeared in a pea-soup fog. Talking with Frederick Ackerman in an earnest effort to re-orient my mind, I asked him what the present conglomeration of abstracts, wire shapes, and distorted forms meant. "I spent about ten years of my life trying to find out," he said, "and now my complacency with regard to the whole thing is summed up in 'What the hell does it matter?'"

★

Thursday, December 8.—Continuing a series of talks by heads of the various architectural schools before The Architectural League, Dean Meeks presented at luncheon today the case for Yale. He told us some interesting facts and figures about the School of the Fine Arts in its four departments. What the architects listened most carefully for, however, was some indication as to the philosophy back of the teaching of architecture. The Dean's words on this particular subject were care-

fully chosen, and had apparently been considered from many points of view:

"We all realize that the arts are going through a stage of change, revision, and readjustment. Stylistic eclecticism in architecture seems to be making way for spontaneity in design, truly reflecting contemporary social conditions, materials, and methods of construction. Out of this may come—nay, surely will come—'style' to replace 'the styles.' But underlying architecture is a fundamental esthetic which has developed through the millennia of human experience. Composition, balance, rhythm, proportion, and scale are perennial and will endure through all vicissitudes and attacks. Functionalism and expressionism are the intellectual sisters of such underlying principles. They also are perennial. Together these basic considerations will form and dominate the new architecture. By them architecture will be judged, as heretofore, throughout its continuous and glorious history.

"To carry out this simple policy of fundamentals requires a curriculum based on experience on the one hand, and prophetic vision on the other. This latter element is not so chimerical as it sounds. First of all tendencies should be tolerated, recognized, and examined. I am a firm believer in the inherent good sense of the keen young American. He is curious; he wants to experiment, but he also wants to know. Any school which is to be effective today must lead these inquiring young minds. It cannot push. And above all it cannot forbid."

★

Monday, December 12.—Up to Boston to join with possibly a thousand others in honoring William Emerson, Dean of the Architectural School at M.I.T. The occasion was nicely balanced between pleasurable anticipation and deep regret. On the one hand, the Architectural School was entering upon a new phase of its life, in a new building on the Cambridge side of the Charles River, a building that for all its strict adherence to traditional forms, seems to lack no smallest detail of comfort and convenience. Shades of the old Walker Building!—where, although we had electricity for night drafting coming through suspended individual bulbs, the heat in the building was turned off at sundown in the traditional New England spirit of thrift. And now here are drafting room comforts almost unbelievable, with a flood of indirect lighting that permits no shadows upon a drawing board.

On the other hand, the motivating force of the school is retiring to a well earned rest from labors that, though clothed in all the polished suavity of the famed William Emerson personality, nevertheless reached deep down into the human and personal side of those who sought education, and particularly those who sought it under financial difficulties. Many an archi-

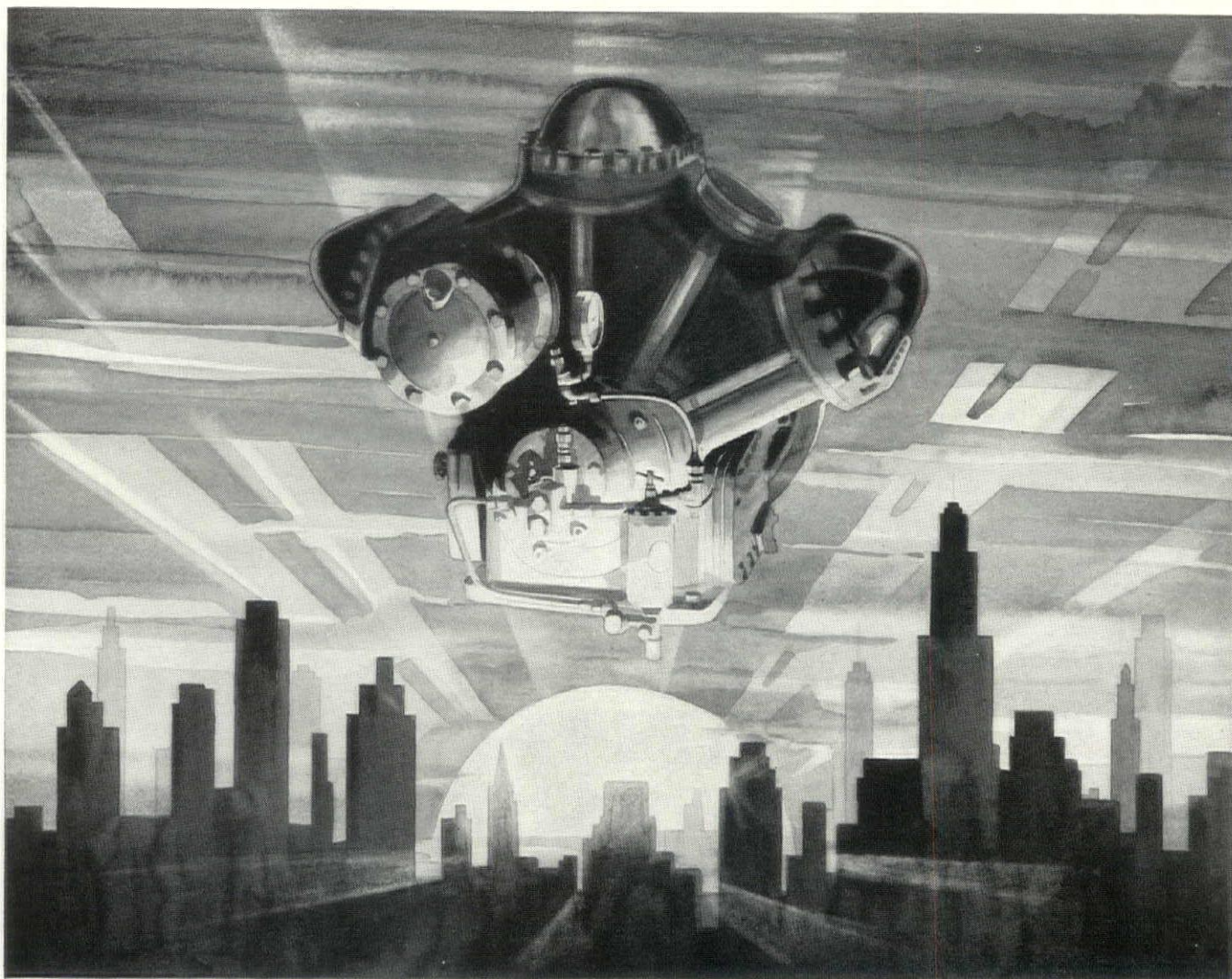
tect schooled at M.I.T. will look back upon his relationship with the Dean not so much as one of preceptor and student, but almost as one of father and son.

One of the most enjoyable parts of the opening was the opportunity to look over the work of past years, chronologically arranged on the walls. What some man in search of a thesis did in 1887 is interesting to compare, for instance, with some John Taylor Arms drawings of a later time, even then showing the microscopic quality which has marked the later etcher. The reign of strict classicism continued over many years, disturbed occasionally by influences rococo, *art nouveau*, or perhaps Far Eastern, but surely in any future display the work of 1937 and 1938, freed of all quest for beauty, will date itself even more conspicuously than anything else the many years have produced.

★

Tuesday, December 13.—Scurrying around Boston, renewing old friendships, crossing and recrossing the Common from upper Newbury Street offices to lower Milk Street in the midst of the famous cows' most intricate meanderings, the day was indeed a good one. At its end, turning into a berth for New York, I marvelled at the fact that it had been possible within the last few hours to talk with Daland Chandler, Henry R. Shepley, Francis Bulfinch, Adrian Sawyer, Harry B. Little, Stanley B. Parker, Andrew H. Hepburn, Hubert Ripley, William Titecomb, John F. Lavalley Charles D. Maginnis, Barry Wills, Frank Chouteau Brown, Felix Burton, Dean Hudnut, Dr. Gropius, Harry J. Carlson—a pretty good architectural bag, and yet there were a lot of misses—those who were out on the job or possibly out in search of another client.

Thursday, December 15.—Antonin Raymond, who went to Japan with Frank Lloyd Wright to build the Imperial Hotel, remained there for eighteen years. He has come back to America to stay, largely, I imagine, because of the fact that all the world seems to be suffering from an epidemic of nationalism, and Japan, like many other countries, is inclined to have the new Japan built by the Japanese rather than by any foreigners. Raymond's experience and observations are particularly valuable for the reason that he saw Japan before its native culture withered before the devastating blast of Western ideas. There the master builder was architect, free of any considerations as to the achievement of art, and interested only in building well with the materials at hand. Raymond stirred us, at a League luncheon today, with a message productive of much self-questioning on the part of the architects who heard him. This is no place to attempt the boiling down of his message—it is far too important for that. Read it in the next issue.

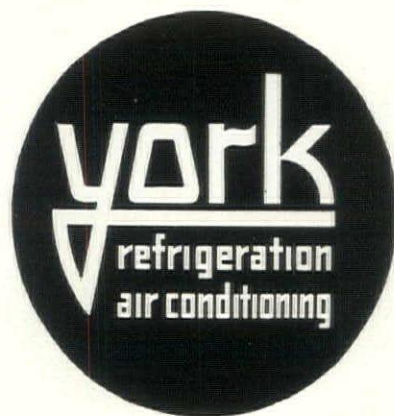


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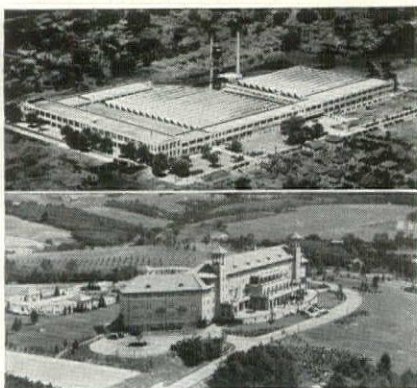
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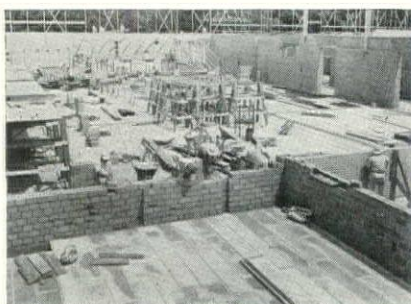
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George H. Van Anda Photograph



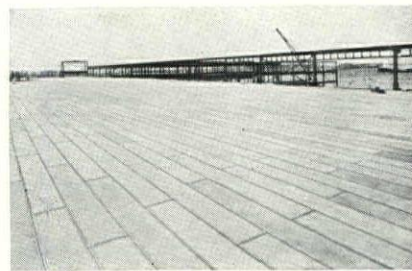
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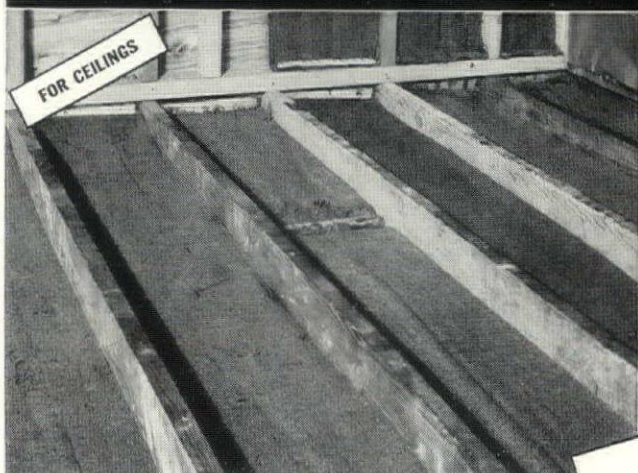
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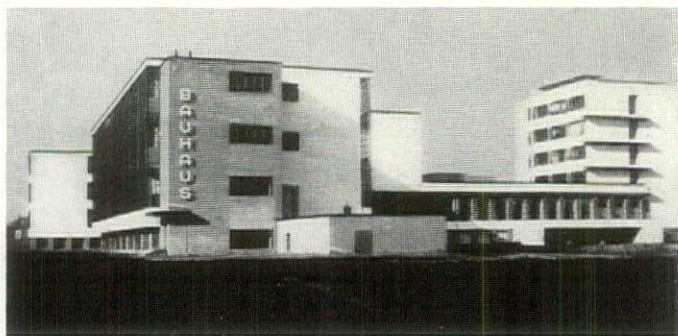
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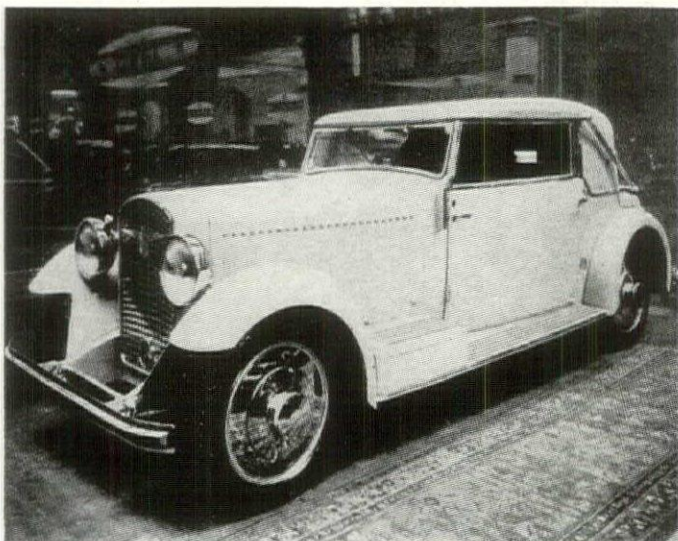
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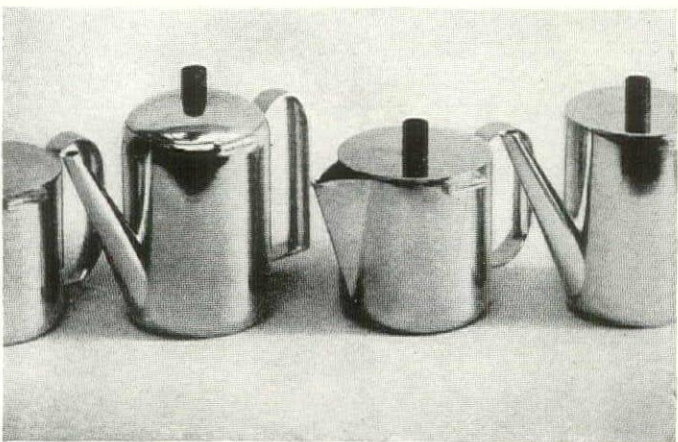
The most important experiment in art education of the twentieth century: an illustrated life history of the late Bauhaus.



BAUHAUS, DESSAU: 1925-6



ADLER MOTOR CAR: 1929



COFFEE- AND TEAPOTS: 1926

BAUHAUS 1919-1928. Edited by Herbert Bayer, Walter Gropius, Ise Gropius. The Museum of Modern Art, New York. 224 pp., 550 illustrations. 7½ x 10. \$3.75.

The span of existence of the Bauhaus coincides almost exactly with that of the German Republic. A world-famed product of the extraordinary post-War cultural renaissance in Germany, it was appropriately closed by the Nazi government in 1933. The Bauhaus was formed by Walter Gropius in 1919 with the combination of the Weimar Academy and the Arts and Crafts School. Its purpose was "to create a consulting art center for industry and the trades;" its credo: "The complete building is the final aim of the visual arts. Their noblest function was once the decoration of buildings. Architects, painters and sculptors must recognize anew the composite character of a building as an entity. . . . Art is not a 'profession.' There is no essential difference between the artist and the craftsman."

On this basis Gropius set up his school. Designing workshops were organized in which the designer executed his own work. Two teachers were allocated to each student group, one an artist and one a master craftsman. With this emphasis on the integration of design and the understanding of materials, the Bauhaus quickly began turning out work that attracted students from all over the world. It dealt with manufacturers, making contracts for the design of lighting fixtures, furniture, accessories, textiles, wallpapers, pottery. It produced buildings. It published books of its own design on its own press. It drew no line between theory and practice, or between work and play: the Bauhaus parties were almost as well known in Germany as the school's more serious undertakings.

The influence of the Bauhaus has been almost incalculable; there is no field of modern design which it has not affected in one way or other. And today, five years after the closing of the school, this influence is as great as ever. Many Bauhaus people are in this country: Gropius and Breuer at Harvard, Miës van der Rohe, Hilbesheimer and Peterhans at Armour, Albers and Schawinsky at Black Mountain College, and perhaps a dozen others who are teaching or working independently. This book, which appears just as the Museum of Modern Art has opened its Bauhaus show in New York, is the most complete record of the work, aims, and personnel of the Bauhaus yet published. It describes the history of this remarkable institution in detail, presents the curriculum, contains articles by its outstanding teachers, and includes a tremendous number of illustrations which cover all phases of Bauhaus activities. As a document on one of the most important educational ventures of the twentieth century its value is obvious, and the illustrations at the left, showing work executed ten or fifteen years ago, indicate that its usefulness as a guide and source book is by no means negligible. Designed by Herbert Bayer, typographer, painter, designer and photographer, and former Bauhaus master, it is a beautiful piece of book design. For anyone interested in any phase of modern art "Bauhaus 1919-1928" is required reading.

PROTECTION

WHERE PROTECTION

IS *Vital*

MANY of the most important units of architectural equipment are subjected to the severest exposure. If paint peels off or rust develops on steel windows, air conditioning cabinets, eave troughs, meter boxes, building hardware, or any of many other iron or steel products, a dissatisfied owner is apt to blame everyone—including the architect. Protection from rust is vital both to continued owner satisfaction and longer life for the product in question. Fortunately, no house, school, church or monumental structure need be erected without this protection of Parker Processes on the iron and steel equipment for the building.

Parker Processes provide a rust inhibiting base for paint finishes that assures positive adhesion, giving from three to five times greater finish effectiveness than if finished over bare metal. Many manufacturers now apply either Parkerizing or Bonderizing to their products as standard practice. Others will apply them on specification. Insist on Parker Processes where protection from rust is vital.

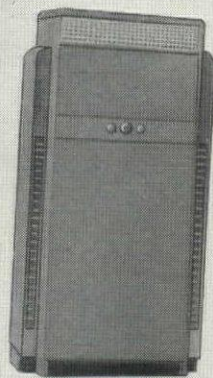
PARKER RUST-PROOF COMPANY
2180 East Milwaukee Ave. • Detroit, Michigan



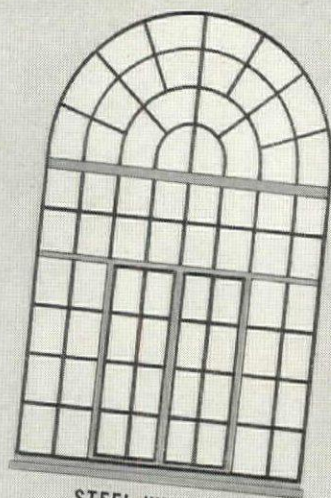
Send for This Book

It illustrates and describes how a Parker Process is applied in mass production of Steel Windows, Screen Frames, Air Conditioning Cabinets and other products, as well as listing names of outstanding users.

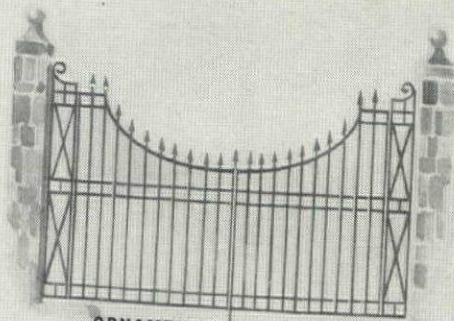
Note: On many of the products illustrated above Parker Processes are used as standard practice in the finishing system.



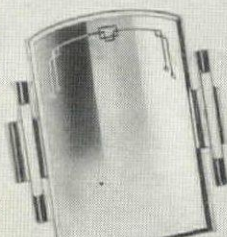
AIR CONDITIONING EQUIPMENT



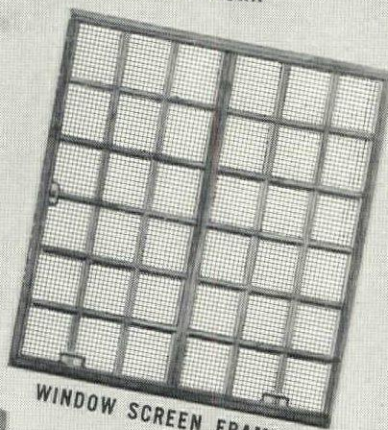
STEEL WINDOWS



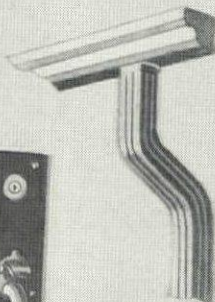
ORNAMENTAL IRON WORK



BATH ROOM CABINETS



WINDOW SCREEN FRAMES



EAVE TROUGHS



METER AND CONTROL BOXES



BUILDING HARDWARE

PARKER

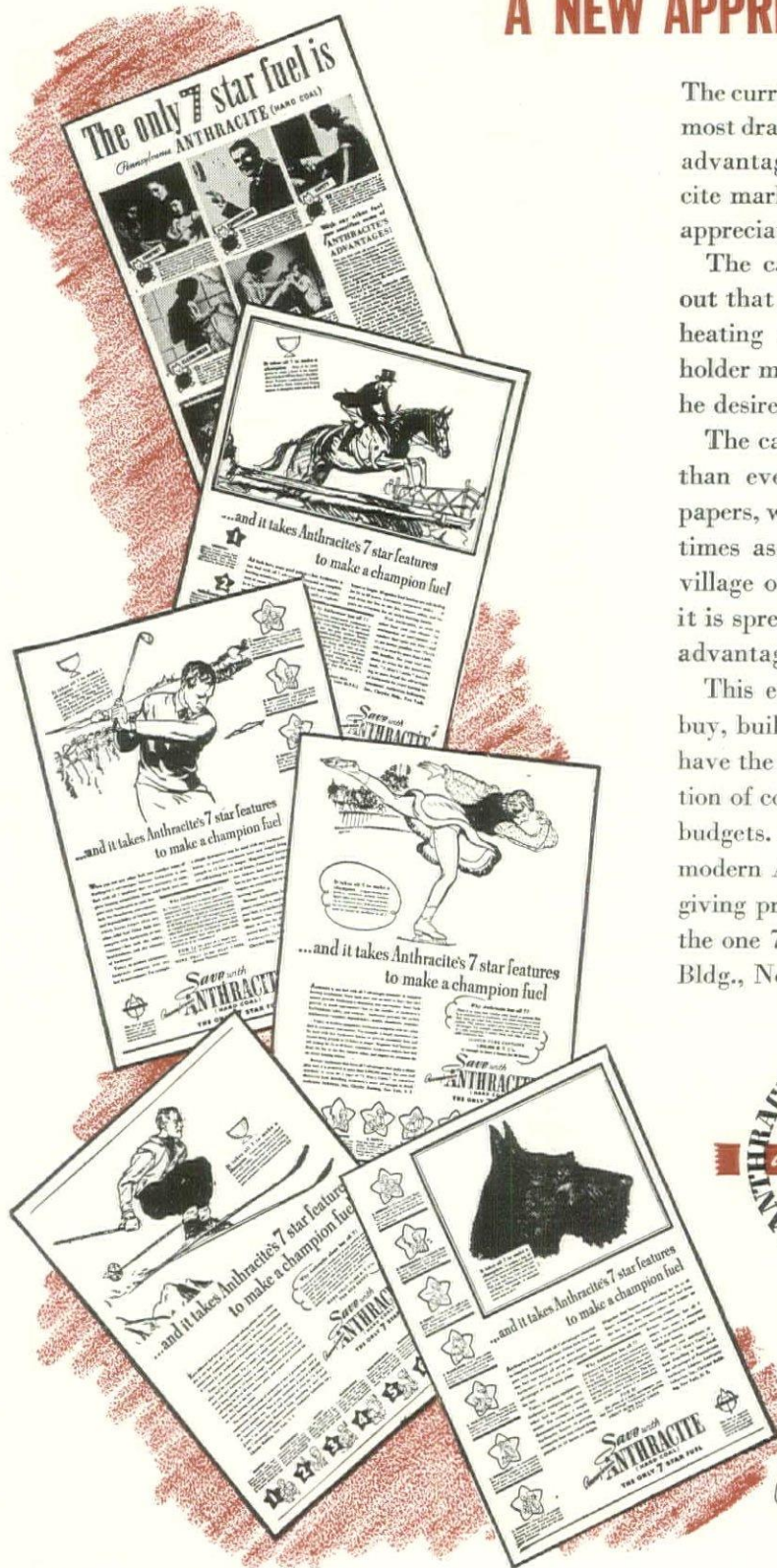
Processes CONQUER RUST

BONDERIZING • PARKERIZING

The Public

IS ACQUIRING

A NEW APPRECIATION OF ANTHRACITE



The current Anthracite Industries, Inc., advertising tells a most dramatic and easily understood story of Anthracite's advantages. Evidence is accumulating in the whole Anthracite market, to prove that the public is acquiring a new appreciation of Anthracite.

The campaign carries convincing evidence. It points out that Anthracite provides all 7 essentials to complete heating satisfaction. It demonstrates how the householder must sacrifice some of Anthracite's advantages if he desires to use any other fuel.

The campaign is reaching more people, in more places than ever. Advertisements are appearing in 72 newspapers, with more than 10,000,000 circulation and several times as many readers, reaching every city, town and village of the primary Anthracite markets. In addition, it is spreading out into new areas—to tell new users the advantages this 7-star fuel can offer.

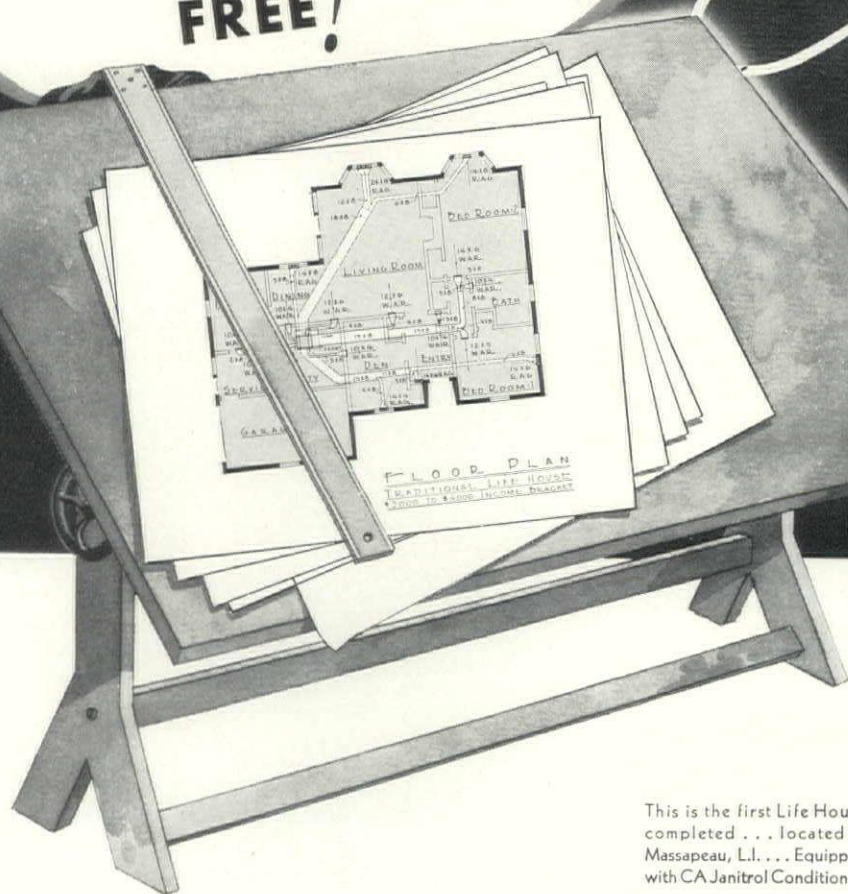
This extensive advertising effort is telling those who buy, build and pay for modernizing their homes, how to have the utmost heating comfort, with the best combination of convenience and economy to suit their needs and budgets. Architects and builders who specify and install modern Anthracite equipment are building good-will by giving present clients and customers home heating with the one 7-star fuel. Anthracite Industries, Inc., Chrysler Bldg., New York City.



This Seal of Approval appears on Anthracite equipment only after it has passed rigid tests.

Save with
ANTHRACITE
(HARD COAL)
THE ONLY 7 STAR FUEL

WE WILL GLADLY
FURNISH YOU, UPON REQUEST, THESE
COMPLETE HEATING LAYOUTS
FOR THE 8 "LIFE HOUSES"
FREE!

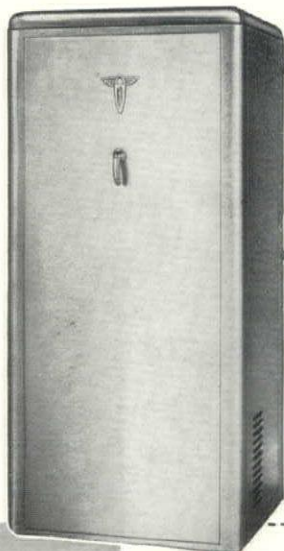


This is the first Life House
completed . . . located at
Massapeau, L.I. . . . Equipped
with CA Janitrol Conditioner.

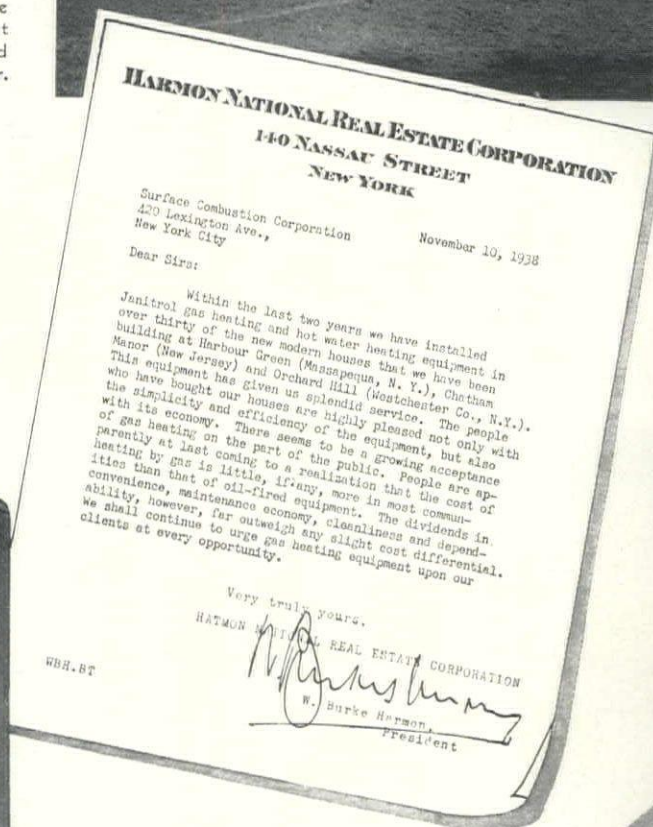
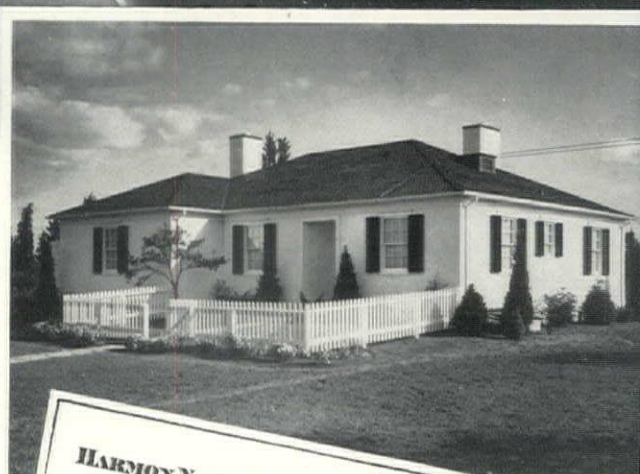
Here's a real honor . . . The first Life House to be completed is equipped with a Model CA Janitrol gas-fired winter air conditioner! Experience was the foundation on which the equipment selection was made . . . Harmon National Real Estate Corporation, builders of this Life House, have been using Janitrol for several years and had previously installed this make of equipment in a number of their attractive homes. Experience is a logical yardstick to use in connection with Janitrol because the product itself has a foundation of 38 years of experience . . . 38 years devoted to the engineering, development and manufacture of gas-fired equipment exclusively.

That experience, coupled with unexcelled plant, laboratory and engineering facilities, places us in a most favorable position to serve the architectural and building professions. Our engineering department has prepared a full set of heating plans for all eight of the Life Houses. Write us today for your free copy of the "Life House Heating Plans." . . . Use the coupon.

Furniture steel casing finished in tapestry blue . . . heavy corrugated twin heat exchangers . . . float tank humidifier . . . multi-inspirator burners . . . special blower mounting for quietness . . . heavy steel plate base . . . glass wool filters.



Janitrol
**SCORES AGAIN
WITH THE FIRST
"LIFE HOUSE"
COMPLETED!**



Mail THE COUPON TODAY!

**SURFACE COMBUSTION CORPORATION
TOLEDO, OHIO**

Please send me a copy of "Life House Heating Plans" as mentioned in Architectural Forum for January.

NAME _____

FIRM _____

ADDRESS _____

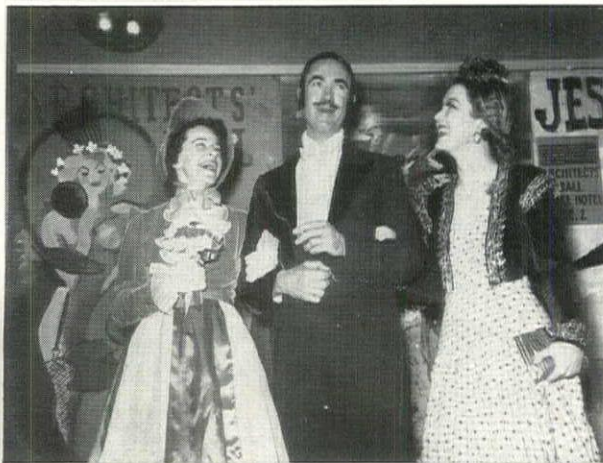
JANITROL
GAS-FIRED
HEATING EQUIPMENT

HOLLYWOOD OVER LAKE MICHIGAN .



The arena for *Ferdinand the Bull*, in the design of which George T. Senseny was the director, John Cromelin, art director—where Louis Armstrong and his band held forth

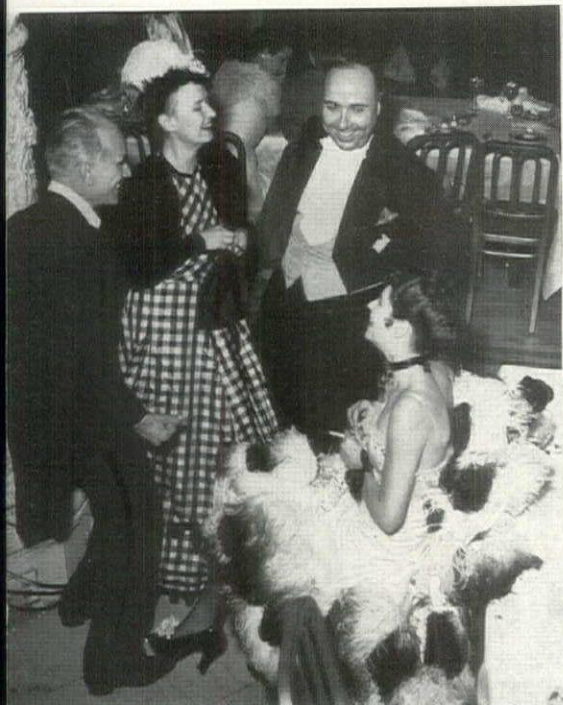
In movie sets designed by the architects to represent forthcoming Hollywood productions, Chicago put on a Ball December 2 in The Drake to outdo her Latin Quarter Ball of six years ago. Guests appeared in dress appropriate to the characters featured in each of the pictures. Airplanes from Hollywood delivered cargoes of glamorous ladies, costumes and atmosphere. Chief beneficiaries, needy young architects.



John Howard Raftery with Mmes. Bissell and Cochrane



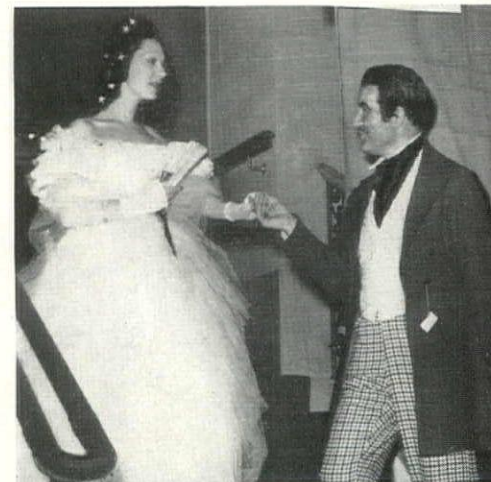
Nathaniel Owings and Lawrence Williams



Seymour Blair, Mrs. Ambrose Kramer, Jr., Arthur Meeker, Jr., Mrs. Alfred Shaw



Mr. and Mrs. William Pereira



Miss Gertrude Lawrence and Walter S. Fr.

Chicago Architects Screen and Swing

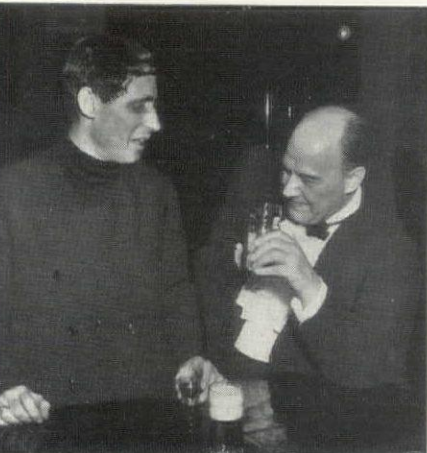


The Jesse James set, designed by Knight C. Cowles



Mr. and Mrs. George T. Senseney as a toreador and Joan of Arc.

Mr. and Mrs. Francis Chapin, relaxing from art and the Art Institute



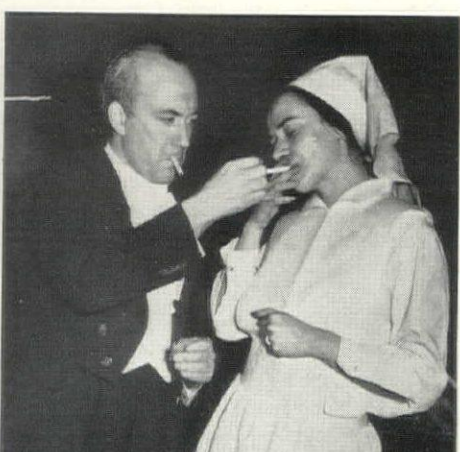
Hal Pereira and Samuel Marx



Otto K. Eitel and John W. Root the Chairman



Thomas E. Tallmadge, alias Franz Joseph



Noel Flint and Mrs. Charles Dornbusch
Forum of Events continued on page 38

LETTERS

Plus Forum:

Congratulations on PLUS! It seems to me an excellent and badly needed publication. My only criticism is that it seems a bit overtypographized, but I am delighted to see it come out.

ALFRED BARR
Director

*The Museum of Modern Art
New York, N. Y.*

Reference to December issue, PLUS, p. 10: Philadelphia, 1876: "All buildings at this exposition still preserved a sympathetic and primitive colonial style . . ."

The good Dr. S. Giedion ought to take a look sometime at Memorial Hall, Horticultural Hall. They were built for the exposition and are still in use, in Fairmount Park. If they are primitive colonial in his opinion, then I am sympathetic.

A. M. SHUMATE

Philadelphia, Pa.

Supervision? Forum:

The FHA has made a major contribution in arousing the interest of the mortgage lender to carry on and carry out a program which will result in better building by better builders. But, it cannot do the job alone. It is necessary for the one whose money is involved to accept some responsibility along the lines of supervising construction and seeing that the best talent has been secured for the design and layout of the security for his loan.

Too many mortgagees do not set up adequate machinery to see that they are going to get well-built mortgage security. Too many institutions put the burden on the contractor to get temporary financing during construction of a house and then make a permanent loan only after completion of the building. Since the temporary mortgagee will get his money back just as soon as the permanent loan is made, he is not particularly interested in the way in which the house is built. And, when the permanent mortgage is made, the mortgagee has difficulty in learning what the contractor has installed under the paint . . .

Prepared as a solution to this problem, our latest research bulletin, *Construction Loan Procedure*, points out that, if more lending institutions institute complete procedures for making construction loans, "the time of architects usually taken up with supervision of construction can be released because of the lending institution's inspection service" and further that "more architects can profitably turn their efforts toward small home planning."

Architects' fees for small houses are not large enough in comparison with those for other available work to interest them. It is necessary that it be a large job before the architect can afford to spend as much time as he should during the actual construction so that he can see that everything is being put together properly. There may not be enough architects to take care of the need for their services when a heavy building program is going on. In this connection we would like to ask and learn the reaction of architects to two questions: 1) Would it increase the interest of architects to do more designing of small houses if they could be sure they could turn over their responsibility for supervision of construction to the lending institution? 2) Would it affect their ideas so that their services could be made available to the lower income class building modest homes?

J. HARDINGE, JR., SECRETARY
*Society of Residential Appraisers
Chicago, Ill.*

A good subject of all-night discussion is the question whether an architect should transfer his responsibility for proper supervision to others in order to concentrate on design.—Ed.

Competitions Cont'd Forum:

Some 25 years ago, as I was coming out of the hall where the drawings submitted in an important competition of that day were on exhibition, I remember hearing one of those who were leaving with me say, "It has cost the architectural profession months of work and \$40,000 to find out that York & Sawyer can design a bank!"

The lesson to be learned from the recent competition for the Covington Post Office is just as illuminating, since it demonstrates beyond the possibility of a doubt, not only that a man who has served for several years, with conspicuous success, as a Consulting Architect in the Procurement Division of a Treasury Department knows how to design a post office, but also that Holabird & Root are pretty good too.

The only thing is, I wonder whether it can possibly be that these two discoveries, developed as the product of so much futile effort on the part of competitors, juries and officials are actually news to the Supervising Architect of the Treasury or to the rest of us.

I wonder also what became of that unknown genius to whom this competition was to have afforded the opportunity of springing from poverty and obscurity to

fame and fortune.

FRANCIS P. SULLIVAN

Washington, D. C.

Architect Sullivan and others to whom the competition remains a stumbling-block will find the other side of the picture presented (page 15) in the words of the president of the R.I.B.A.—Ed.

Argentine Heat Forum:

. . . Apartment houses in the Argentine have been conditioned (hot and filtered air for winter—dehydrated, cooled and filtered air for summer) for ten years. There must be fifty modern apartment houses completely air conditioned here.

But there is something here not yet dreamed of in the States. There is a silica gel unit in the basement, reactivated with a fuel oil air heater. Dry air at normal temperature to suit each floor. There is a circulation unit in each apartment to which cold well water is pumped. Each tenant starts and stops his circulator to please himself. The circulator has a 1/2 hp. motor-fan for four bedrooms, living room, dining room, etc. *He gets 10 changes per hour!*

In winter, hot air is distributed to the apartments *without* operating the circulator, but through the same ducts.

The first machines required two hours for a cycle. One such machine is in Buenos Aires, and several in Brazil. Then came the drum requiring only twenty minutes for the complete cycle, which of course means one-sixth the quantity of gel.

Now they have a ten-minute cycle, a cheap hot air automatic furnace for 300° F. air for rapid reactivation, with a fuel economy of 90 per cent and a stack temperature of 160°F. (counter flow) in summer and lower in winter.

The present furnace is absurdly expensive and is a combination of black sheets, "cast set" of 1/2 in. thick, calorized tubes for the transition between firebox and labyrinth, and a curious double shell, the inner one being a "radiation stopper."

A plant for an apartment house of total volume for hot air heating, 10,000 cubic yards, of which 8,000 are conditioned in summer sells for \$10,000.

MARK R. LAMB, President
*New York Steel Exchange
Buenos Aires, Argentina*

Neighbor Lamb underestimates our air conditioning progress. Silica gel is no stranger to us, and the individually operated conditioner, the cooling of air by well water, and mechanical provision for air movement are all old friends and comforters.—Ed.



**PENBERTHY
AUTOMATIC ELECTRIC
SUMP PUMPS**

MADE IN 6 SIZES

*Constructed of Copper and Bronze
Throughout*



PENBERTHY INJECTOR COMPANY

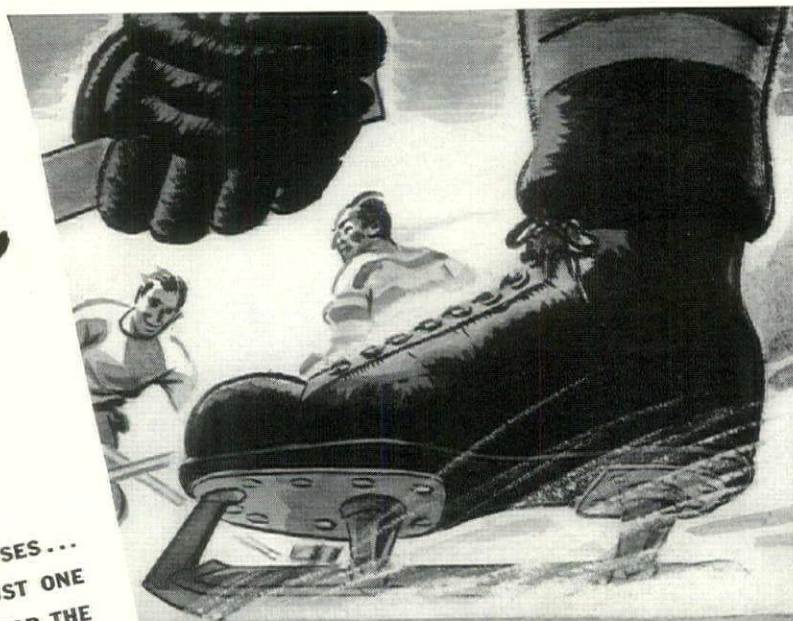
Manufacturers of Quality Products Since 1886

Canadian Plant: WINDSOR, ONTARIO

DETROIT, MICHIGAN

*What a
Test for a
floor!*

UNDER HOCKEY PLAYERS AND CIRCUSES...
UNDER ICE AND DIRT...LIFE IS JUST ONE
ENDURANCE TEST AFTER ANOTHER FOR THE
MADISON SQUARE GARDEN TERRAZZO FLOOR



$\frac{3}{4}$ " TERRAZZO TOPPING

$\frac{1}{4}$ " BRINE PIPE

T-IRON

$2\frac{3}{4}$ " CONCRETE UNDERBED

$\frac{3}{4}$ " SAND CUSHION

$\frac{1}{4}$ " 8-PLY WATERPROOFING

CORK SLAB

Detail cross-section drawing of the floor in Madison Square Garden, New York City's famous sports center. This unusual installation illustrates the qualities of Terrazzo. Where will you find another material that can successfully resist all the kinds of punishment that this $\frac{3}{4}$ -inch thickness of Terrazzo does? Note details of construction. The top covering may be a layer of water (soon frozen to ice), or ordinary dirt.

IF YOU want to specify a floor that will resist all kinds of beatings and come through with colors flying, just answer these questions:

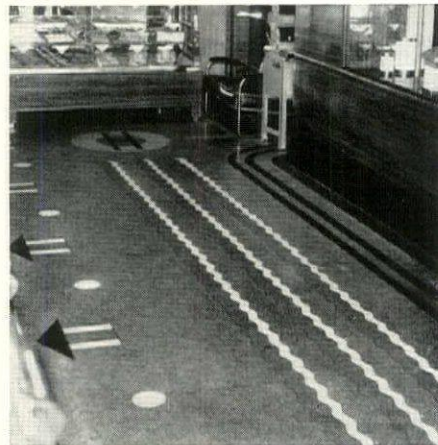
What kind of a floor will withstand the clashing skates of hockey stars... the thudding hoofs of horseshow entries... the rhythmic tread of dancing feet... or the heavy tread of a circus pachyderm? What material will resist effects of varying temperatures caused by freezing and refreezing of overlying coverings of ice?

In Madison Square Garden they have answered these questions with a base floor of Terrazzo. Just as architects and builders are using Terrazzo floors in public buildings of many kinds, in schools and retail

stores—in any building where floor traffic is heavy, constant, and wearing, and where maintenance costs must be low.

Terrazzo is as hard as marble. It is a combination of marble and cement. Yet this same Terrazzo can be as beautiful as it is practical. Usually mixed right on the job, its possibilities are limited only by good taste and imagination. And you can be sure that the finished job will be exactly as planned. Colors will be rich... designs clear... both will last.

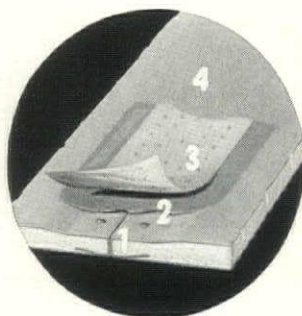
Get complete data on Terrazzo and its uses. For this detailed information, write the National Terrazzo and Mosaic Association, 1406 G Street, N. W., Washington, D. C.



● Many smart designs for store floors are possible with Terrazzo. It gives you wide latitude in suggesting floors that are cheerful, inviting, long-lasting—and easy to keep clean at low cost. Figure on it for wainscoting, stairways, counters as well as floors.

THE NATIONAL TERRAZZO AND MOSAIC ASSOCIATION

Here's how joints are CONCEALED



in Sheetrock walls

1. The recessed edge forms a channel at joints—
2. —which is filled with a special cement
3. Perf-A-Tape—strong, perforated fiber tape—is then imbedded in the cement, and—
4. —more cement is applied over it, leveled and sandpapered, completely concealing the joint.

BEFORE

REMODELED WITH SHEETROCK

LET SHEETROCK

THE FIREPROOF WALLBOARD

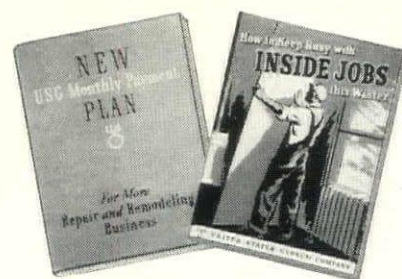
HELP YOU GET WINTER WORK

Recessed Edge Sheetrock* and Perf-A-Tape* are one of America's most popular remodeling combinations. With them you can build good-looking walls and ceilings over which any type of decoration can be applied. Sheetrock and Perf-A-Tape are easy to apply—go up quickly—cause a minimum of dust, dirt and inconvenience to building occupants. And—joints are CONCEALED in Sheetrock walls.

USG Will Help You Get Sheetrock Jobs

To help you keep busy this winter on inside jobs—as thousands of other builders are doing—USG has prepared a special Sheetrock book. It tells you WHERE TO FIND JOBS—HOW TO SELL THEM.

And through its new monthly payment plan, USG provides a way for you to get your money in cash as soon as the job is finished.



Write today for free copies of the "Inside Jobs" and "Monthly Payment Plan" books. They'll help you keep busy—and warm this winter. They're both free to you.

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Send me your new "Inside Jobs"
book—also the new "Monthly Pay-
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Address.....

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IMPORTANT BUILDING PRODUCT NEWS

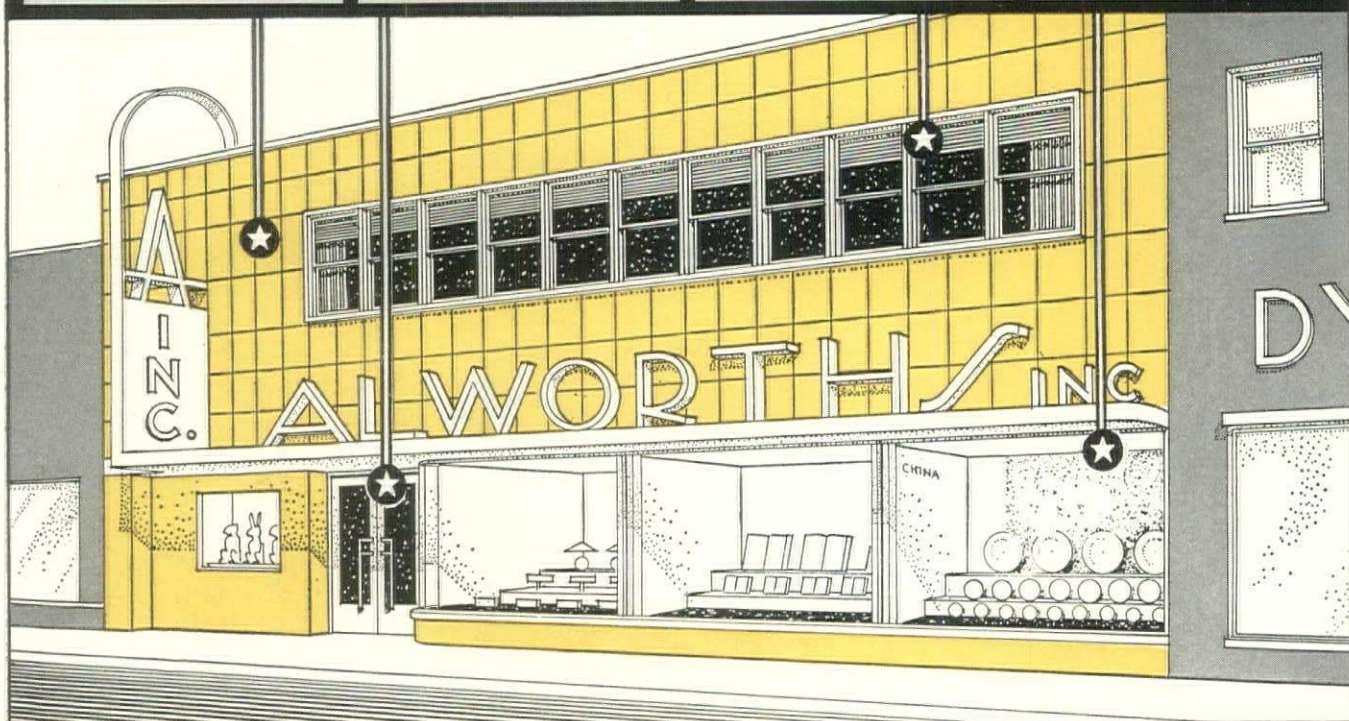
-for every architect and builder in America!

PORCELAIN ENAMEL FACING PANELS—wide range of permanent colors—safe at any height—individually suspended.

BRONZE OR ALUMINUM DOORS AND ENTRANCES—rich in lasting beauty—sturdy—durable—low upkeep cost—no painting.

SEALAIR ALL-ALUMINUM WINDOWS—putty or metal glazed—for all types of buildings and homes—opening sizes to 5' x 9'.

STORE FRONT CONSTRUCTION—complete, harmoniously designed line—fully resilient sash, bars, rolled or extruded.



Kawneer—pioneer in the field of Rustless Metal Building Products—offers the most advanced types of Store Fronts, Windows and Doors on the market today. Years of experience and development in design, fabrication and finishes bring notable improvements which may well affect your specifications for 1939.

ARCHITECTURAL PORCELAIN ENAMEL FACING PANELS—permanent, attractive and colorful, for all types of store fronts and buildings. 27 standard satin finish colors. Durable—light in weight—safe at any height. Individually suspended and easily installed. Adaptable—

formed in any desired shape, allowing great freedom for the designer.

KAWNEER RUSTLESS METAL DOORS AND ENTRANCES are made for store fronts, residences and buildings of all types. Furnished in aluminum, bronze, or other durable non-ferrous metals—with sturdy, precisely built doors in both welded-tubular and flush type construction. Rich in beauty, they require practically no maintenance.

SEALAIR ALL-ALUMINUM WINDOWS—SERIES 120 AND 220—meet all requirements for schools, apartments, residences, hospitals, hotels, commercial, public and monumental buildings. Types for Colonial, English, Modern or any architectural

style—double-hung or casement. Complete factory-fitted, factory-assembled units—in standard sizes for openings up to 5'0" x 9'0". Putty or metal glazed. Never require painting—cannot rust, rot or swell. Upkeep costs are practically eliminated. The outstanding window value today.

KAWNEER STORE FRONT CONSTRUCTION is up-to-date and attractive. Fully resilient sash and bars reduce possibility of plate glass breakage to a minimum. Resilient extruded or rolled construction in aluminum or bronze. The Kawneer line also includes latest types of awning bars, and metal work for the entire front.

Information on any Kawneer product will be sent on request. Write today for details.

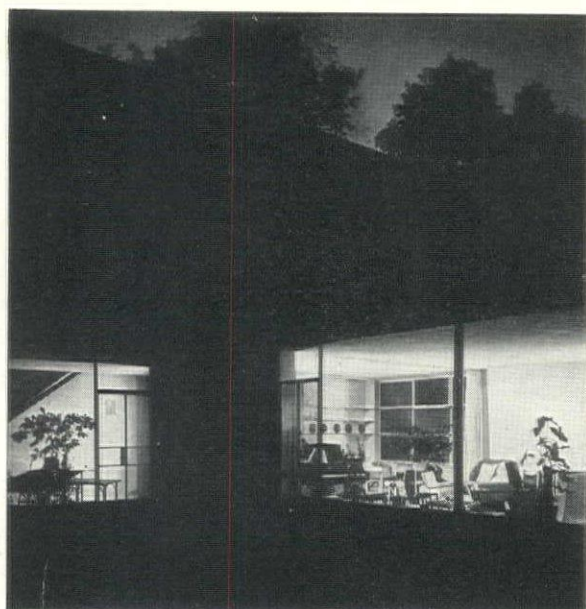
Kawneer

THE KAWNEER COMPANY, NILES, MICHIGAN. BRANCHES: NEW YORK, CHICAGO, BERKELEY, CAL. DISTRIBUTORS IN PRINCIPAL CITIES.



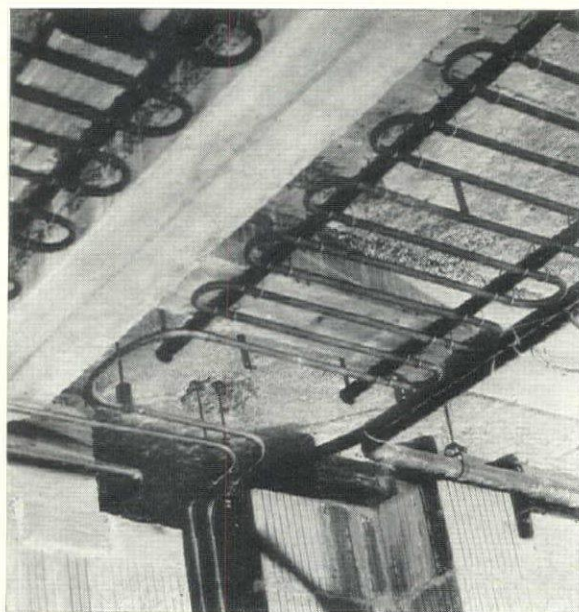
Wide World

MAN OF THE MONTH . . . to do and Dean for M.I.T. (page 13 adv.)



Eero Stoller

BUILDING OF THE MONTH . . . bringing the outdoors in (page 39)



PRODUCT OF THE MONTH . . . conditioned walls for body comfort (page 55)



ALUMNAE HOUSE

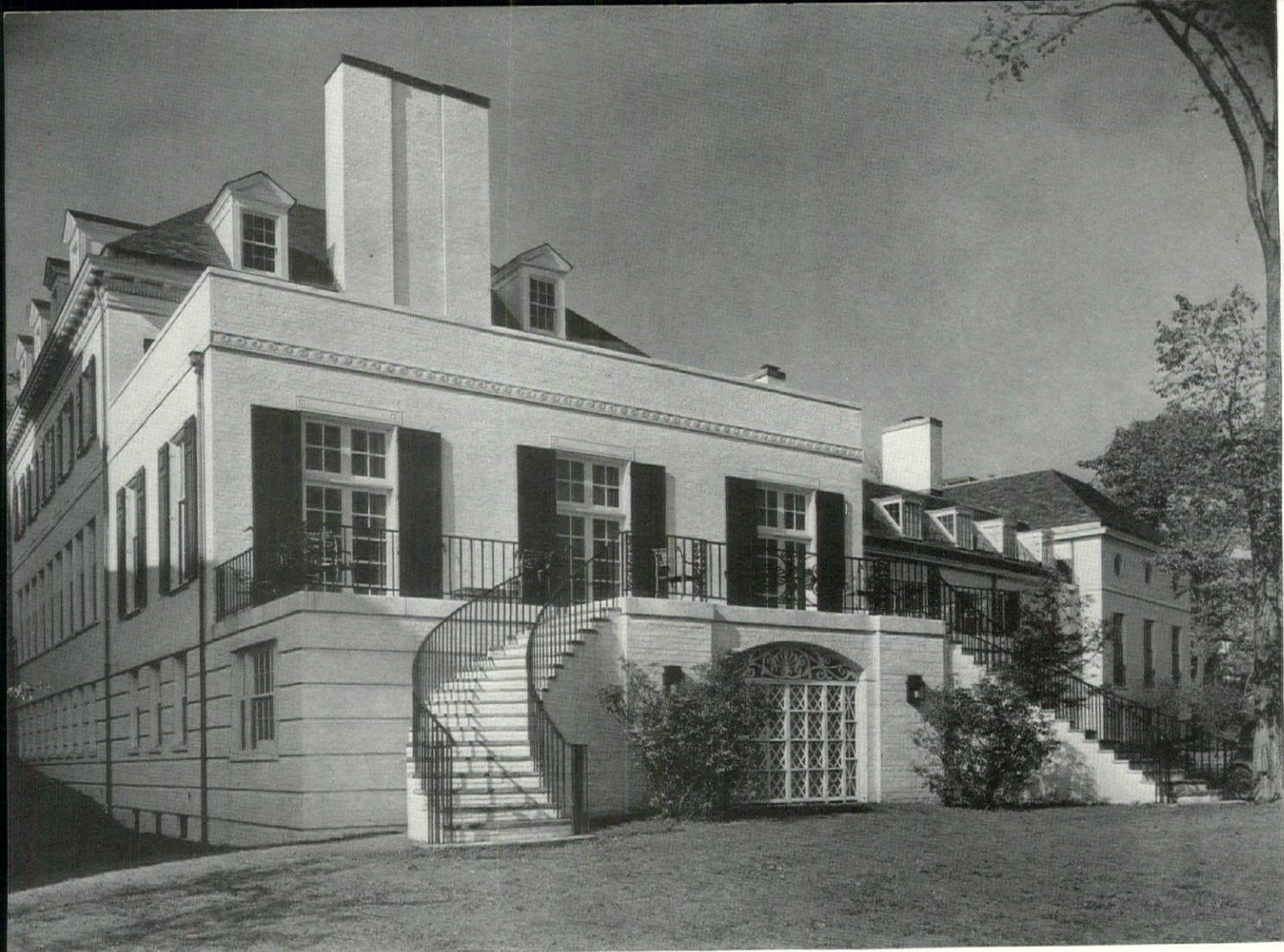
SMITH COLLEGE, NORTHAMPTON, MASS.



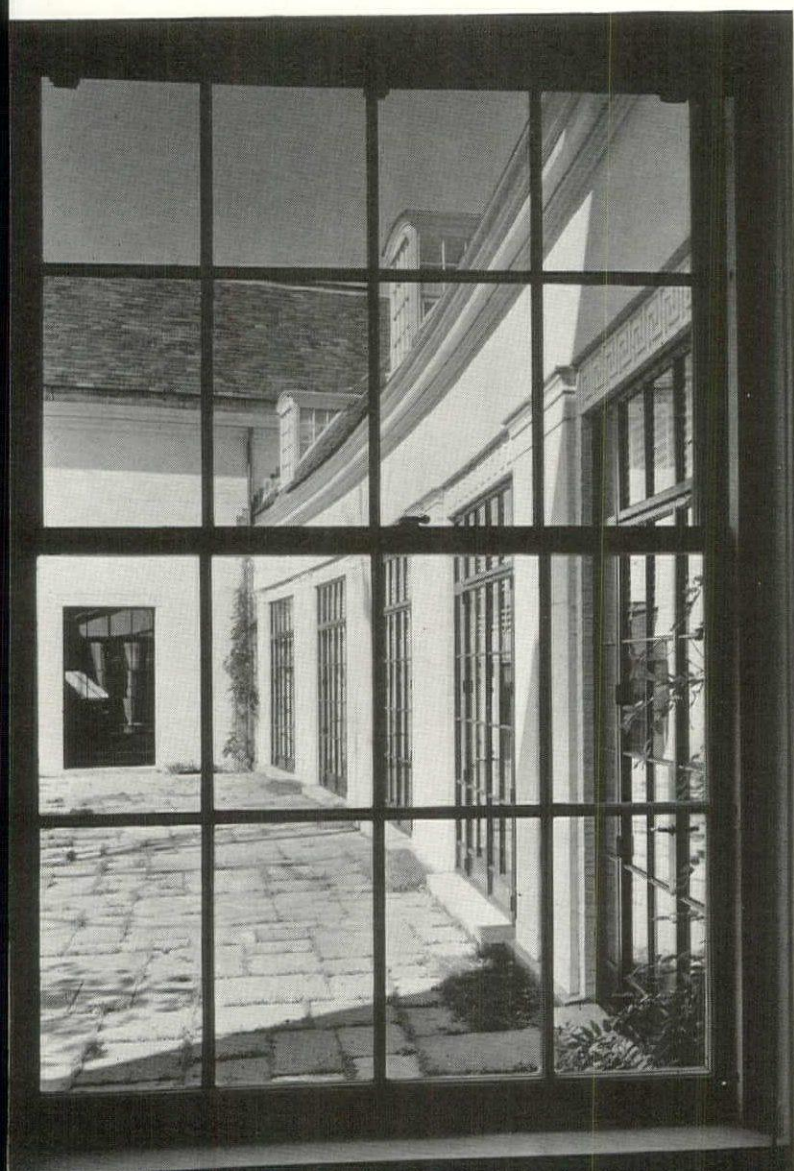
Samuel H. Gottscho Photos

EVANS, MOORE & WOODBRIDGE, ARCHITECTS

Built by the alumnae as a center for their widely spread social and organizational activities, Alumnae House by specific requirement was to express complete harmony with New England tradition. Without sacrifice of any comforts, conveniences and amenities belonging to the year 1938, it was desired that the building should combine a fitting dignity with the informality inherent both in the local tradition and the rather complex functional requirements. Unquestionably the new building takes its place in the community as a blood relative of the former settlers. In addition and of even greater significance, here is the evidence that, in the hands of uninhibited designers, there is in the familiar vernacular no bar whatever to a restatement of tried and tested forms in convincing and contemporary terms.



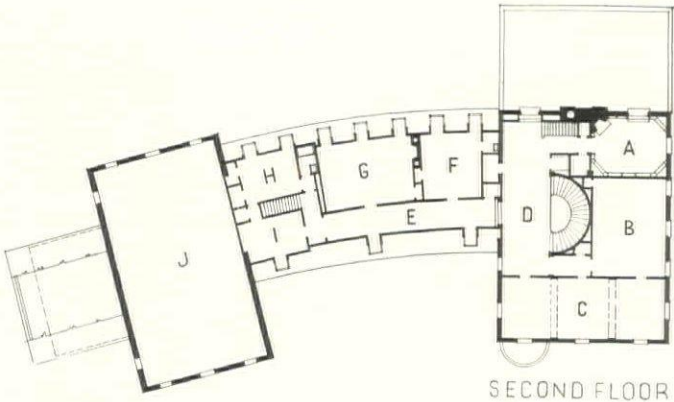
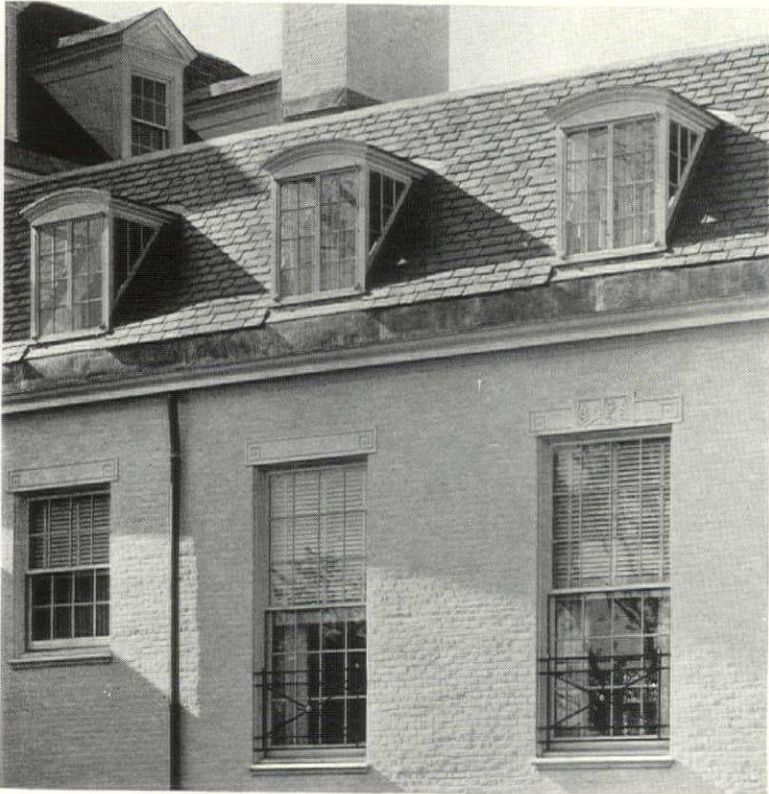
FROM THE OUTSET the architects conceived the building as white painted brick. When the walls were up, trimmed with delicately carved white marble, doubts arose as they invariably do. Would it not be better to leave the good red brick job in its own color? Now that the architects' original intention prevailed, its wisdom is unquestioned. At the left, the range of windows, lighting office space in first story and basement, belie the common contention that traditional classic fenestration cannot be reconciled with actual need.



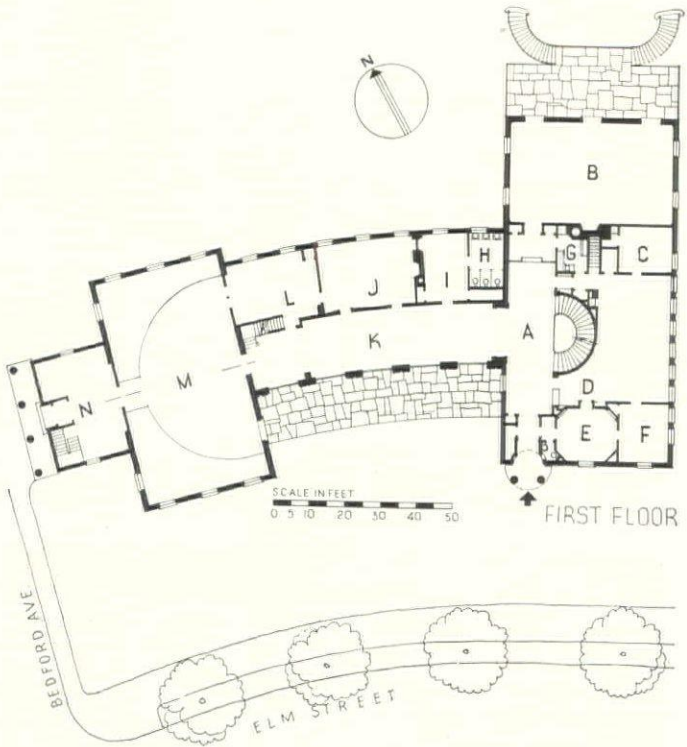
REQUIREMENTS OF THE PROBLEM and site dictated a plan that combined, without a rigid and formalized unity, three major functions: a social club, a conference hall for varied purposes (occasionally used by the public), and office space. Designed as a connecting link, as shown by the plans on facing page, is a gallery, into which and beyond which reunions and other large social gatherings may expand to limits governed only by the adjacent terrace and lawns.

On the following page, the variations in size and character of windows, conforming to functional needs, once again indicate the almost unlimited breadth of tradition's palette when laid down by a designer who regards these forms as opportunities for further development.

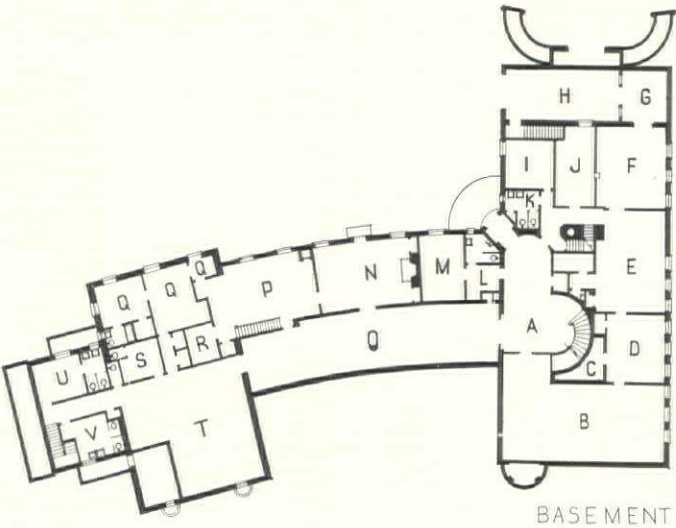
ALUMNAE HOUSE, SMITH COLLEGE, EVANS, MOORE & WOODBRIDGE, ARCHITECTS



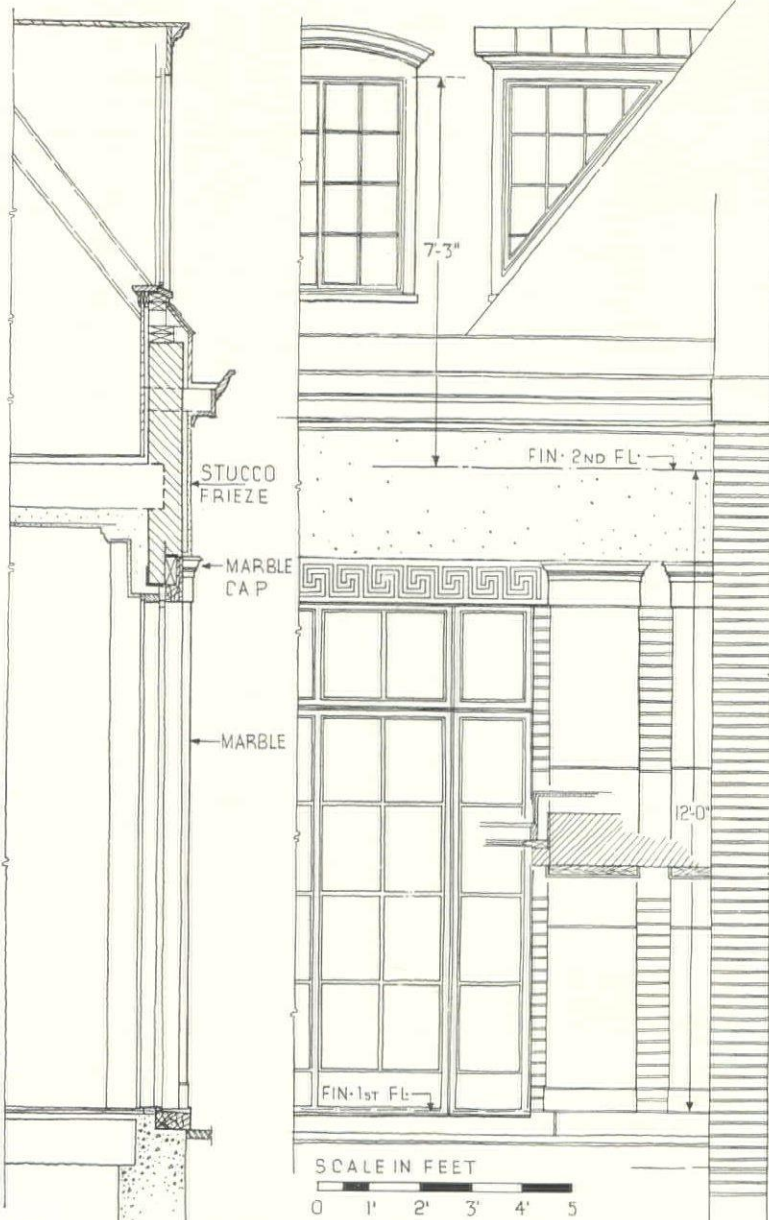
SECOND FLOOR
A. LIBRARY B. DIRECTORS' ROOM C. COMMITTEE ROOMS D. STAIR HALL E. HALL F. SITTING ROOM G. MUSIC ROOM H. GUEST ROOM NO. I I. GUEST ROOM NO. II J. UPPER PART OF CONFERENCE HALL



FIRST FLOOR
A. ENTRANCE HALL B. LOUNGE C. QUARTERLY D. GENERAL OFFICE E. GENERAL SECRETARY F. SECRETARY G. PANTRY H. TOILET I. POWDER ROOM J. PRIVATE DINING ROOM K. GALLERY L. SERVING PANTRY M. CONFERENCE HALL N. LOBBY



BASEMENT
A. STAIR HALL B. STORAGE C. VAULT D. ALUMNAE FUND OFFICE E. BOOKKEEPING F. MAILING AND SHIPPING ROOM G. ENTRY H. LOADING SPACE I. REST ROOM J. STORAGE K. TOILET L. COATS M. MEN'S ROOM N. GAME ROOM O. CORRIDOR P. KITCHEN Q. CARETAKER'S SUITE R. STORE ROOM S. DRESSING ROOM T. STORAGE U. WOMEN'S REST ROOM V. MEN'S ROOM



DETAILS SOUTH FACADE-GALLERY

ALUMNAE HOUSE, SMITH COLLEGE, EVANS, MOORE & WOODBRIDGE, ARCHITECTS

GALLERY. Walls are of prima vera veneer over plywood, with door trim of Botticino marble in its closely related color. An ingenious use of narrow pine strips between the squares of veneer provides thumbtack support for exhibition material without disfigurement of the walls. Floor is of black rubber tile with gray insets. Interior decorators: A. Kimbel & Son, Inc.



STAIR HALL. Again the black and gray floor, with white wood trim and plaster walls painted a rich rosy red terra cotta. Stair rail is of polished brass on supports of iron and brass; the non-bearing balusters in between are of glass.





LOUNGE. The main social room of Alumnae House has walls of chartreuse yellow, trim of dark green, a base of Verde Antique marble, parquetry floor of black walnut. The suggestion of a cornice consists of three lines of half-round beading, gold-leafed.



COMMITTEE ROOMS. Divisible into smaller units by the folding partitions, this range extends across one end of the clubhouse block on the second floor. Walls are covered with a pale buff fabric; floor of bright yellow ochre and black rubber tile. The furniture is bleached mahogany.

CONFERENCE HALL. In two levels divided by the rail, the room is adapted for meetings, lectures, dances or for banquets. Walls are warm gray, wood-work French walnut with paldao in mitered panels, floor of American black walnut. Venetian blinds and chair seats are coral red. Sidney Waugh designed the overdoor grilles which, with all the carved ornament, are picked out in red, gold and blue.



ALUMNAE HOUSE, SMITH COLLEGE

EVANS, MOORE & WOODBRIDGE, ARCHITECTS
E. J. PINNEY CO., GENERAL CONTRACTORS



GALLERY STAIR HALL. Repeating the warm gray walls of the Conference Hall and the black and gray floor of the Gallery, from the latter of which the hall is separated by a partition of etched glass in a bronze frame.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Natco "Speed-A-Backer" hollow tile with exterior veneer of common brick, National Fireproofing Corp. Two-inch wood furring, metal lath and plaster. Interior partitions—Natco Hollow tile, National Fireproofing Corp. Brick for heavy loads, wood stud on top floor. Columns—4-inch lally and steel. Structural steel—junior beams and girders, Jones and Laughlin Steel Corp. Floor construction—2-inch concrete slab with wire mesh reinforcing.

ROOF: Vermont slate on wood sheathing. **SHEET METAL WORK:** Flashing—lead-coated copper. Gutters—Wood lined with lead-coated copper.

INSULATION: Roofs—Rockwool. Sound insulation—Old Newark Acoustical plaster.

WINDOWS: Sash—Wood double hung and metal casements. Glass—Double thick, American Window Glass Co. Mirrors by Pittsburgh Plate Glass Co.

STAIR: Poured concrete with rubber treads. **ELEVATORS:** Automatic push-button type, Otis Elevator Co.

FLOOR COVERINGS: Rubber tile by Armstrong Cork and Hood Rubber Co. Black walnut parquet floors by R. T. Adams.

WALL COVERINGS: Board Room—vertical pine boarding. Gallery—Plywood veneered with prima vera, U. S. Plywood Corp. Conference Hall dado—Plywood veneered with

paldao, N. Y. Veneer Co. Dining room, powder room, and sitting room—wallpaper, Richard E. Thibaut, Inc., Katzenback and Warren. Committee Rooms—Celotex covered with fabric, Celotex Corp.

FURNISHINGS: A. Kimbel and Sons, Inc. **WOOD AND METAL TRIM:** Trim—Exterior—Idaho white pine and Vermont Marble, Vermont Marble Co. Cast iron porch and railings—J. Blum and Bradley and Hubbard. Folding partitions—American Car and Foundry Co.

HARDWARE: All by Ostrander and Eshleman Inc.

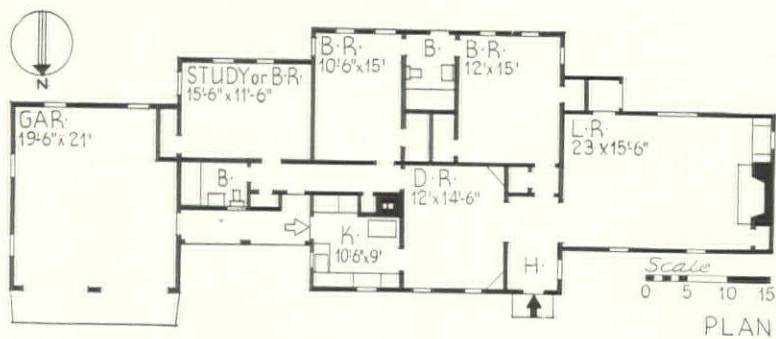
PAINTING: Interior—Lead and oil. Exterior walls—Brick painted with Bay State brick paint. Sash—lead and oil.

ELECTRICAL INSTALLATION: Wiring system—General Electric Co. Fixtures—A. Ward Hendrickson & Co. Special equipment—Stanley McCandless, lighting consultant for special lighting.

PLUMBING: Cold and hot water pipes—brass, American Brass Co. Toilet fixtures—Standard Sanitary and Mfg. Co. Kitchen equipment—John Van Range Co.

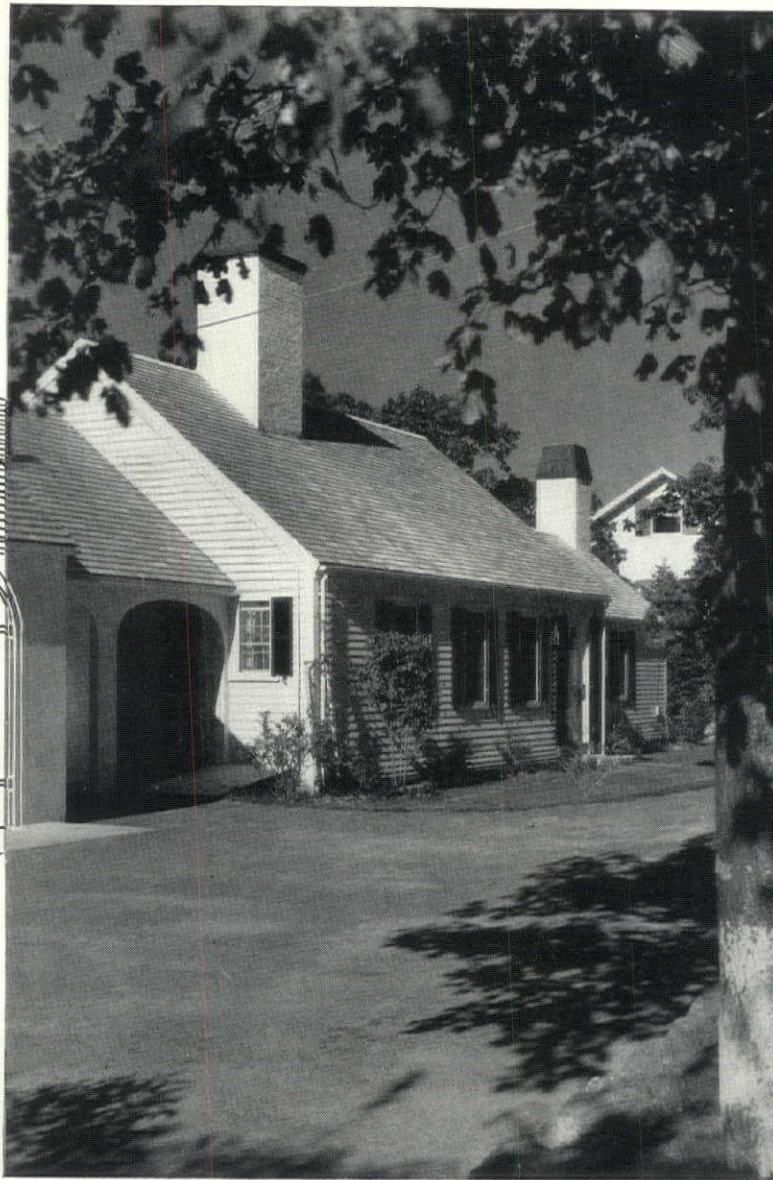
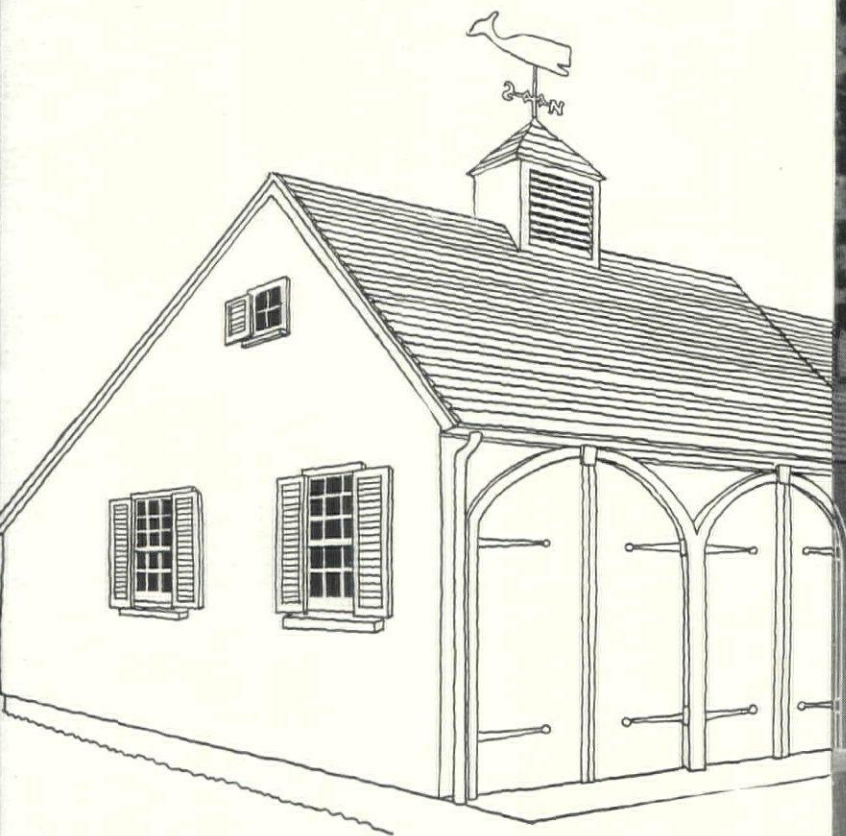
HEATING AND AIR CONDITIONING: Heating—Vacuum system. Boiler—H. B. Smith Co. Oil burner—Petro-Nokol, Petroleum Heat and Power Co. Radiators—H. B. Smith Co. Grilles—Register and Grille Mfg. Co. Thermostats—Johnson Service Co. Hot water heater—Taco Heaters, Inc. Vacuum pump—Nash Engineering Co.

HOUSE FOR DANIEL H. COAKLEY, JR., BUZZARD'S BAY, MASS.



This one-story residence is a good example of Mr. Wills' well known work in the New England manner. Designed to give the effect of a "rambling" house, it includes a considerable amount of compactly arranged living space, although the use of the dining room as circulation to the bedrooms might be unacceptable in some cases. The interiors, which repeat the period treatment of the exterior, are handled with simplicity and vigor. Cost: \$9,800. Cubage: 28,000, at about 35 cents per cubic foot.

ENTRANCE



HOUSES



Haskell
ROYAL BARRY WILLS, ARCHITECT



WINDOW LIVING ROOM

CONSTRUCTION OUTLINE

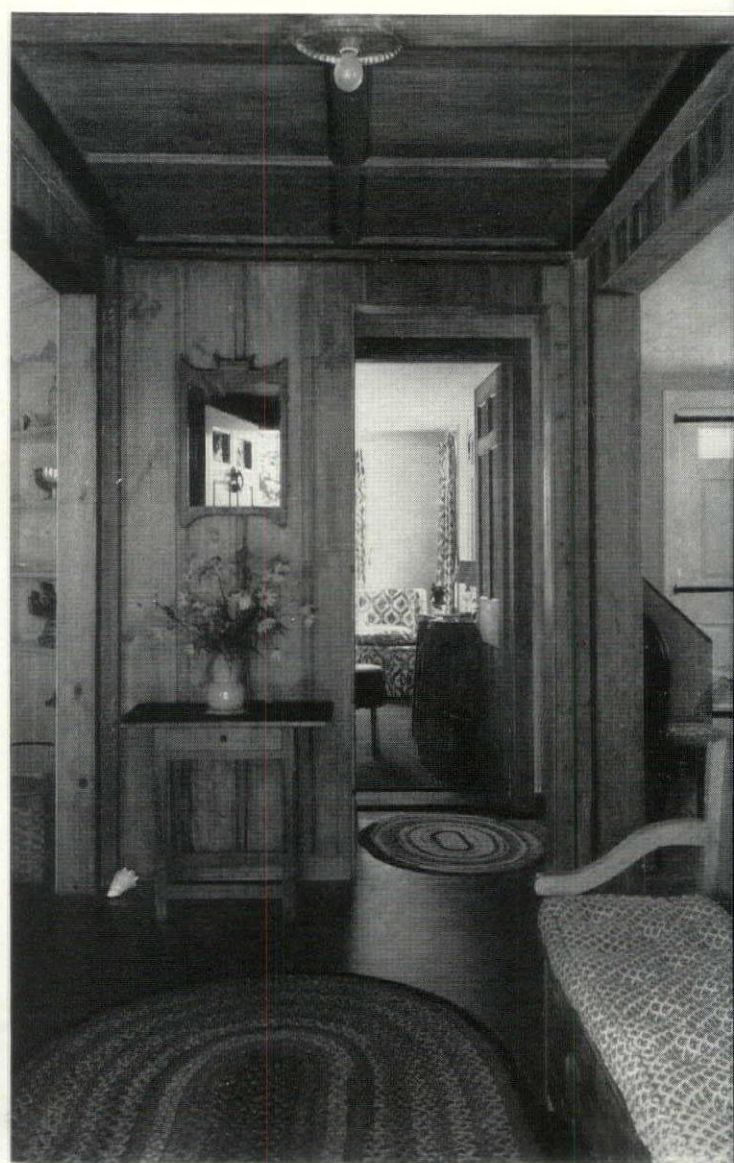
STRUCTURE: Wood frame construction, clap-boards.
 ROOF: Covered with white cedar shingles.
 CHIMNEY: Salvaged brick. Damper—H. W. Covert Co.
 SHEET METAL WORK: Flashing—Copper. Gutters and leaders—Toncan metal, Republic Steel Corp.
 INSULATION: Outside walls and attic floor—Rockwool, Gimco, General Insulating Mfg. Co.
 WINDOWS: Sash—Pine, double hung. Glass—Libbey-Owens-Ford Glass Co. Screens—Bronze.
 FLOOR COVERINGS: All floors—stained wide boards of pine. Kitchen and bathrooms—linoleum.
 WOODWORK: Trim—mostly white pine painted, some white pine stained. Doors—6-panel pine.
 HARDWARE: Local hand-wrought hardware.
 PAINTING: Interior—Norfolk Paint. Walls—mostly papered. Ceilings—Calcimined. Floor—Waxed.
 ELECTRICAL INSTALLATION: Wiring system—BX cable.
 KITCHEN EQUIPMENT: Range—Magic Chef, American Stove Co. Refrigerator—Electrolux, Servel, Inc. Sink—Standard Sanitary & Mfg. Co.
 BATHROOM EQUIPMENT: "Standard" fixtures, Standard Sanitary and Mfg. Co. Cabinets—Columbia Metal Box Co.
 PLUMBING: Cold and hot water pipes—Brass tubing.
 HEATING AND AIR CONDITIONING: Filtering and humidifying, Fox Furnace Co. Gas fired boiler. Grilles. Thermostat—Minneapolis-Honeywell Regulator Co. Hot water heater—Ruud Mfg. Co.

STUDY



Haskell Photos

HALL

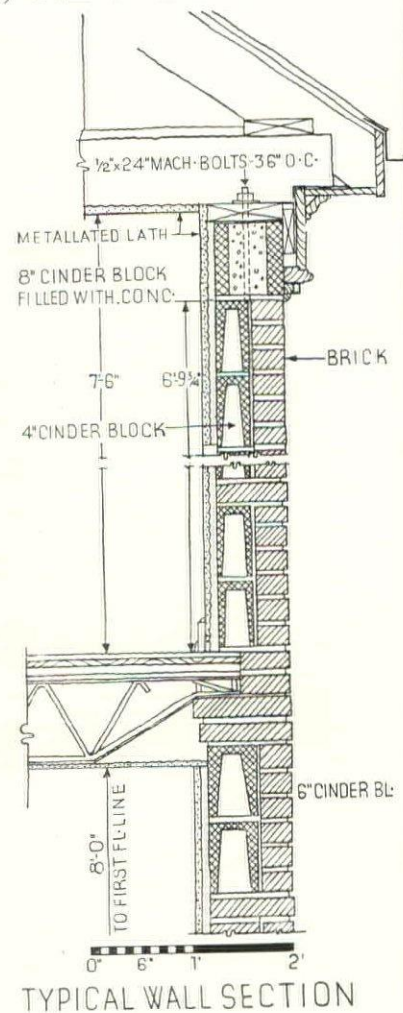


HOUSE FOR DR. A. P. WILLIAMS, GARDEN CITY, NEW YORK



Gustav Anderson Photos

While the appearance of this house varies little from conventional design, the plan, which is of unusual excellence, deserves careful study. The service quarters are very well arranged, with good circulation to the main and service entrances. The passage from the garage to living room or study is convenient, and makes ingenious use of the space afforded by the fireplaces. It also seems desirable to give the dining room as much privacy as has been provided here. Despite the traditional exterior, the architect has been able to include two generous decks opening off the bedrooms. The services on the bedroom floor are ample and are well located in the central hall, and it should be noted that most of the closets are of the efficient shallow type. Cross ventilation in all sleeping rooms, three baths and a dressing room provide a high degree of comfort in a house of moderate size. Cost: \$20,380. Cubage: 62,000, at about 33 cents per cubic foot.



TYPICAL WALL SECTION

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Brick backed up by 6 inch cinder block furred, Reynolds Co. Metallated lath, three coats plaster. Floor construction—Open trusses, Truscon Steel Co. Oak flooring, metal lath and plaster for ceilings.

ROOF: Construction—2 x 8 inch rafters. 1 x 6 inch wood roofers, building paper, 30-pound felt. Covered with tile, Ludowici-Celadon Corp.

CHIMNEY: Brick, clay flue lining. Lamper-Covert throat, H. W. Covert Co.

INSULATION: Outside walls—Reynolds metallated lath, Reynolds Corp. Roof—Double sided metallated paper.

WINDOWS: Sash—Steel, Truscon Steel Co. Glass—Quality A, Libbey-Owens-Ford Glass Co.

WOODWORK: All to detail. Garage doors—Roway overhead doors, Rowe Mfg. Co.

HARDWARE: Stanley Works and Schlage Lock Co.

PAINTING: Interior walls and ceilings—Paint, Sherwin-Williams Co. Floor—Shellac and wax, Minwax Co. Exterior walls—Lime whitewash and cement paint, Medusa Portland Cement Co.

ELECTRICAL INSTALLATION: Wiring system—BX. Fixtures—David Kojan.

KITCHEN EQUIPMENT: Refrigerator—General Electric Co. Sink—Monel Metal, International Nickel Co. Dishwasher—Westinghouse Electric and Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Cabinets—G. Ketcham Mfg. Co.

HEATING AND AIR CONDITIONING: Including filtering and humidifying with gas fired boiler—Bryant Heater Co. Grilles—Tuttle and Bailey Mfg. Co. Thermostat—Minneapolis-Honeywell Regulator Co. Hot water heater—Ruud Mfg. Co.



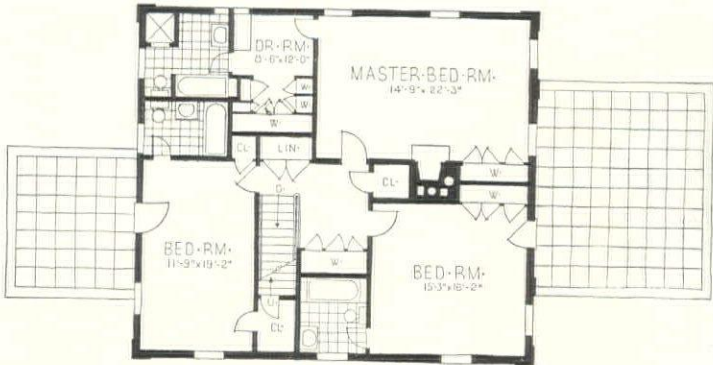
LIVING ROOM



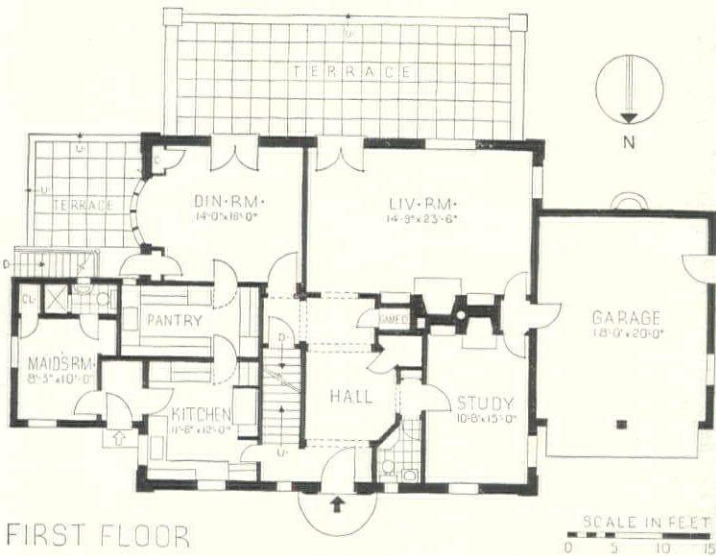
DINING ROOM



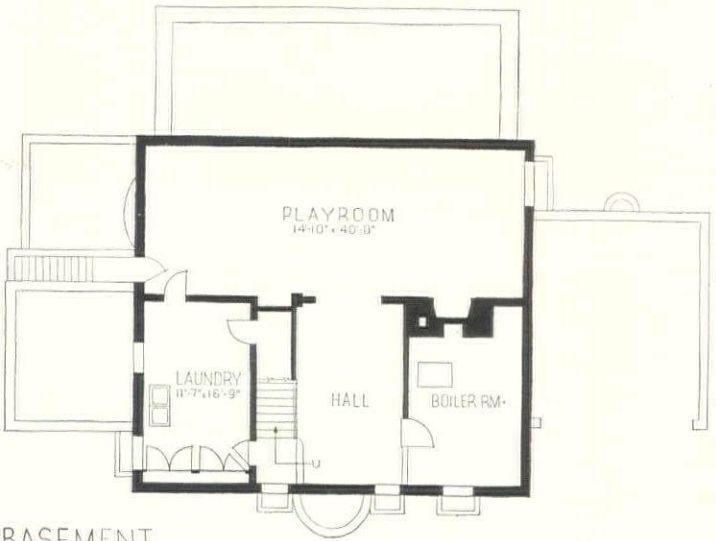
STUDY



SECOND FLOOR



FIRST FLOOR



BASEMENT



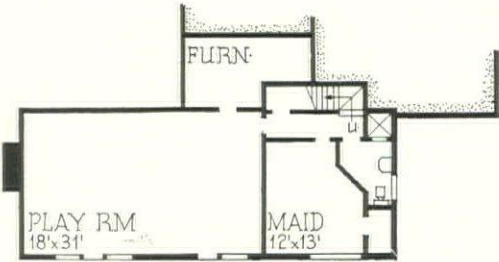
KITCHEN

HOUSE FOR DR. JAMES B. GRAESER, OAKLAND, CALIFORNIA

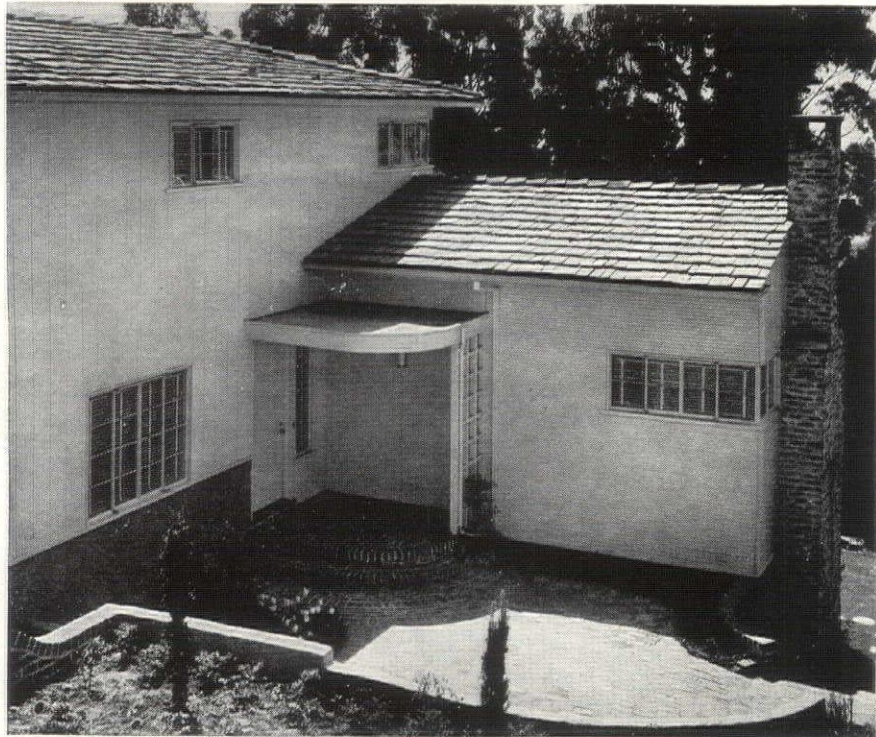


Esther Born

An irregular, sloping lot and a view were two factors which strongly conditioned the planning of this house. As is frequently the case in the San Francisco Bay district, the garage is on a level with the top floor, and living quarters are below. The arrangement in this case has permitted the placing of the master bedroom on a separate level, which from the point of view of privacy is highly desirable. The general living quarters occupy the floor below, with two bedrooms on an intermediate level. Due to the slope it was possible to build the basement entirely above ground, with a large playroom and maid's room. Cost: \$15,990. Cubage: 32,000 at about 50 cents per cubic foot.



BASEMENT



DINING ROOM

CONSTRUCTION OUTLINE

FOUNDATION: Piers and continuous, reinforced concrete. Cellar floor—Concrete slab.
STRUCTURE: Exterior walls—1-inch special run redwood rustic or 1-inch stucco on double-kraft building paper on 1-inch diagonal sheathing and studding. Inside finish—colored California stucco on wood lath. Floor construction—Wood joists, building paper on 1-inch diagonal sub-floor. Ceiling colored stucco on wood lath.

ROOF: Wood joists covered with 1-inch O. P. sheathing covered with 32-inch cedar shakes. Decks covered with Grade 1 Con-Ser-Tex, W. L. Barrell Co.

CHIMNEY: Common brick, terra cotta lining, Superior damper.

SHEET METAL WORK: Flashing—Galvanized iron copper bearing, Toncan, Republic Steel Corp. Leaders—26 gauge galvanized iron, American Rolling Mills.

WINDOWS: Sash—Steel, Fenestra Fen-wrought casements, Detroit Steel Products Co. Glass—Grade B. double strength, Libbey-Owens-Ford Glass Co. Venetian blinds—National Venetian Blind Co.

FLOORS: All rooms white oak except kitchen, which is linoleum. Bathrooms—Tile, Gladding, McBean & Co.

FLOOR COVERINGS: Living room, bedrooms and halls—Carpet, Broadloom Carpet Corp.

WALL COVERINGS: Kitchen—Sanitas, Standard Textile Products Co. Bathrooms—Tile and Sanitas.

WOODWORK: Trim—white pine. Shelving and cabinets—White pine and mahogany plywood. Doors—Flush panel.

HARDWARE: Schlage Lock Co.

PAINTING: Floors—Filled, s'ained, shellacked, waxed. Trim and sash—Painted three coats flat, W. P. Fuller Co. Exterior walls—Painted three coats exterior paint, W. P. Fuller Co.

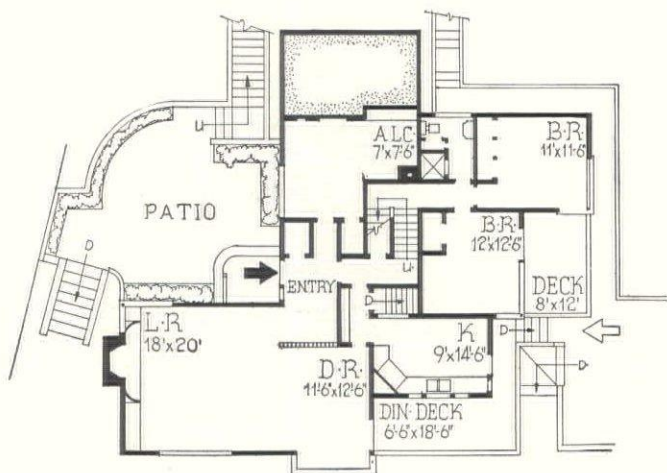
ELECTRICAL INSTALLATION: Wiring system—Knob and tube. Switches—Flush tumbler type, General Electric Co.

KITCHEN EQUIPMENT: Range and refrigerator—General Electric Co. Sink—Standard Sanitary Mfg. Co.

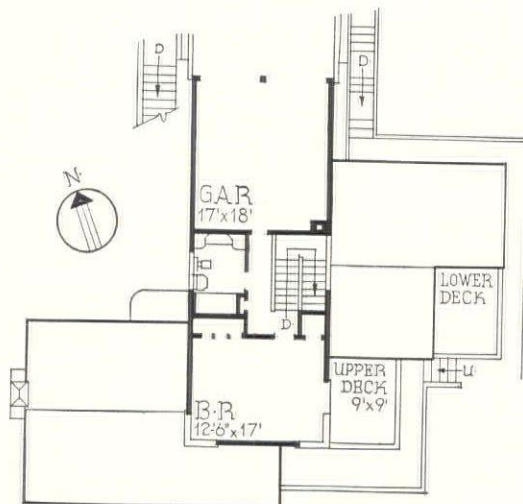
BATHROOM EQUIPMENT: All fixtures—Standard Sanitary Mfg. Co. Seat—C. F. Church Mfg. Co. Cabinet—Hallensheid and McDonald.

PLUMBING: Soil pipes—Extra heavy cast iron, Walworth Co. Cold water pipes—Wrought iron, John Byers. Hot water pipes—copper tubing, sweat fittings, Mueller Co.

HEATING AND AIR CONDITIONING: Hot air, winter conditioning, filters and humidifier—General Electric Co. Oil fired boiler—General Electric Co. Registers—Tuttle and Bailey Mfg. Co. Hot water heater—Ruud Co.



FIRST FLOOR



SECOND FLOOR



Harold Haliday Costain

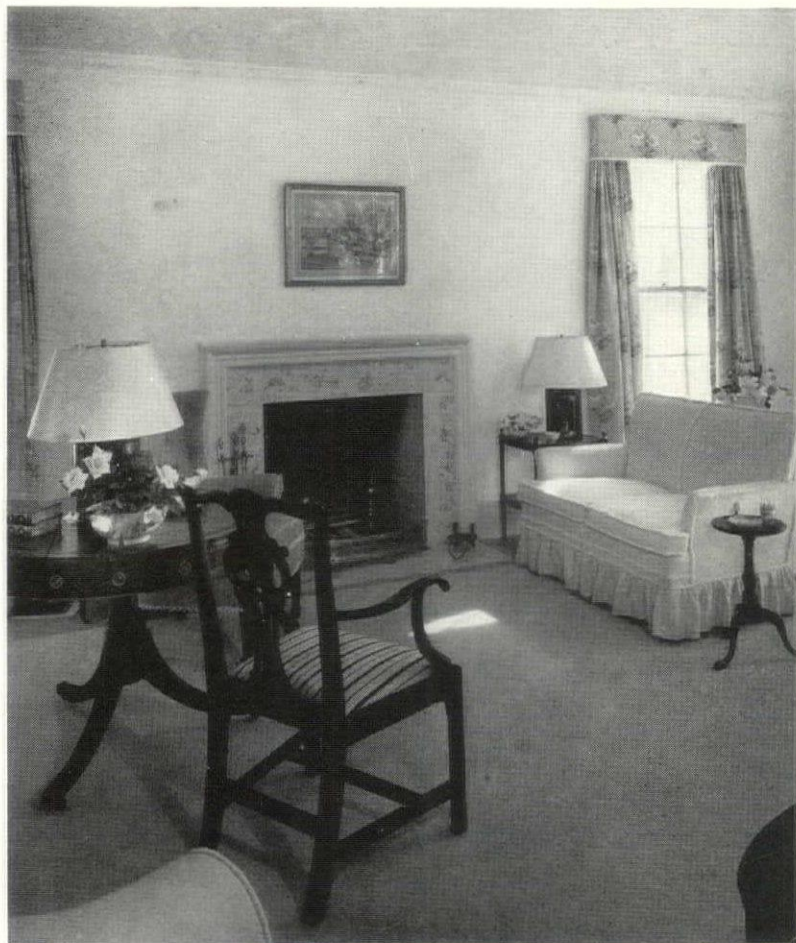


SOUTH ELEVATION

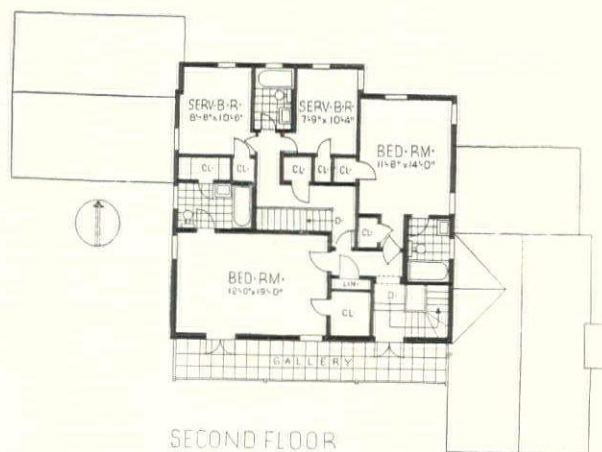
A luxurious, though not particularly large house, this Florida residence is a skillful modification of a traditional Southern type, well planned and attractively landscaped. The main hall gives direct access to living room, dining room, guest room and kitchen. On the second floor a separate suite is provided for the servants; two stairways give maximum privacy and convenience for both parts of the house. Particularly noteworthy are the generous room sizes and storage facilities. Cost: \$13,949. Cubage: 37,700 at about 37 cents per cubic foot.

PATIO

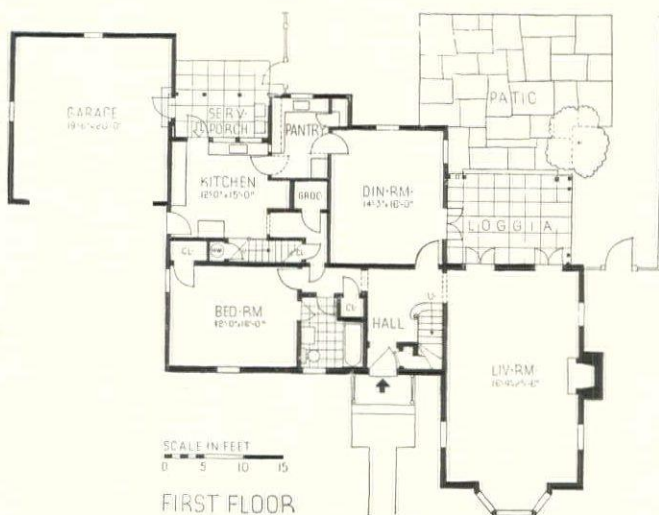




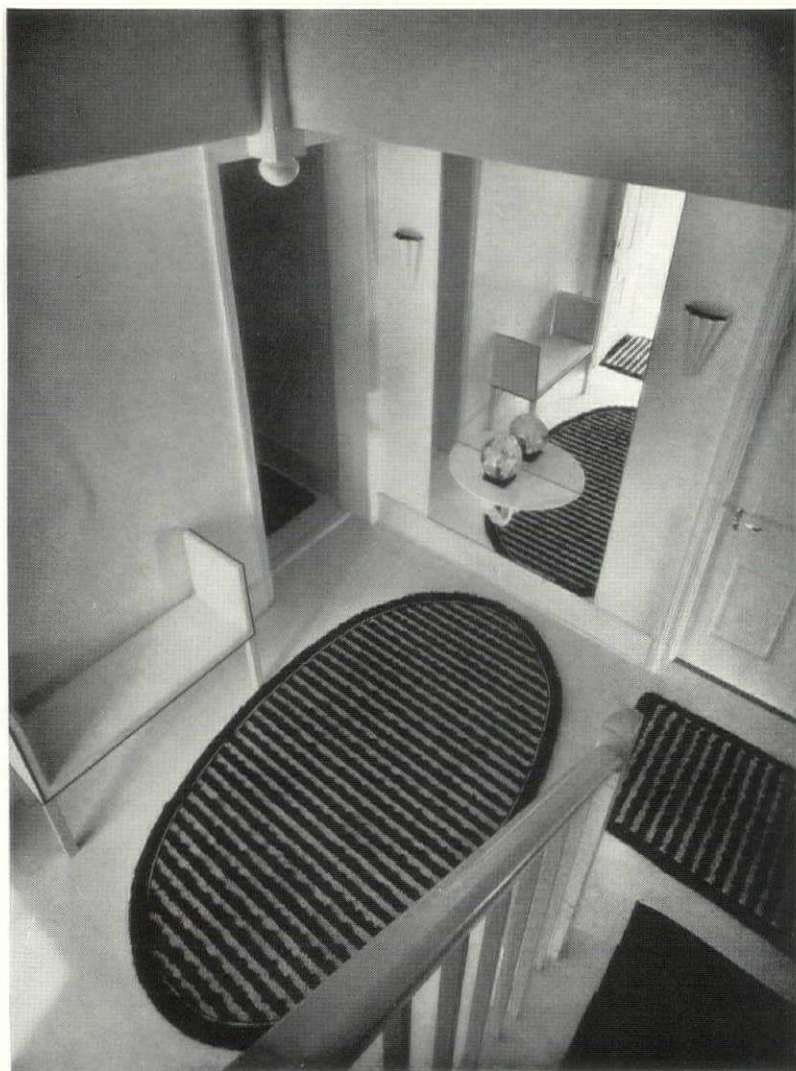
LIVING ROOM



SECOND FLOOR



FIRST FLOOR



ENTRANCE HALL

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—10 in. beveled siding; 30 lb. felt; diagonal sheathing; studs and plastering inside. Floor construction—3 x 10 inch and 2 x 12 inch joists on first floor and second floor.

ROOF: Construction—2 x 6 inch rafters with 1 x 3 inch shingle lath covered with heart cypress wood shingles.

SHEET METAL WORK: Flashing—16 oz. copper throughout.

WINDOWS: Sash—Double hung with Unique sash balances. Glass—Double Strength, quality A, Pittsburgh Plate Glass Co. Screens—16 gauge bronze.

FLOOR COVERINGS: Living room and bedrooms—Clear white oak, Bruce Flooring Co. Kitchen and bathrooms—Linoleum.

WOODWORK: Trim and cabinets—White pine. Doors—6 panel Colonial.

HARDWARE: Solid Bronze, chrome finish, galvanized butts.

PAINTING: Interior walls and ceilings—Three coats oil, Sherwin Williams Co. Floor—White zinc filler, varnished (two coats) and waxed. Exterior walls, sash and roof—Three coats oil paint, Sherwin-Williams Co.

ELECTRICAL INSTALLATION: Wiring system—Rigid conduit. Switches—Toggle.

KITCHEN EQUIPMENT: Range—Gas. Refrigerator—General Electric Co. Sink—Flat rimmed, Crane Co.

LAUNDRY EQUIPMENT: Sink—Double laundry tray, Crane Co. Washing machine and drier—Bendix Home Appliances, Inc.

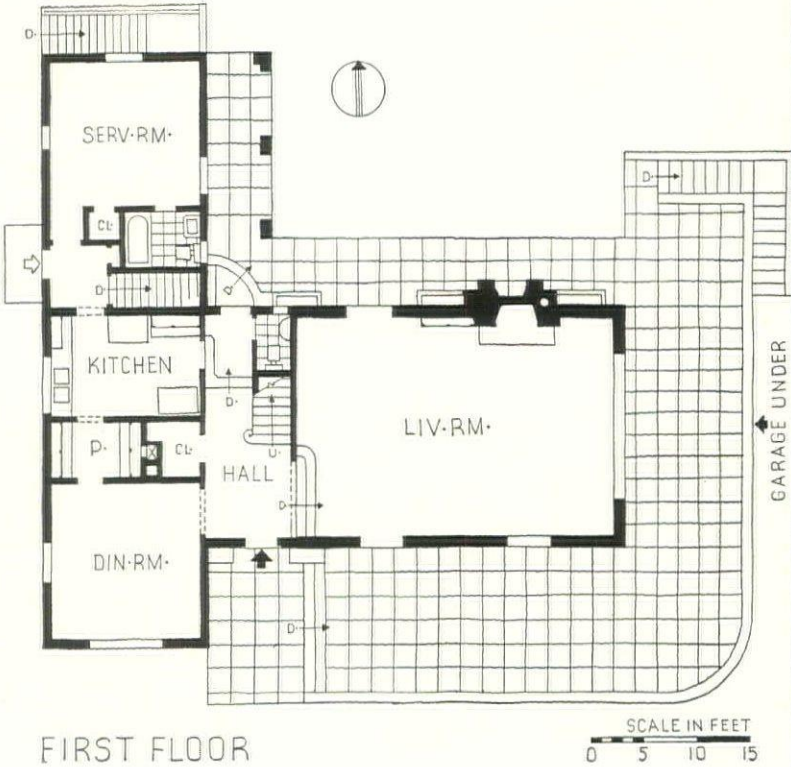
BATHROOM EQUIPMENT: All fixtures by Crane Co. Cabinets—Jenkins Mfg. Co.

PLUMBING: Pipes—Anaconda copper, American Brass Co.

GENERAL CONTRACTOR: W. L. Hunt Construction Co.



LIVING ROOM



The T-plan adopted for this residence has the advantage of giving the living room three exposures as well as free access to the terraces which surround it. The plan also permits the placing of the service quarters with a reasonable amount of privacy. Certain characteristics of recent work are apparent in the design, particularly the tendency to combine traditional with specifically modern elements, an example of the latter being the window which extends across the end of the living room. Cost: approximately \$25,000.



STAIR HALL

NORTH



SOUTH



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—Brick veneer and Haydite backing. Interior partitions—Wood studs and U. S. Gypsum hardwall plaster. Floor construction—Robertson Steel floors covered with sub-floor and oak panels, E. L. Bruce Co.

ROOF: Covered with special antique finish tile, Ludowici-Celadon Co. **SHEET METAL WORK:** Flashing and gutters—copper.

INSULATION: Outside walls—Sprayo flake, Sprayo Flake Co. Roof—4-inch Rockwool.

WINDOWS: Sash—Wood casements, Andersen Frame Corp. Glass—First floor: Vista plate; second floor: Grade A Pennvernion, both Pittsburgh Plate Glass Co. Glass blocks—"Decora," Pittsburgh-Corning Corp. Mirror—copper backed, Pittsburgh Plate Glass Co.

FLOOR COVERINGS: Kitchen, service entry and bathrooms—Rubber tile and linoleum.

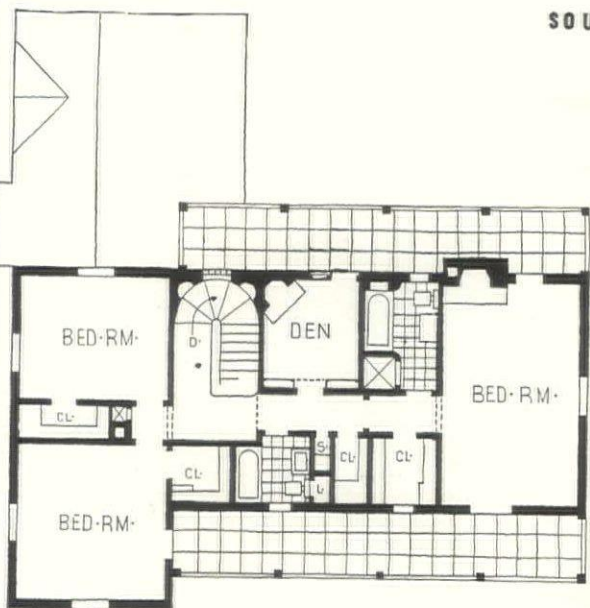
WALL COVERINGS: Baths—Carrara glass, Pittsburgh Plate Glass Co. **PAINTING:** All interior walls painted with Wallhide; Woodwork with Banzai Enamels. Waterspar Varnish and Floorhide for outside porches. Cementhide and Sun-proof paint for exterior. All paint by Pittsburgh Plate Glass Co.

KITCHEN EQUIPMENT: Refrigerator—Electrolux, Servel, Inc. Sink—Stand. San. & Mfg. Co. Cabinets—G. I. Sellers and Sons Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary and Mfg. Co. Cabinets—Miami Cabinet Division of the Philip Carey Co.

PLUMBING: Gas link—Wrought iron, A. M. Byers Co. Cold and hot water pipes—Streamline copper, Mueller Brass Co.

HEATING AND AIR CONDITIONING: Winter air conditioning, gas fired boiler, Bryant Heater Co. Hot water heater—Ruud Mfg. Co.



SECOND FLOOR

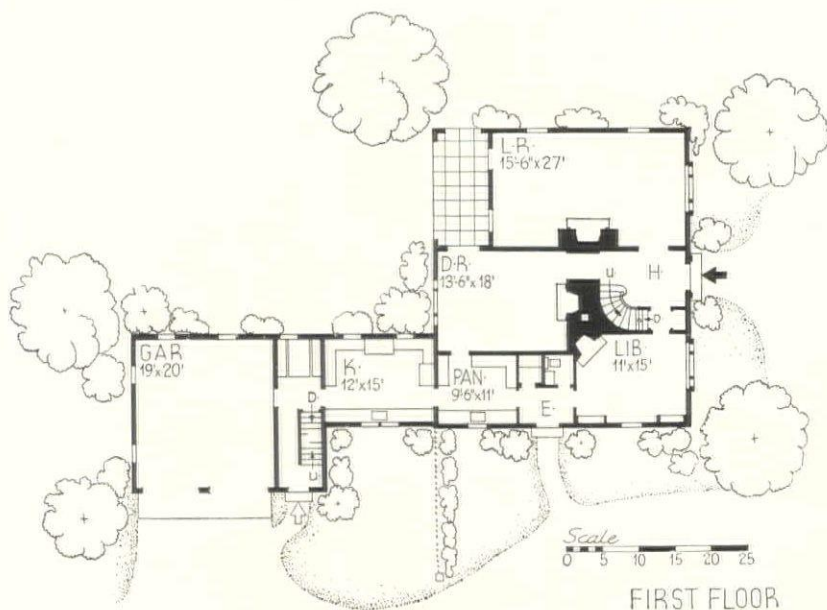
HOUSE FOR RIDLEY WATTS, JR., SHORT HILLS, NEW JERSEY



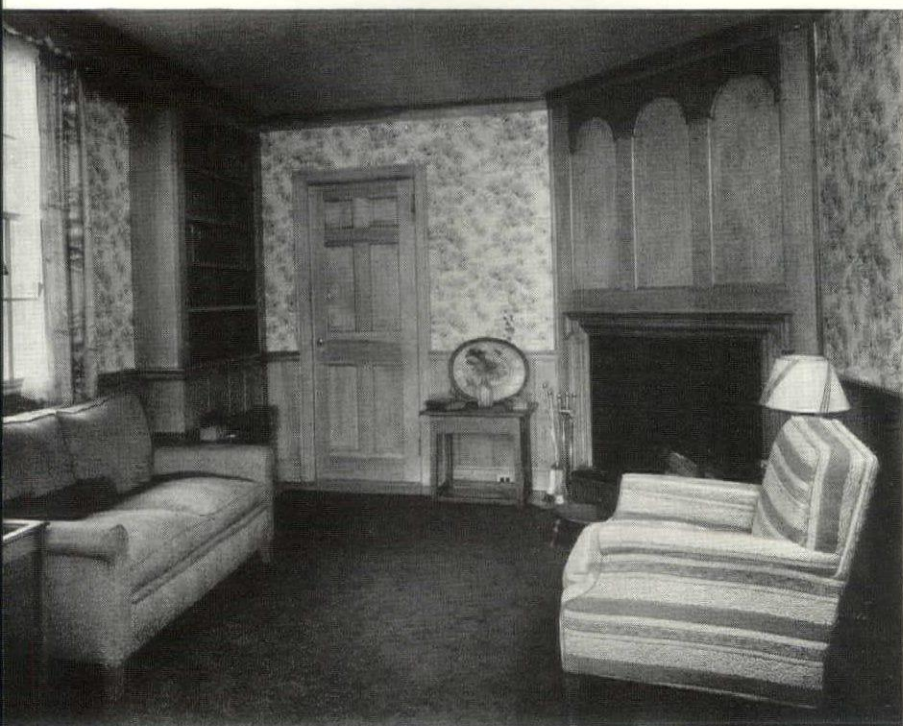
In following a well-established Colonial pattern, even to the wing at the rear of the house, the architect has succeeded in obtaining a very workable plan. The wing permits the convenient placing of services on both floors and makes possible the luxury of a kitchen with through ventilation. Cost: \$25,500. Cubage: 58,000, at about 44 cents per cubic foot.



Richard Garrison Photos



LIVING ROOM



LIBRARY



CONSTRUCTION OUTLINE

FOUNDATION: Walls—concrete block. Cellar floor—Concrete on cinder fill with integral waterproofing.

STRUCTURE: Exterior walls—Cedar clap-board, $\frac{7}{8}$ pine sheathing, Sisalkraft Building paper, 2 x 4 inch studs, U. S. Gypsum Rock-lath, three coats plaster, U. S. Gypsum Co. Floor construction—Frame, $\frac{7}{8}$ pine subfloor, oak finish, metal lath, plaster.

ROOF CONSTRUCTION: Frame—shingle lath, wood shingles.

CHIMNEY: Common brick, H. W. Covert Co. **SHEET METAL WORK:** Flashing, gutters and leaders—16 oz. copper.

INSULATION: Outside walls ground and attic floors—4-inch U. S. Gypsum Co. Rock wool. Weatherstripping—Zinc.

WINDOWS: Sash—Wood, "Silentite," Curtis Companies. Glass—Quality "A" double thick, Libbey-Owens-Ford Glass Co. Screens—Wood frame, bronze mesh.

STAIRS: Oak treads and handrail; other finish material white wood.

FLOOR COVERINGS: All rooms—oak except kitchen and bathroom, which have linoleum.

WOODWORK: Trim—White wood to detail. Cabinets—Kitchenmaid Mfg. Co. Doors—Colonial veneered. Garage doors—Overhead type.

PAINTING: Interior walls and sash—Three coats lead and oil. Ceilings—Two coats lead and oil. Floor—Stain and wax. Exterior walls—Three coats lead and oil. Roof—stain.

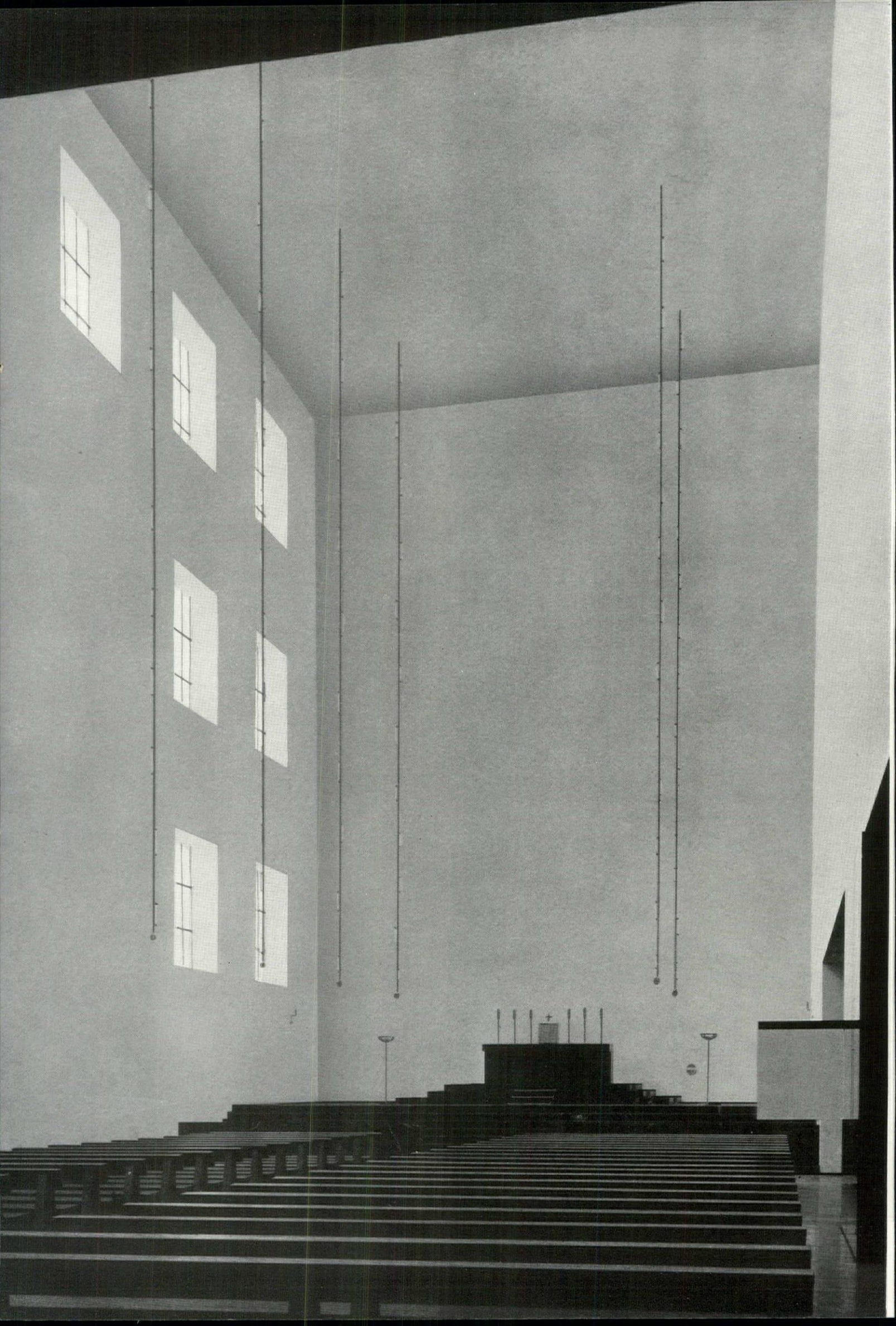
ELECTRICAL INSTALLATION: Wiring system—BX. Switches—Bryant Electric Co. Fixtures—Cassidy Co.

KITCHEN EQUIPMENT: Refrigerator—General Electric Co. Sink—Standard Sanitary Mfg. Co.

BATHROOM EQUIPMENT: All fixtures by Standard Sanitary Mfg. Co. Shower—Modern, Shower Door Co. Cabinets—Jenkins Mfg. Co.

PLUMBING: Cast iron soil pipes. Cold and hot water pipes—brass, American Brass Co.

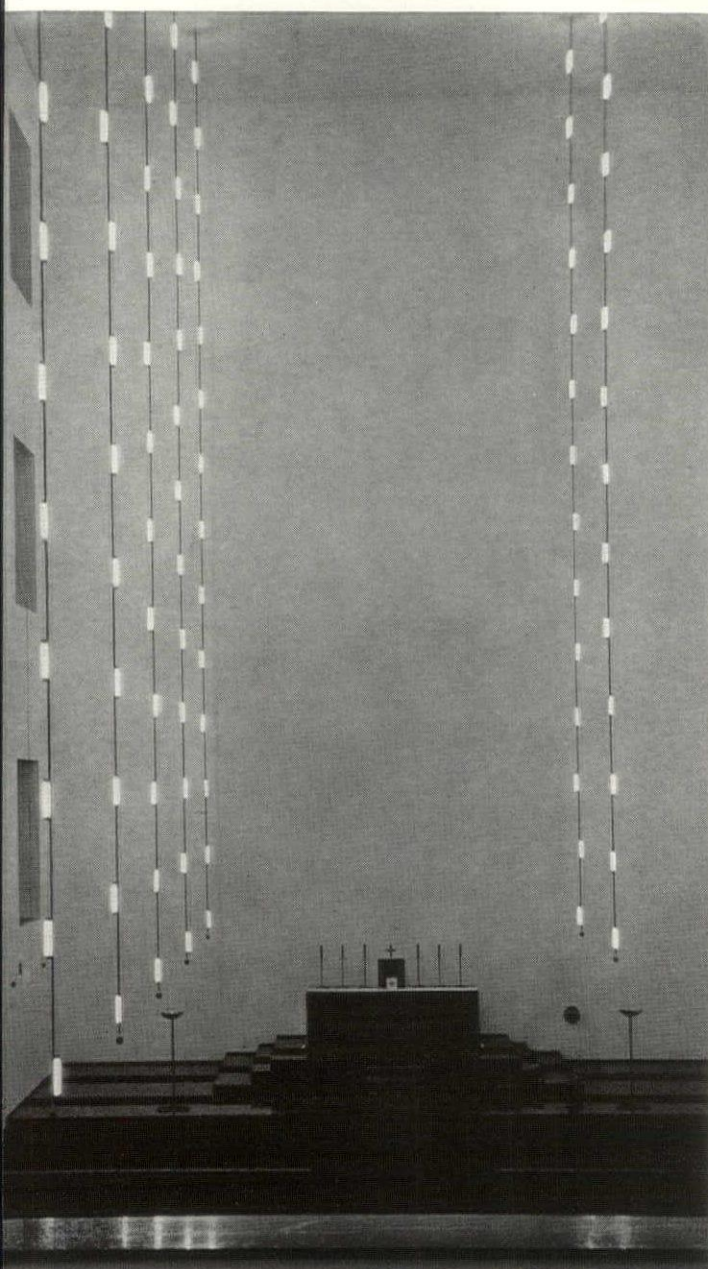
HEATING AND AIR CONDITIONING: Bryant heating and air conditioning for winter use, Bryant Heater Co. Hot water heater—Crane Co.



THE ARCHITECTURE OF RUDOLF SCHWARZ

It is well known that the Third Reich brought to an end the modern movement in Germany, substituting an official architecture which closely follows classical forms. The works of Architect Rudolf Schwarz shown here therefore predate 1934.—THE EDITORS.

CORPUS CHRISTI, AACHEN



by H. A. REINHOLD

IN THE well known German weekly *Die Bauwelt*, Vol. LII, 1934, p. 1, is a description of a doctor's house near Frankfurt just then finished by Rudolf Schwarz. The critic writes that he is well aware of the fact that people consider Schwarz a brilliant architect, but, in his opinion, Schwarz "reflects too much." This is true inasmuch as Schwarz is unemotional and does not follow brain waves. He is rooted in deep spiritual reflections. All his works reveal a lucid and grand sobriety which enables him to use every means of modern technical accomplishment without ever becoming one of the hundred "Technoid" stylists.

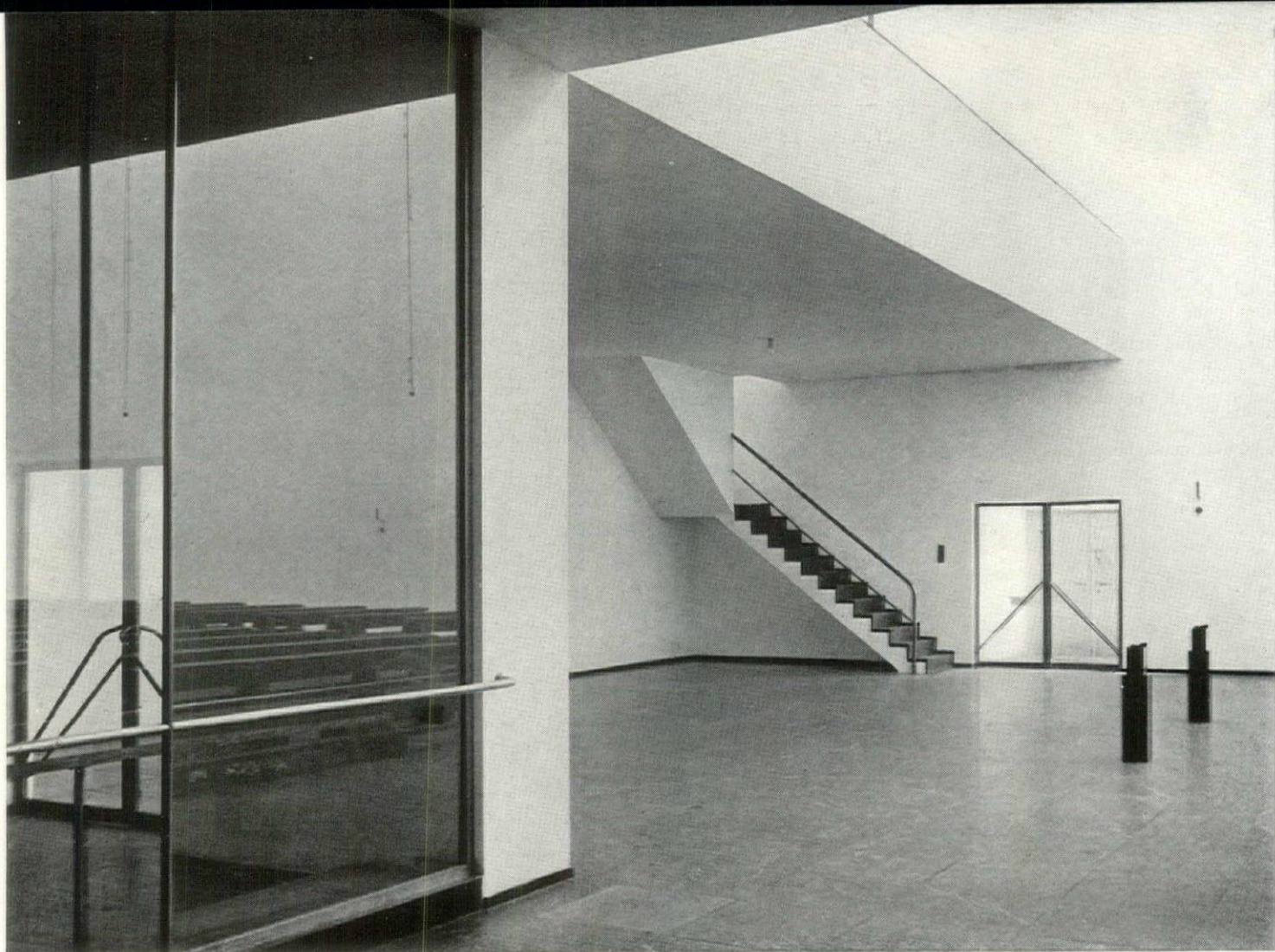
It is no wonder then that even in his church architecture Schwarz initiates something entirely new. We present the only two churches which he has as yet been able to build—Corpus Christi in Aachen and a little chapel built by the villagers of Leversbach near Cologne. In spite of the fact that there are other church architects in Germany who have built more and better-known churches—such as Klemens, Holzmeister, Han Herkomer, Dominikus Boehm, Martin Weber, Johannes Kamps and a dozen more—the leading German architectural dictionary (*Wasmuths Lexikon fuer Baukunst*, 1937) shows Mr. Schwarz as the true representative of Catholic church architecture. We think this is right.

There is no longer any doubt about his outstanding character. He is an architect whose two churches are landmarks of our period.

Rudolf Schwarz has been closely connected with the most radical wing of the Catholic Youth Movement, the "Quickborn" (a word of old German origin meaning life-source), which has its center at the castle of Rothenfels in Lower Franconia. The spiritual and intellectual leader of the liturgical movement is Romano Guardini, the famous author of *The Spirit of Liturgy* and *The Church and the Catholic* who has been the official representative of Catholic "Weltanschauung" on the staff of the University of Berlin for about twelve years. The "Liturgical Movement" which has strongly influenced the "Quickborn" (life-source) has its center at the Benedictine Abbey of Maria Laach whose Abbot is the illustrious Dr. Ildefons Herwegen.

Rudolf Schwarz is the most doctrinaire and radical of all Catholic church architects in Germany. He has expounded the principles which guide himself and his friends in *Gottesdienst, ein Zeitbuch*, Würzburg, 1937, (Rothenfels a. M.).

He believes in an absolute "new start." Building this new start on the ideology of his specific group, he does not believe that the change of technical possibilities is the only or decisive element which makes a new style for Catholic churches. It gives him only new possibilities of



CORPUS CHRISTI, AACHEN

construction. It affects the form, making it simpler, lighter, more de-materialized and more functional. But with these elements, he still might create a church which would be nothing but reduced Gothic or skeleton Baroque or a Romanesque with concrete vaults and thinner walls.

As the most radical of all German church architects, Rudolf Schwarz consciously withdraws from all traditional styles, trying neither to imitate nor to avoid them. His aim is adequate room for the given liturgy and its ideal realization. Style and forms are utterly secondary. The sacrifice of the Mass is the center of Catholic worship. Therefore, the elements for the conception of a church are the altar, the priest and the surrounding people (*circumstantes*). All other things, such as the sources of light, the ambos, the pews, etc., have to remain subordinated and have to emphasize the primary aim. The same is true for the colors—they bring out the liturgy and underline its essential character. Schwarz

rejects all sensational solutions and all technical bravado. He rejects all falseness as intellectually dishonest. He is, of course, a radical functionalist. If Moser's church of St. Anthony in Basel, Switzerland, created a *technical* revolution in continental church building, Schwarz's Corpus Christi Church in Aachen started another one, deeper and more radical. It makes architects really develop, as a new problem, the essential church out of its *theological, liturgical* and *practical* conception. Schwarz's Corpus Christi Church has been called an "exclamation mark" in the language of modern architectural forms. There is nothing in this church which detracts from the service—the sacrifice of bread and wine on the altar. The ascetic whiteness of the walls, the black marble of the altar almost throw the liturgy into our presence. The sources of light are high above the heads—no distraction from the "divine action and presence." Near the altar two sober rows of windows descend to put a last emphasis on the holy mystery. The monumentality

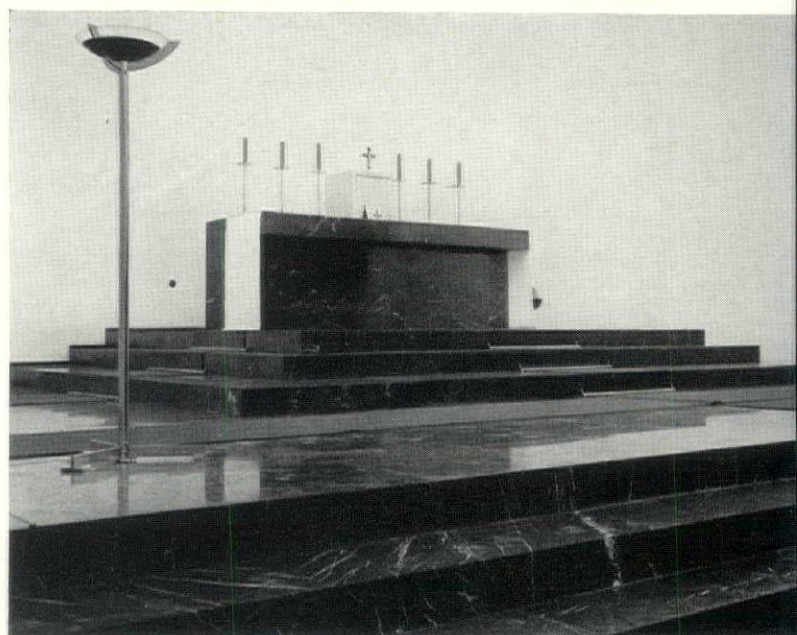


PULPIT

and majesty of the beautiful proportions show a new possibility which conveys that "magic" element of architecture which thrills us in the pyramids, the Parthenon, the domed Hagia Sophia, the vaulted cathedral of Mainz and the splendor of Paris and Chartres. This "poverty" is not insufficiency, frail weakness nor pauperism. It is rather the strength of an original grasp of the essentials of Catholic belief in holy mysteries which demand Askesis—preparedness, self-effacement, a tense will to renounce peripheral distractions—and which fill one instead with a new richness of other worldly values.

The chapel in Leversbach shows how Schwarz is able to create a sacred place with the simplest local materials and with exclusion of all pseudo-hieratic style elements, without which other modern architects have been unable to make a church distinguishable from a factory or silo. Here is an interesting reaction from the village teacher

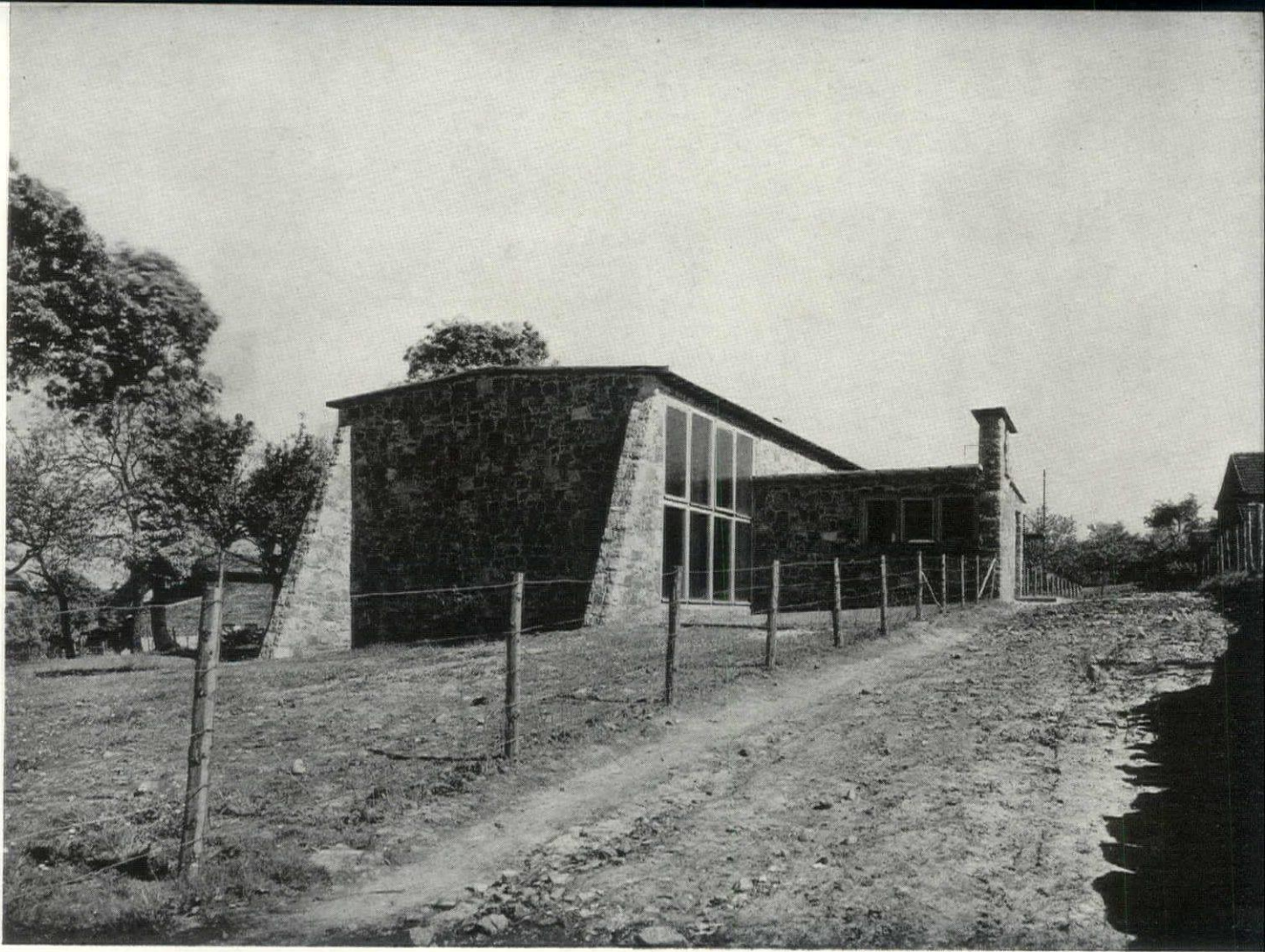
ALTAR



CHAPEL IN LEVERSBACH NEAR COLOGNE

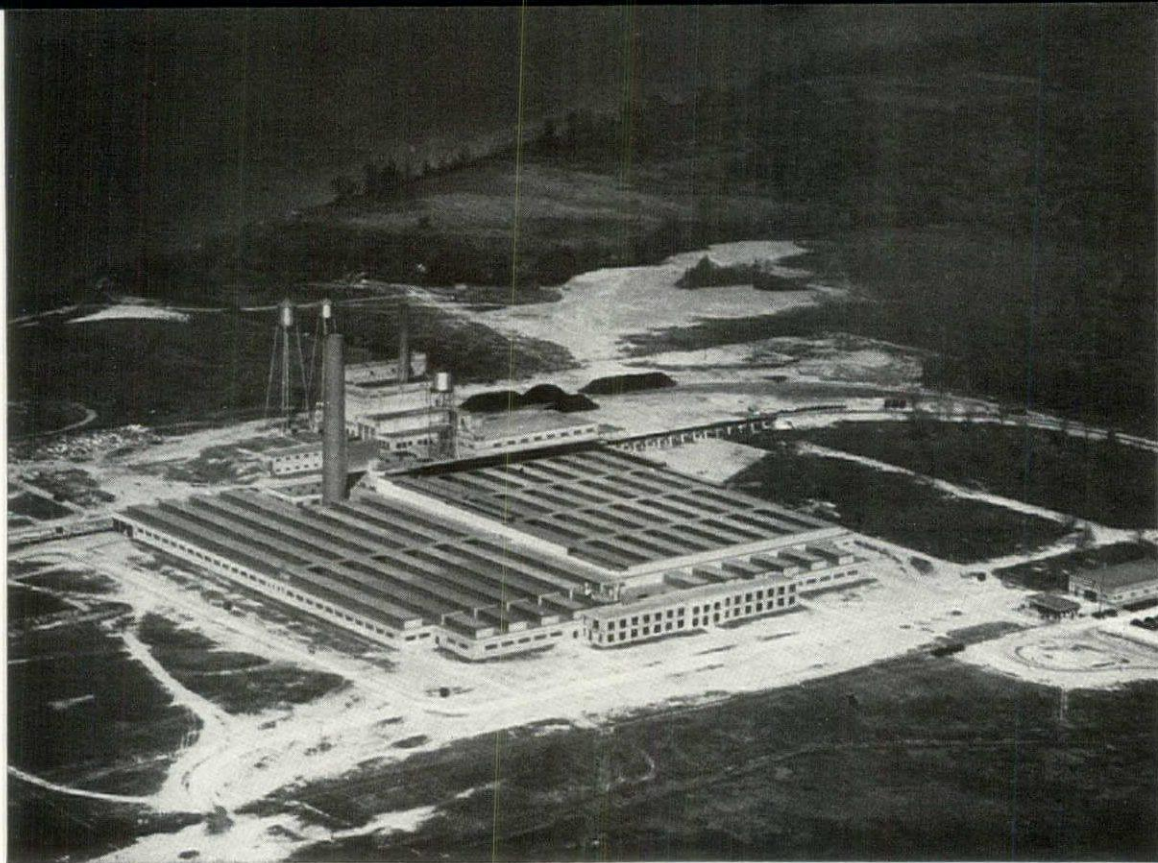


of Leversbach who watched the peasants during their work: "I was prepared for everything, even to lose my job in the village which I loved so much. As long as we planned, all seemed well. So few people can really understand plans and charts. And everybody was glad that something was being done . . . They expected something which would be somehow different, although nothing so startling and altogether different . . . although I had never concealed our real intentions. I always told them that these would be something 'strange' to them. When the walls rose, there was a growing resistance. People from other villages came and ridiculed those walls without windows and pinnacles. In the evenings half the village stood there with distrusting looks. He who knows the people realizes that they are afraid of nothing more than the unusual, the strange, the new, the different . . . Many wishes for vaults, steep roof, steeple, organ loft were easily ruled out by pointing to the considerable expense. We told them why we wanted the priest to stand among the people during his confession, why we had the windows at the altar, why only one room without a 'real' sanctuary in this little chapel. . . . But while we saw already the beautiful and noble proportions, the touching simplicity, the 'essentiality,' they only noticed the crude, the raw, the empty. But in the meantime they have lived in the chapel, and now they object if they have to go to another church." I think Rudolf Schwarz has made the church anew a house for divine worship, not an autonomous, architectural expression of religious feeling, "religiöses Weltgefühl." That is a step forward.



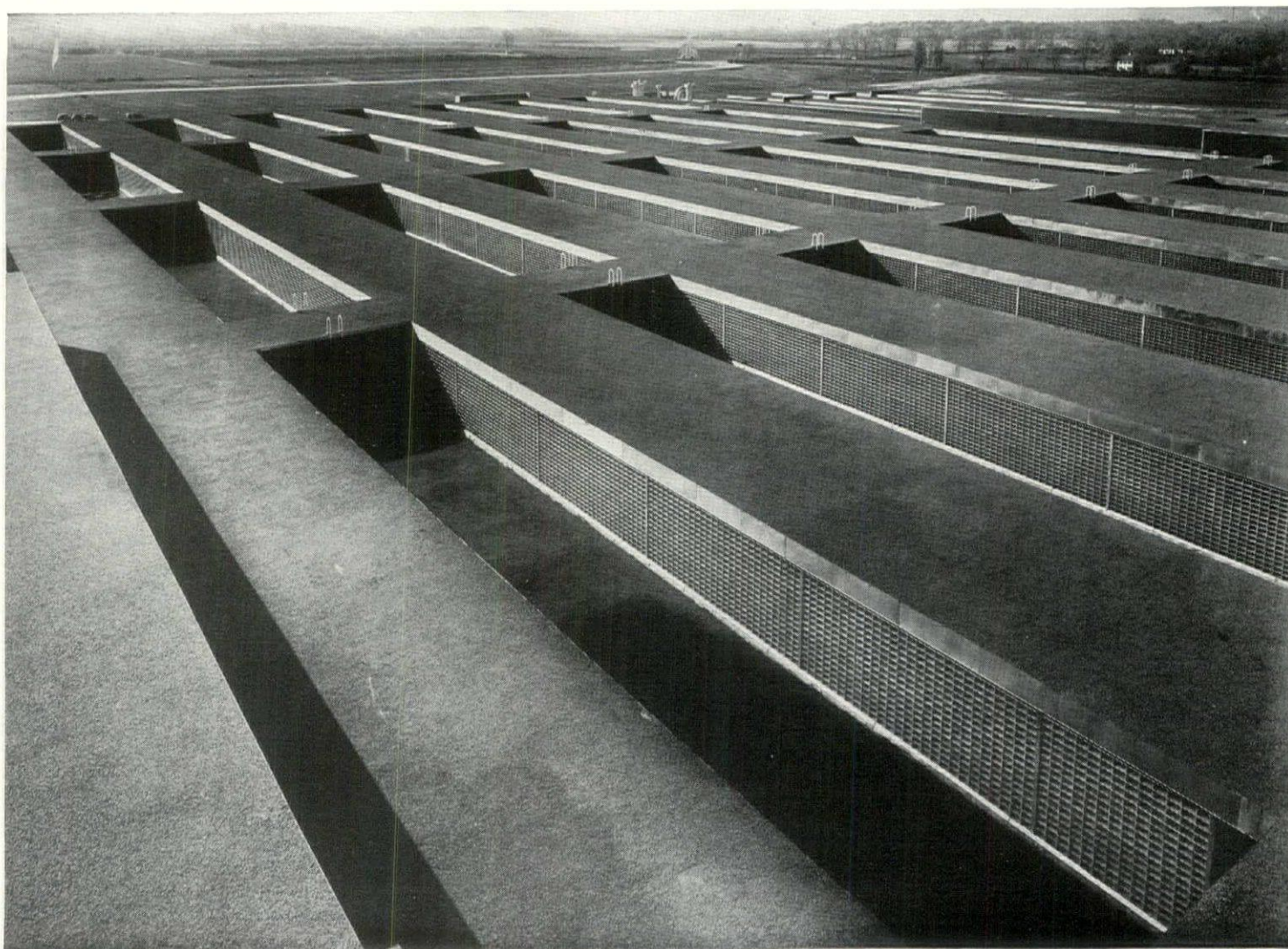
CHAPEL IN LEVERSBACH

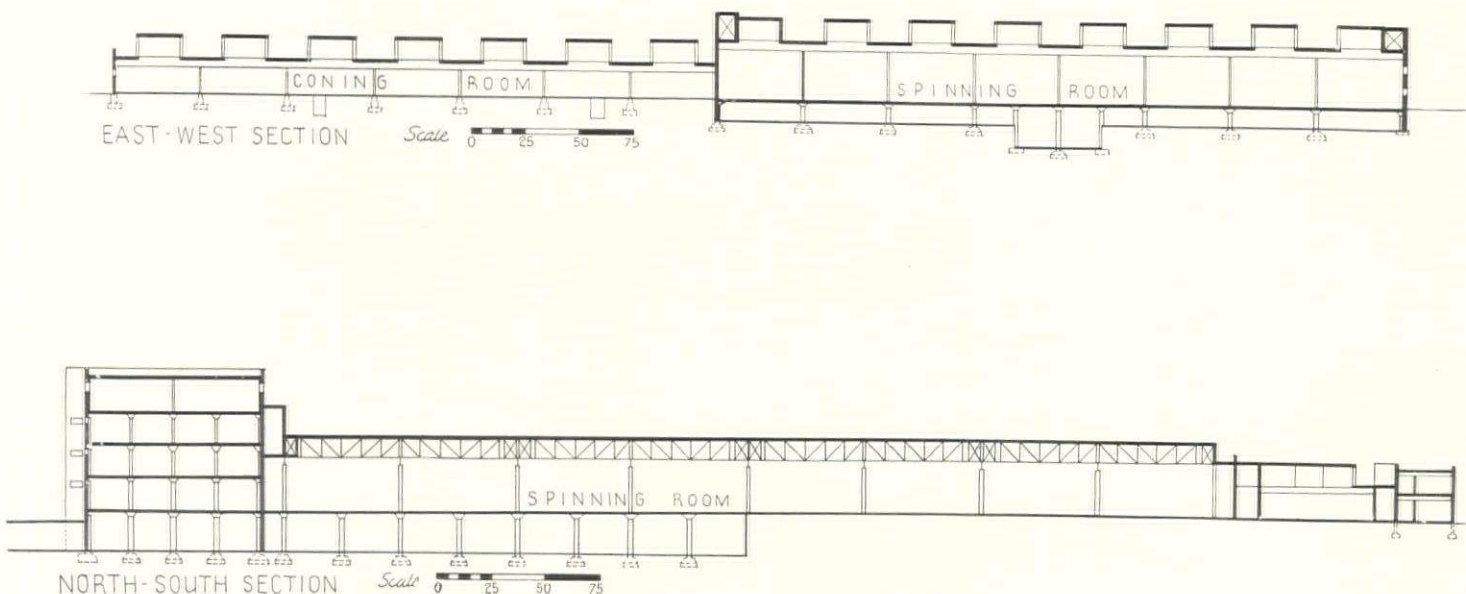




RAYON FACTORY

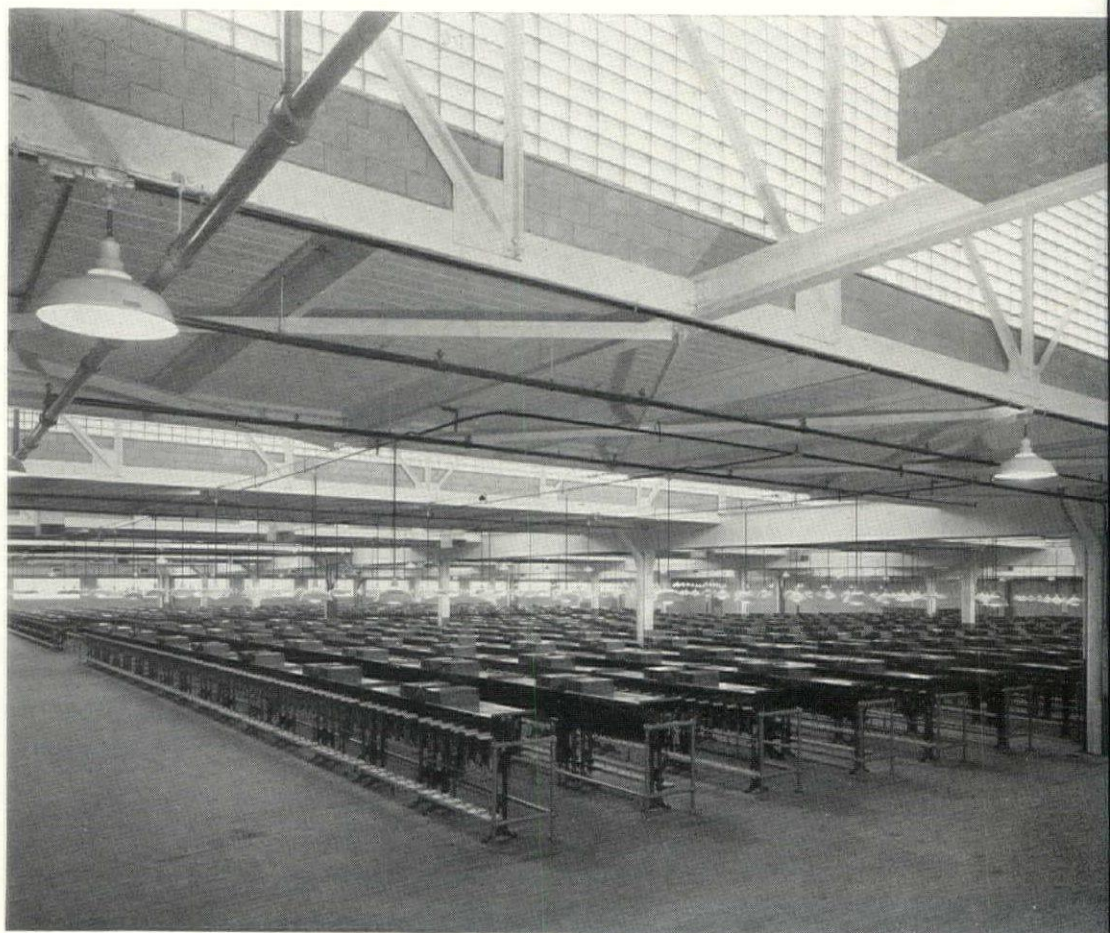
FOR THE INDUSTRIAL RAYON CORPORATION
ENGINEERS: WILBUR WATSON & ASSOCIATES





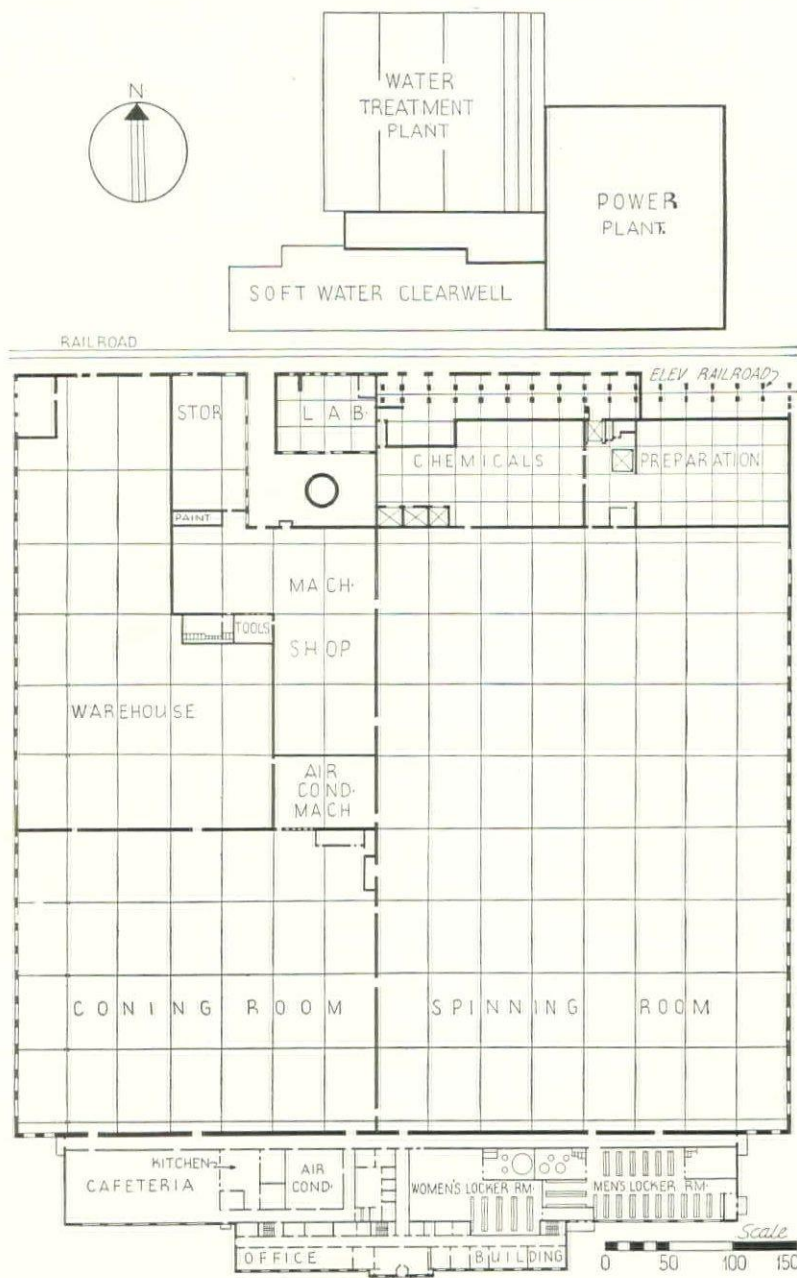
AINESVILLE, OHIO
 CONTRACTORS: THE HUNKIN CONKEY CONSTRUCTION CO.

Covering fourteen acres of ground, this large rayon plant on the shore of Lake Erie is a windowless, completely air conditioned factory designed to produce new types of yarns by a recently developed continuous spinning process. The site was selected because large quantities of water (15,000,000 gallons per day) are needed for manufacturing purposes, and because space had to be provided for future expansion of the plant. The factory as it now stands consists of a water intake extending out into the lake, a power house, water treating plant, a multi-story building for the preparation of chemicals, manufacturing space, cafeteria, employment office, and an administration building. Notable as the largest single installation of glass block on record, the group is of interest for its complete elimination of windows, save for the office building, the use of block in the monitors, and the large interior bays. The complex requirements of the manufacturing process necessitated prolonged research on the part of many of the companies which furnished materials and equipment, and the finished plant is an excellent example of the effect of technological development on architectural design.



VIEW OF THE CONING ROOM. Here the yarns produced on the spinning machines in the adjacent room are transferred from bobbins to cones by skilled operators. The distribution of daylight through the monitors is clearly illustrated.

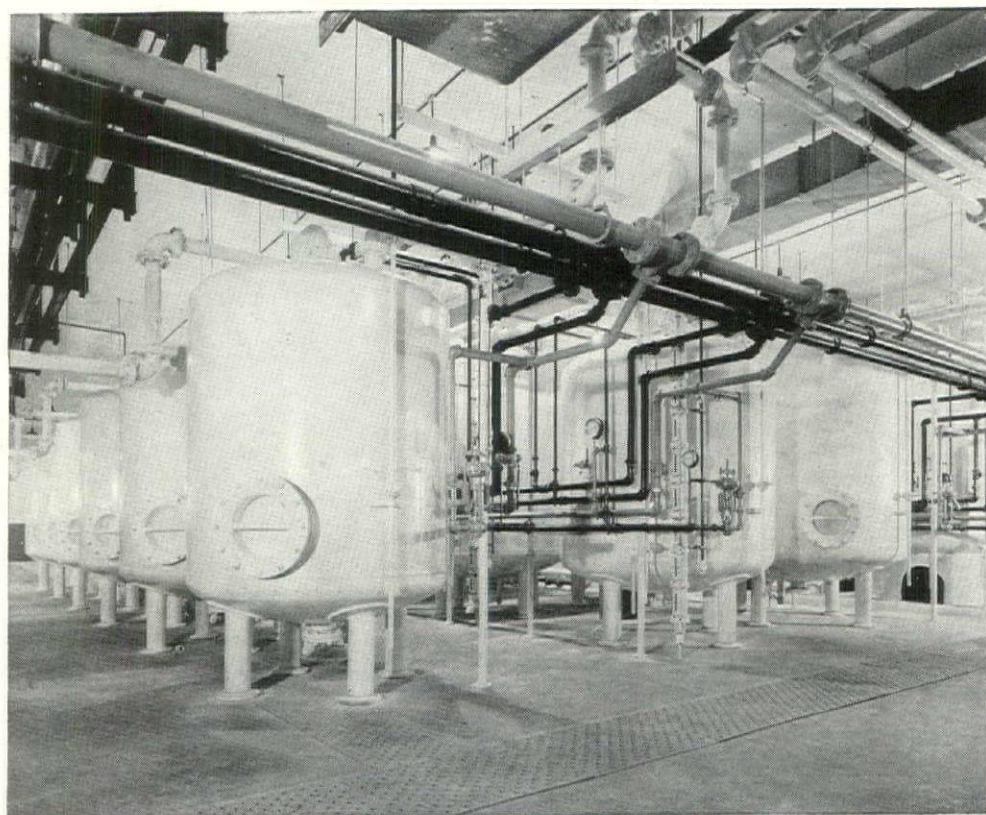
Separated from the main manufacturing building by a railroad track are the power house and water treatment plant, the latter consisting of gravity type filters, softeners, and storage space. The chemical preparation building is 206 x 80 ft., partly four stories in height, and the rest three. This building, entirely of reenforced concrete construction, houses some of the general air conditioning units as well as equipment for the preparation of the rayon materials. Immediately adjacent is a small chemical laboratory, designed for a future second floor.



THE SPINNING ROOM is a one-story structure with a basement under about half its area. The room is 454 x 320 ft., has a monitor type roof which is supported on steel columns which form bays 54 x 40 ft., a spacing dictated by machinery requirements. The monitors, one in each bay, are 20 ft. wide x 9 ft. 8 in. high. The rest of the space is occupied by a coning room, warehouse, and machine shop.

THE OFFICE BUILDING is a two-story structure of steel, brick and timber, with plaster interior finish and acoustically treated ceilings. A utility section directly behind contains locker and toilet rooms, kitchen, cafeteria, and dispensary. The office and utility units are served by a separate air conditioning system.

VISCOSE RIPENING TANKS are located in the basement. After aging the viscose is pumped from these tanks to spin baths at the top of the three-tier spinning machines illustrated on the opposite page.

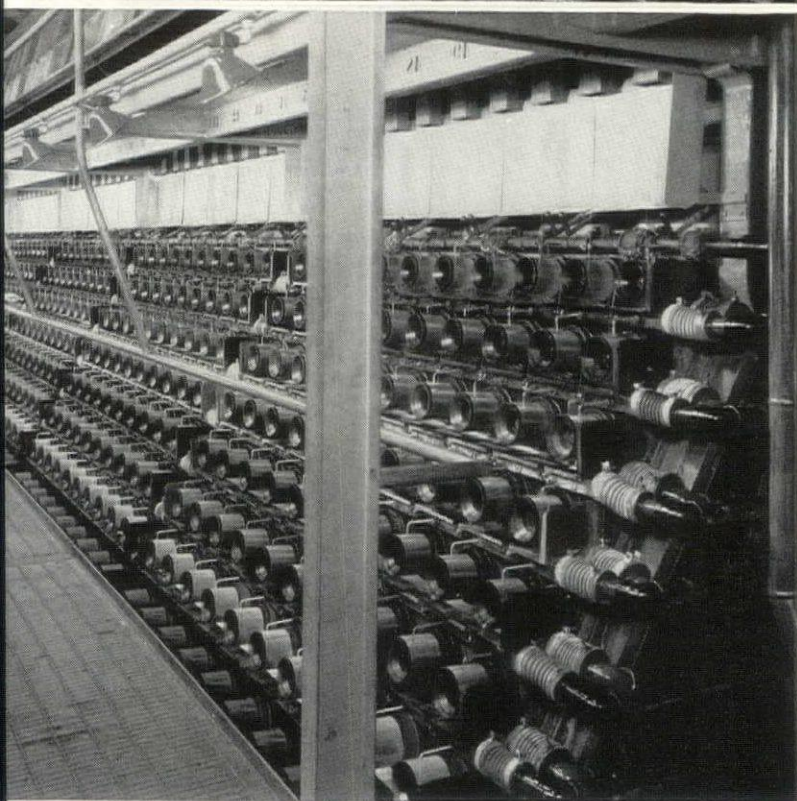




THE HUGE SPINNING MACHINES shown at the left fill a room which is three and a half acres in extent. Built up in three tiers, the machines take the yarn from the liquid stage to the bobbins on which the completely processed material is wound.

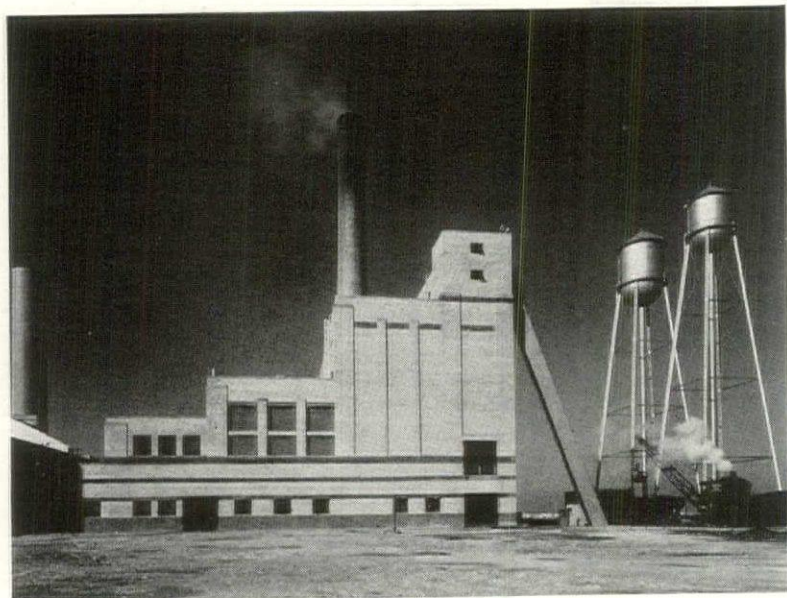


AT THE LEFT, a detail view of the spin tanks. From these tanks the liquid rayon goes through minute holes in nozzles submerged in the "spin bath," passes over a series of reels (lower left), and is then carried down to the bobbins in the bottom tier.

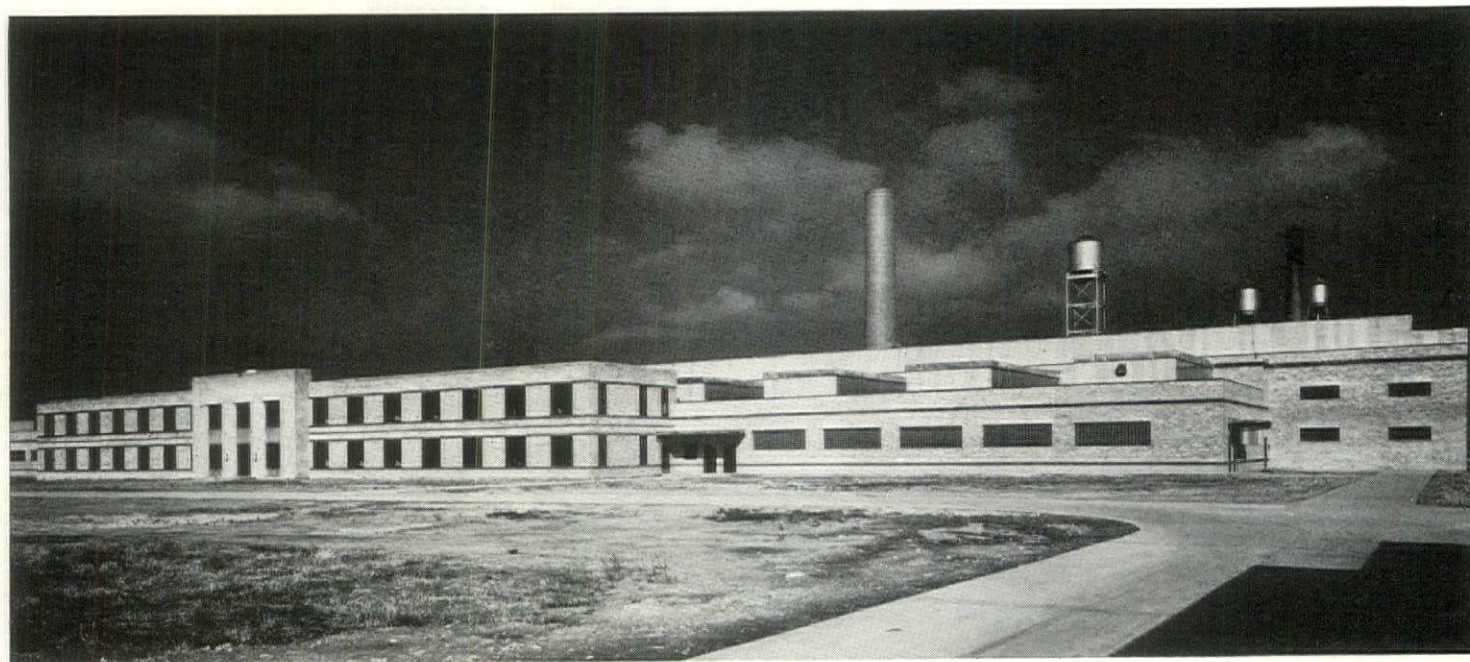


BELOW, the coning machines on which yarn is transferred from bobbins to the cones which are used by the textile mills.





Two views of the plant, showing the power house (left), and the office block and manufacturing unit (below). The power plant will develop 270,000 pounds of steam and 15,000 KW per hour. The office block is the only building in the group which uses windows to any appreciable extent.



CONSTRUCTION OUTLINE

FOUNDATIONS: Type—All spread footings on clay. Material—Concrete, Standard Cement Co., Medusa Cement Co. Waterproofing—All walls below grade dampproofed.

STRUCTURE: Exterior walls gray brick throughout, Belden Brick Co. Interior partitions—Mostly glazed tile except in offices, Stark Brick Co. Columns—Reinforced concrete in basements and in multi-story building, otherwise steel, Bethlehem Steel Co. Floor construction—Cement, asphalt and wood as required to fit manufacturing processes.

ROOF: Those on one-story buildings are of the monitor type, of exposed structural steel with treated wood sheeting and four-ply tar and gravel roofing.

SHEET METAL WORK: Flashing and gutters—aluminum.

INSULATION: Roofs—All insulated with

2 in. Celotex, Celotex Corp. Sound insulation—Ceilings of offices, U. S. Gypsum Co. Acoustic tile.

GLASS BLOCK: Insulux, Owens-Illinois Glass Co.

STAIRS AND ELEVATORS: Detail of stairs—concrete and steel. Elevators—one in chemical preparation building. Grating and stairs in spinning room by Blaw Knox Co.

FLOOR COVERINGS: Offices are partly carpeted, partly covered with linoleum. Rubber tile in main lobby and corridor.

WALL COVERINGS: Salt glazed tile in mill and power house.

WOOD AND METAL TRIM: Trim—oak and black walnut in office building. Doors—wood and hollow metal. Garage doors—Overhead type.

HARDWARE: Russel and Erwin Mfg. Co.

PAINTING: All steel primed with Rustoy, Studebaker Chemical Co. Ceilings—Arco Co.

Wood floors oiled and concrete floors painted in toilets and utilities section with Arco floor paint, Arco Co. Sash (exterior)—Valdura, American Asphalt Co.

ELECTRICAL INSTALLATION: Wiring system—3-5000 KVA Westinghouse turbines. Switches—Westinghouse. Fixtures—Westinghouse Electric and Mfg. Co.

PLUMBING: Pipes—Wrought iron for soil stacks and vents. Cold and hot water pipes—Galvanized wrought iron. Toilet fixtures—Kohler Co. Complete kitchen equipment by Kitcheneering.

HEATING AND AIR CONDITIONING: Heating—Central Fan System consisting of filtering, humidifying and cooling. Air and Refrigeration Co. Boiler—Combustion Engineering Co. Thermostats—Johnson Service Co., Minneapolis—Honeywell Regulator Co. Valves—Chapman Valve Mfg. Co. Feed water heater—Cochrane Co.

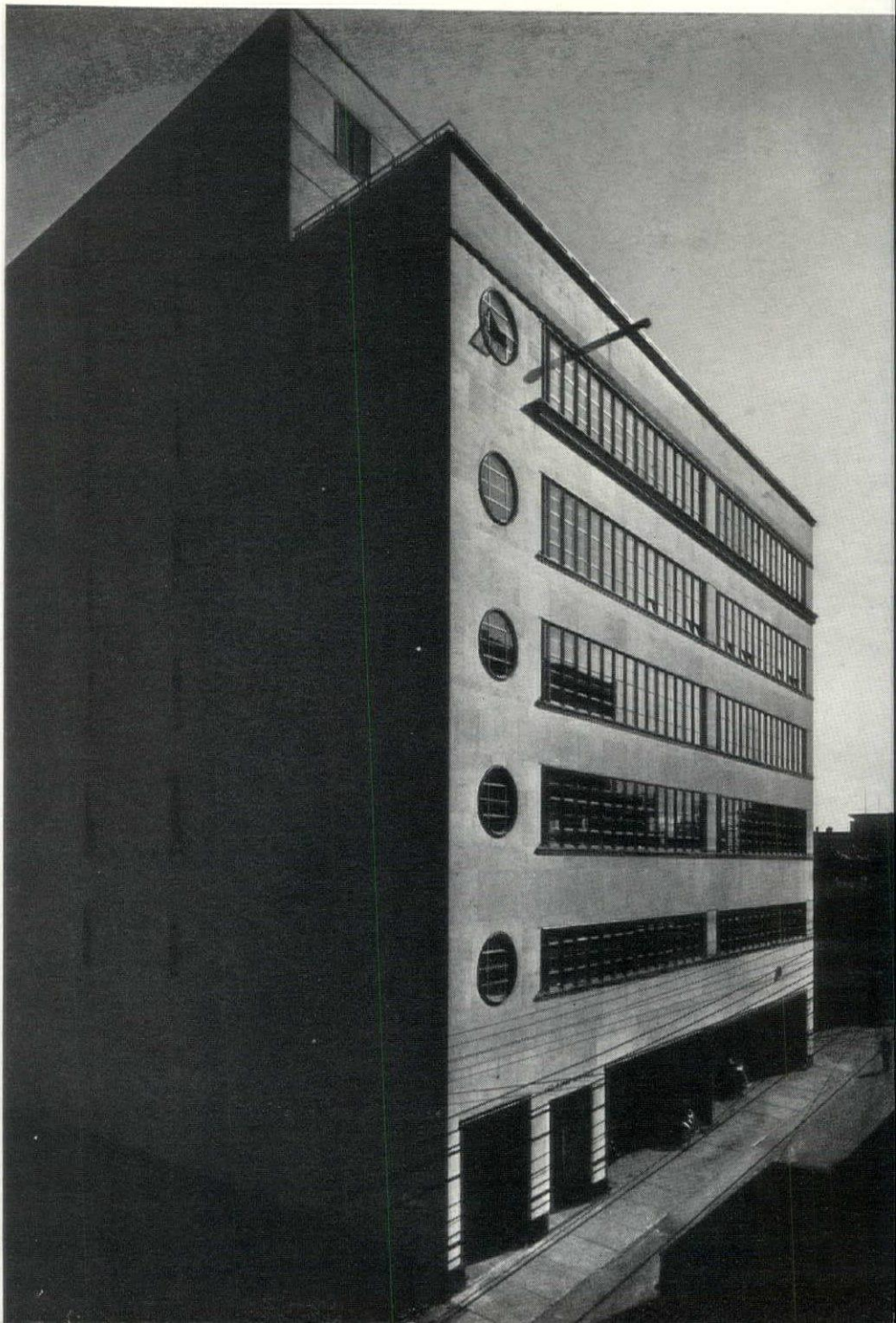


NEWSPAPER PLANT

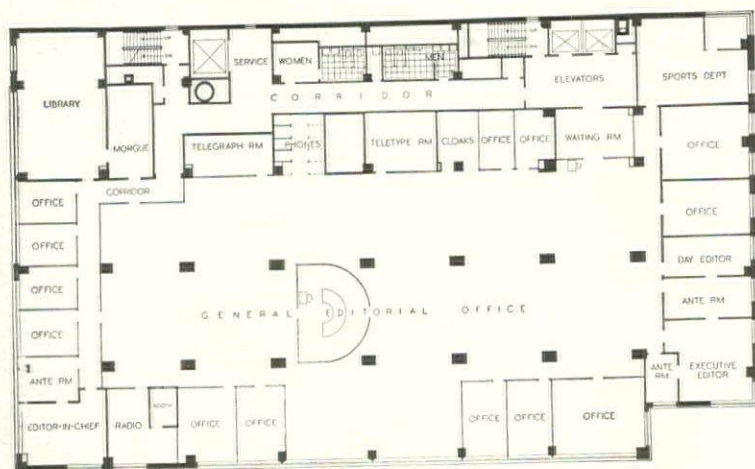
THE WILLIAM H. WRIGHT BUILDING

TORONTO, CANADA

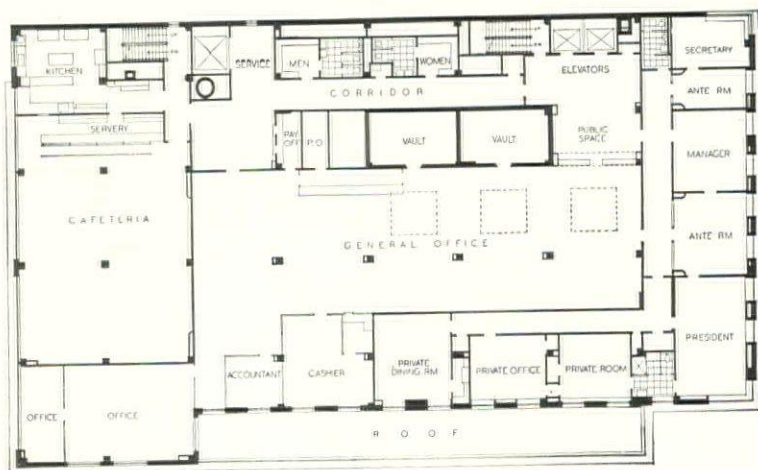
MATHERS & HALDENBY, ARCHITECTS



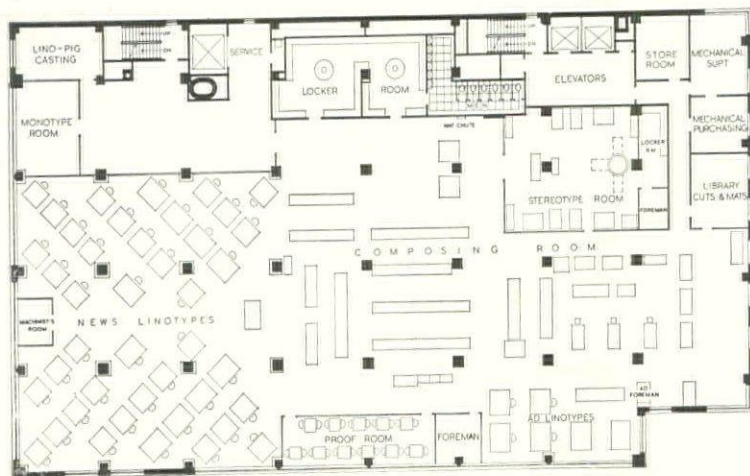
NEWSPAPER PLANT THE WILLIAM H. WRIGHT BUILDING, MATHERS & HALDENBY, ARCHITECTS



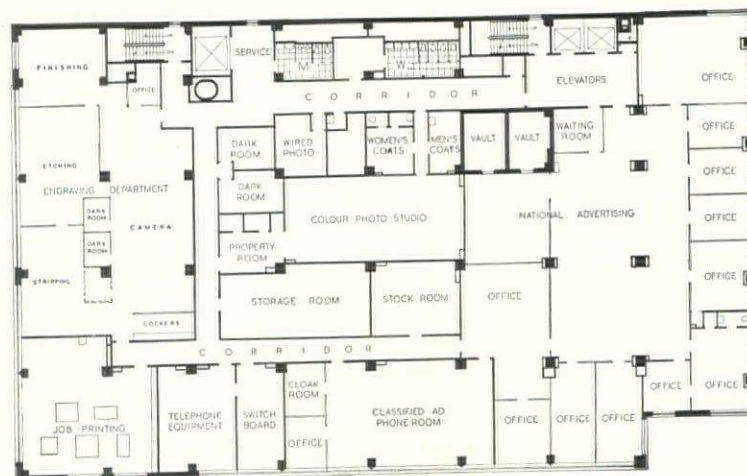
FIFTH FLOOR PLAN



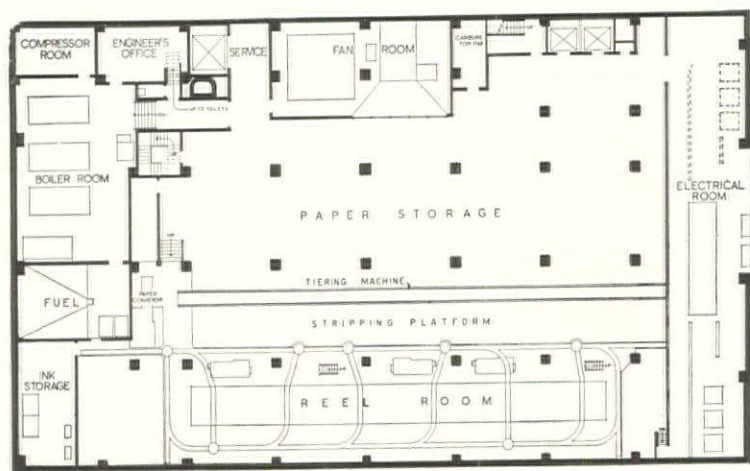
SIXTH FLOOR PLAN



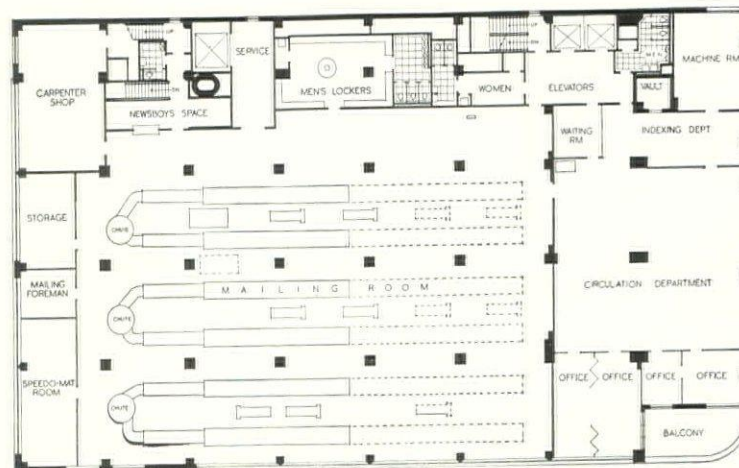
THIRD FLOOR PLAN



FOURTH FLOOR PLAN



BASEMENT PLAN



SECOND FLOOR PLAN



LOBBY

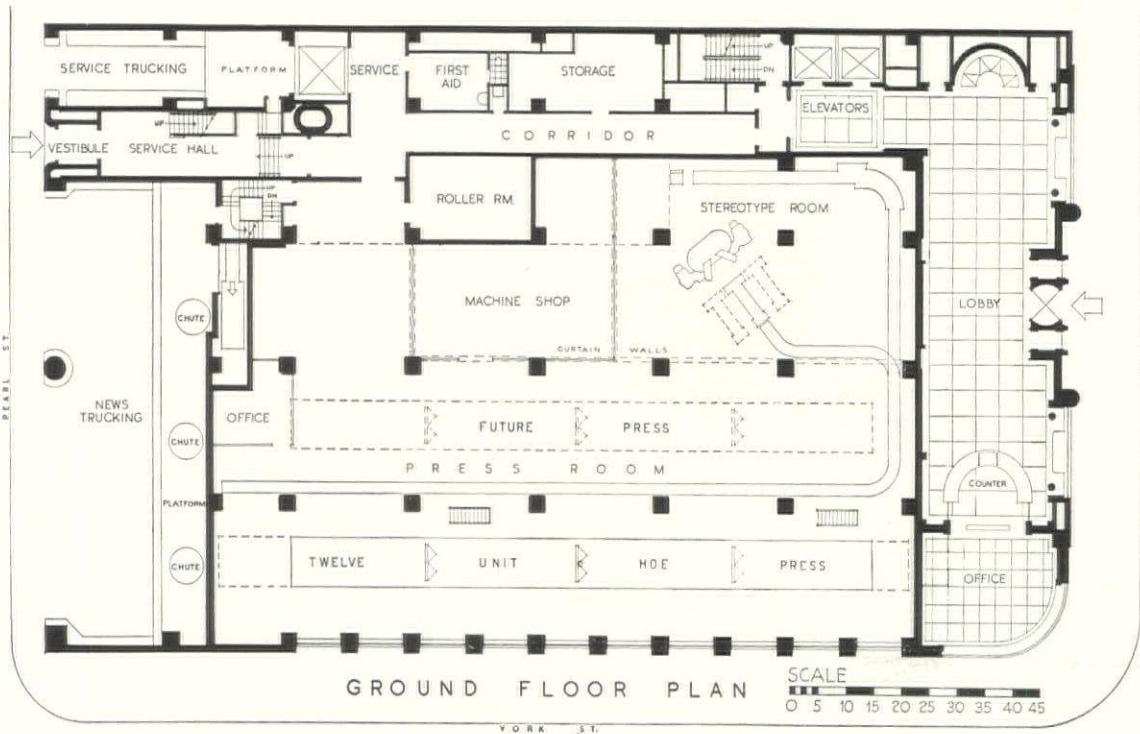
Pringle & Booth



ENTRANCE

RGB Studios

The close relationship between architectural developments in Canada and the U. S. is clearly illustrated by this plant for the Toronto "Globe and Mail." According to the requirements of the owners, "the building was to be primarily a factory for the production of a daily newspaper, but the site was prominent and a distinctive exterior was required. It was also desired that the treatment suggest its other function, that of a memorial to the late William H. Wright." In this unusual combination of requirements the key to the character of the building is to be found. A further stipulation was that large show windows be provided at street level to give passers-by a view of the presses and folding machines in operation. All of these functions have been admirably provided for, and are consistently expressed by the design. Of particular interest are the interiors, which again suggest the dual character of monumentality and factory efficiency.

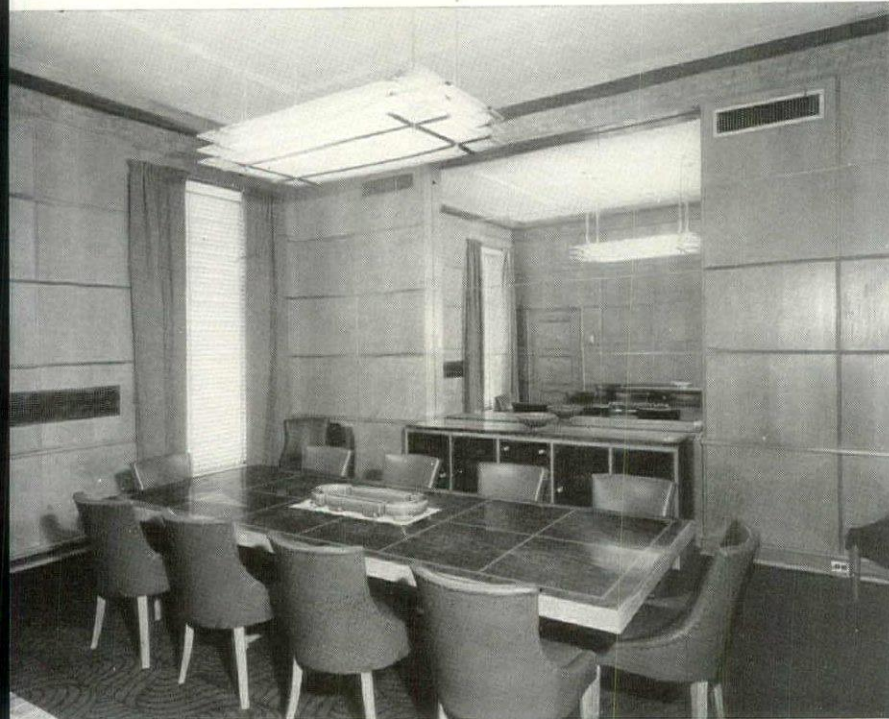


NEWSPAPER PLANT

THE WILLIAM H. WRIGHT BUILDING, MATHERS & HALDENBY, ARCHITECTS

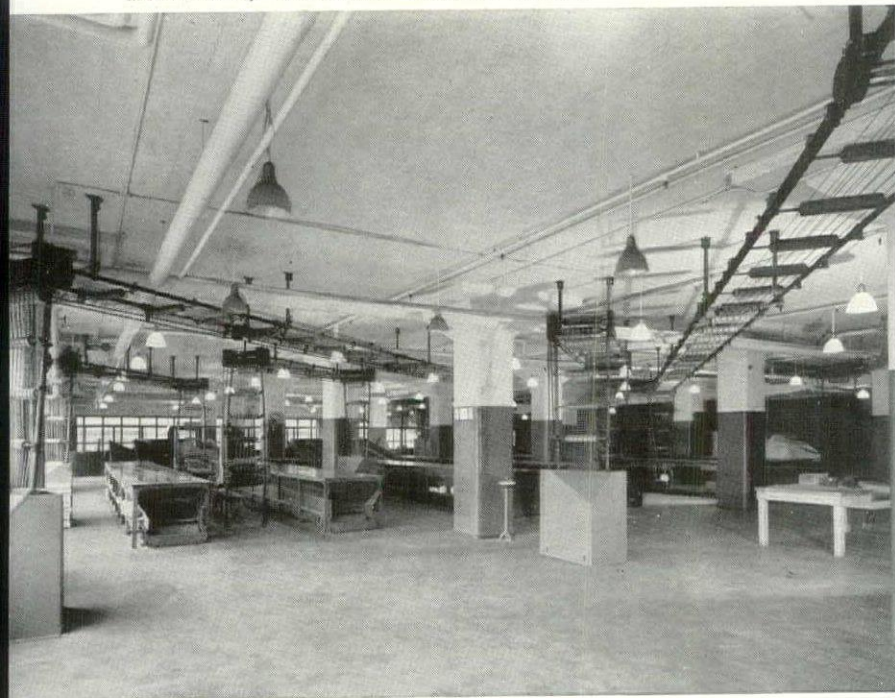
LOCKWOOD GREEN, INC., CONSULTING ENGINEERS

ANGLIN-NORCROSS CORP., GENERAL CONTRACTORS



DIRECTORS' DINING ROOM

MAILING; BELOW: PRESS ROOM



CONSTRUCTION OUTLINE

FOUNDATION: Footings—Reinforced concrete caissons to rock.

STRUCTURE: Exterior walls—Indiana limestone, Shawnee Stone Co. Backed with hollow tile, "Speedtile," Cooksville Brick Co. Columns—Reinforced concrete. Floor construction—Reinforced concrete flat slab throughout, unfinished, some parts suspended plaster ceilings.

ROOF: Reinforced concrete slab covered with Alexander Murray 20-year bonded felt pitch and gravel.

SHEET METAL WORK: Flashing—16 oz. copper, all lead covered where dripped over cut stone work. Ducts—Aluminum ducts used for ventilating system in engraving department. Galvanized iron elsewhere.

INSULATION: All exterior walls of executive offices and floor over loading space insulated with 2-inch Armstrong Cork Board, Armstrong Cork Co. Roofs—3-inch Armstrong compressed cork board. Broadcasting booth insulated by Johns-Manville.

WINDOWS: Sash—Henry Hope and Sons of Canada, Ltd.

STAIRS: Reinforced concrete with terrazzo finish; Norton Alundum aggregate in treads, Norton Co.

ELEVATORS: Two passenger, one freight, full automatic, signal controlled, Otis Elevator Co.

FLOORS: Cement mortar armored and hardened in paper storage, mailing floor and composing room, etc. Tile in all lavatories, washrooms and locker rooms. Jennison Wright strip wood block in press room. "Feralun" cast iron plate floors in stereotype foundries, American Abrasive Metal Co. Terrazzo in corridors.

FLOOR COVERINGS: Carpets in private executive offices. Linoleum in general business offices. Johns-Manville asphalt tile in all private offices and editorial department.

WALL COVERINGS: Natco glazed structural tile used for all walls and columns in press room, National Tile Co. Terra cotta tile for all walls in locker rooms, lavatories, etc. Walnut paneling in executive offices.

WOODWORK AND SPECIAL TRIM: Trim—Integral steel door frames and trim. Steel coved base generally. Interior Doors—Generally slab veneered birch. Garage doors: Richards-Wilcox Burvet, Richards-Wilcox Mfg. Co.

HARDWARE: Nicklene finish, Yale and Towne Mfg. Co.

PAINTING: Interior walls and ceilings—Flintflex. Trim and sash—Dulux Enamel, all by Canadian Industries Ltd.

ELECTRICAL INSTALLATION: Wiring system—Rigid conduit. Fixtures—Holophane, Holophane Co.; Curtis Lighting Co.; Duplexlite, The Miller Co. Special Equipment—Westinghouse "Nofuz" distribution panels throughout, Westinghouse Electric and Mfg. Co. Main switchboard, including press controls by I. T. E. Circuit Breaker Co. Press drives by General Electric Co.

PLUMBING: Fixtures—Crane Co. and Standard Sanitary and Mfg. Co. Soil pipes and vents—Extra heavy cast iron by Page-Hersey. Water pipes—Seamless drawn brass tubing, Anaconda, American Brass Co. Pumps by Darling Bros., Montreal. Kitchen Equipment by Wrought Iron Range Co. and Sheet Metal Products, Ltd.

HEATING: Webster sub-atmospheric, Warren Webster Co. Radiators—Gurney cast iron, National Radiator Co. Valves for radiators—Warren Webster Co. Others—Jenkins Valve Co.; Crane Co. and McAvitty. Thermostats—Powers Regulator Co. Boiler—Spencer Heater Co.

AIR CONDITIONING: Complete system, zoned, providing humidification and cooling by water coils. Each floor zoned for individual exposure. Radiation supplies 60 per cent of heat, balance provided by the air conditioning system. Wilson "Spiderweb" filters. Fans and air washers, B. F. Sturtevant Co. Motors, Westinghouse Electric and Mfg. Co. Registers and grilles—Hart and Cooley.

SPECIAL EQUIPMENT: Lamson pneumatic tube system to all departments, Lamson Co.

GLASS

again asserts itself as an architectural and decorative medium: Jury selects the winning entries in the second annual Pittsburgh Glass Institute Competition.



Martin Harris
JURORS: DAILEY, MACALISTER, LOEWY, KIMBEL, LESCAZE, KAHN

REPORT OF THE JURY

The jury met at 10 A.M. on November 15 in New York. Members of the Jury were: Gardner Dailey, Albert Kahn, William Kimbel, William Lescaze, Raymond Loewy, and Paul MacAlister. Alfred Shaw, who was ill, was absent and excused.

The Competition Adviser, Howard Myers, editor of *THE ARCHITECTURAL FORUM*, reported that 503 entries were received, ten of which were disqualified for failure to comply with the program.

The program established five major classes of work: Residential, Commercial, Industrial, Public, and General. These classes were subdivided into thirteen categories.

Examination was first made by each Juror of all the entries, in order to acquaint himself with the general scope of the competition. Then the Jury as a whole again examined all the entries, with criticisms and comments made informally. The purpose of the competition was stated in the program and was frequently referred to by the Jurors: to find "new solutions of contemporary problems in architecture and related fields which present distinguished uses of glass."

The Jury, after discussion, agreed that as they understood it to be their duty, prizes should be awarded not so much on the basis of the quantity and size of glass used, but rather on the basis of quality of design, as shown by intelligent and distinguished use of glass.

The Jury regretted that no entries which complied with

the Jury's interpretation of the program had been made in the classifications of Theaters and Public Buildings, and further, that the sections on Hotels, Industrial Buildings, and Institutional Buildings did not bring forth a larger number of interesting entries.

The Jury devoted the first three hours on November 15 to examination of all entries in four of the classes, omitting Residential, and retained those entries in the various subdivisions which seemed worthy of further consideration. These were reviewed in the afternoon, and eight prizes and three mentions were awarded in the ten subdivisions of these groups.

On November 16 the entries in the Residential category were examined. After discussion of the numerous entries in the three sections of this group several votes were taken in order to arrive at the final selections. In most cases either a unanimous vote or an overwhelming majority was obtained. In the three categories of Residential Building three prizes and six mentions were awarded.

After making the awards in this class the Jury re-examined the entries in the other four classes and felt that two more mentions could be added to those given on the preceding day. In the afternoon, examination was limited to all the first prizes in order to choose the grand prize.

WILLIAM LESCAZE, Chairman

Comments on the following pages indicated by quotation marks are by the Jury.

AWARDS

RESIDENTIAL

Houses over \$12,000

GRAND PRIZE: Edward D. Stone, Carl Koch, Jr., Associated Architects, New York City, for residence of Mr. and Mrs. A. C. Koch, Cambridge, Massachusetts.

PRIZE: Edward D. Stone, Carl Koch, Jr., Associated Architects, New York City.

MENTION: Kenneth Day, Architect, Philadelphia, for own residence in Miquon, Pennsylvania.

MENTION: Richard J. Neutra, Architect, P. Pfisterer, Collaborator, Los Angeles, for residence of Mr. and Mrs. Edward Kaufman, Westwood, California.

Houses under \$12,000

PRIZE: Harwell Hamilton Harris, Carl Anderson, Associated Designers, Los Angeles, for residence of George C. Bauer, Glendale, California.

MENTION: Clarence W. W. Mayhew, Architect, Oakland, California, for residence of Harold V. Manor, Orinda, California.

MENTION: George Patton Simonds, Architect, Hayward, California, for residence of Mr. and Mrs. William Roger Stoll, Hayward, California.

DOMESTIC INTERIORS

PRIZE: J. R. Davidson, Designer, West Los Angeles, for the Stothart residence, Santa Monica.

MENTION: Gregory Ain, George Agron, Designers, Los Angeles, for residence of Mr. and Mrs. Sidney Brown, Los Angeles.

MENTION: Robert Hiden, Designer, Los Angeles, for bachelor apartment.

COMMERCIAL

Shops two stories or under

PRIZE: George Howe, Architect, Philadelphia, for the Evening Bulletin Building, Philadelphia.

MENTION: Clarice Saymon, Designer, New York, for Marty's Beauty Center, Rockville Center, New York.

Stores three stories or over

PRIZE: Nimmons, Carr & Wright, Architects, Chicago, for Sears, Roebuck Building, Baltimore, Maryland.

COMMERCIAL INTERIORS

PRIZE: Walker and Gillette, Architects, New York City, for glass doors at 40 Wall Street, New York.

MENTION: J. H. Pickering of Amos Parrish and Company, Inc., Designer, New York City, for Amos Parrish and Company, Inc. offices.

MENTION: J. R. Davidson, Designer, West Los Angeles, for Sardi's Restaurant, Hollywood.

HOTELS

PRIZE: Harbin F. Hunter, Architect, Los Angeles, for Lindy's Restaurant, Los Angeles.

INDUSTRIAL

PRIZE: Albert J. Daniels, Engineer, Shrewsbury, Massachusetts, for W. H. Nichols Building, Waltham, Massachusetts.

EDUCATIONAL

PRIZE: Alfred Kastner, Architect, Washington, D. C., for School and Community building, Jersey Homesteads, Hightstown, New Jersey.

MENTION: Richard J. Neutra, Architect, Los Angeles, for Ralph Waldo Emerson Junior High School classroom, Los Angeles.

INSTITUTIONAL

PRIZE: Victorine and Samuel Homsey, Architects, Wilmington, Delaware, for Children's Beach House, Lewes, Delaware.

GENERAL

PRIZE: Reinhard and Hofmeister, Architects, New York City, for entrance doors to Rockefeller Center branch of Chase National Bank.

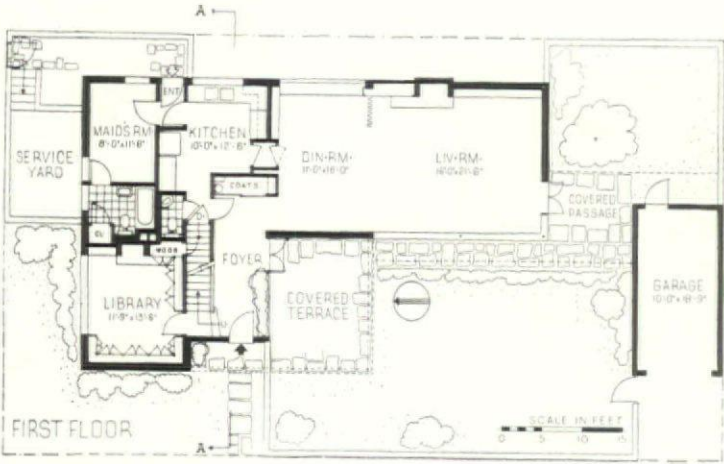
MENTION: Gustav Jensen, Designer, New York City, for all-glass table executed by Harriton Carved Glass Co.

GRAND PRIZE

GRAND PRIZE HOUSES OVER \$12,000: EDWARD D. STONE, CARL KOCH, Jr., ASSOCIATED ARCHITECTS, NEW YORK CITY



GRAND PRIZE and PRIZE HOUSES OVER \$12,000: EDWARD D.STONE, CARL KOCH, JR., ASSOCIATED ARCHITECTS

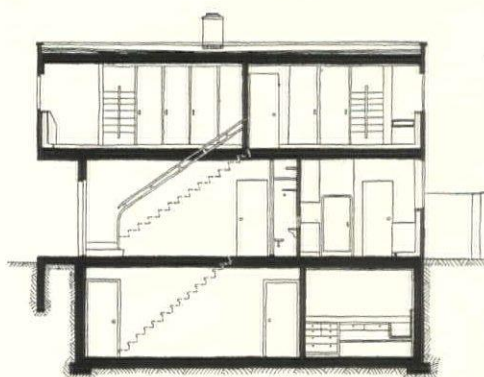


HOUSE FOR A. C. KOCH, CAMBRIDGE, MASS.





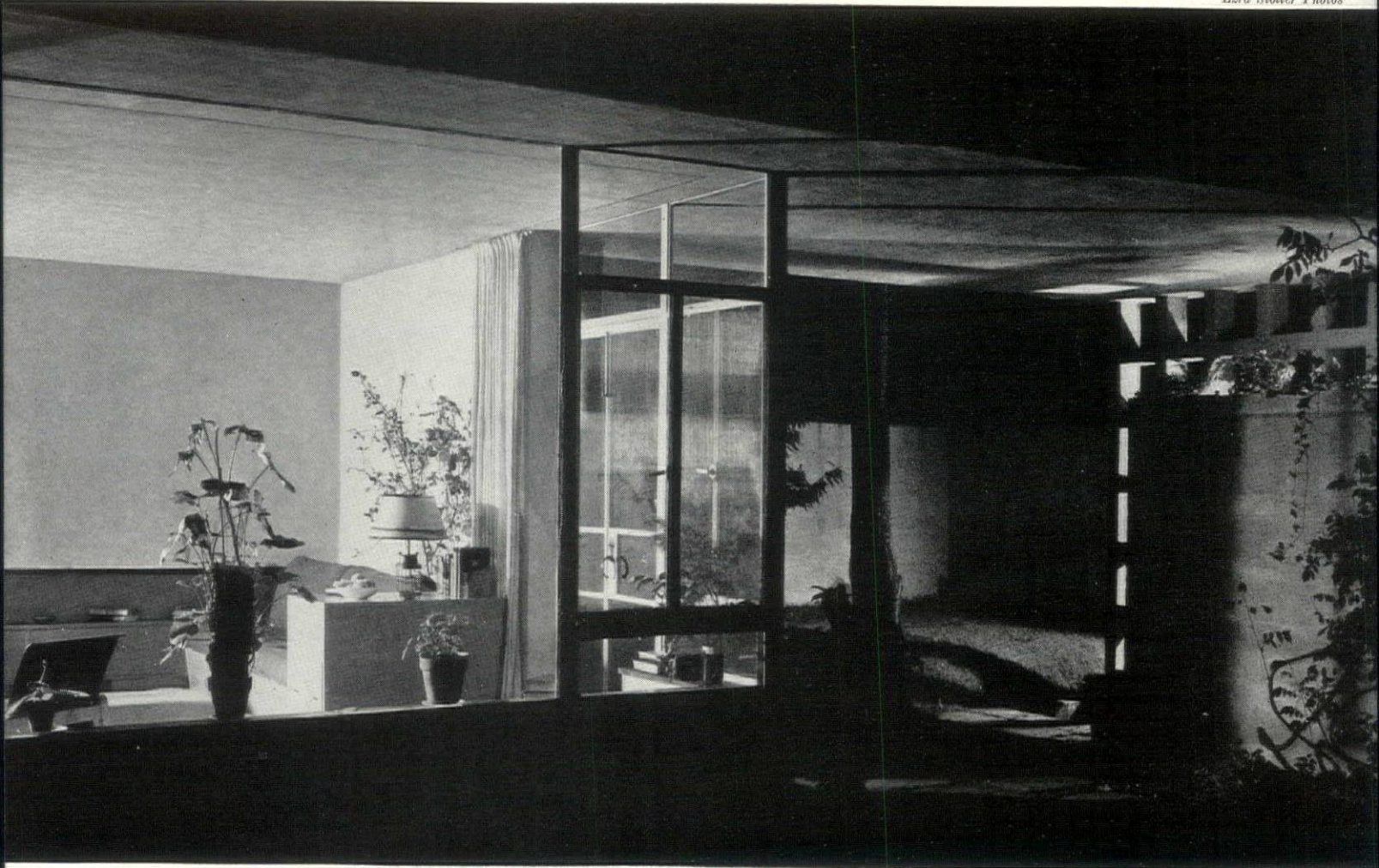
COVERED TERRACE



SECTION "A-A"

LIVING ROOM SEEN FROM GARDEN

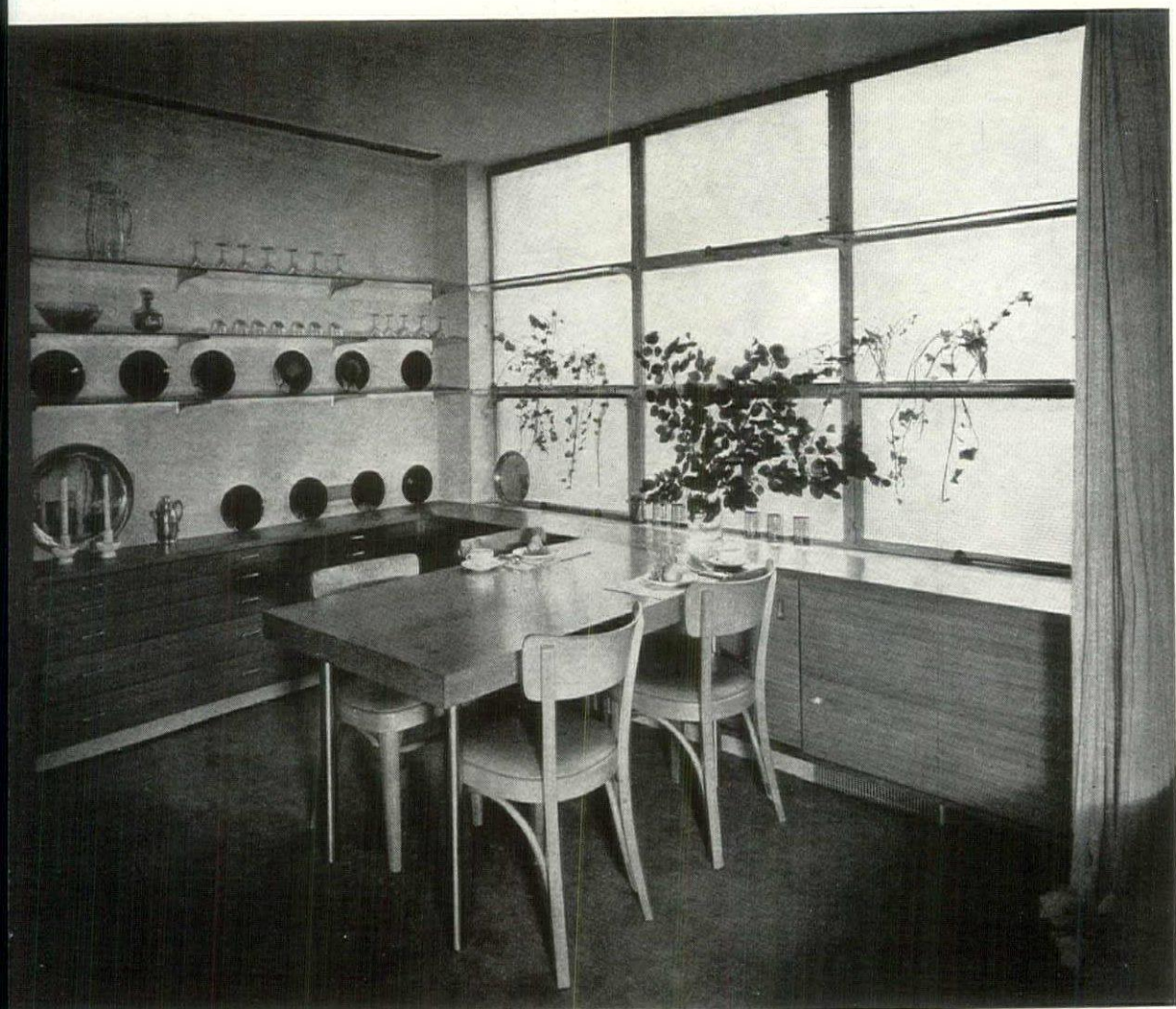
Esra Stoller Photos



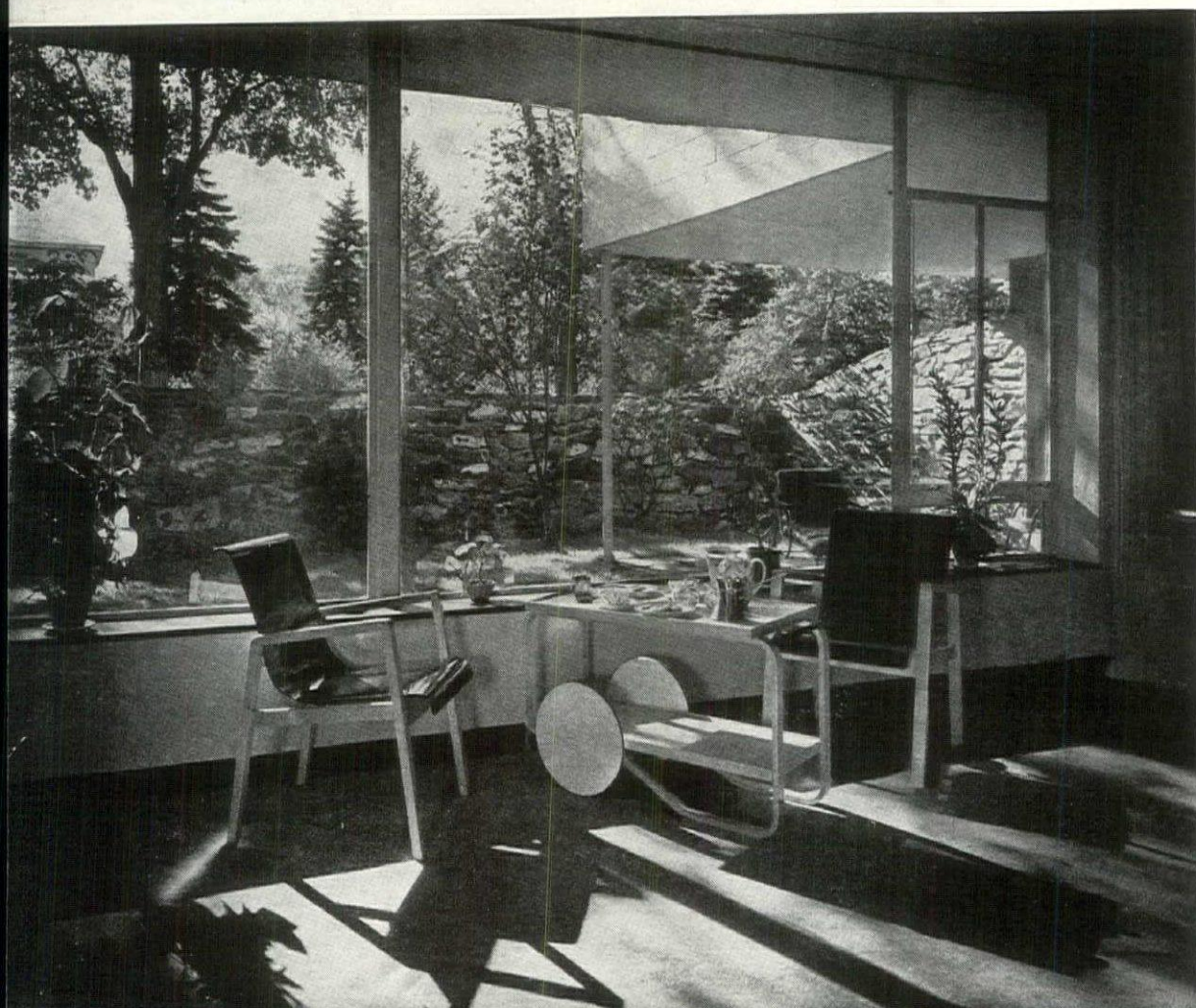
"Portrays in one house practically all of the possibilities of glass, using both the clear and translucent materials, and using it in stationary areas and mobile parts. Ventilating sections well placed, most of them under shelter. Commendable is the use of translucent

glass where there are plants, as well as the problem of screening off the house next door. There has been no attempt to use glass where it was not necessary. For instance, privacy has been maintained on the street side of the house by a minimum of windows."

**GRAND PRIZE and PRIZE HOUSES OVER \$12,000: EDWARD D. STONE, CARL KOCH, Jr
ASSOCIATED ARCHITECTS**



**DINING
ROOM**



**LIVING
ROOM**



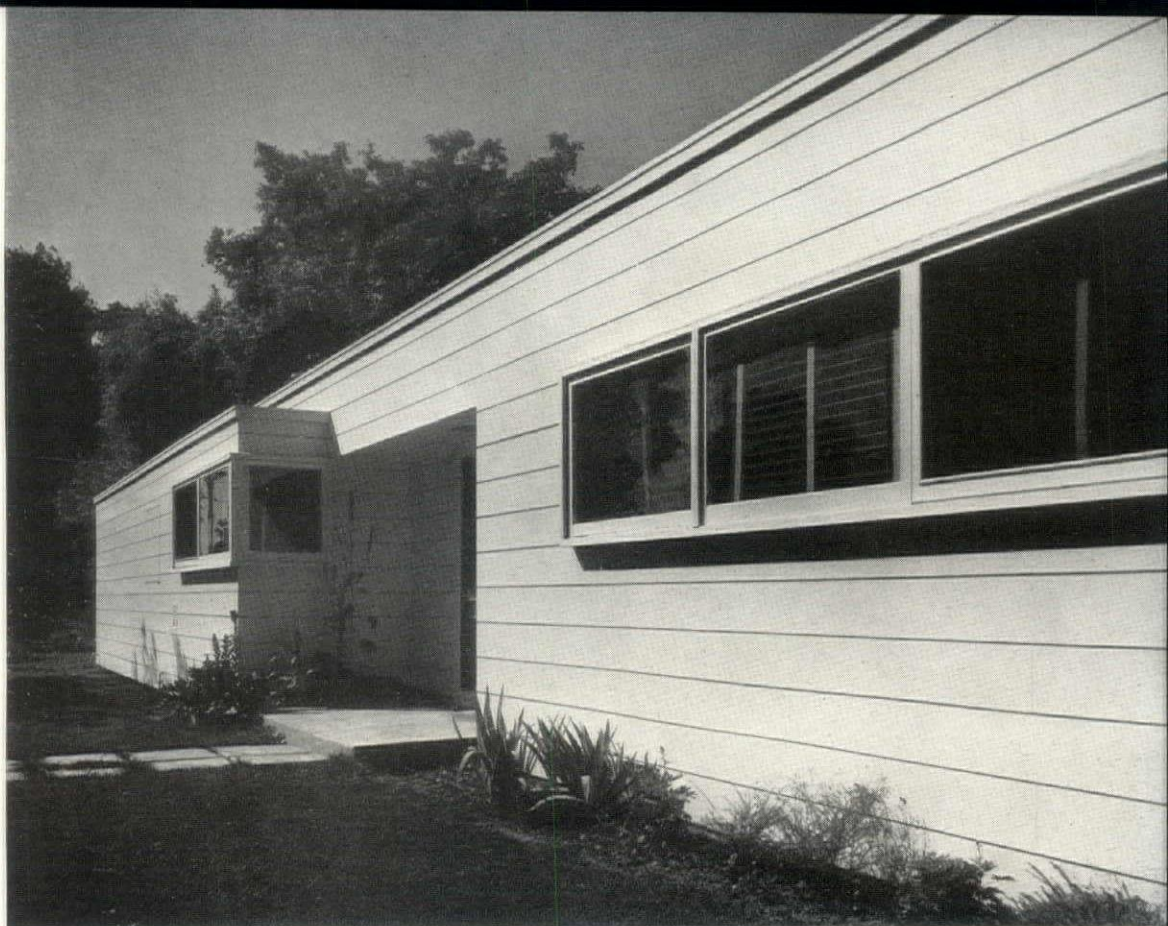
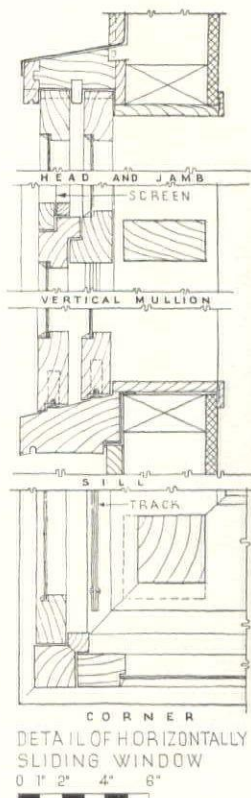
SIZE HOUSES UNDER \$12,000: HARWELL HAMILTON HARRIS, CARL ANDERSON, ASSOCIATED DESIGNERS, LOS ANGELES

"An excellent use of glass on the living side of the house. Particularly suitable for a temperate climate. This is a good solution of a problem which requires little private life and much outdoor living in a small house."



MENTION HOUSES UNDER \$12,000: CLARENCE W. W. MAYHEW, ARCHITECT, OAKLAND, CALIFORNIA

A highly imaginative design for living. A winter garden, sheltered patio, and living room are given the most varied possibilities of use by means of large sliding doors. The three units can be used separately or thrown together with the greatest of ease: an excellent demonstration of the high degree of flexibility made possible by the modern approach to planning.



MENTION HOUSES UNDER \$12,000:

GEORGE PATTON SIMONDS, ARCHITECT, HAYWARD, CALIFORNIA

The complete absence of decoration emphasizes the window treatment, and gives this small one-story house a good feeling of scale. The slight projection given the windows is not only of visual interest, but provides a useful shelf on the interior.



Fred Dapprich

MENTION DOMESTIC INTERIORS:

GREGORY AIN, GEORGE AGRON, DESIGNERS, LOS ANGELES

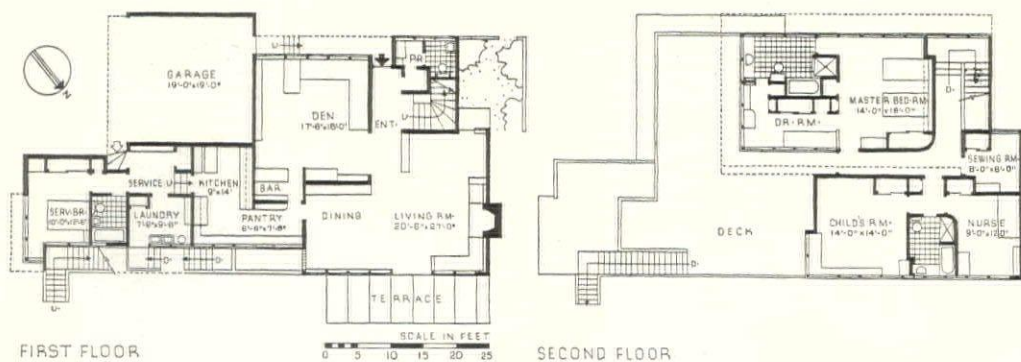
The use of glass to open a room to the view has been carried to the limit in the bedroom, where a window extends from floor to ceiling and from wall to wall. A large picture window extends similar advantages to the sitting room.



Robert M. Damora

MENTION HOUSES OVER \$12,000: KENNETH DAY, ARCHITECT, PHILADELPHIA

The difficulties frequently presented by the combined use of glass block and clear glass have been solved with a minimum of effort. The block is used where light is needed but not visibility; the windows give an adequate view from any part of the room. Curtains provide a simple means of controlling light intensity.



MENTION HOUSES OVER \$12,000: RICHARD J. NEUTRA, ARCHITECT,
PETER PFISTERER, COLLABORATOR, LOS ANGELES

The consistent use of window and wall has produced an exterior of the utmost simplicity and clarity. Metal casements without muntin bars provide ample light for rooms within, and create a pleasing rhythm on the outside of the house. A small amount of glass block has been used to cut off the view from one room into the room adjoining.



PRIZE DOMESTIC INTERIORS: J. R. DAVIDSON, DESIGNER, WEST LOS ANGELES

Ludwig

"Particularly effective use of opaque glass as a decorative and utilitarian screen. It separates but does not absolutely divide—one of the best uses of glass."



MENTION DOMESTIC INTERIORS: ROBERT HIDEN, DESIGNER, LOS ANGELES

The conventional mirror over the fireplace has been here extended to form the entire wall of the room. The complete simplicity of the installation ensures its effectiveness.



Gottseho

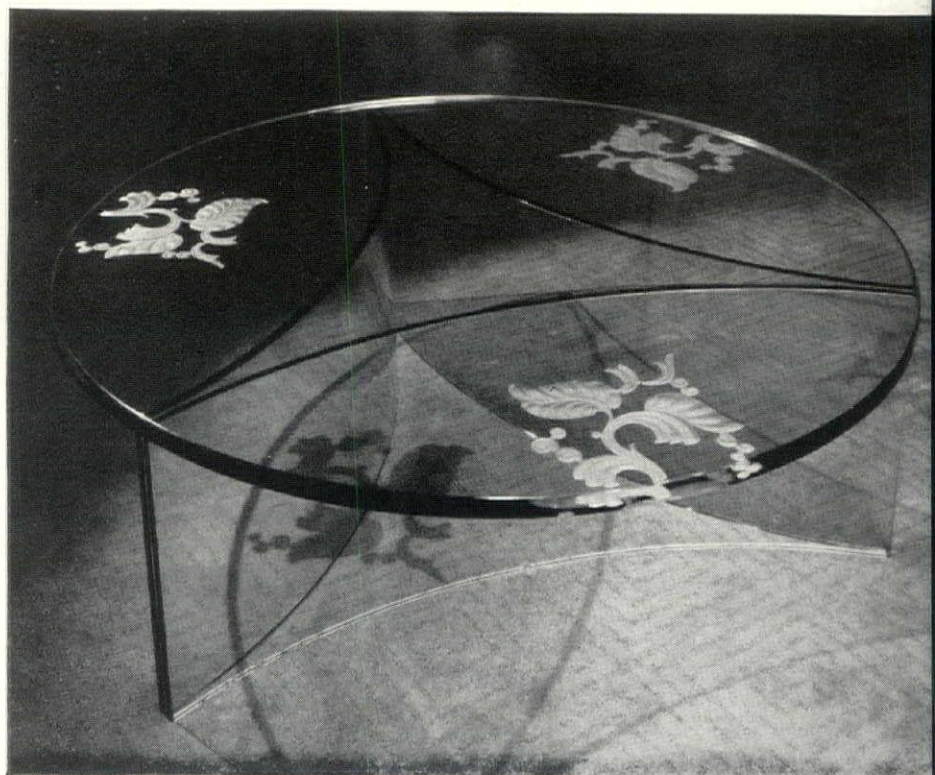
PRIZE GENERAL: REINHARD AND HOFMEISTER, ARCHITECTS, NEW YORK CITY

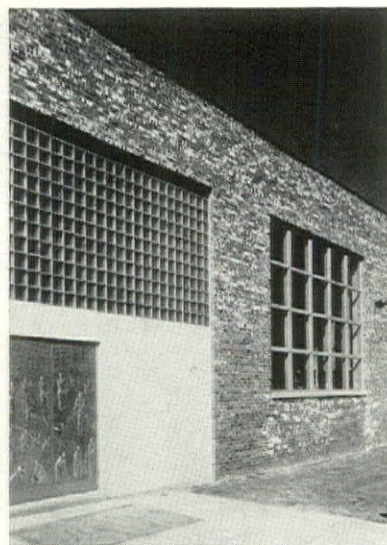
"Takes advantage of the decorative and translucent properties of glass used in contrast with other materials—in this case white metal."

For complete presentation of Rockefeller Center Branch of Chase National Bank, New York City, see Architectural Forum, Feb. 1938, page 149.

MENTION GENERAL: GUSTAV JENSEN, DESIGNER, NEW YORK CITY

Glass is often badly used when applied to furniture. This table is a good example of sound construction and appropriate decoration.



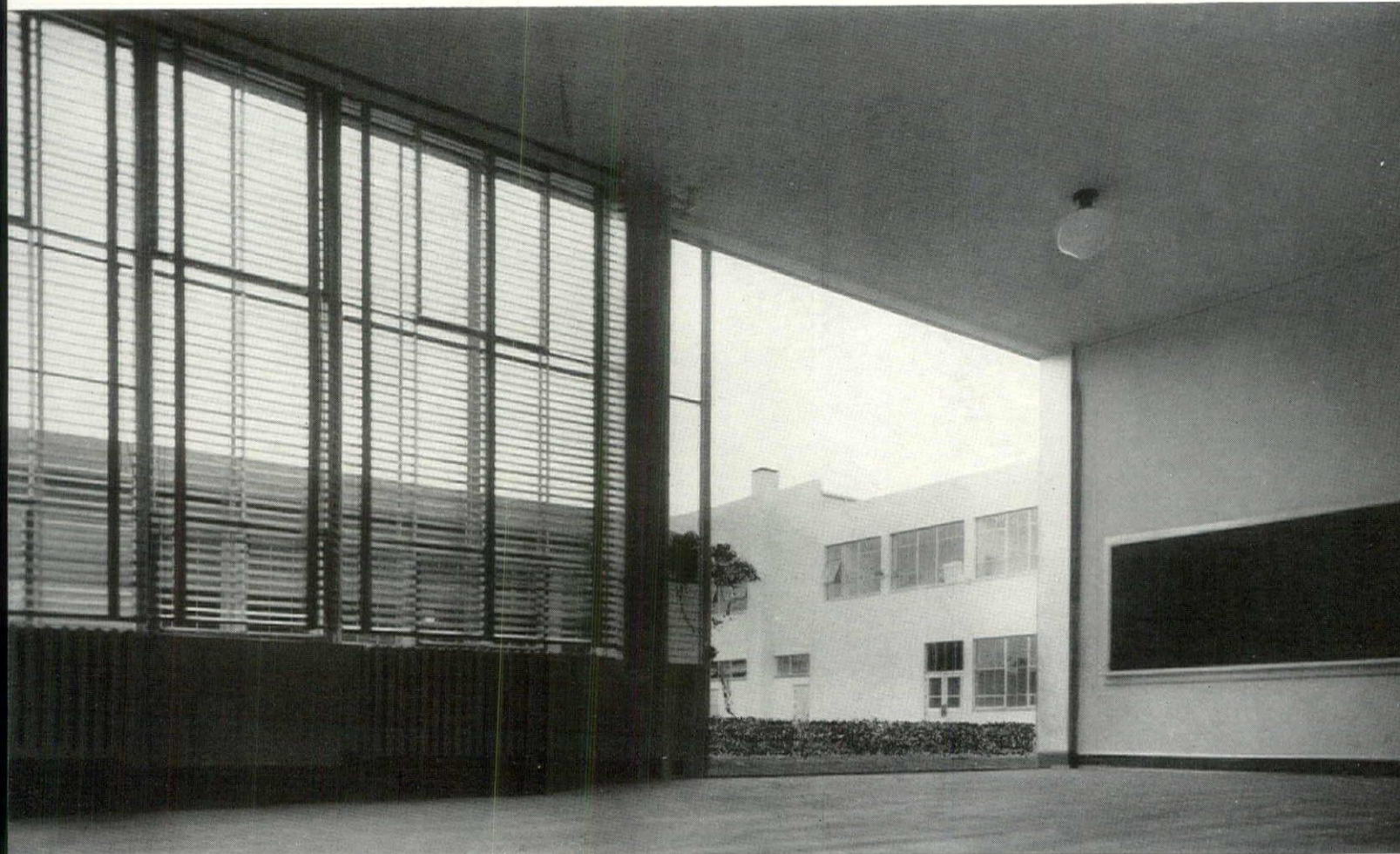


Robert M. Damora Photos

PRIZE EDUCATIONAL: ALFRED KASTNER, ARCHITECT, WASHINGTON, D. C.

"Working within the restrictions of a limited budget, the architect managed to create a feeling of space through the use of glass. Interior glass screens made more easy the problem of supervision, increased light and helped in the isolation of undesirable sounds."

For complete presentation of School and Community Building, Jersey Home-steads, Hightstown, N. J. see Architectural Forum, March 1938, page 227.



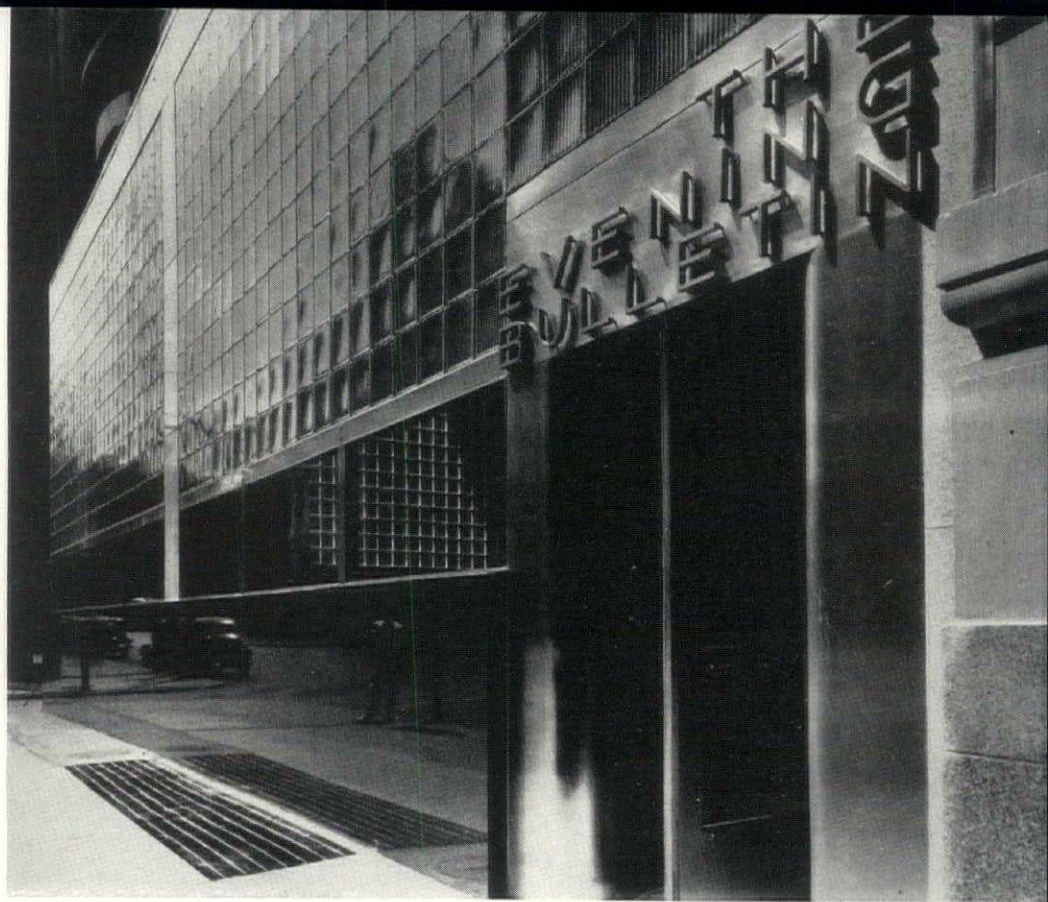
MENTION EDUCATIONAL: RICHARD J. NEUTRA, ARCHITECT, LOS ANGELES

Excellent illustration of the new trend in school design. Large window areas and a sliding door of metal and glass provide not only excellent

illumination, but make possible a close relationship between indoor and outdoor educational activities.

PRIZE SHOPS two stories or under:
 GEORGE HOWE, ARCHITECT, PHILA.

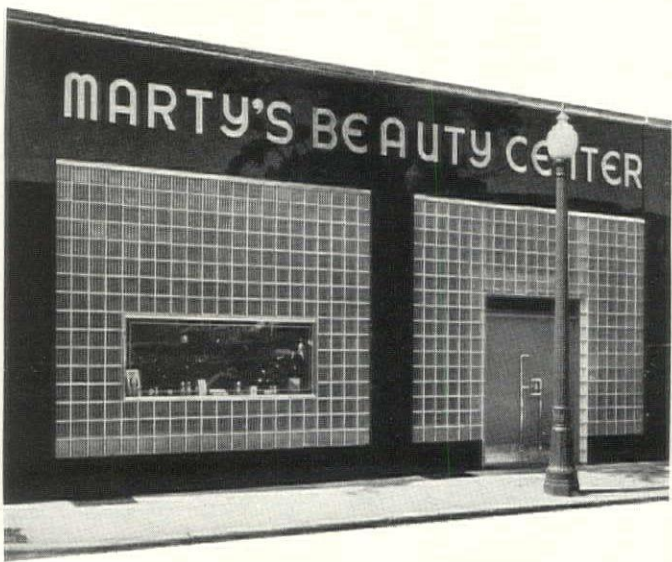
"From the point of view of the requirements of the problem, this is an effective dramatization obtained by the combined use of different kinds of glass. Has the double function of giving light by day and advertising by night."



Schnall

MENTION SHOPS two stories or under:
 CLARICE SAYMON, DESIGNER, N. Y. C.

Of interest as an all-glass facade, with opaque glass facing, glass lettering, glass block, and small show window.



Dria Duryea

MENTION COMMERCIAL INTERIORS:
 J. H. PICKERING, DESIGNER OF
 AMOS PARRISH CO. INC., NEW YORK CITY

Good use of glass block for partitions, where it is important to transmit a maximum of daylight to the interior spaces. The mirror gives spaciousness to a restricted area.





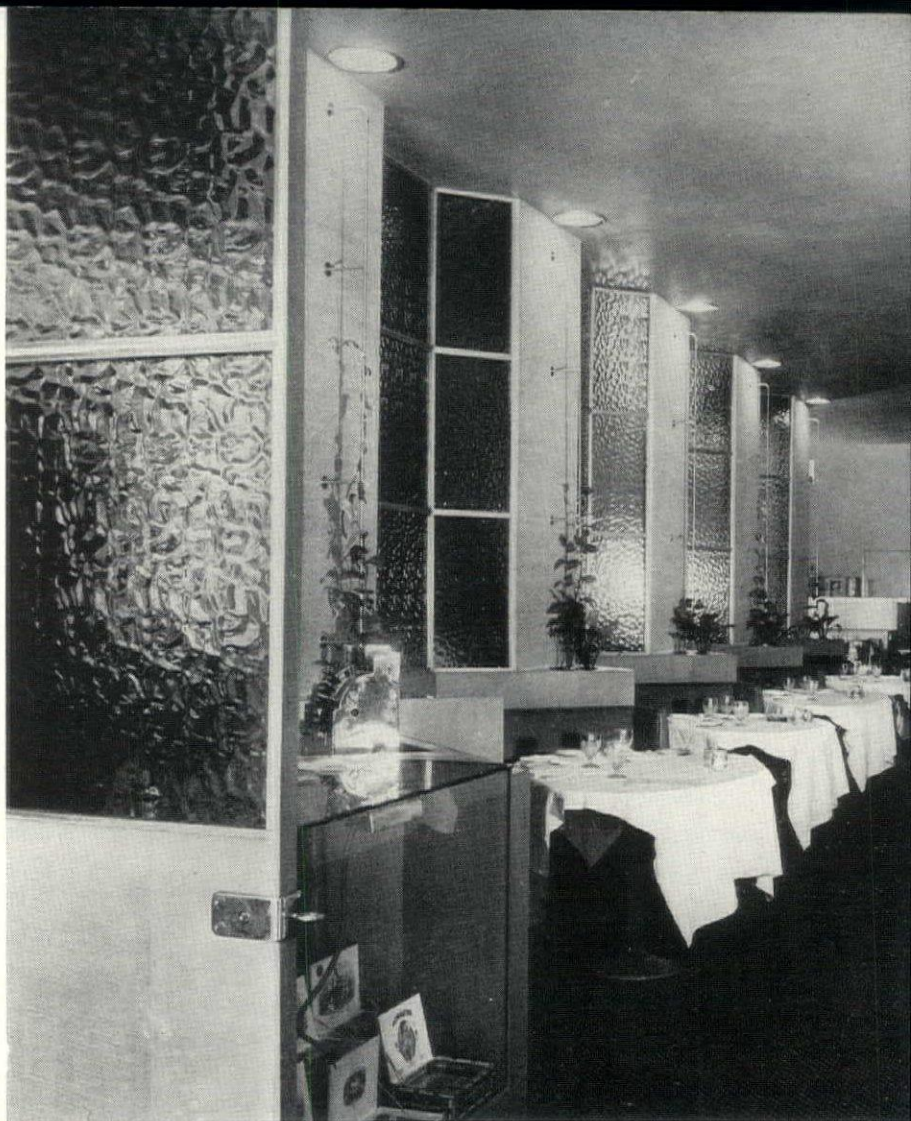
PRIZE STORES three stories or over: NIMMONS, CARR, AND WRIGHT, ARCHITECTS, CHICAGO

"For commercial purposes, this is an effective and unusual show window which, by its large scale, is arresting. It acts as a show window for the building itself as well as for merchandise."

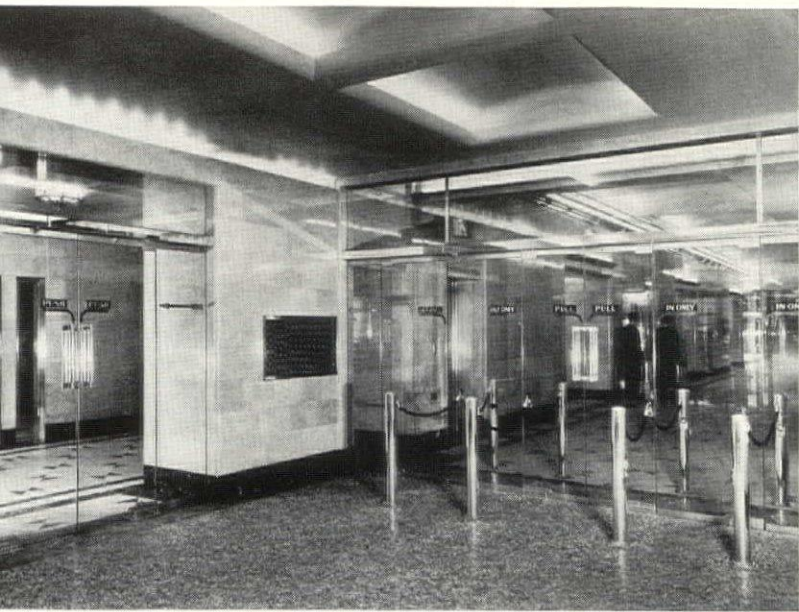
MENTION COMMERCIAL INTERIORS:

J. R. DAVIDSON, DESIGNER, WEST LOS ANGELES

An unusual installation of a highly textured glass. As used, the glass panels are a highly decorative element, suitable for use as part of the lighting scheme of the room.



Shulman



PRIZE COMMERCIAL INTERIORS:

WALKER & GILLETTE, ARCHITECTS, NEW YORK CITY

"Intelligent use of a recently developed material (shock-resisting glass). Particularly well treated here because of the additional use of the electric eye, which makes touching of the door unnecessary. Gives good visibility for people going in and out, and thus accelerates flow of traffic. Particularly suitable for interiors which receive only little daylight."

For complete presentation of Glass Doors at 40 Wall Street, New York City, see Architectural Forum, Feb. 1938, page 70.

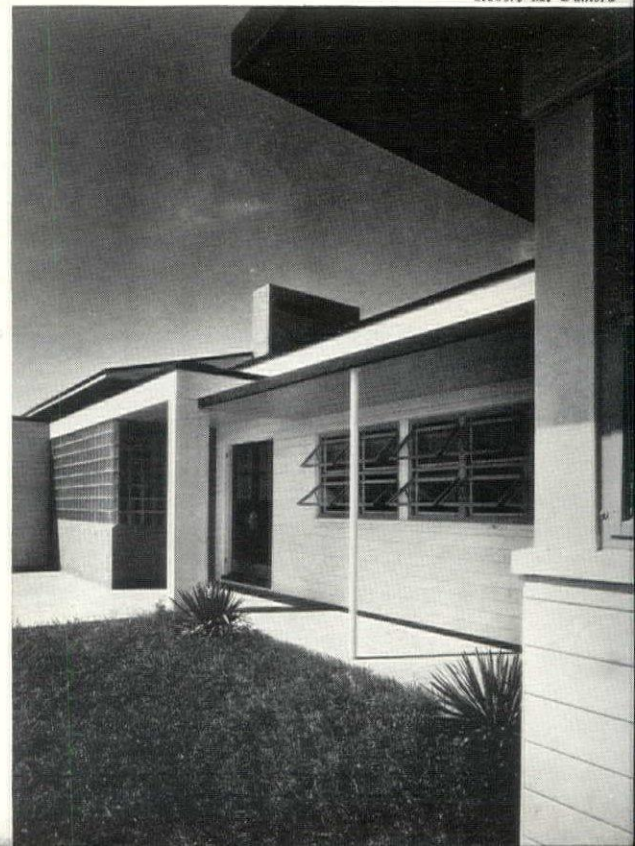
PRIZE INSTITUTIONAL:

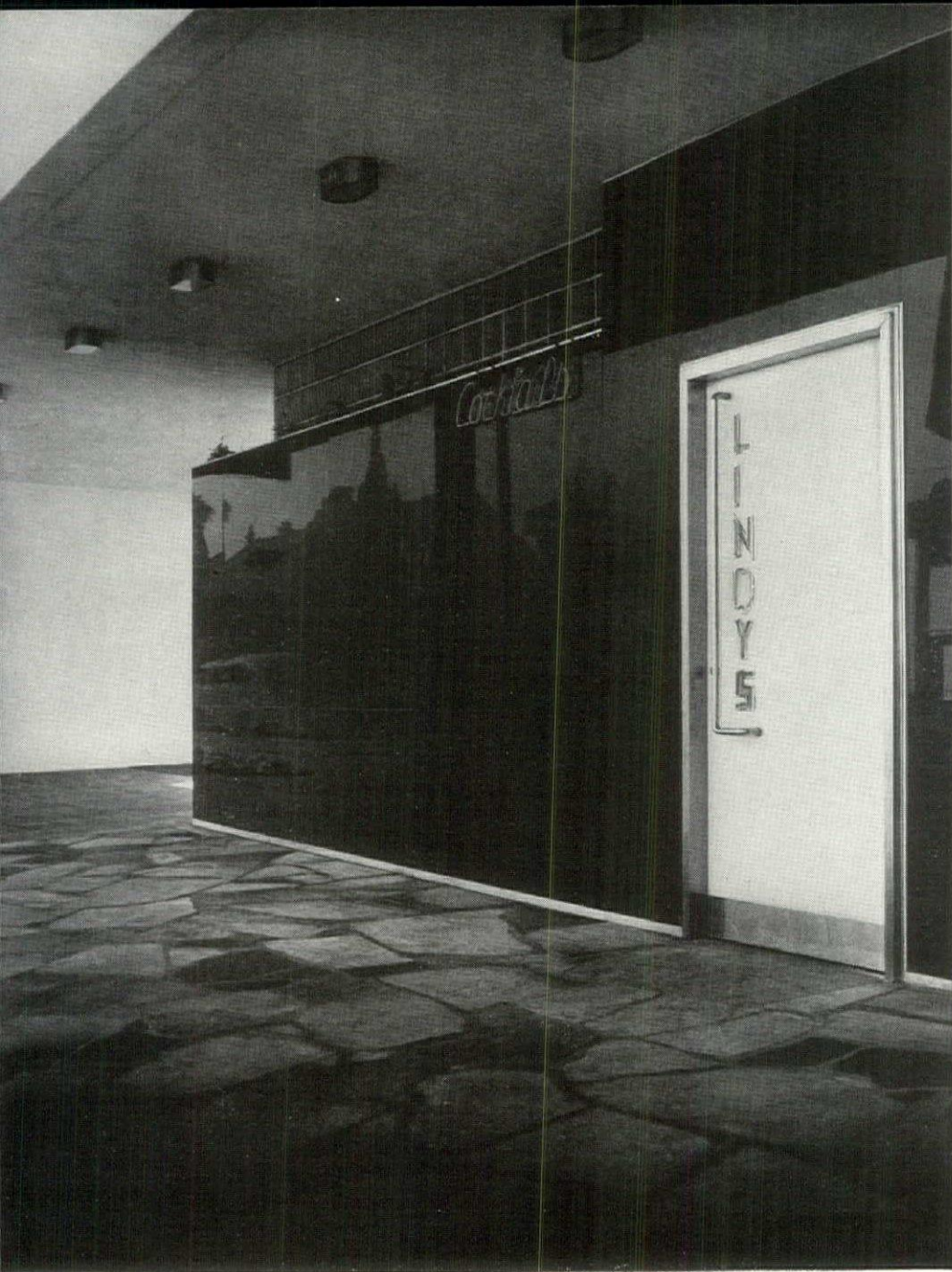
VICTORINE AND SAMUEL HOMSEY, ARCHITECTS,
WILMINGTON, DEL.

"Architectural pivoted sash particularly good for controlling ventilation in a room where there are children. Very judicious use of materials, such as brick, glass block, etc."

For complete presentation of Children's Beach House, Lewes, Del., see Architectural Forum, Oct. 1938, page 248.

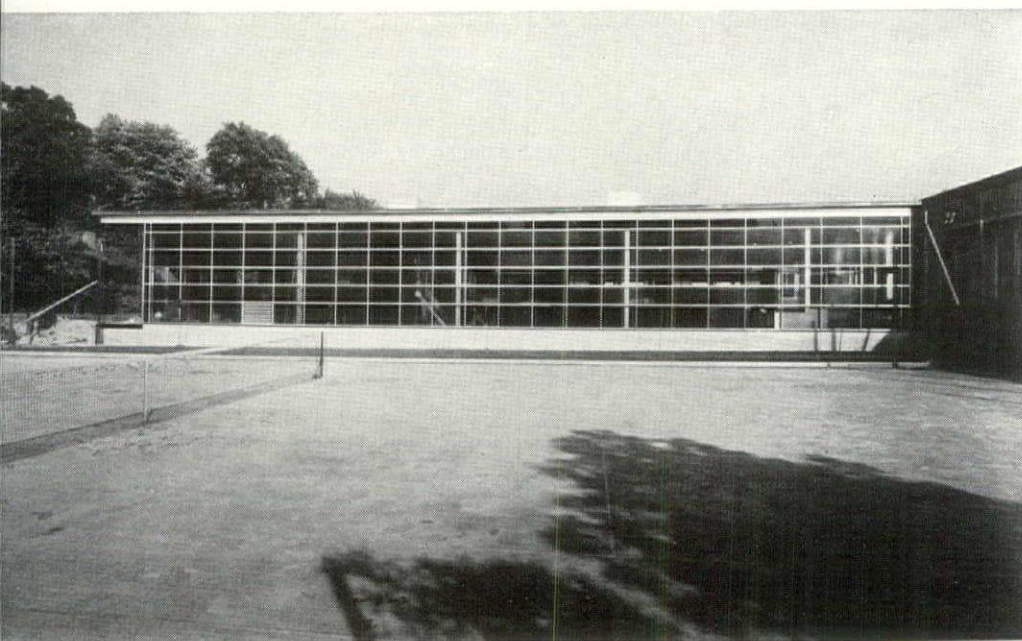
Robert M. Damore





PRIZE HOTELS: HARBIN F. HUNTER,
ARCHITECT, LOS ANGELES

"Arresting use of glass for commercial purposes. Effective through its boldness and simplicity."



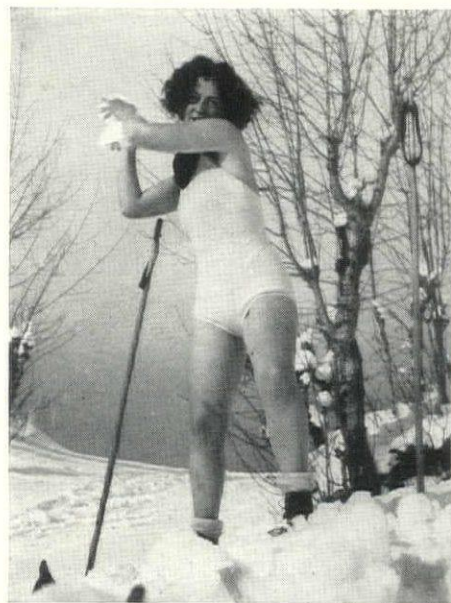
PRIZE INDUSTRIAL: ALBERT J. DANIELS,
ENGINEER, SHREWSBURY, MASS.

"Glass used as a non-bearing material free of the structural members. A commendable way of alternating translucent and clear glass. A fresh and direct approach."

For complete presentation of W. H. Nichols Building, Waltham, Mass., see Architectural Forum, March 1938, page 205.

PRODUCTS AND PRACTICE

The attractive young woman at the right is not a "snow bird" nor any sort of faddist, but merely a perfectly normal person who is quite comfortable in her bathing suit despite the snow and a thermometer below freezing. She is kept so by radiant heat, reaching her both by way of the sun's direct rays and by reflection from the snow-covered ground; a condition which often occurs at several points in Europe and in our own Sun Valley, Idaho. This principle is the basis of a new type of heating used extensively in England, France, and Germany, and increasingly in the United States, where it has been applied in reverse for cooling as well. The various systems of heating are described in detail in the article below.



Feher-Black Star

RADIANT HEATING

Architects, and even some heating engineers, are prone to shy away from the subject of radiant heating on the ground that it is hard to understand. Actually, the chief difference between radiant and convection heating is absurdly simple: in convection heating the effort is to warm the walls of a room by warming the air; in radiant heating the air is warmed by warming the walls. Thus in a room heated by convection, the air is always warmer than the average temperature of the walls, floor, and ceiling, while in a radiant-heated room this average is always higher than the air temperature.

The only aspect of the subject hard at first to grasp is the further *physiological* effect which this difference has on those within the heated space. Stated most simply, one can be comfortable in cooler air if a room has warm walls. This is due to the fact that part of the heat lost by the body is in the form of *radiant heat*, which flows from the skin and clothing to any cold surface regardless of air temperature. This principle is well illustrated in rooms heated in the ordinary way. To be comfortable in an uninsulated steel garage, with walls below 50° F. in zero weather, the air would have to be heated to about 85°, while in a well insulated structure, with the walls at 67° or better, air at 70° would suffice. Radiant heating merely carries this one step further, and produces comfort with 70° walls and 65° air.

All of this can be put another way by saying that a person in a radiant-heated room is warmed primarily by radiation (heat that "jumps" from the walls to the body without warming the air between) rather than primarily by convection (heat absorbed from the air). This definition is inaccurate in that the body, as a heat producing machine, does not ordinarily *absorb* heat from the environment in any form, but rather *gives off* heat in varying quantities and in various ways. It contributes to an understanding of the subject, however, because of the fact that often—and particularly at times when we are likely to be most conscious of the heating method—we absorb some heat in one way and give off heat in another. Thus we absorb some radiant heat from an open fire or red-hot stove, and radiate another quantity—usually more—to our other surroundings.

It is common to think of radiant heating as a departure from traditional methods, but this is only true in a limited sense. Actually, direct radiation was the basis of the excellent heating system employed by the Romans in Britain and Germany, of the open fire and fireplace of medieval times, of the tile stoves used so exten-

sively in Central Europe, of all forms of heating, in fact, up to the invention of the Franklin Stove in 1742, and the furnace in 1835.

This would be of little significance, however, were there not strong indications that a return to radiant heating under modern conditions promises important advantages. Briefly, radiant heating is said to be both better and cheaper than convection heating. More specifically, its advantages are listed under three headings: architectural, physiological and economic. Its architectural advantages include the fact that it does not mar or interfere with decorations, takes little or no space, may be so arranged as to make alterations an exceedingly simple matter, and easily solves otherwise difficult heating problems arising from frequently used entrances, high rooms, and large glass areas. Its physiological claims embrace both comfort and health: comfort because of more uniform air and radiant temperatures throughout the heated space, a greater comfortable range of bodily activity under a given set of conditions, absence from drafts, and easier ventilation; health because of the reduced contrast between indoor and outdoor air temperatures, higher humidities more easily maintained, and cooler and cleaner air for breathing. Economically, it is said to save up to one-third on fuel, and in some cases to reduce the first cost of the heating plant.

With these formidable claims the surprising thing is that it is not more in use at the present time. For while it is no longer true that one can count the American installations on the fingers of both hands, the total since the completion of the much-publicized British Embassy in 1929 is still small indeed when compared with other types.

For this several reasons are commonly cited. Most commonplace is the assertion that the American climate is too severe for radiant heating. At the opposite extreme is the theory that its introduction into this country has been deliberately obstructed by a widespread conspiracy of the equipment manufacturers. Equally ridiculous, these misunderstandings ignore the real reasons for the delay in America's acceptance of the radiant heating technique: the failure of technicians to comprehend what changes are—and especially what changes are not—implied in the application of the radiant method; the inertia of an established way of doing things. For the facts are that this method can be applied with equal success under every climatic condition, and that it requires no special equipment not everywhere available.

HISTORY

This point is well illustrated by the development of radiant heating abroad. In its present phase, this development began in 1907, when Arthur H. Barker, an English heating engineer, obtained a patent for the use of heating pipes embedded in the walls and floor. Barker had observed that one of the rooms in his house, which had a wall warmed by a chimney containing several flues, was noticeably more comfortable than an adjoining room although air temperatures in both rooms were identical. Evidently in the belief that such a source of heat should be kept low in the room to stimulate convection, he developed a system in which the lower part of the walls and an abutting portion of the floor were warmed by hot-water pipes embedded in the construction. This he used in several large jobs with some success, with improvements tending always in the direction of larger heating surfaces at lower temperatures, and away from the floor and walls and in the direction of the ceiling.

Barker's system was later purchased and aggressively developed by Richard Crittall & Co., British heating equipment manufacturers, but some time before this another system was introduced by George H. Widdows, county architect of Derbyshire. Widdows' system involved warming the entire floor to about 80° by heating pipes—at first activated by steam and later by hot water—in a cavity under the floor. Use of both systems gradually increased and a third was soon developed by G. N. Hayden & Sons, a heating firm located within ten miles of the ruin at Bath which best illustrates the Roman system of radiant heating. Not surprisingly, the Hayden system closely parallels that used by the Romans, the heating medium being hot air circulated through channels under the floor.

Unquestionably, the initial acceptance of these new systems was immensely facilitated by several factors peculiar to England. Like all new developments, each had at first certain flaws which could not be corrected except on the basis of practical experience, and in this each was aided by England's mild and humid climate and the fact that its people were accustomed to the open fireplace and had an active dislike for warm air.

This, however, in no way prevented the rapid perfection of the various systems. By 1925, the English use of radiant heating had broadened considerably—floor heating for schoolrooms, for example, being quite general—and was beginning to spread to the continent. At this point still another system was introduced, again based on an invention of Arthur Barker's. Employing flat, cast iron plates with channels for hot water or steam on their back surface, which could be installed flush with either walls or ceiling, this system was put on the market by the National Radiator Co., Ltd., as an answer to the competition of other forms of radiant heating. About the same time electric panels were introduced, giving the European architect of today—32 years after the granting of the first radiant heating patent—the choice of hot air, steam, hot water, or electricity as the heating medium, and the floor, walls, or ceiling for heating purposes.

With the exception of cast iron and electric heating panels, all of these systems are available in this country. Most of the equipment used—including the heating plant proper, risers, valves, and controls—is identical with that employed for conventional methods, and the balance simply a matter of the structural assembly of ordinary materials. Nor is the design of such a system particularly difficult. For most practical purposes, you can afford, if you like, to skip the sections on theory which follow, and merely design a system capable of maintaining room air at 65°, figuring losses in the ordinary way. This has, in fact, been the practice both here and abroad, and the only precaution which must be taken is to keep surface temperatures low enough so as not to injure structural materials or—in the case of floors—cause discomfort.

PHYSIOLOGY

If you are comfortable at this moment, your skin temperature is probably between 82° and 89° F. Skin temperature is the human thermostat; when it indicates that heat losses are about equal to the amount of heat produced within the body by oxidation,

you are comfortable. Should its average fall below 82°, or should some part of your body, especially the feet, go much below this, you would feel cold. Should it go above 89°, you would feel hot.

Heat is produced within the body at widely varying rates, depending mostly on bodily activity, and to a lesser extent on age and individual adaptability. Variation with age is on the order of 50 per cent, rising to a peak at about 10 years, and gradually falling to a low-point in old age. Individual adaptability accounts for from zero to 20 per cent of heat production within the zone of comfort, and from 25 to 35 per cent in extremes, but is effective only in overly cold conditions, since heat production goes up under conditions which cause overheating.

More important than either of these, however, is the variation according to physical activity, and the body's ability to store heat in the tissues and draw on the reserve thus created. Heat production is more than doubled by light exercise, tripled by physical work, and increased more than 5 times by strenuous activity. The excess heat thus created is wasted by evaporation as soon as the body tissues reach their heat capacity, but the reserve thus created is nevertheless sufficient to permit loss of heat at half-again the rate of heat production for periods of several hours without discomfort.

From the foregoing, it is evident that the problem of heating for comfort is a matter of regulating body heat losses so that they do not exceed heat production by more than the amount which can comfortably be withdrawn from storage during periods of relaxation, and at the same time to provide for the comfortable dissipation of the excess generated by physical activity. In the case of an average adult with an activity-range from

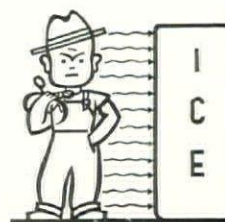
relaxation to light exercise, these points are roughly about 400, 600, and 700 Btu. per hour.

Body heat is dissipated into the environment, largely by way of the skin, by convection, radiation, conduction, and evaporation. In addition a small and fixed amount is lost through evaporation in the respiratory tract, by excretion, etc. The chart on the following page (top, left) shows the actual quantity of heat lost in these ways by two individuals of widely varying reactions in a uniform environment; that is, in a room with air and walls of equal temperature. It is based on the most recent research work of the John B. Pierce Laboratory of Hygiene, and gives the reaction of normally clothed, completely relaxed subjects over a period of about an hour and a half.

Most importantly, this chart shows that under uniform air and wall conditions, radiation and convection are the principal variables in the heat-loss equation, and about equal in magnitude. At the cold border of the comfort zone, they together account for nearly 600 of the total of about 650 Btu. per hour loss; at its middle (69° air and walls) for about 450 out of less than 550 Btu.'s, and only at its hot border does evaporation begin to



CONVECTION



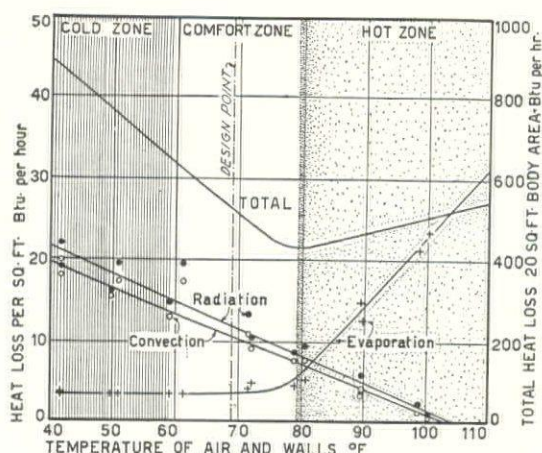
RADIATION



CONDUCTION

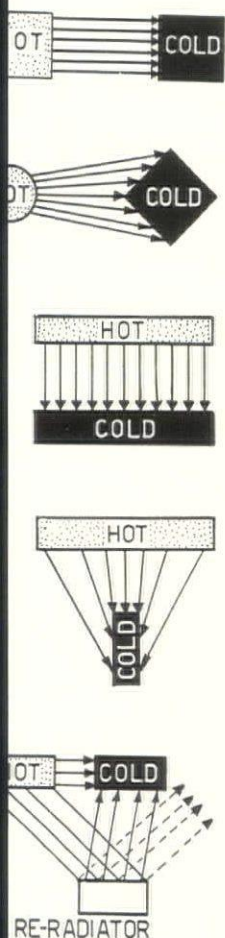


EVAPORATION



become a considerable factor, with about 125 out of the 450 Btu. loss. The condition indicated by the chart is on the dividing line between radiant and convection heating. An increase in the temperature of the air and a decrease in the temperature of the walls to the points usually found in convection heating (in best practice, 70° air—68° walls) would result in a slight increase in the loss due to radiation and a slight decrease in the loss due to convection. Under these conditions, comfort could be maintained within but a narrow range of bodily activity, and any prolonged exertion would cause overheating and perspiration. If, on the other hand, wall temperature is increased and air temperature decreased, as in radiant heating, radiation losses go down and convection losses up. Under these conditions, the range of comfortable bodily activity is increased, both because such activity stimulates increased convection and evaporation losses in the relatively cool air and because the body is enabled to store more heat comfortably. Thus radiant heating more nearly fulfills the definition of heating for comfort previously stated.

PHYSICS

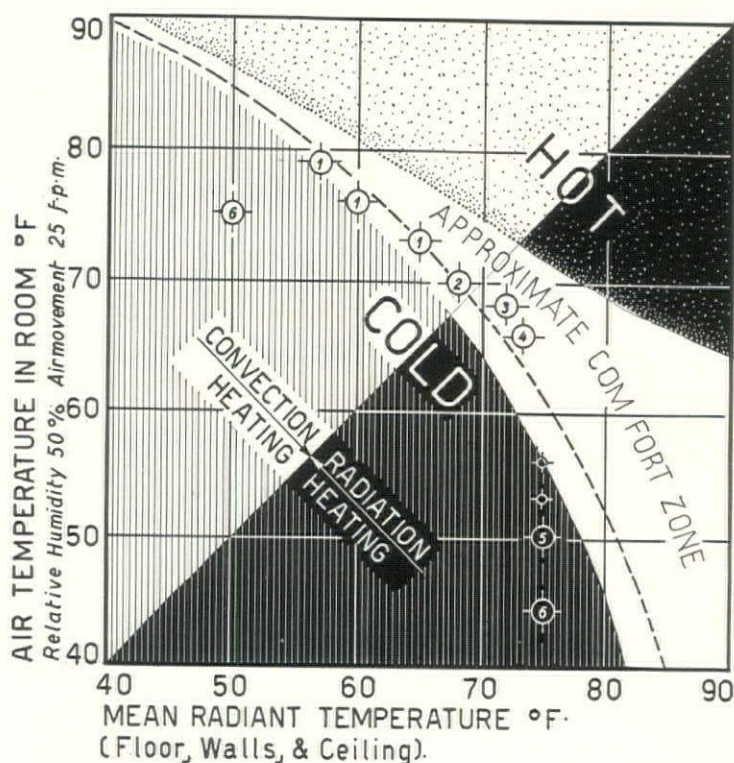


Radiant heat behaves a little like light and a little like electricity: like light in that it travels in straight lines and is but little affected by atmosphere; like electricity in that it flows from a hot to a cold body like current from a positive to a negative pole. Technically, it is like both in that it is held to be a wave motion in ether.

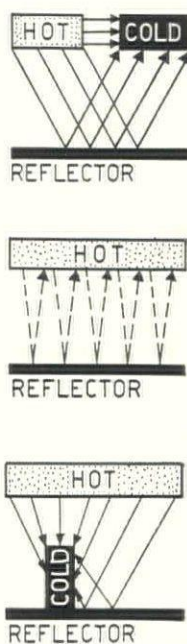
Radiant heat flows in maximum quantities between opposite parallel surfaces; if these are offset or at an angle to one another the heat flow is reduced according to the angularity of the rays. A point source of radiant heat would, like a point source of light, radiate heat to a surface in inverse proportion to the square of the distance between, but since in most cases the heat flow is from a finite surface it is reduced by distance only by the varying proportion which the receiving surface constitutes of the total area to which heat is radiated: equivalent to a solid angle of about 45°.

Another factor which affects the amount of heat radiated from one surface to another is the nature of the surfaces themselves: rough, dark surfaces radiate and receive heat about 10 times as freely as polished metals. Most building materials, with the exception of glass, polished metals, and glazed tile, have an "emissivity factor" of about .9 as compared with a black body.

Especially important in radiant heating is the phenomenon of re-radiation, illustrated by

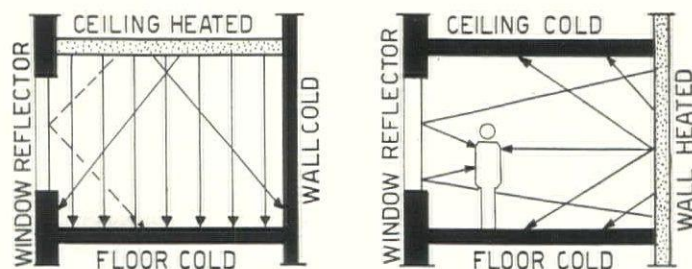


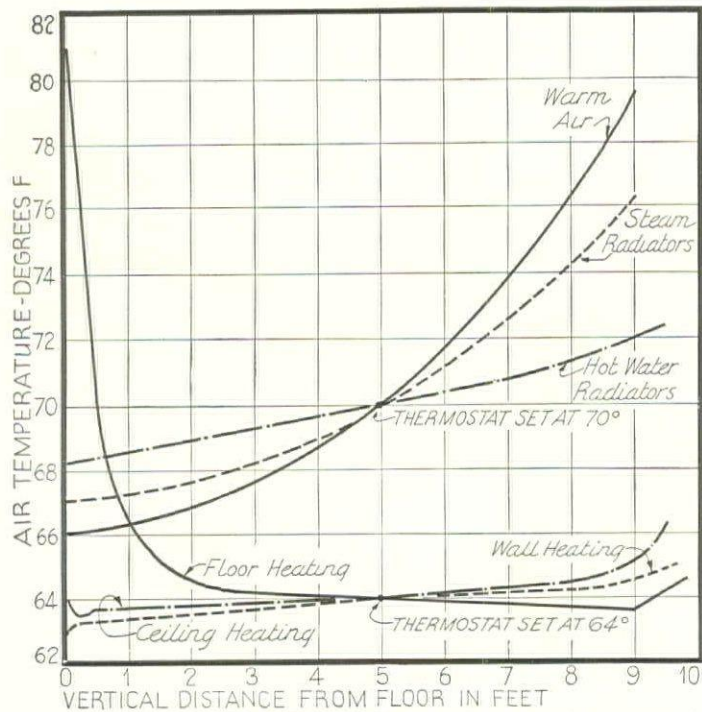
COMFORT CHART for radiant and convection heating, showing approximate comfortable balance between wall and air temperature for an extremely wide range of conditions. Comfort zone is for winter only, summer values would be somewhat higher. Dash line indicates design-value for mean radiant temperature (average of walls, floor and ceiling) with air temperature given—example: for 65° air, line shows MRT as 72°. Points indicate results of various tests and computations from the following sources: 1, 1, 1. A.S.H.V.E. Laboratory. 2. Comfort Chart, A.S.H.V.E. Guide. 3. Westinghouse Research Laboratory. 4. T. Napier Adam. 5. and 6, 6. (English practice) L. J. Fowler and Arthur H. Barker.



the bottom diagram at the left. This is the capacity of a more or less "neutral" body to pick up radiant heat, convert it into sensible heat, and then re-radiate this heat to cooler bodies; to become a secondary heat source in itself. In summer, the earth and practically everything on its surface become such secondary sources of the sun's heat; in a room with floor heating, the ceiling—if adequately insulated—functions in the same way.

Closely allied to this, but obeying the rule of light that the angle of reflection must equal the angle of incidence, is the reflection of radiant heat. Most substances with low emissivity reflect substantial quantities of heat, and glass—which is known to be opaque to heat rays from a source below about 400° F.—is said to reflect about 90 per cent of the kind of low-source-temperature rays used in radiant heating. Thus the problem of how to calculate the cold surfaces of windows is one of the big questions in the still largely unsolved problem of figuring radiant heating.





MORE UNIFORM AIR TEMPERATURES, as claimed by the proponents of radiant heating, are shown to be a fact by the chart above, drawn from data given by T. Napier Adlam and based on actual tests. For similar figures for a room with semi-radiant heating, see Arch. Forum, Jan. 1938, p. 56.

MRT

The term *mean radiant temperature* refers not to the average thermometric surface temperature of a space, but rather to a temperature corresponding to the average rate of heat emission per square foot of surface. MRT may be measured with an instrument known as an "integrating thermopile," calculated as indicated in the current Guide of the American Society of Heating and Ventilating Engineers. The latter, however, ignores the secondary effect of warm surfaces on cold.

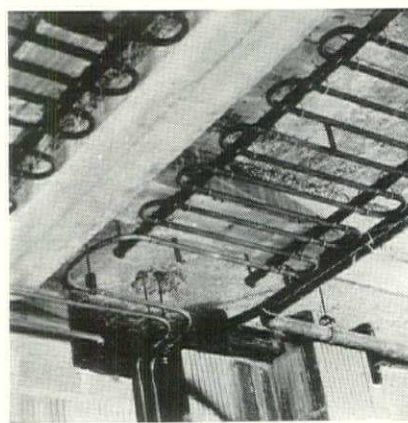
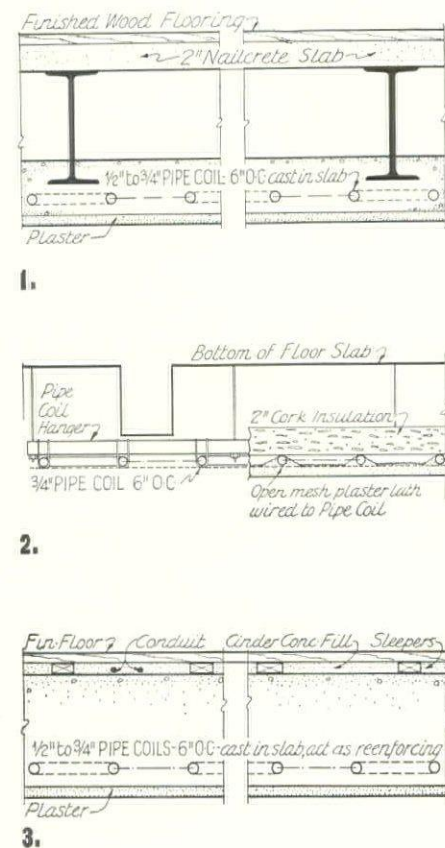
METHODS

The objective of radiant heating is to raise the mean radiant temperature of the surfaces of the space to be heated to the point which will produce a comfortable condition within the room. It is accomplished by warming part or all of one or more of the room surfaces. This usually (except in strictly reflective set-ups, so far confined to the laboratory, and unless rooms are entirely open to the out-of-doors, as in some English schools) has the incidental effect of also warming room air, with the result that most such systems reach a comfortable balance with a MRT of about 72° and air temperature at about 65°.

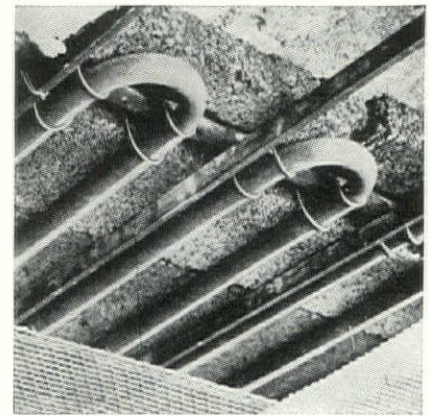
To achieve this condition by warming all of the surfaces of the room would require that they be heated to a temperature about 6° higher than 72°, owing to the fact that their emissivity is not 100 per cent. To accomplish the same thing by warming half the area would not, however, require double this temperature, since the unheated surfaces will not be absolute zero, but rather about 64°, even in very cold weather. Instead of twice 78°, therefore, heating panels covering half the area would theoretically call for a surface temperature of only about 93°, and actually somewhat less, owing to the further warming of the unheated portions by radiation. Similarly, heating panels occupying a quarter the area would call for a theoretical temperature of but 110°, and steam heated panels would be needed on only about 5 per cent of the entire area.

Choice of an appropriate heating method for a particular room involves a host of factors including the use to which the room is to be put, the method of construction, and the importance of the first cost of the system. Hot-water pipes embedded in about one-third the area of a plaster ceiling have, in general, proved the most satisfactory method, but are also the most expensive, owing both to the large amount of small-diameter pipe used and the more expensive plaster job and insulation which this method requires. Hot-air channels under the floor have produced amazingly good results, but call for fireproof construction. Steam and hot-water panels set flush with the surface of the walls and ceiling are cheap and effective, but have the disadvantage that they must be

(Continued on page 60)



2a.



2b.

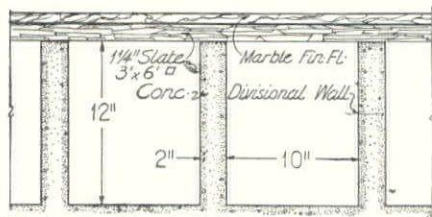
CEILING HEATING has been the type most widely used in high grade construction, with circulated hot water in continuous pipe coils as the heating medium. This system is patented in England by Richard Crittall & Co., and in the United States by Wolff & Munier, Inc., their American licensees. Standard coils are mild steel, 1/2 and 3/4 in. in diameter, 6 in. on center, lengths up to 200 ft. Water temperatures 115°-125° with resulting plaster temperatures between 105° and 115° have been found sufficient for zero weather, with coils in about 1/3 of the ceiling area.

1. shows the construction employed in heating the British Embassy in Washington,

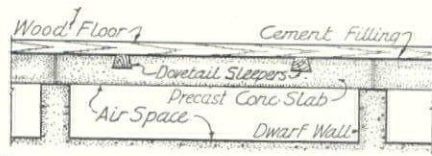
where coils were mounted in a special concrete slab, which was plastered on its underside to form finished—and in some cases ornamental—ceilings.

2, 2a & 2b show the construction ordinarily used, where pipe coils support lath and plaster to form a dropped ceiling, plaster being forced through open-mesh wire lath into good contact with the coil, which is insulated above with cork. Special lime plaster with scrim in finish coat is used to prevent cracks.

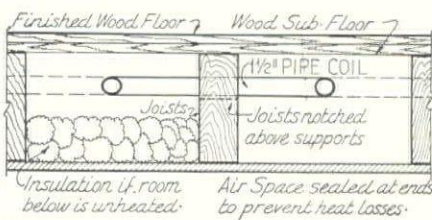
3. shows simplified system used abroad in multi-story buildings.



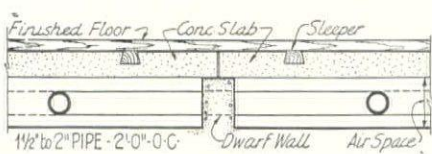
4.



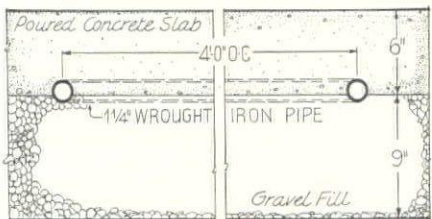
5.



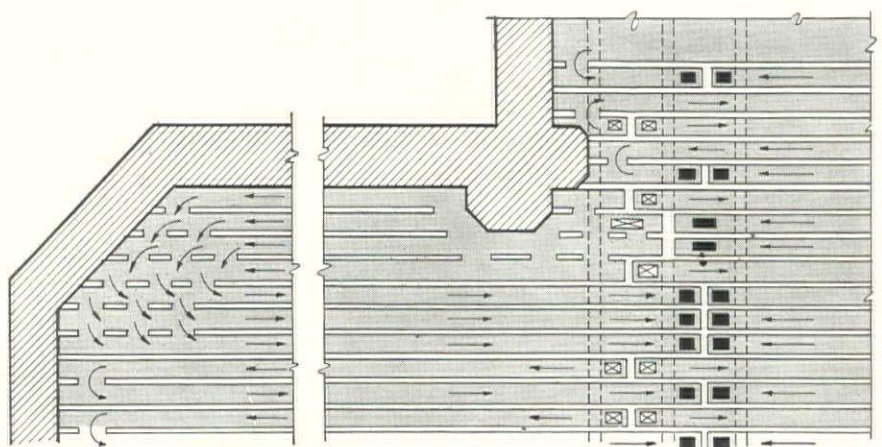
6.



7.



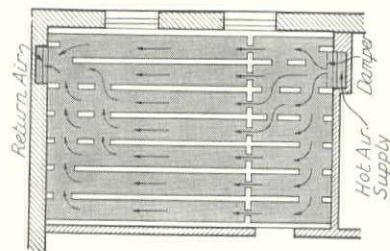
8.



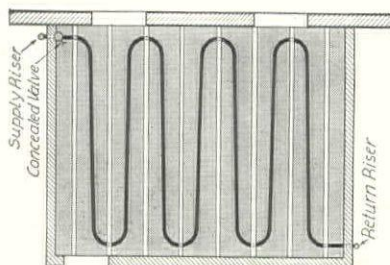
PLAN

☐ Hot Air Supply Openings

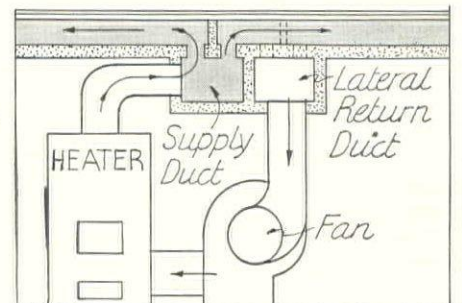
● Return Air " "



5a.

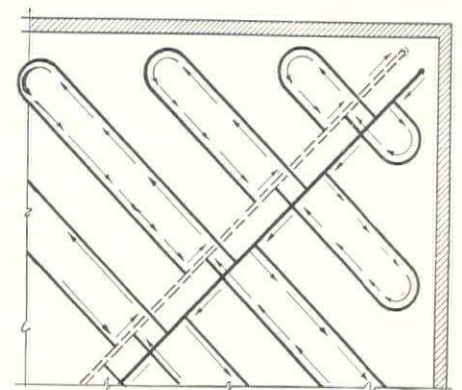


7a.



4a.

SECTION

— Supply } In pipe trench
--- Return }

8a.

FLOOR HEATING has been widely used abroad, particularly in schools and churches, and has been employed in several instances here. Hot air, steam, and hot water are all used as the heating medium, but in most cases the heat is transferred to the floor from the air in a cavity beneath. Not shown above is a patent system, known as the Deriaz System, much used in France, in which the heat from pipes is transmitted to the floor by metal strips attached to both at right angles to the pipes and spaced at regular intervals. Floor surface temperatures of about 82° have been found sufficient for zero temperatures outside in most work.

4 & 4a. show the exceedingly successful system of floor heating used in the new Liverpool Cathedral, which has produced the remarkable result of less than 2° difference in air temperature in 58 ft. of height. As shown in the section and plan, hot air is circulated through cavities under the floor, the system being entirely closed and warm air returning directly to the heater. Another surprising result of this arrangement is that it takes 36 hours for the building to cool 1° after the fire is shut off.

5, & 5a. show a similar system used in

multi-story buildings in England, especially in hospitals. Here the air channels are but 4 in. deep, which has been found sufficient for even distribution to medium-sized rooms. Air is conveyed to the floor by ordinary risers located in the opposite corners of the room.

6. shows a floor heating system for use with ordinary wood frame construction, actuated by steam pipes located in the middle of the space created by the floor joists. This arrangement naturally results in marked shrinkage of the framing members and flooring, which must be carefully provided for.

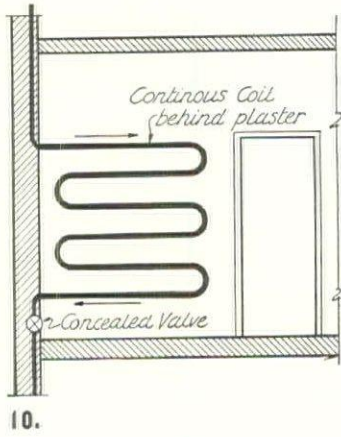
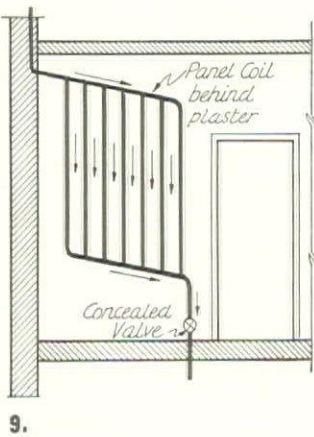
7, & 7a. show a system similar to number 5., but with hot water or steam coils as the heating medium. These do not require forced circulation on account of their large diameter. Precast concrete slabs containing sleepers to which the finished floor, usually Teak or block flooring, is fastened are removable for repairs. This system has been used extensively in English schools, including the now-famous type in which one wall is left open almost all year.

8, & 8a. show the method employed by Frank Lloyd Wright in heating the S. C.

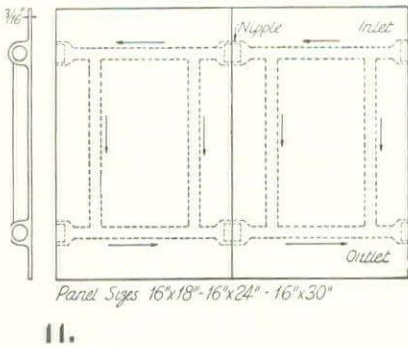
Johnson Building, in which steam pipes, 4 ft. on center, heat the floor slab from below. A 9 in. gravel fill insulates this exceedingly simple system from the earth, while the mass of the slab guarantees uniform distribution of the heat to the whole floor area.

Floor heating involves the special problem of providing enough heat for the room without heating the floor beyond the point which is comfortable for the feet, especially in small rooms. This problem becomes acute when it is necessary for the occupants of the space to stand in one place for extended periods, since the temperature of the floor surface under the feet may rise to the point of acute discomfort. In extremely cold climates, it is probably desirable to supplement floor heating with other radiation in order to avoid this effect.

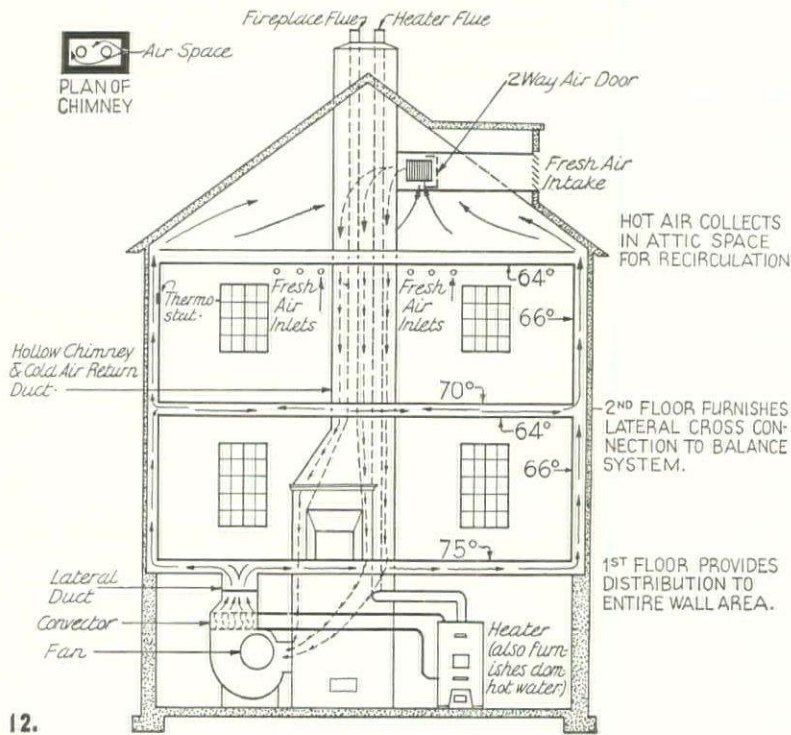
Rugs, however, may be freely used with all types of floor heating, and this tends to counteract the disadvantage referred to above. Because of its low cost and the opportunity to use air as the heating medium, coupled with the possibilities of reflective materials on the ceiling, this method probably offers the most interesting advantages for small-house work.



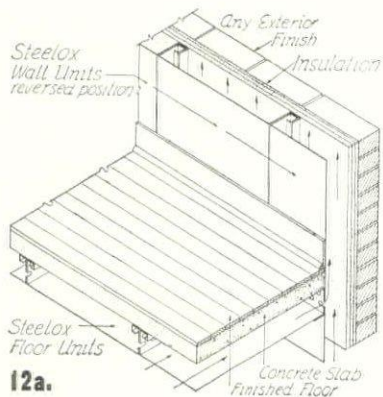
WALL HEATING may be accomplished with pipe coils buried in the plaster (9. & 10.) or with special cast iron panels, known as "Rayrads," (11.) manufactured in England by the National Radiator Co., Ltd. It is used by itself in the form of a decorative wainscoting and to supplement ceiling heating in special locations, such as near frequently used entrances, large windows, etc. Rayrads are actuated either by hot water or steam, are also used on ceilings, particularly in schools. Another form of wall heating is by tapestries into which resistance wires are woven for electric heating. Special electric panels are also used on ceilings.



11.



12.



12a.

WALLS, FLOOR & CEILING are all employed in this interesting hot-air system of American design (12. & 12a.) invented by P. G. Swars, and employing the steel house construction of Steel Buildings, Inc. in an unusual way. Heated air is delivered to the entire area of the first floor by a transverse duct, rises through the walls on 4 sides of the building and is collected in the attic space and returned through a duct in the chimney surrounding the flues. Second floor provides cross connection to balance the system, which is said to provide a high degree of comfort at the lowest possible fuel cost.

(Continued from page 58)

surrounded with moldings to allow for expansion and contraction, and are said to cause uneven heating and discomfort if approached too closely. Some systems necessarily have a considerable heat capacity, which results in a time-lag in their operation which may be an advantage or disadvantage according to the use to which the building is put. In office and commercial work such a lag is said to result in considerable fuel savings.

The theoretical battle royal which rages over the advantages of the floor, walls, and ceilings as the proper location of the radiant heat source probably immensely exaggerates the importance of this factor, since it ignores the presence of re-radiation and heat reflection in almost every set up. Thus ceiling heating warms the floor to the point where it acts as secondary radiator, and both floor and ceiling heating probably owe a large part of their effect on a person standing erect to heat re-radiated from the walls. The same is true of objections to one or another system based on what is called "screening"—obstruction of the heating surface by furniture, etc.—which has been found in practice to be of little consequence. Actually, the only difference of practical importance between the various systems is probably their relative effect on air temperature, which is least—and therefore best—in the case of ceiling heating.

Almost unexplored are the tremendous possibilities opened up by the use of highly reflective surfaces, such as metal foil, glass, and porcelain enamel, as secondary radiators. The most obvious example of this would be reflective ceiling materials in conjunction with floor heating, its furthest extension has been the experimental radiant-cooling system installed in the operating room of a western hospital in which body cooling in hot weather is successfully accomplished by reflection to a small and inconspicuous cold-plate, connected to a compressor, located in a remote corner of the room.

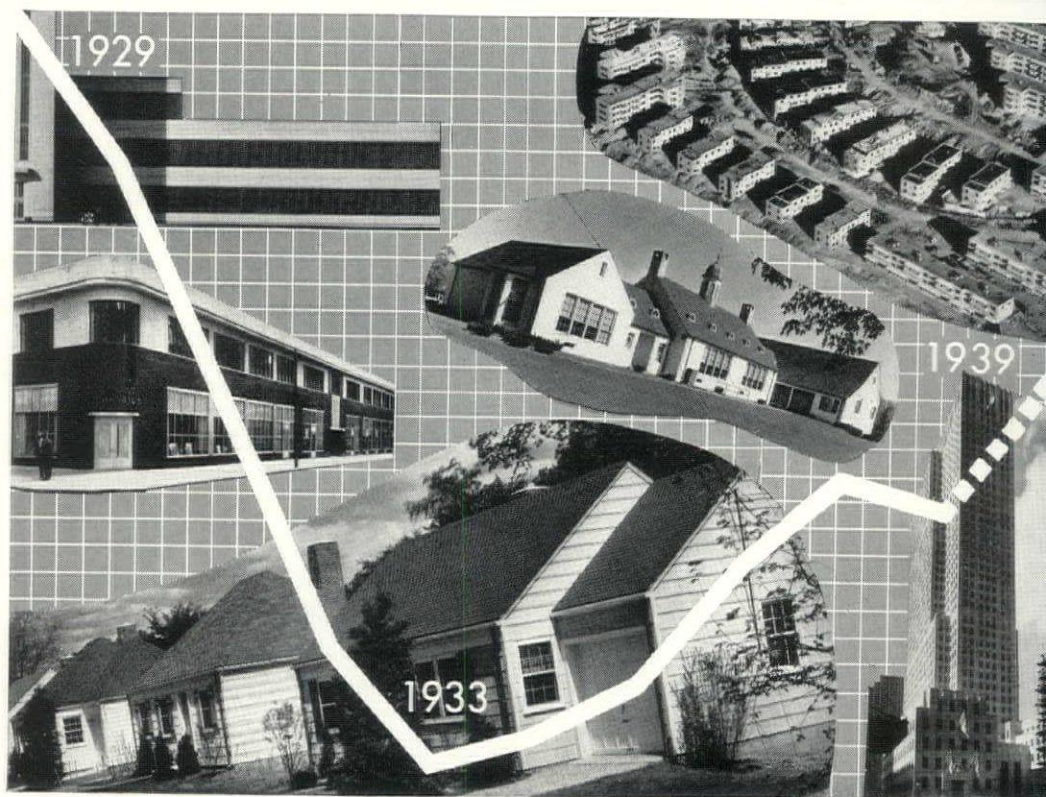
CONTROL

Control of radiant heating systems is complicated by the fact that the radiant temperature of the heated space enters so largely into the comfort equation, simplified by the fact that there is much more leeway before overheating results. Mere maintenance of a uniform air temperature in a radiant heated room would, however, be likely to result in overheating in mild weather. Abroad, a special instrument known as the "eupatheoscope," which measures the combined effect of radiant temperature, air temperature, and air movement, has sometimes been used, particularly in conjunction with electrical heating. In this country, what is called "sub-master control" of the heating medium, combined with manual adjustment in the various rooms, has been found very satisfactory. This method, in a system in which hot-water is used as the heating medium, involves an outdoor thermostat used to re-set a second thermostat which controls water temperature in the boiler, and throttle valves on the coils in the various rooms which may be permanently set to balance the comfort effect throughout the building. More elaborately, push-button valves are sometimes included for adjustments to suit individual whims.

BUILDING MONEY

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Building, its past, present and probable future

BUILDING FORECAST: 1939

The Architectural Forum collects and examines informed opinion, concludes residential construction will advance 30 per cent over 1938; total construction, over 20 per cent.

MONEY spent for building in the entire U. S. during 1938 totaled approximately \$5,185,000,000. For 1939 THE ARCHITECTURAL FORUM forecasts a 23 per cent increase in total construction expenditures to \$6,385,000,000.* This prediction is based on an interpretation of informed professional opinion voiced in a nation-wide survey of economists and leaders in the building field.

Breaking down total expenditures into the various construction classifications, THE FORUM's survey indicates that non-farm residential building will be the driving force behind the 1939 advance—it will increase 30 per cent from \$1,285,000,000 to \$1,671,000,000. Construction of commercial buildings, which last year cost

\$345,000,000, is due for an 18 per cent rise to \$407,000,000. Industrial construction will jump 23 per cent from \$245,000,000 to \$301,000,000. Public utility and public building will likewise advance. Expenditures for additions, alterations, and repairs will exceed those of 1938 by about 20 per cent.

Past. The year 1938 was a fairly good year for Building. Year-end estimate for total U. S. activity was only 3 per cent under that for the post-Depression peak year of 1937. And, this drop was due entirely to decreased activity by private enterprise; as shown in the tabulation on page 64, each and every classification of private construction fell off. Public construction alone made a vain effort to hold up the total.

It took half the year for residential building to get under way. After a push by the liberalized policies of the Federal Housing Administration and a still harder push by improved business sentiment, the construction of homes at mid-year got

moving, and in later months actually sprinted in a futile attempt to reach predictions. As measured by F. W. Dodge Corp.'s contract figures, November 1938 was the biggest November for Building since 1929. And, despite the fact that last fall's increased activity brought with it a leveling of the downward trend of costs, this spurt is one of the most important single factors behind the national optimism held for 1939's building volume.

Present. While THE FORUM's forecast is primarily based upon expert opinion and not upon any statistical manipulation, an analysis of the many factors affecting the probable trend of building is in order. As a matter of fact, majority of the opinions sampled by THE FORUM are based upon such analyses.

Primary among these factors are **supply** and **demand**. In the residential field, the relationship between the two has been well publicized by the everyday use of such terms as "the ill-housed third of the nation" and "slum clearance." In fact,

*All 1938 construction figures used on these pages are estimates of actual expenditures for materials and labor in the entire U. S. as prepared by Economist Lowell J. Chawner of the Department of Commerce. All 1939 figures have been projected by THE FORUM on a comparable basis. All figures are exclusive of expenditures for maintenance and work relief.

CHAWNER—It appears that residential building in 1939 will be substantially larger than it has been during the past three years, possibly as much as 40 per cent. . . .

In view of the recent improvements in industrial production, it appears likely that factory building in 1939 will be somewhat higher, possibly 30 per cent. . . .

In view of the high vacancies still existing in commercial buildings throughout the U. S., it is hardly likely that this type of construction will experience a notable increase, although an advance of possibly 15 per cent may not be unlikely. Electric light and power construction may very well experience a considerable increase in volume, possibly 20 per cent over (last) year's activity. . . .

These estimates refer to current activity, that is, expenditures for labor and materials, rather than to work started as measured by contracts awarded or permits issued.—Chief Lowell J. Chawner, Division of Economic Research, Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce.

WENZLICK—We think there is a possibility that residential building will increase (this) year in comparison with 1938 by more than 50 per cent. It seems likely that the greater part of the increase will come in the first half of the year, as cost increases may be getting under way in substantial amounts by the latter part of the year, and these increases may prove a deterrent to the upward building trend. We would . . . guess that commercial building will be somewhere between 10 and 25 per cent above 1938; factory building, better than 25 per cent above; institutional building, better than 10 per cent above. It is quite difficult to estimate public building for 1939. Combining all types of building, our estimate would be that it will show an increase of 25 per cent or better.—President Roy Wenzlick, Real Estate Analysts, Inc.

AYRES—Our projections of trend lines of building construction gives us indicators of the probable valuations of building contracts for the year 1939 as contrasted with those for the year 1938. They indicate that . . . commercial construction in 1939 may exceed that of 1938 by 22 per cent. Industrial contracts may move up 45 per cent; institutional, 10 per cent; public buildings, not including public works, 16 per cent; residential buildings, 19 per cent; all classes of additions, alterations and repairs, 15 per cent; and all construction on Dodge contract basis, 12 per cent.

These are not carefully reasoned estimates. They are instead unadjusted mathematical computations of trends.—Economist-Vice President Leonard P. Ayres, The Cleveland Trust Co.

DODGE—The construction outlook appears better . . . than at any time in the last few years. The big depression . . . is definitely behind us. (Our) 1939 estimate, value of total construction contracts, 37 Eastern States:

Classification	Million Dollars	% change from 1938
Commercial buildings	\$300	plus 33
Industrial buildings	250	plus 85
Education and science	250	minus 14
Hospital and institutional	85	minus 29
Public buildings	100	minus 13
Religious buildings	40	unchanged
Social and recreational	100	minus 13
Misc. non-residential buildings	25	unchanged
TOTAL NON-RESIDENTIAL	\$1,150	plus 8
Apartment and hotels	500	plus 86
1 & 2-family houses	800	plus 12
TOTAL RESIDENTIAL	1,300	plus 32
TOTAL BUILDING	2,450	plus 20
Public Works & Utilities	1,050	minus 12
TOTAL CONSTRUCTION	3,500	plus 8

—F. W. Dodge Corporation.

the word "shortage" has become synonymous with "housing." Statistically, the supply-demand ratio is so badly out of balance that there is need of at least 750,000 new dwelling units per year for the next five years. (Last year's crop amounted to about half that number.) Reduced commercial and industrial building during depression years has left these classifications in a similar, though not as pressing, fix.

Whether or not private enterprise will work toward balancing the supply-demand scales in 1939 depends upon how willing it is to tackle low cost housing and, to a certain extent, upon how much money the public is able to save. Expenditures for home building come after those for life's bare necessities. During the six-month period from April through October 1938, cost of these necessities as measured by National Industrial Conference Board's index of the **cost of living decreased** 1 per cent; and, it is encouraging to find that during the same period **purchasing power** as measured by the Department of Commerce's index of employees' compensation **advanced** 4 per cent. Continuation of these trends should expand the building market.

As well known as the housing shortage is the vast supply of idle **funds seeking investment**, a large part of which is available to qualified builders in the form of mortgage loans. Exemplary of the condition throughout the country is the fact that member banks of the Federal Reserve System as of December 14, 1938, held \$3,480,000,000 of excess reserves—\$2,420,000,000 more than they held on the corresponding date of the preceding year, set an all-time high. Savings banks and insurance companies are also loaded with unemployed cash. And, this money may be had at lower interest rates than ever before.

Thanks to **FHA's mortgage insurance**, an increasing amount of these idle funds will undoubtedly go into residential building. On December 13, the President upped FHA's insurance limit by \$1,000 million, thus made available a total of \$1,415 million of mortgage insurance to grease Building's gears.

Further lubrication for the money situation is the trend of non-farm residential **foreclosures**. Since January 1937, the course has been generally downward, and October (latest month for which figures are available) set a record. In that month foreclosures amounted to only 8,773—less than 80 per cent of those for October, 1937—and brought the ten-month total to 30,000, or about 23 per cent below that for the corresponding period of the preceding year.

While the trend of **rents** has continued comparatively steady during the past fifteen months, building **costs** have been generally downward, now stand from 5 to 10 per cent below those of September 1937. Existence of this spread in the trends of rents and costs is an inducement to home building. However, the current

course of wholesale building material prices is slightly upward (see page 2) and, if the predicted increase in building for 1939 takes place, the upward trend will probably be more than slight. Placing another hurdle in the way of greatly increased building is the real possibility of a **labor shortage** and the boost in wages that would logically accompany it. While these hurdles are not apt to interrupt the upward course of building activity in 1939, they must be reckoned with and are definite hazards to any activity of boom proportions.

Probably the most important single factor behind the optimistic opinion for Building's near future is improved **business sentiment**. It came in early fall with advances in the barometric trends of steel and automobile operations and stock market prices, and was reassured by the outcome of the November elections. This renewed faith in the future tends to loosen the purse strings of Big Business as well as of potential home builders. That it has already done this for business is indicated by the recent increase in the volume of Wall Street flotations of **new capital issues**—from \$120,000,000 in September to \$165,000,000 in October.

Then there is **Government spending**—ordinary and extraordinary. Federal pump-priming began last summer, but its effects on Building did not come until a month or so ago; and bulk of the priming will not be done until 1939 is well along in age. Extent of combined Government spending and pump-priming on Building is seen in the following official estimates of expenditures:

Home Owners Loan Corp. will spend \$17,900,000 in modernizing and reconditioning its horde of acquired properties during the first six months of this year and \$18,600,000 in the last six months. In 1938 HOLC spent about \$28,016,000 for the same purposes.

During the first half year, the Farm Security Administration will spend \$20,000,000. For the second half there is a question mark which cannot be erased until Congress takes action on the program; if it is continued, another \$20,000,000 will be spent. Last year FSA expenditures totaled about \$44,000,000.

The U. S. Housing Authority this year will actually advance to local housing authorities somewhere between \$60,000,000 and \$100,000,000, about 40 per cent of it during the first six months. During 1938 only about \$15,000,000 of USHA money was so advanced.

Building budget of the Interior Department will be reduced. Divided evenly between the two halves of the current year, \$50,000,000 will be spent, as compared with last year's \$61,000,000.

In addition to its non-Federal program, the Public Works Administration has allotted just under \$200,000,000 to Federal bureaus for public works projects. Estimate is that \$155,000,000 of this will

be used for building construction—\$70,000,000 in the first six months of 1939, \$60,000,000 during the second six months, and the balance in the first half of 1940. Only \$12,000,000 was spent in 1938. PWA will also supply about half the funds (in loans and grants) necessary to build 6,216 non-Federal projects whose total cost will be \$1,430,000,000. About \$525,000,000 will be spent in the first half of 1939; about \$600,000,000, in the second half; the balance, in 1940. Half of these expenditures will be for building as opposed to heavy engineering.

Without PWA's help, the Procurement Division spent about \$40,000,000 for public buildings in 1938. This year the expenditures will approximate \$39,000,000 in the first half, \$33,000,000 in the second. Included in the 1939 figures is \$60,000,000 for post office construction alone—twice as much as in 1938.

Last year's Army and Navy buildings cost about \$59,000,000. This year's will cost at least \$73,000,000.

Since all these Government funds are sufficient to keep public building rolling for some time, it is unnecessary and unlikely that the 76th Congress will authorize any additional extraordinary allotments, unless it be an increase in USHA's treasure chest.

It is likely, however, that Congress will heed Presidential wishes to accelerate the U. S. defense program. If this proves true, some classifications of building ac-

tivity will be stimulated, and not the least will be public utility and industrial expansion.

With the possible exception of material costs and labor wages, all of the factors mentioned above are presently bullish for Building. And the near term outlook for them is satisfactory. There is, however, one factor which tends to tone down this optimism—the possibility of another large scale war threat such as gripped the world last fall. Actual war or the threat of it would over night change public opinion, kick all forecasts for 1939 into a cocked hat.

Future. Such are the statistics and background upon which Building's opinion is based. To determine this THE FORUM obtained a statement as to the probable trend of 1939 building activity from leading statistical agencies, from nationally known economists, and from recognized leaders in the building industry. Representing fifteen large cities coast to coast, the last mentioned group was composed largely of bankers, savings and loan men, realtors, contractors, subdividers, architects, engineers, and FHA and city officials.

Comments from some of these cities appear in the accompanying marginalia; estimates from all of them are summarized in the tabulation of sectional opinion below. Where forecasters tied down their opinions with specific percentages, the figures for each classification of build-

BODFISH—Residential building is in for the best year since 1929 in all probability. . . . The figure for 1939 should . . . represent nearly a third more expenditure than was the case in the year just closed.

It is altogether likely that there will be considerably more expenditure for modernization and repairs on both residential and other types of buildings than in any year since the depression. Probably between 20 and 30 per cent more money will be spent in this direction than in the year just closed.—Executive Vice President Morton Bodfish, U. S. Building and Loan League.

BOBER—We will probably have built around 280,000 to 300,000 new homes in 1938. . . . I think that it is not over-optimism to predict around 400,000 new homes (for 1939) built by private industry, provided the general recovery keeps under way. But on top of that we should have roughly 100,000 new home units in the public housing sector, erected by the USHA.—Economist W. C. Bober, Johns-Manville Corp.

* * *

CHICAGO—I am looking toward a very rapid acceleration of building in 1939. I think that 1939 will show a particularly favorable trend in the early part of the year. The immediate building outlook is toward low cost, single-family housing construction. Also, there should be acceleration in low cost, multiple housing construction. There may be an increase in industrial construction. . . . I'd be very much disappointed if construction in Chicago didn't increase at least 15 per cent.—Administrator Percy Wilson, Marshall Field Estate.

DETROIT—It is our opinion that with the Federal help possible, there will be considerable residential building in this vicinity during 1939. . . . We look for only a limited amount of new commercial building, although there will be much alteration and rehabilitation work.

As to industrial work during 1939—a large amount of such building was carried on last year . . . in spite of the lag in the automobile industry. With a more promising outlook for 1939, we are hopeful of having a goodly share of new automobile factory building, especially to replace obsolete plants. The other industries, as well, promise a substantial amount of new building.—Albert Kahn, Inc., Architects and Engineers.

HOUSTON—With regard to commercial construction, I anticipate an increase of 25 per cent in outlying store buildings, possibly as much as 100 per cent if downtown office buildings are included in this category and present well-developed plans mature. In home building, I predict at least a 20 per cent increase.—Manager Meredith Hadden James, Real Property Department, Guardian Trust Co.

LOS ANGELES—Building activity in Los Angeles should run substantially ahead of last year.—Earl S. Anderson, Los Angeles Chamber of Commerce.

MIAMI—I look for an increase in residential construction of at least 10 per cent to give a conservative estimate. . . . I would estimate the increase in commercial building in Miami in 1939 will reach 15 per cent, with perhaps a 10 per cent increase in industrial construction. Remodeling has been off during the (past) year, but we expect a gain.—Building Inspector W. H. Peace.

NEW ORLEANS— . . . Expect 100 per cent increase over the \$2 million of residential permits issued in 1938. . . . Expansion in the industrial field resulting from the great activity in oil development in Southern Louisiana warrants the belief that 1939 should see an increase of 30 per cent over the . . . total for 1938.—President Stanley M. Lemarie, Real Estate Board of New Orleans.

SECTIONAL OPINION as to 1939 building volume (compared with 1938) by classifications of construction:

CITY	RESIDENTIAL	COMMERCIAL	INDUSTRIAL	INSTITUTIONAL	REMODELING
BOSTON	UP	+ 5%	+15%	SAME	+10%
CHICAGO	+45	+15	UP	UP	+50
CLEVELAND	+35	+10	+10	UP	SAME
DETROIT	+40	UP	UP	UP	+50
HOUSTON	+15	+35	+20	DOWN	SAME
KANSAS CITY	+20	SAME	SAME	SAME	SAME
LOS ANGELES	+20	UP	UP	UP	—
LOUISVILLE	+15	SAME	UP	SAME	UP
MIAMI	+10	+10	SAME	DOWN	+10
NEW ORLEANS	+85	+125	+30	+130%	+50
NEW YORK	+15	+20	+20	—10	UP
PHILADELPHIA	+35	+10	+30	SAME	+20
SAN FRANCISCO	+15	UP	UP	UP	UP
SEATTLE	+35	SAME	DOWN	SAME	SAME
WASHINGTON	+20	+20	+5	+5	+5

NEW YORK—The preview outlook for 1939 is much brighter than for 1938 because our reports show that contemplated construction is about \$600 million, or five times greater than last year at this time—almost preguaranteeing right from the firing of the starting gun on January 1 that 1939 building will go away out in the lead over 1938.—The Dow Service, Inc.

PHILADELPHIA—In my opinion, the outlook for the construction industry in and around Philadelphia for 1939 is very bright. I feel that the program will be a constantly expanding one from this time on to at least the latter part of 1940. . . . The probable value of 1939's as relative to 1938's, in my opinion, would line up as follows: residential, 140-150 per cent; commercial, 110 per cent; industrial, 150 per cent; institutional, no estimate; remodeling, 125 per cent; public works, rapid expansion but no specific estimate."—President J. Willison Smith, Land Title Bank and Trust Co.

SAN FRANCISCO—On home building, all indications point up; I look for a slight increase—say 10-15 per cent—in 1939 over 1938. On heavy construction, there's an awful lot of PWA coming up. As for privately financed heavy construction, I don't look for much (in 1939).—Secretary-Manager William Hague, Central California Chapter, Associated General Contractors of America.

SEATTLE—The 1939 pick-up in residential building will be 25 per cent greater. . . . But aside from the domestic building and public works program, an analysis of future building shows no happy prospects in other kinds of construction.—President B. Marcus Priteca, Washington State Chapter, A. I. A.

WASHINGTON—All indices reflecting real estate activity in metropolitan Washington show a very sound condition and the statistical trend indicates that 1939 will show improvement over the past year. . . . The general construction industry has gained a momentum that is already being reflected by higher material prices. The steadily increasing volume. . . will cause a shortage in our limited labor supply.—Realtor-Home Builder Waverly Taylor.

ing for each city were averaged. If the consensus indicated an increase, but was not measured in percentage, the word "up" was inserted in the proper place. Conversely, the word "down." Where a building classification's trend was predicted as unchanged, the word "same" appears; where insufficient opinion was given, a dash.

While forecasters from many cities did not feel justified in predicting the trend of each type of building, and some of them would not venture to measure their opinion in percentages, all of them (with the exception of those in Boston) defined the outlook for residential construction. Perhaps on the basis of the local building boomlet already under way, New Orleans went furthest out on the limb, with a prediction of about 85 per cent more home building for 1939. Other cities particularly bullish about residential construction are Chicago, Detroit, Cleveland, Philadelphia and Seattle. At the bottom of the list: Houston, Louisville, New York, San Francisco and Miami.

Largest advance in the volume of commercial construction was indicated at New Orleans, evidently to service the anticipated number of homes.

Comparatively large industrial expansion in New Orleans, Philadelphia and Houston may be discounted by the fact that during the past year only a small amount of work was done in this classification. The same is true of New Orleans'

predicted institutional building. The current year will see more remodeling than did 1938, according to reports from ten cities. And, it is generally anticipated that most remodeling dollars will be spent on commercial structures.

With regard to the statements of statistical agencies and economists, the predictions of F. W. Dodge Corp. are by far the most complete (see marginalia, page 62). Particularly noteworthy are its forecasts for factory construction (up 85 per cent) and commercial construction (up 33 per cent). Also noteworthy is Dodge's belief that *decreased* activity will be experienced in the construction of educational, science, hospital, institutional, public, social and recreational buildings. Too, Dodge looks for a drop in contracts for public works and utilities, despite the fact that some official estimates point in the other direction. No other statements from statistical agencies and economists predicted decreased construction in any classification, and three of them predicted a larger increase in residential building than did Dodge.

Interpreting the statements made by all 92 individuals and agencies entering into its survey and reducing to one composite group of percentages all the mathematical predictions made, THE FORUM came to the conclusion that total building activity in the entire U. S. in 1939 would approximate \$6,385,000,000. If so, 1939 will be Building's best year since 1930.

STATISTICAL REVIEW AND FORECAST¹

TYPE OF CONSTRUCTION	1920-29 AVERAGE	1937	1938 ²	1939	1938-39
				FORECAST	CHANGE
TOTAL RESIDENTIAL (NON-FARM)	\$3,511	\$1,393	\$1,285	\$1,671	+ 30%
COMMERCIAL	\$ 918	\$ 367	\$ 345	\$ 407	+ 18 %
INDUSTRIAL	552	367	245	301	+ 23
OTHER NON-RESIDENTIAL ³	443	160	155	171	+ 10
TOTAL NON-RESIDENTIAL	\$1,913	\$ 894	\$ 745	\$ 879	+ 15%
FARM ⁴	454	360	330	330	0
PUBLIC UTILITY ⁵	1,147	621	495	569	+ 15
TOTAL PRIVATE	\$7,025	\$3,268	\$2,855	\$3,449	+ 21%
TOTAL PUBLIC	1,947	2,072	2,330	2,936	+ 26
TOTAL CONSTRUCTION	\$8,972	\$5,340	\$5,185	\$6,385	+ 23%

1—Dollar values for 1920-38 are estimates (in millions) of activity for the entire U. S., as prepared by Chief Lowell J. Chawner of Division of Economic Research, Bureau of Foreign and Domestic Commerce, U. S. Department of Commerce. (For explanation of derivation of these figures and for a more complete tabulation of building activity from 1915 to 1937, inclusive,

see ARCH. FORUM, June 1938, p. 517 et seq.). All figures in the last two columns are based upon an interpretation of expert opinion obtained by THE FORUM in a nation-wide survey; they were not computed by Mr. Chawner, but are comparable with his estimates. None of the figures is comparable with those published by F. W. Dodge Corp. and titled "contracts awarded,"

inasmuch as the figures in this tabulation are estimates of actual expenditures for building labor and materials in the entire U. S. All figures exclude maintenance and work relief.

2—Preliminary estimate.

3—Excluding residential building by utilities.

4—Including repairs.

5—Private ownership only.

A FOUR-SIDED REALTOR

corners the Portland, Ore., home market, carries his eggs in ten baskets.

In the past when Portland has thought of large, expensive houses, it has automatically thought of Allison H. Dean. One of Oregon's top-notch realtors, he has sold some \$3.5 million of land during the past fifteen years, has acquired the selling rights of not one but ten swank Portland subdivisions. This month, however, Realtor Dean moves into new and larger fields. Through a merger with another large Portland realtor he acquires joint sales control of the city's most up-and-coming residential section. And, since lots in this section run the price gamut from top to bottom, today when Portland thinks of most any kind of a house or lot, it automatically thinks of Dean.

In addition to his diversification of land offerings, 41-year-old Dean carries several other real estate eggs in several other baskets. He develops and manages subdivisions, runs a building company titled "Homes, Inc.," displays 55 copyrighted variations of his "chassis unit home," and boasts a "one-stop service" aimed at solving in one fell swoop the prospective home builder's many problems.

No native son, Allison Dean is a Portlandite of only 15 years standing. In 1923 at the age of 26, he breezed into Portland from Saskatchewan with a wife, two children and \$11. The rest is an American success story predicated on the usual basis of effective salesmanship. In six years he firmly established his reputation as a salesman of expensive properties, celebrated it by selling a 1½-acre homesite for \$43,000—a Portland record.

By then he had also determined what section of Portland was to be the logical focal point of his activities—the hills on the west side of town. When the city founders built their cabins on the west side of the Willamette River they underestimated future expansion. Consequently, their multiplying descendants had to either climb the surrounding hills or hop across

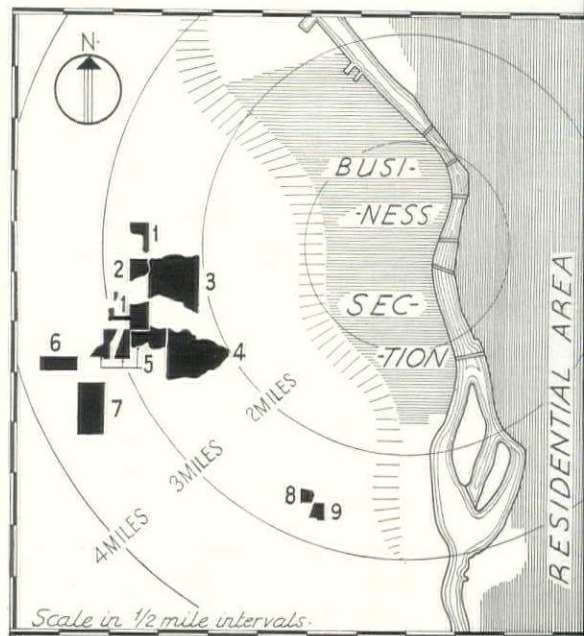
the river to the flat lands beyond. They chose the latter course, left the hills to a few hardy rich who liked the view.

Though many subdividers have gazed longingly at the wooded hilly land beginning only two miles from the city center, their interest was soon dampened by the winding, climbing dirt roads that provided its only access. But it was Dean's fortune to happen along just as these roads were being replaced by good highways.

In 1932, nine years after arriving in town, he got his first real toe-hold in the western hills when the owners of Green Hills, pioneer subdivision for the area, gave him exclusive selling rights. Dean used this toe-hold to advantage. The natural inclination of neighboring property owners was to pick competitive realtors to sell their lots and thus create healthy rivalry. Dean's counter-argument was that the area should be developed uniformly, and that it could best be done under one management. Proof that he was convincing are the 1,080 salable acres for which he now has exclusive rights. And proof that he lived up to his bargain is the fact that due to his uniform restrictions no unsightly, unplanned shacks dot the territory.

Latest move by Dean to increase his control over the western hills was made when he and the Land Estate Company agreed to merge their holdings and place under a single management nearly all choice west-side subdivisions. Effective this month, the new company will have new down-town headquarters, plans to build a suburban west-side office.

The Realtor. First and foremost a salesman, Allison H. Dean has directed his interests along a single channel—real estate. In 1931 he organized Allison H. Dean Co., hired two experienced salesmen, then in less than six months hired two more. These four make up his present staff and carry a major share of the sales

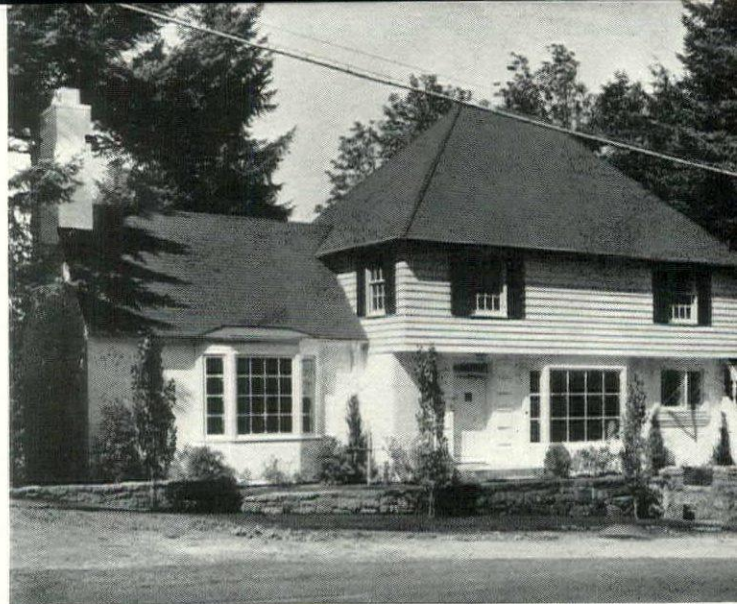
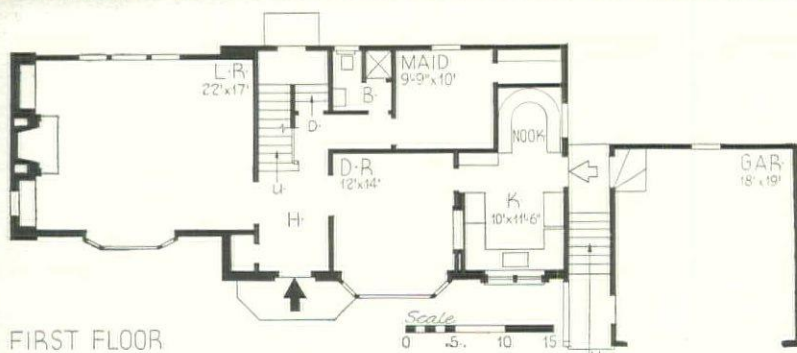


Stomping Ground of Realtor Dean is hilly west Portland. He has exclusive selling rights in 1) Pittock Estate, 2) Highland Crest, 3) The Highlands, 4) Green Hills, 5) Nichols Estate, 6) Westover Crest, 7) Forest Hills, 8) Albinwood, 9) Hillsdale Heights. Under Dean's uniform restrictions the houses below are harmonious in design though in two separate developments.

load. That they have plenty to sell is easily seen by peeking into Dean's ample listings: a potpourri of seven hill subdivisions, three big unplatted estates for sale in sections, several other smaller estates, as well as individual listings.

His subdivisions on the west side have followed in general the pattern of The Highlands—60 acres of swank and prestige on a 300-acre estate. Dean was given exclusive selling rights to The Highlands when he took a prize prospect away from its long-standing broker. Since then he has sold 21 out of a total of the 79 lots, which range in area from one-fourth acre to three acres; the sales, in price from \$1,250





Roscoe DeLuer Hemenway, Architect
English Park Subdivision

Land: \$2,000
House: \$9,500

to \$5,000. In The Highlands homes cost from \$10,000 to \$100,000, set a mark for the neighbors to shoot at.

Present trend in new western hill subdivisions, however, is toward smaller lots and cheaper homes. Example: Albinwood, where one-half- to one-acre lots cost from \$500 to \$750; houses, from \$4,500 to \$6,000.

The subdivider. Many of Dean's bargains for exclusive sales rights included the joker that he had to subdivide the properties before he could sell them. Consequently, he soon found himself spending much of his time laying out plot plans, running in utility lines, and building roads.

The joker was sometimes an ace for Dean, however, giving him the opportunity to play with subdivision titles. In 1936 he subdivided the 80-acre Bay Estate, chose the relatively unexciting title of "Forest Park." But in addition he gave individual names to each of the estate lots, using the word "Forest" in every subtitle. Examples: Forest Home, Forest Shadows, Forest Lawn, Forest Glade. Each lot was marked with its individual sign. This permitted the identification of lots without the aid of a map, permitted many a prospect the minor but satisfying triumph of taking friends out to see his "country estate." Result: Forest Park was a sell-out in three months.

With this and other records chalked up to his credit, it was little wonder that Dean decided to start a subdivision for himself. Within the city limits of Portland he has taken an option on six acres of land under a clause requiring him to pay for at least \$2,000 worth of property a year. He restricts the homes there to English architecture, thus prevents the hodgepodge of design that characterizes so many U. S. neighborhoods. Also in style is the title—English Park. Dean's building company has built and sold two houses there; a third is under construction.

The salesman. Recognizing the value of playing up the western hills of Portland as a unified area, as well as the necessity

of being fair to the many property owners, Dean chose a collective nom de plume: "The Hills of Home," has used it with such effectiveness that today no Portlandite thinks of individual subdivisions but of the western hills as a unit.

Actually Dean has spent precious little on direct advertising. In his fifteen real estate years, he has put \$40,000 in newspaper ads—only 1 per cent of his gross sales volume. He also has published occasional booklets illustrating houses for sale in various parts of The Hills of Home. These, as well as his news ads, are conservative in format, but at the same time achieve an atmosphere of exclusiveness, tread delicately around the subject of costs. Sample slogan: "Country estates right downtown."

To catch the eye of the motorist roaring over the area's now-fine roads, Dean has erected conservative billboards on properties for which he is salesman at a cost of about \$500 a year. One result of his concentration on high-cost properties is that he has never used a model house, feeling that modeled splendor would attract sightseers, not buyers.

The builder. As the complexity and diversity of his activities warranted, it was natural that Allison Dean soon found himself deep in the building business. He organized a building company titled Homes Inc., made himself chief salesman. Next logical step occurred to him while mulling over the sales resistance created by the multiplicity of contracts and complications that face the prospective home builder. To break that resistance by eliminating its cause, Dean developed as a part of Homes Inc. his own "one stop service," which means just what it says. Anyone planning to build a home need stop only at the Homes Inc. office; it does the stopping for him from then on. The organization will purchase land, choose the architect, let the building contract, supervise construction, and arrange financing. What makes Homes Inc. stand apart from other similar services is that it

scotches the potential builder's biggest bugaboo—cost. In the Homes Inc.-client contract is written the total price of the house and lot, and of the fifteen houses built to date, not one has exceeded that contract price.

King-pin of Homes Inc. is 30-year-old Architect Ira Washburn who does the estimating and superintends construction. Although a client may finance his purchase with whomever he wishes, he is headed toward insurance companies and the FHA if his mind is not already made up. Homes Inc. also builds on speculation, obtains FHA approval in case the eventual lender should want mortgage insurance.

Two of the speculative houses built by Homes Inc. are based on Allison H. Dean's pet design scheme: the "chassis unit." He recognizes that there are certain rooms in every house that can be related to one another in a standard pattern without destroying the flexibility of the whole design. So, he puts those various elements in a cube, calls it his chassis unit. It includes kitchen, dining room, and garage on the first floor, a bath and two bedrooms on the second. To this unit, living and other rooms can be added in some 55 copyrighted ways. Advantage of the chassis unit is that its partially standardized construction should prove economical in volume operations. As yet, however, it has not been proved. Homes Inc. has built only two chassis unit houses on $\frac{1}{8}$ acre plots, has priced them at \$6,500, has yet to sell them.

The man. When Dean left the prairie grade schools of Saskatchewan he wrote finis to his formal education. Nonetheless, Portland's University Club made him an associate member last fall, thus cap-and-gowned his self-education. He is Oregon State Chairman of the NAREB's Land Developers and Home Builders Division, a member of the Chamber of Commerce and Real Estate Board. Though now living on the east side flats, he remains true to his Hills of Home, owns a 10-acre tract on which some day he will build.



Ira Washburn, Architect
Albinwood Subdivision

Land: \$600
House: \$4,400

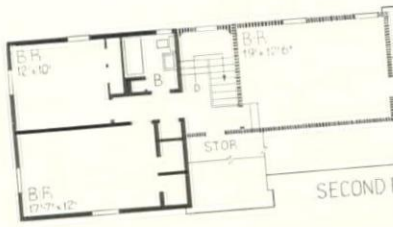
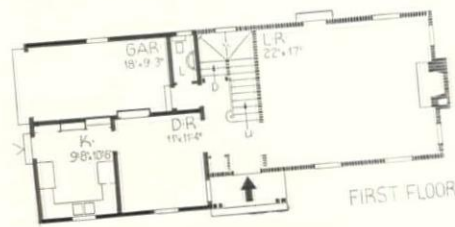
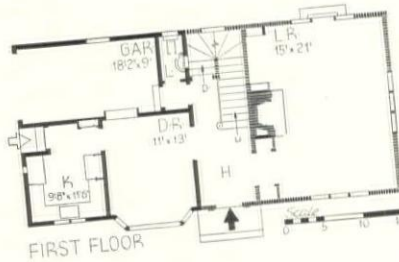


Ira Washburn, Architect
Albinwood Subdivision

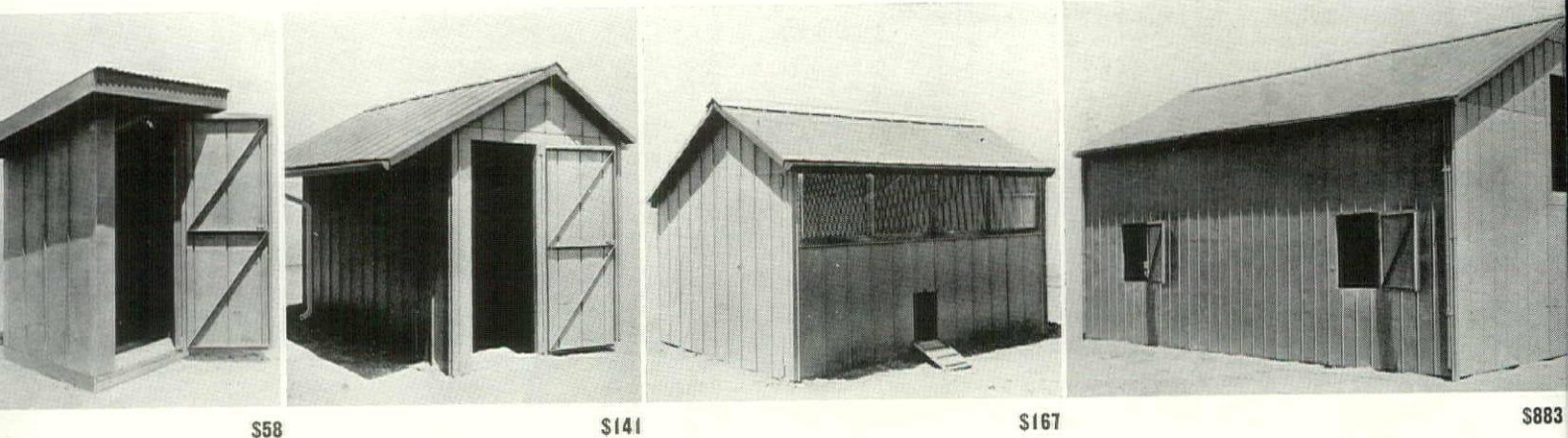
Land: \$750
House: \$4,450



All photos Columbia Commercial



Chassis Unit Houses (left) were designed and named by Dean. The heavy outline on the plans defines the chassis; shaded lines, the additions to it. Dean claims the standard unit would save money in multiple production, has copyrighted 55 variations of the plan. The two shown were built by Hemes Inc.



\$58

\$141

\$167

\$883

T. C. I. PUTS THE FARMER IN STEEL, also his horses, cows, chickens

and corn. A low cost five-building suite for FSA and public use.

EVIDENCE that the Government stamp of approval has been placed on the prefabricated steel house came in late November as the Tennessee Coal, Iron and Railroad Co. began delivery of an order for 60 all-steel farm houses and out-buildings to the Farm Security Administration. The initial installment included two units of five buildings each (a dwelling, barn, chicken house, store house and privy), shipped from the Company's huge Birmingham plant 48 miles to the Alabama Tenant Security Project near Jasper, Ala.* The bill: \$3,119 per five-building unit. Week ago these two newsworthy farms were scheduled for occupancy, and ten other units were taking shape in various other FSA projects in Alabama, Georgia, and South Carolina.

A subsidiary of U. S. Steel Corporation, misnamed Tennessee Coal, Iron and Railroad Co., sells no coal, no raw iron and transports nothing other than company freight. Principal products are steel, galvanized iron, tin plate, and rails. Like its sister subsidiary, Carnegie-Illinois Steel Corp. (ARCH. FORUM, Dec. 1938, p. 477), T. C. I. recognizes housing as a potential new market for many of its products. In 1936 it began developing that market with the construction in Birmingham of Tennessteel Model Homestead to "signalize the advent of (a) new steel era in small home and farmstead construction." But, T. C. I.'s signalizing was a bit premature—it sold only one group of its Tennessteel buildings, whose construction featured galvanized sheet steel siding on a frame of wood.

More recent experimentation by T. C. I. in the steel house field has been done in cooperation with engineers of FSA's Con-

struction Division. Purpose was to develop a new system of construction to help accomplish objectives of the Bankhead-Jones Farm Tenant Act. One outcome of this joint effort was called the U. S. S. Panelbilt System of Construction. Other outcomes: erection year ago of one experimental unit in the Greenbelt area of Maryland; award of the recent contract to T. C. I. when FSA called for bids on a dozen steel farm building suites.

Construction. Panelbilt structures differ from the Company's earlier attempts at steel construction mainly in that they contain many times as much steel. The dwelling is constructed wholly of steel except for wooden doors, floors (which may be either wood or concrete) and interior wall finish (which is insulating wallboard). Out-buildings are entirely steel. Together the five buildings which constitute the farm unit require approximately twelve and a half tons of the metal.

Construction of the dwelling is particularly noteworthy. Even its foundation piers are prefabricated. Formed of two hot-rolled steel channel sections, they are delivered to the site shop-welded to a steel footing plate and coated with asphalt. Steel floor joists, side wall panels, and interior partition frames are then bolted in place. Atop them are secured steel ceiling and roof panels.

Side wall panels containing doors and windows are interchangeable with solid wall sections, therefore make possible a large number of floor plan variations. T. C. I. is currently offering twelve such variations ranging from a three-room house to a two-family house containing six rooms and two baths. Designed on the basis of 4 ft. modules, all are readily expandable by the simple addition of panels.

Prices. Complete repertoire of T. C. I.'s farm buildings reads like a page from a mail order catalogue:

The "Walker," a 22½ x 36½ ft. dwelling (pictured opposite), comes without

fireplace and front porch. Price, erected at Jasper: \$1,870 (approximate).

Type "D" barn measures 20 x 32 ft., contains wagon shed, corn crib, two compartments for animals, implement storage room and hay loft. Price: \$883.

Type "8" barn, 18½ x 28½ ft., provides wagon shed, poultry house, stable, granary and tool room. Price: \$688 (erected at Tysonville, Ala. Not shown above.).

Poultry house measures 10 x 12 ft., has capacity for 50 chickens. Price: \$167.

Store house, or outdoor pantry, 8½ x 12½ ft., has large roof overhang for outside shelter. Price: \$141.

Privy measures 4 x 4 ft. Price, excluding foundation and floor: \$58.

Selling points of T. C. I.'s family of farm buildings are its resistance to fire and weather, resultant low repair costs and the ease with which it may be dismantled, moved and re-erected with practically 100 per cent salvage value. T. C. I. further points out to the farmer that no rat, field mouse, chipmunk or termite has yet succeeded in biting through sheet steel. But, purchasers pay for these advantages. Proof is the fact that while T. C. I.'s 24 ft., 7½ in. x 36 ft., 6 in. "Calhoun" house (cheapest dwelling now completed) costs \$1,695 erected at nearby Orangeburg, S. C., FSA last fall erected a group of 24 x 36 ft. prefabricated five-room frame farm dwellings in Southwest Missouri at a cost of \$1,105 each. (ARCH. FORUM, Nov. 1938, p. 393). However, cost of complete fire insurance coverage for a frame house at Jasper comparable in size to T. C. I.'s steel dwelling would be about \$22 per year. The latter would obviously need no fire insurance.

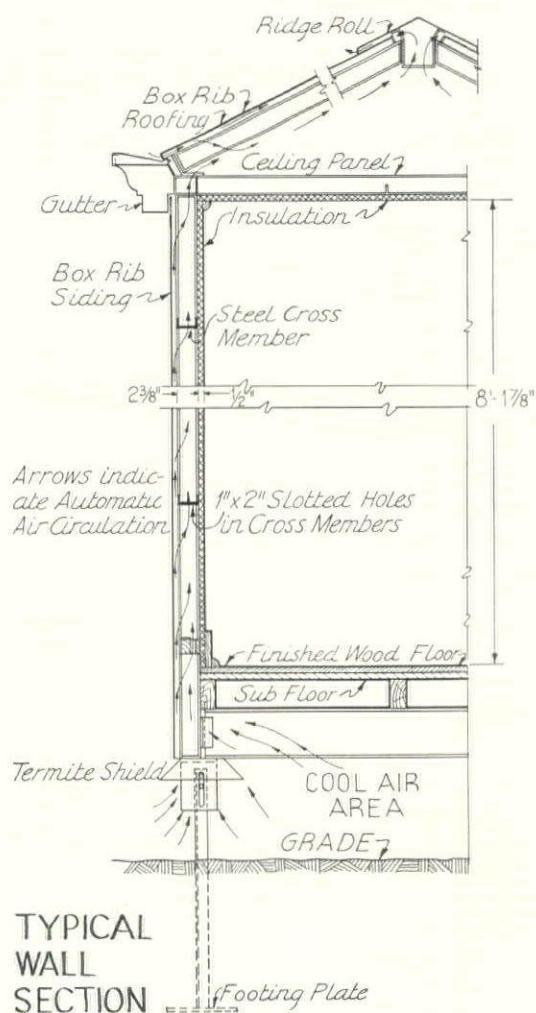
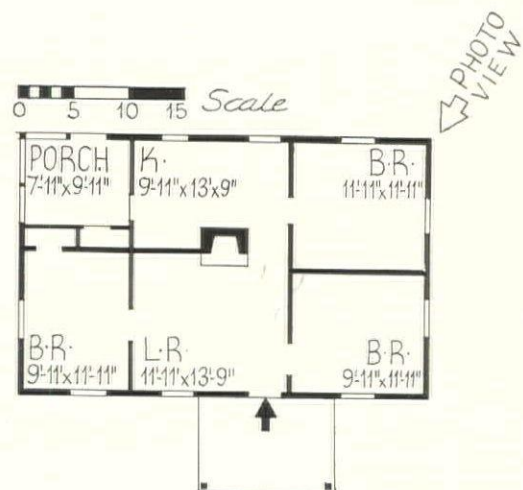
The November debut of the T. C. I.-FSA steel farm buildings struck the fancy of the press, even rated a front page blurb in New York City's *Herald Tribune*. Result: within ten days the manufacturers had received some 200 inquiries—including one from Canada, one from South America and one from a U. S. mail order house with an eye to stocking the buildings.

* Hometown of Senator John H. Bankhead and House Speaker William B. Bankhead, proponents of Government farm legislation. Brother John's Bankhead-Jones Farm Tenant Act, for the furtherance of which T. C. I.'s steel farm units were designed, proposes via Federal loans to help qualified farm tenants, sharecroppers, and laborers become farm owners.

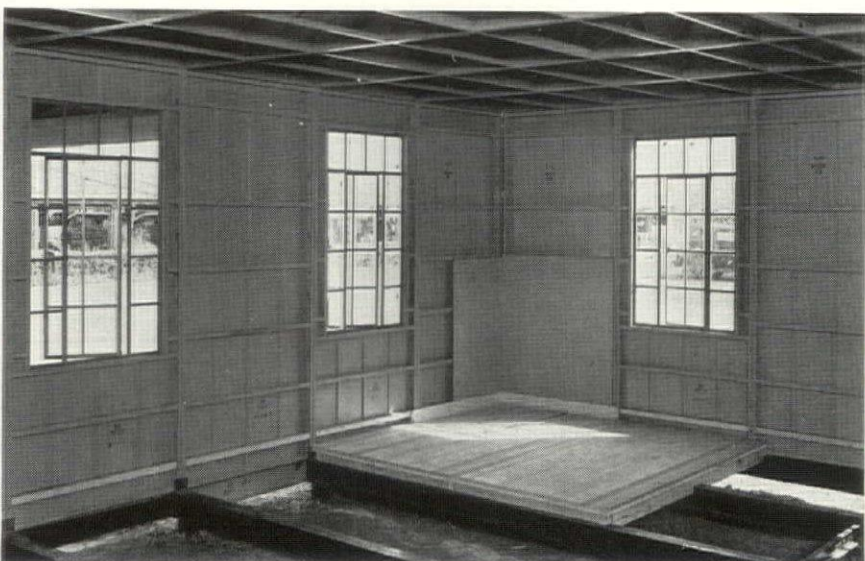


"THE WALKER"

\$1,870



Construction view (above) shows steel ceiling joists and roof panels combined and reinforced to form rigid trusses. Note foundation, floor and wall construction in view, below.



Cavity walls, open at top and bottom, result when insulating board is applied to the inside of steel wall panels. Hot air generated in this cavity is carried up through slotted holes in the panels' cross members to attic and escapes through continuous ridge ventilator and gable louvers (section, above). Claiming that this wall construction has lower conductivity value than a 13 in. brick wall, T.C.I. offers it as a solution to the difficult problem of insulating steel houses, which, if inadequately insulated, become sunshine-fired ovens.

USHA SPENDS ITS 1938 BUDGET

A milestone in Government's low cost housing program was reached at mid-December as USHA took inventory, found that not one unallocated dollar remained in its corporate cash register. Of the \$800,000,000 that used to be there, \$320,986,000 has been signed away in loan contracts for 140 projects in 75 communities, \$328,803,000 has been earmarked for 43 communities already having loan contracts and for 80 additional communities. The remainder has been set aside for annual contributions to all these communities and for contingencies. Thus, unless and until Congress replenishes the cash register (and it is likely the USH Administrator Nathan Straus will ask for at least \$500,000,000 more), Government will be unable to initiate any further new housing business.

Loan contracts that have been written cover 90 per cent of approved projects' proposed costs. At USHA's discretion they may be increased by one-tenth in case of over-runs in construction costs, but under no circumstances may they exceed 90 per cent of the projects' actual costs. Contracts also provide that local participation be equal to 10 per cent of the projects' costs plus a one-tenth margin of safety.

If Government's housing program proceeds according to schedule, total loan contracts written to date will eventually provide housing for 64,451 low income families. (See tabulation, below and opposite.) And, when outstanding earmarkings (shown on the page following) have been converted into loan contracts, the total will approximate 148,300 families. Indica-

STATE	CITY	PROJECT	SITE	NO. DWELL. UNITS	TOTAL COST ¹	COST PER DWELL. UNIT ²	STATE	CITY	PROJECT	SITE	NO. DWELL. UNITS	TOTAL COST ¹	COST PER DWELL. UNIT ²	
ALA.	BIRMINGHAM	No. 1	VACANT	860	\$4,253,071	\$3,739	KY.	FRANKFORT	No. 1	(3)	91	\$ 387,000	\$2,676	
	MOBILE	No. 1	VACANT	100	453,000	3,501		LOUISVILLE	EAST END ⁴	SLUM	814	4,734,000	3,656	
		No. 2	SLUM	298	1,381,000	3,167			WEST END	SLUM	788	4,650,000	3,656	
CAL.	LOS ANGELES CO.	No. 1	VACANT	250	1,287,000	3,400		LEXINGTON	No. 1	(3)	206	990,000	3,012	
		No. 2	VACANT	253	1,304,000	3,400	LA.	NEW ORLEANS	ST. THOMAS	SLUM	741	4,845,700	4,109	
	OAKLAND	No. 1	SLUM	400	2,117,000	3,203			MAGNOLIA	SLUM	656	4,500,000	3,871	
		No. 2	SLUM	156	763,000	3,202			No. 3	SLUM	916	5,562,000	3,973	
	SAN FRANCISCO	Nos. 1 & 2	(3)	418	2,204,000	2,906			No. 4	SLUM	903	5,362,000	3,941	
								Nos. 5 & 6	(3)	1,390	7,856,000	3,350		
D. C.	WASHINGTON	No. 1	VACANT	282	1,571,000	4,000	MD.	ANNAPOLIS	No. 1	75% VAC.	100	532,000	3,520	
		No. 2	SLUM	246	1,511,000	3,650		BALTIMORE	No. 1	SLUM	692	3,986,500	3,980	
		No. 3	SLUM	428	2,610,000	3,701			No. 2	SLUM	878	5,578,900	3,980	
		No. 4	VACANT	301	1,644,000	4,053			No. 3	SLUM	810	4,993,800	3,980	
FLA.	JACKSONVILLE	BRENTWOOD ⁵	VACANT	224	1,140,625	3,833			No. 4	SLUM	258	1,518,200	3,980	
	ORLANDO	No. 1	SLUM	156	609,000	2,768			No. 5	SLUM	404	2,385,000	3,980	
	PENSACOLA	No. 1	SLUM	120	623,000	3,620			No. 6	VACANT	600	2,931,000	3,971	
		No. 2	75% VAC.	120	550,000	3,423			No. 7	VACANT	502	2,598,000	3,971	
	ST. PETERSBURG	No. 1	80% VAC.	242	1,065,000	3,343	MASS.	BOSTON	No. 1	SLUM	1,017	6,214,000	4,114	
	TAMPA	No. 1	51% SLUM	350	1,693,233	3,500			No. 2	SLUM	672	4,088,000	4,245	
GA.	ATLANTA	No. 1	SLUM	602	3,340,000	3,623			No. 3	SLUM	1,092	6,473,000	4,121	
		No. 2	SLUM	604	3,054,000	3,279			No. 4	SLUM	342	2,032,000	4,057	
		No. 3	SLUM	634	3,410,000	3,482		CAMBRIDGE	No. 1	(3)	328	2,017,000	3,305	
		No. 4	SLUM	598	3,154,000	3,372		HOLYOKE	No. 1	(3)	159	921,000	3,344	
	AUGUSTA	OLMSTED ⁴	VACANT	167	759,800	3,645	MICH.	DETROIT	No. 1	SLUM	248	1,450,818	4,550	
		SUNSET	VACANT	168	761,400	3,773			No. 2	VACANT	355	2,064,948	4,446	
	COLUMBUS	No. 1	(3)	450	2,067,000	2,578			No. 3	VACANT	2,150	12,325,234	4,434	
	SAVANNAH	No. 1	90% VAC.	164	808,000	3,475			No. 4	VACANT	440	2,563,511	4,446	
		No. 2	(3)	501	2,284,000	2,401	NEB.	OMAHA	No. 1	75% SLUM	522	2,492,000	3,500	
ILL.	CHICAGO	SO. PK.	SLUM	1,708	9,638,000	4,284		N. J.	ASBURY PARK	No. 1	SLUM	126	750,000	3,786
	PEORIA	No. 1	SLUM	540	2,843,100	3,775	ELIZABETH		No. 1	80% VAC.	423	2,244,000	3,845	
IND.	ANDERSON	No. 1	SLUM	203	978,000	3,505	NEWARK		No. 1	VACANT	444	2,515,000	3,626	
	DELAWARE CO.	No. 1	VACANT	111	475,000	3,243			No. 2	80% VAC.	240	1,344,000	3,864	
	KOKOMO	No. 1	VACANT	175	705,000	3,283			No. 3	SLUM	463	2,770,000	3,841	
	MUNCIE	No. 1	SLUM	274	1,268,000	3,213			No. 4	VACANT	465	2,483,000	3,705	
	VINCENNES	No. 1	VACANT	83	353,000	3,374			NORTH BERGEN	No. 1	SLUM	170	959,000	3,725
KY.	COVINGTON	No. 1	VACANT	263	1,234,000	3,489			TRENTON	No. 1	SLUM	123	650,000	3,768
		No. 2	SLUM	168	931,000	3,661								

INVENTORY OF PUBLIC HOUSING

tion of what these families will have to pay for rent is found in the preliminary estimates for the seventeen projects which are either under construction or whose construction contracts have been approved. Average rent per room per month (including water, but excluding heat, gas and electricity) is \$3.94. Lowest rent, \$2.66, is likely to be obtained by the Austin, Tex. housing authority which is building fireproof one-story row houses. At the other end of the scale is the predicted \$5.18 rental of New York City's huge Red Hook project which is to be six stories high and of masonry construction.

Behind these rents are costs. Austin's 60-house project is going up on formerly vacant land at a construction cost of \$2,351 per dwelling unit (including the cost of such equipment

as ranges, refrigerators, screens, etc. and the local authority's overhead, carrying and architectural charges applicable to dwellings). On the other hand the 29-building, 2,643-family Red Hook project is being built 53 per cent on expensive slum land and will cost about \$4,642 per family dwelling unit. Since these unit costs represent the two extremes, it is not expected that rents for any of the projects for which loan contracts have been written will exceed Red Hook's. And, chances are that Austin's figure will be bettered by only two other Texas authorities who may depress their rents to as low as \$2 per room per month.

Below are listed communities having loan contracts; on the following page, communities having earmarkings.

STATE	CITY	PROJECT	SITE	NO. DWELL. UNITS	TOTAL COST ¹	COST PER DWELL. UNIT ²
N. J.	TRENTON	No. 2	50% SLUM	380	\$2,049,000	\$3,960
N. Y.	BUFFALO	LAKEVIEW ³	75% VAC.	696	4,047,651	4,191
		WILLERT PK. ⁴	SLUM	172	913,000	3,855
		PERRY-ALA.	SLUM	771	4,401,000	4,330
	NEW YORK	RED HOOK ⁵	53% SLUM	2,643	16,592,800	4,642
		QUEENSBRIDGE ⁵	8% SLUM	2,551	16,740,200	4,610
		No. 3	(3)	1,476	9,323,000	3,396
	SYRACUSE	EASTERN ⁴	SLUM	678	4,366,700	3,800
	UTICA	No. 1 ⁴	VACANT	212	1,000,000	3,690
	YONKERS	No. 1	SLUM	545	3,307,000	4,000
N. C.	WILMINGTON	No. 1	75% VAC.	116	572,000	3,725
		No. 2	70% SLUM	136	713,000	3,642
OHIO	CINCINNATI	No. 1	VACANT	750	4,000,000	3,800
		No. 2	VACANT	750	3,891,000	3,800
	CLEVELAND	No. 1	75% SLUM	554	3,300,000	4,092
		No. 2	SLUM	627	3,630,000	4,083
		No. 3	VACANT	623	3,240,000	4,174
	COLUMBUS	No. 1	SLUM	456	2,097,330	3,114
	DAYTON	No. 1	VACANT	400	1,936,000	3,648
		No. 2	VACANT	200	980,000	3,647
	TOLEDO	WEILER ⁴	VACANT	380	1,827,000	3,600
	WARREN	No. 1	(3)	224	1,101,000	3,060
	YOUNGSTOWN	WEST LAKE ⁴	66% VAC.	600	3,150,000	3,864
	ZANESVILLE	No. 1	70% VAC.	326	1,499,000	3,478
PA.	ALLENTOWN	HANOVER ⁴	VACANT	322	1,607,000	3,686
	CHESTER	No. 1	50% SLUM	396	2,165,000	3,725
	PHILADELPHIA	No. 1	90% VAC.	620	3,378,700	3,914
		No. 2	VACANT	1,000	5,283,800	4,050
		No. 3	SLUM	1,361	8,136,011	3,895
	PITTSBURGH	No. 1	70% VAC.	825	4,943,000	4,000
		No. 2 ⁴	60% VAC.	431	2,553,000	3,895
		No. 3	SLUM	1,758	10,975,000	3,880
	READING	No. 1	(3)	400	2,005,000	3,119
S. C.	CHARLESTON	No. 1 ⁴	SLUM	126	700,400	3,366
		No. 2	SLUM	90	429,500	3,600
		Nos. 3 & 4	(3)	290	1,441,000	2,550

STATE	CITY	PROJECT	SITE	NO. DWELL. UNITS	TOTAL COST ¹	COST PER DWELL. UNIT ²
S. C.	COLUMBIA	No. 1	SLUM	200	\$1,046,000	\$3,747
		No. 2	SLUM	200	1,012,000	3,525
TENN.	CHATTANOOGA	No. 1	SLUM	496	2,514,000	3,414
	KNOXVILLE	No. 1	VACANT	244	1,213,295	3,500
		No. 2	SLUM	320	1,568,476	3,500
	MEMPHIS	No. 1	SLUM	478	2,474,000	3,439
		No. 2	SLUM	700	3,684,000	3,369
TEX.	AUSTIN	CHALMERS ⁴	SLUM	86	346,719	2,750
		ROSEWOOD ⁵	VACANT	60	225,710	2,351
		SANTA RITA ⁵	VACANT	40	142,043	2,414
	BROWNSVILLE	No. 1	SLUM	148	594,000	2,811
	CORPUS CHRISTI	No. 1	67% VAC.	85	313,000	2,634
		No. 2	SLUM	112	424,000	2,680
		No. 3	SLUM	45	205,000	2,625
	EL PASO	No. 1	SLUM	318	1,345,000	2,871
	FORT WORTH	No. 1	SLUM	252	1,211,199	3,300
		No. 2	SLUM	250	1,042,087	3,000
	HOUSTON	No. 1	80% VAC.	332	1,558,000	3,379
		No. 2	SLUM	328	1,778,000	3,336
	SAN ANTONIO	No. 1	SLUM	1,250	3,986,380	2,390
VT.	BURLINGTON	No. 1	VACANT	101	485,000	3,861
W. VA.	CHARLESTON	No. 1	SLUM	366	1,771,252	3,600
		No. 2	VACANT	138	645,248	3,600
	HUNTINGTON	No. 1	SLUM	80	421,000	3,693
		No. 2	SLUM	136	625,000	3,630
		No. 3	VACANT	284	1,290,000	3,562
	PARKERSBURG	No. 1	VACANT	152	747,000	3,719
T. H.	HONOLULU	No. 1	VACANT	220	1,125,000	3,564

¹ Cost of entire project, including cost of demolition, if any.

² Cost of dwelling facilities only. Includes cost of equipment, architects and overhead applicable to dwellings.

³ Data not available.

⁴ Construction contract approved for award.

⁵ Construction started.

USHA—continued

EARMARKINGS OUTSTANDING

USA —continued											
MARKINGS OUTSTANDING											
ALA.	Anniston	\$540,000	ILL.	Savannah	918,000	MONT.	McComb	450,000	S. C.	Harrisburg	1,500,000
	Birmingham	4,172,000		Chicago	7,326,000		Meridian	1,200,000		McKeesport	900,000
	Gadsden	900,000		St. Clair Co.	1,500,000		Billings	270,000		Philadelphia	16,882,000
	Phenix City	500,000					Butte	900,000		Scranton	1,000,000
CAL.	Los Angeles	25,000,000	IND.	East Chicago	1,000,000		Great Falls	675,000			
	Los Angeles Co.	2,669,000		Fort Wayne	1,500,000		Helena	300,000			
	Oakland	2,409,000		Gary	2,800,000	NEB.					
	San Francisco	13,017,000		Hammond	1,800,000		Omaha	2,000,000			
COL.	Denver	3,000,000		Marion	500,000	N. J.					
	Pueblo	1,000,000		New Albany	450,000		Atlantic City	1,250,000	TENN.	Chattanooga	1,838,000
CONN.	Bridgeport	6,500,000		Richmond	600,000		Bayonne	1,800,000		Johnson City	300,000
	Hartford	4,500,000					Camden	2,500,000		Knoxville	1,000,000
	New Britain	1,500,000	KY.	Covington	753,000		Elizabeth	1,481,000		Memphis	1,000,000
	New Haven	5,500,000		Frankfort	102,000		Jersey City	7,500,000	TEX.	Austin	500,000
	Norwalk	450,000		Lexington	459,000		Long Branch	540,000		Corpus Christi	479,000
	Waterbury	1,000,000		Louisville	5,000,000		Newark	4,401,000		Dallas	6,000,000
DEL.	Wilmington	2,100,000		Newport	750,000		Orange	900,000		El Paso	1,000,000
D. C.	Washington	8,400,000		Paducah	900,000		Perth Amboy	1,350,000		Houston	7,000,000
FLA.	Daytona Beach	500,000	MD.	Baltimore	1,409,000	N. Y.	Plainfield	900,000		Laredo	600,000
	Jacksonville	2,000,000		Frederick	450,000		New York	14,610,000		San Antonio	5,612,000
	Miami	2,250,000	MASS.	Boston	12,076,000		Schenectady	1,400,000		Waco	900,000
	Sarasota	270,000		Cambridge	2,685,000	N. C.			VA.	Portsmouth	1,500,000
	Tampa	1,500,000		Chicopee	1,000,000		Raleigh	1,800,000			
	W. Palm Beach	750,000		Fall River	2,500,000	OHIO	Wilmington	600,000	W. VA.	Charleston	325,000
GA.	Athens	570,000		Holyoke	972,000		Akron	5,000,000		Martinsburg	450,000
	Augusta	1,000,000		Lawrence	1,500,000		Canton	2,000,000		Morgantown	270,000
	Macon	1,750,000		Lowell	2,700,000		Cincinnati	6,399,000		Wheeling	1,350,000
	Rome	540,000		New Bedford	2,000,000		Cleveland	8,847,000	WISC.	Superior	675,000
				Somerville	2,000,000		Columbus	4,612,000			
			MICH.	Worcester	3,800,000		Dayton	3,376,000	HAWAII		2,388,000
				Dearborn	1,500,000		Portsmouth	1,000,000			
				Detroit	13,436,000		Toledo	3,756,000	PUERTO RICO	Ponce	1,000,000
				Flint	3,500,000		Warren	10,000		Puerto Rico	
			MISS.	Hattiesburg	600,000	PA.	Youngstown	2,000,000		Housing Authority	8,000,000
				Laurel	630,000					San Juan	3,000,000
							Allegheny Co.	2,800,000			
							Bethlehem	1,000,000			

BAIT FOR HOME BUYERS is no down payment

in Hackensack, N. J. The hook: owned real estate.

IN 1936 many a family in Hackensack, N. J. (pop.: 25,000) welcomed a fatter pay check than it had through the depression depths, but still was hard pressed when it came to home ownership's necessary down payment. At the same time, the \$2.8 million Hackensack Mutual Building and Loan Assn. carried 119 foreclosed houses on its books which it did not want to dump on the market, yet could not sell for their value. Astute local Realtor Fred M. Fountain took these two facts, shuffled them, and produced the obvious answer: sell the properties without down payment.

As a director of the Hackensack Mutual Building and Loan Assn., Fountain then weighed the risks of no down payment against the risks of holding owned real estate, found the balance in favor of the former. Result was a plan that proved mutually profitable: within two years the Hackensack Mutual has been relieved of 50 previously non-salable properties; Fountain has received a 5 per cent commission for selling half the properties himself, 2 per cent for overwriting the remainder sold by other brokers.

Nothing down. Basis of the plan is simply to give the purchaser a contract for sale, require him to make monthly payments. When these payments total 10 per cent of the purchase price, they are considered the equivalent of a down payment and title is granted. As average sales price of

the Hackensack houses is slightly under \$5,000, the purchaser has to accumulate \$500 in "rent" before he receives the title and a \$4,500 mortgage. The monthly rent amounts to \$55, is made up of amortization, \$21; interest, \$15; taxes, \$18; building and loan share payment, \$1. It takes an average of three and one-half years to collect the 10 per cent down payment, a total of twenty years to pay off the mortgage at 6 per cent interest.

Hackensack Mutual let Fountain guinea-pig the plan with nine of the 119 residences. All nine were easily sold, convincing the association that sale with no down payment should move into high gear. It did. So impressed was a home town rival, the United Building and Loan Association, that year ago it too enlisted the services of Realtor Fountain to help sell its 50 owned properties. Since then it has given fifteen Hackensackers the benefits of home ownership without down payment. In addition, some nine other New Jersey building and loan associations have adopted the plan.

Remodeling down. With real estate accounts fast disappearing from their books and with family incomes and savings increasing, the two Hackensack building and loan associations soon tightened up their lending terms. Early in 1938 Fountain devised a painless method of increasing the associations' equity in the properties they sold, made it a part of the no down pay-

ment plan. He observed that the average home purchaser is well aware of the bulk of his down payment, but as an owner the same person will spend almost gladly a like amount for reconditioning. Therefore Fountain added to the no-down-payment agreement a clause requiring that the buyer undertake specific repairs and that he complete them within three months. This work served to protect the associations' equity in the property by building up the value of the house itself.

Required repairs were usually of a protective rather than a decorative nature. The building and loaners estimated that the owners generally saved as much as 40 per cent of the cost of remodeling through their own labor—a sizable item to any buyer. Average estimated cost of repairs to the tenant was \$400.

Five per cent down. With business conditions still improving, the latest step of the Hackensack building and loan associations has been to replace the no-down-payment plan with a 5 per cent down payment plan. Under it, the "rent" is allowed to accumulate as in the original scheme and, when the purchaser has anted another 5 per cent of the property value, he gets a 90 per cent mortgage.

The long range success of no- or low-down-payment plans hinges largely on the integrity of the purchaser himself. So it was necessary for the Hackensack building and loan associations to exercise special care in their winnowing of prospects. They chose no one who had appreciable debts, no one whose credit reputation was not A-1. Out of every fifteen applicants, only one made the grade. The associations

(Continued on page 34)



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FHLBB COST INDEX

THE November installment of the Federal Home Loan Bank Board's small house cost index covered the Pittsburgh, Cincinnati, Little Rock and Los Angeles Districts, added further evidence that the building cost trend is steady. Thus, eleven of the 25 reporting cities indicated that cost of the Board's hypothetical house had increased slightly since August; nine indicated lower costs; five noted no change.

FHLBB DISTRICTS CUBIC FOOT COSTS

STATES AND CITIES	NOV. 1938	AUG. 1938	NOV. 1937	NOV. 1936
PITTSBURGH:				
DELAWARE:				
WILMINGTON	\$0.246	\$0.246	\$0.242	\$0.223
PENNSYLVANIA:				
HARRISBURG	.237	.237	.243	.233
PHILADELPHIA	.224	.226	.240	.212
PITTSBURGH	.267	.270	.280	.254
W. VIRGINIA:				
CHARLESTON	.245	.246	.260	.235
WHEELING	.250	.252	.277	.241

CINCINNATI:				
KENTUCKY:				
LEXINGTON	.228	.222	.233	.218
LOUISVILLE	.243	.241	.249	.231
OHIO:				
CINCINNATI	.255	.255	.261	.242
CLEVELAND	.267	.266	.286	.259
COLUMBUS	.239	.247	.254	.236
TENNESSEE:				
MEMPHIS	.239	.236	.242	.213
NASHVILLE	.213	.212	.228	.213

All individual cost movements were minor. Largest was a decrease of one cent in the cubic foot cost of Los Angeles, California's house. Next largest was a nine mill advance in nearby Phoenix, Ariz. Other significant fluctuations in cubic foot costs were those at Columbus, Ohio; Dallas, Tex.; San Antonio, Tex. (where decreased costs were reported) and Philadelphia, Pa. and Lexington, Ky. (where advances were reported). None of the other cities reported changes in price of more than half a cent per cubic foot. Average change: a decrease of 1/3 mill.

FHLBB DISTRICTS CUBIC FOOT COSTS

STATES AND CITIES	NOV. 1938	AUG. 1938	NOV. 1937	NOV. 1936
LITTLE ROCK:				
ARKANSAS:				
LITTLE ROCK	.217	.215	.216	.214
LOUISIANA:				
NEW ORLEANS	.249	.251	.255	.231
MISSISSIPPI:				
JACKSON	.253	.253	.249	.227
NEW MEXICO:				
ALBUQUERQUE	.272	.277	.277	.260
TEXAS:				
DALLAS	.239	.245	.253	.235
HOUSTON	.246	.250	.256	.239
SAN ANTONIO	.247	.252	.259	.231

LOS ANGELES:				
ARIZONA:				
PHOENIX	.269	.260	.281	.252
CALIFORNIA:				
LOS ANGELES	.228	.238	.247	.228
SAN DIEGO	.243	.243	.258	.233
SAN FRANCISCO	.265	.264	.266	.253
NEVADA: RENO	.274	.273	.278	.265

NO DOWN PAYMENT

(Continued from page 72)

also appraised properties carefully at the time sales contracts were let; but, after the owners reconditioned, they made only superficial examinations.

Principal weakness of the Fountain plan lies in the difficulty of repossession when an owner fails to live up to his part of the bargain. The Hackensack Mutual believes, however, that if an owner-tenant contested eviction in court it could win on the grounds of dispossession for non-payment of rent. Fortunately, in the three cases where eviction has been necessary the tenants have left without protest.

A secondary weakness lies in the structures themselves. The houses start off these 20-year agreements with an average age of twenty years. Thus, purchasers will not become actual owners until the properties are about 40 years old, so they may some day find it more economical to move into newer structures and write off all payments as rent.

Regardless of its long term implications, however, the Fountain plan has served the double purpose for which it was intended. It has provided an outlet for the Hackensack Mutual's owned real estate and has created business for Hackensack's oldest realtors, Fountain and Sons, Inc.



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Guastavino Timbrel Tile (all-masonry) Dome of 72' 0" span over Planetarium Chamber, erected by

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500 FIFTH AVENUE, NEW YORK

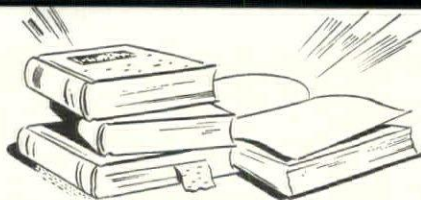
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HERE'S PROOF

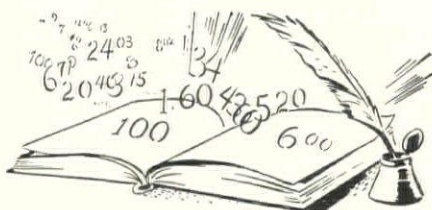
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FACTS

This is the true picture of residential financing in the United States. Figures are from recent Federal Home Loan Bank Board reports.



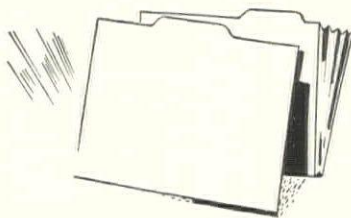
FIGURES

Total home mortgage loans made in 1937 by institutional lenders—\$1,605,000,000.00.*

Here are the percentages:

Savings or Building and Loan Associations.....	55.82%
All Commercial Banks.....	22.08%
Mutual Savings Banks.....	8.24%
Life Insurance Companies.....	13.86%
Total.....	100.00%

*In addition, an estimated \$475,000,000.00 was loaned by individuals and other non-institutional lenders to finance homes.



FILE

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and Loan Association—You help local business!*



Exterior, Hotel Roosevelt Bar, Pittsburgh, Pa.; James F. Eppenstein, Architect.

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OR INDUSTRIAL
PIPE LINES**



● A non-rusting copper piping system is, by far, the most desirable for plumbing or heating installations. The architect knows this—and so does the prospective home owner; yet, not being acquainted with the actual facts, he may consider it too costly and pass it up without due consideration.

AS A MATTER OF FACT, THE INSTALLED COST OF STREAMLINE COPPER PIPE AND BRONZE SOLDER FITTINGS IS VERY LITTLE, IF ANY, HIGHER THAN RUSTABLE MATERIALS—AND TODAY IT IS LOWER THAN EVER BEFORE.

Every architect, building manager, realtor or home owner knows that reliable piping for plumbing and heating is the most important thing in the building. To use out-moded, rustable pipe with its old-fashioned threaded fittings to supply modern fixtures and radiators is as impracticable as it is inconsistent.

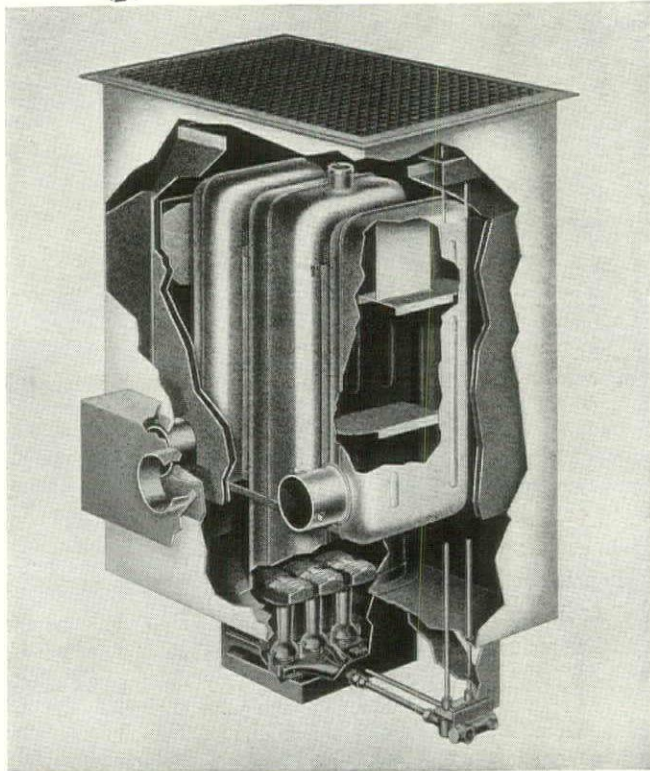
STREAMLINE Copper Pipe and Solder Fittings that cannot rust or clog is the ultra-modern piping system that bridges the gap between out-moded and modern piping lines. It is the permanently reliable conducting system that insures efficient service from up-to-the-minute fixtures and radiating units, year in and year out. With the possible exception of extremely abnormal water conditions, STREAMLINE will outlast the building in which it is installed. There will be no future repair bills.

Like all good things, STREAMLINE has many imitations, but no equals.

Specify genuine STREAMLINE—Insist upon its being used. Its quality is constant and its cost the lowest in copper pipe and fittings history.

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PIPE AND FITTINGS DIVISION
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**AIR CONDITIONING
REFRIGERATION**



at the MOST EFFICIENT Floor Furnace Ever Built!

By all standards of efficiency and economy the new Payne Gas Floor Furnace heads the field! It is rapidly becoming the most popular unit of its type.

The Payne Floor Furnace is economical to buy. Easily and quickly installed. Requires no basement.

Made in America's most modern furnace plant—by manufacturers who have devoted 25 years to the production of gas-fired appliances exclusively.

Write for full information.

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FURNACE & SUPPLY CO., INC.
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FORUM OF EVENTS

(Continued from page 27)

AWARD

To Sir Raymond Unwin, the Ebenezer Howard Memorial Medal of the Garden Cities and Town Planning Association of England, presented November 23, by Walter Elliot, Minister of Health.

COMPETITION

With the purpose of expressing qualities of Plexiglas, a new plastic, the Rohm & Haas Company, Inc. announces a competition sponsored by The Museum of Modern Art. Gilbert Rohde directs the competition and will act as technical adviser to the judges. In the first open stage, the designs are to be shown in sketch form closing February 10, 1939. Five entrants will be selected to develop their designs in the plastic itself. There are five cash prizes ranging from \$800 first to \$100. Further details, entry blanks and samples of the plastic may be had by writing Gilbert Rohde, 32 East 57th St., New York, N. Y.

DEATHS

JULES HENRI DE SIBOUR, 65, architect, in Washington, D. C. Viscount de Sibour was born in Paris, brought to the U. S. as a child, and studied at St. Paul's School and at Yale. He returned to Paris to study architecture at the Ecole, and then began practicing architecture in New York with Bruce Price—Bruce Price & de Sibour. His last completed work was a new administration headquarters for the U. S. Public Health Service.

LANSING C. HOLDEN, JR., 42, architect of New York was killed in a New York National Guard airplane in the fog-bound Tennessee hills near Sparta. Following a spectacular aviation service in the World War for which he received the Distinguished Service Cross, Mr. Holden was graduated from Princeton in the class of 1919, and from Harvard in 1924. After studying at the Ecole in Paris he again returned to aviation, serving in the French army in the Moroccan war, in recognition of which service he received the Cross of the Legion of Honor.

SUMNER P. HUNT, 73, at Los Angeles. Educated in private schools until he began the study of architecture in the office of Clarence B. Cutler, Troy, N. Y., Mr. Hunt worked in New York City until 1889 when he moved to Los Angeles, and entered the office of Calkins & Haas. After 1895 Mr. Hunt was the continuing member of successive partnerships with Theodore Eisen, A. W. Eager, and Silas S. Burns. Mr. Hunt helped to establish the City Planning Commission of Los Angeles, served as a member of the State Board of Architectural Examiners, was a charter member of the Engineers and Architects Association of Southern California, was instrumental in forming the Southern California Chapter, A.I.A. in 1894, and served as its president in 1922 and 1923. One of his valuable contributions to the community was his early recognition of earthquake hazards in building, and later he served as a member of the Joint Committee on Earthquake Hazards headed by Dr. Robert Millikan. He was a Fellow of the A.I.A.

HURLBUT S. JACOBY, 52, engineer, in Columbus, Ohio. Mr. Jacoby had been director of industrial research and field director of the Engineering Experiment Station at Ohio State University since 1934. The son of an engineer, Mr. Jacoby attended Cornell where he received his B.A. in 1908

(Continued on page 42)

"I THINK YOU HAVEN'T GOT SOMETHING THERE"

EVERY ARCHITECT is at once an artist and a scientist. It is the scientist who is uppermost when he considers the claims put forward for this new method or that new material. He demands *complete* proof — not merely laboratory results but also actual service records. He refuses to toss his clients' money into a test tube.

The "experimental period" of Dutch Boy White-Lead ended many years ago. Today, anyone with any questions about Dutch Boy will find them answered by millions of successful paint jobs. No paint made anywhere has ever given a more convincing demonstration of complete dependability.

Every application of Dutch Boy White-Lead is a custom-made paint job — mixed to suit the special requirements of the surface to be painted — tinted to the exact shade you and your client desire. By specifying Dutch Boy White-Lead you secure that combination of beauty and durability which is a fundamental objective of good architecture.


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111 Broadway, New York; 116 Oak Street, Buffalo; 900 West 18th Street, Chicago; 659 Freeman Avenue, Cincinnati; 1213 West Third Street, Cleveland; 722 Chestnut Street, St. Louis; 2240 24th Street, San Francisco; National-Boston Lead Co., 800 Albany Street, Boston; National Lead & Oil Co. of Penna., 316 Fourth Avenue, Pittsburgh; John T. Lewis & Bros. Co., Widener Building, Philadelphia.



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to light your Cigarette*

THAT book of matches in your pocket would fall apart except for that inconspicuous piece of plating wire. It takes approximately 400 miles of that wire every day to supply the enormous demand for book matches.

Steel is even more important in almost every aspect of your daily life. Many food delicacies come to you in tin plated steel cans and are cooked on a steel range; the modern plumbing and heating of your house would be impossible except for steel; your clothes, glass, watch, shoes....all contain vital steel parts. You probably travel in a steel automobile, take the train to a steel framed office building, go to the factory, to work at a steel desk or machine.

All the comforts and conveniences of modern life, which have come to be considered necessities, have been made possible by modern refinements in steels. Such refinements in steels do not just happen.... Youngstown maintains a great laboratory and an experienced organization, always working with customers to find the steel best suited to their needs and products.

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hospital staffs
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COMFORTABLE FLOORING



Armstrong-Stedman Rubber Tile Absorbs Shock . . . Reduces Noise



This quiet corridor in Allegheny General Hospital, Pittsburgh, is floored with Armstrong-Stedman Reinforced Rubber Tile. This flooring is also used in the library of the nurses' home, shown above.

QUIET and comfort are built into these floors of Allegheny General Hospital, Pittsburgh. Resilient Armstrong-Stedman Reinforced Rubber Tile muffles noise and cushions foot shocks.

Reinforced with strong but invisible fibres that resist denting, this colorful rubber tile gives extra long wear. Scuffing feet and scraping furniture do not wear away its freshness and beauty.

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Armstrong's **LINOLEUM**
and **RESILIENT, NON-CERAMIC TILES**

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30 days from your board to the finished house

ALMOST \$3,000,000 worth of architect-designed, Precision-Built Homes have already been erected!

Here is the most revolutionary method of home construction yet devised; more house for the money; standard materials and quality construction used throughout; built in 30 days or less; doubly insulated; one-piece, *permanently* crack-proof walls; eligible for FHA loans.

With this method, any frame building—of any size or design—can be completely built and ready for occupancy in a minimum of time. The exterior finish may be our own Sand Finish (resembling stucco and more enduring) or brick veneer, stone veneer, patented sidings, clapboards or shingles.

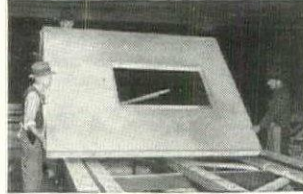
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Let us send you our Simplified Method of Planning—show you how it saves many hours in both drafting and detailing. The entire system is incorporated on 20 compact, convenient cards—which are a joy to use. The system includes the most revolutionary method ever devised for calculating rafters of every type. You have complete flexibility—no limitations on your design. You do not have to modify a single dimension.

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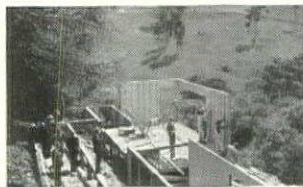
Precision-Built construction starts in the shop—where all lumber is pre-cut.



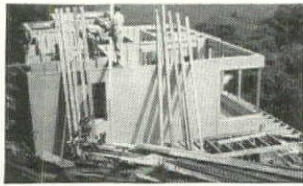
Wall and partition units are framed from working drawings, with doors and windows integral.



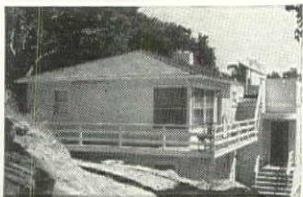
Complete sections are delivered by truck to the location.



In 2 hours all partitions are up; the job is ready for roofing with pre-cut rafters.



Raymond Rigby • Burlingame, Cal. Architect.



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FORUM OF EVENTS

(Continued from page 38)

and his C.E. two years later. For a time Mr. Jacoby was professor of structural engineering at Pennsylvania State College, and served as engineer for the McClintic-Marshall Company, Standard Steel Construction Company, Austin Company, and H. K. Ferguson Company. He was a member of the A.S.C.E.

CHARLES ZELLER KLAUDER, 66, architect, at his home in Philadelphia. Born in Philadelphia, after a brief term in the School of Industrial Art, he entered the architectural office of T. P. Chandler, and six years later he left Mr. Chandler's office and became associated in succession with Wilson Brothers & Co., Cope & Stewardson; Frank Miles Day & Brother; and Horace Trumbauer. In 1900 he re-entered the firm of Day & Brother, and in 1911 was admitted to partnership—Day Brothers & Klauder. On the retirement of H. Kent Day, the firm name became Day & Klauder. Frank Miles Day died in 1918, and on January 1, 1927, the firm's name was changed to Charles Z. Klauder.

Charles Z. Klauder has left the stamp of a great Gothicism on the educational centers of America—Princeton, University of Pittsburgh, Brown, Cornell, University of Colorado, Denver University, Pennsylvania State College, Wellesley, Albion, Drew, Concordia Seminary, Mercersburg Academy, The Hill School, St. Paul's School, University of Chicago, University of Delaware, Hartford Theological Seminary, Theil College, Vanderbilt University, Rhode Island School of Design, Staunton Military Academy.

In 1891 Mr. Klauder received the Silver Medal of the Philadelphia T-Square Club; in 1918 the medal of the Philadelphia Chapter, A.I.A.; in 1921 Gold Medal of the Architectural League of New York; Gold Medal of the A.I.A. for institutional work; and the degree of Master of Fine Arts from Princeton. In 1926 elected Corresponding Member of the Central Association of Austrian Architects of Vienna. In 1927 awarded Grand Prix and Silver Medal of the Pan-American Congress of Architects at Buenos Aires. In 1928 awarded Medal of the Architectural Exhibition at Amsterdam. He was a Fellow of the A.I.A., past president of the Philadelphia Chapter, member of the Architectural League of New York, member and past president of the T-square Club of Philadelphia, member of the Boston Architectural Club, and an Associate of the National Academy of Design. Mr. Klauder has served in recent years as Chairman of the Advisory Committee on Design, Procurement Division.

CHRISTOPHER GRANT LAFARGE, 76, architect, at his home in Saunderson, R. I. Born in Newport, he received his technical training at M.I.T., and shortly afterwards, with George L. Heins, began practice in New York under the name of Heins & LaFarge. In the late eighties the firm won an international competition for the Cathedral of St. John the Divine, the work on which occupied the firm until 1911. After Mr. Heins' death in 1906, Mr. LaFarge was associated with the firm of LaFarge & Morris; LaFarge, Adams & Clarke; and since 1931 LaFarge & Son. Mr. LaFarge was a Fellow and director of the A.I.A., a trustee and secretary of the American Academy in Rome, a member of the advisory board of the School of Architecture at Princeton, and also at M.I.T., a former president of the Architectural League of New York.

KENNETH M. MURCHISON, 66, architect, in New York, N. Y. Mr. Murchison was born in New York, studied architecture at Columbia University and at the Ecole, starting practice

(Continued on page 46)

IT'S EASY MONEY FOR BUILDERS AND THEIR ARCHITECTS

\$10,000

IN PRIZES FOR BUILDING AN

All-Gas Home

**ALL TYPES OF HOMES ARE ELIGIBLE...
NEW HOMES...MODERNIZED HOMES...
SEMI-DETACHED OR ROW HOUSES**

You may have already built a home that could win a big prize and national publicity! But you can't win unless you enter!

Any home built or modernized during the period from July 31, 1937, to July 31, 1939, is eligible, provided gas equipment does the cooking, water heating, refrigeration, and house heating. No limitations as to size, style, cost, or location of houses entered.

But now's the time to get started—competition closes midnight, July 31, 1939. So mail the coupon for the booklet which contains all the information you need.

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ENTER NOW!**

- 1** A clear exterior photograph of house.
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NOW!**

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HOUSE HEATING**



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Kindly forward complete details.

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GIVES IT MODERN FORM AND STRENGTH



Architectural concrete made with Universal Atlas Cement was used in the Superior Theater, at Superior, Wisconsin. Architect—Perry E. Crosier, of Minneapolis. The contractor—M. E. Greenberg Company, Minneapolis

Architectural Concrete made with Universal Atlas Cement has become a part of design for beauty in many types of buildings

THIS Wisconsin moving picture theater is an example of the steadily increasing use of architectural concrete. This reinforced concrete provides beauty as well as strength, durability and fire-safety. It requires little or no maintenance. It is low in first cost, too. Job comparisons usually show a saving in

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It walks hand-in-hand with modern architecture. Its plastic qualities, its clean, monolithic character can be molded to give form to the designer's vision. Its surface treatment, whether left exposed, painted, stuccoed, tiled or treated in innumerable ways offers a wide field for imagination and variety in design. And its application to all forms of buildings is a demonstrated success. Architectural concrete is a practical, economical and beauty-satisfying material.

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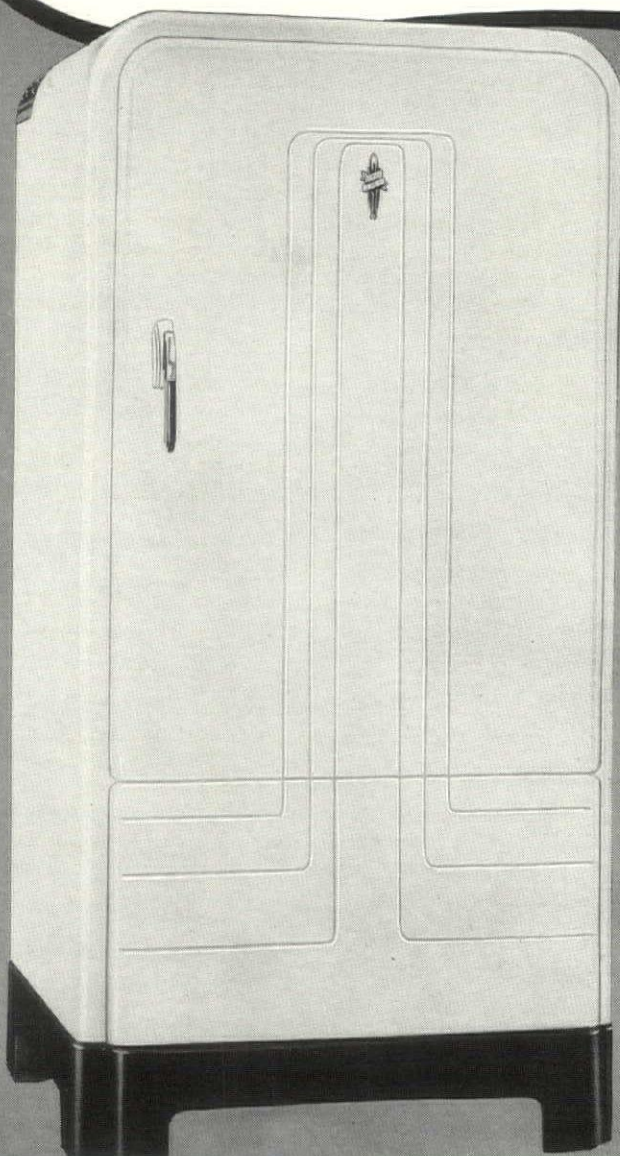
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Now Featuring

**NEW MODERN BEAUTY
GREATER EFFICIENCY
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**MODELS TO FIT ANY SIZE
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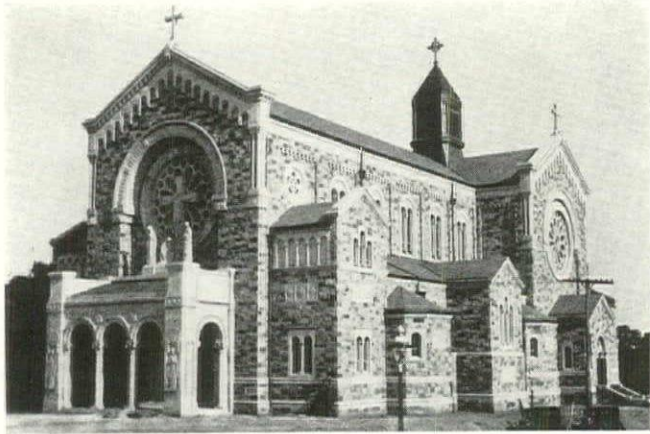
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- NO MOVING PARTS in its freezing system
- PERMANENT SILENCE
- CONTINUED LOW OPERATING COST
- MORE YEARS OF DEPENDABLE SERVICE
- SAVINGS THAT CAN PAY FOR IT

GET ALL THE FACTS about the new 1939 line of the Servel Electrolux gas refrigerators before you make any new refrigeration specifications or commitments in your houses. Servel Electrolux is the *only* automatic refrigerator that offers *all* the above advantages, because it is different from all others. Check up now—and you and your tenants will save more for more years! On display at your gas company or local Servel Electrolux dealer.

SPECIFY THE REFRIGERATOR THEY HEAR ABOUT • BUT NEVER HEAR

Cabot's "Quilt"



St. Joseph's Roman Catholic Church, Baltimore, Md. Insulated with Cabot's "Quilt", which is also used for sound deadening in confessionals. Architect, Hugh Kavanaugh.

... for the *difficult*
insulation jobs

Cabot's "Quilt" has the properties which you require for your most difficult insulation jobs.

High insulation value: Its thermal conductivity is *less* than that of other materials commonly used for building insulation.

Permanence: The evidence of old buildings, recently demolished, proves that Cabot's "Quilt" is rot-proof and vermin-proof. It does not deteriorate with age.

Adaptability: Because it is flexible and easy to install, Cabot's "Quilt" is adapted to almost every type of building construction.

Write for descriptive booklet, *Build Warm Houses*. Address Samuel Cabot, Inc., 1270 Oliver Building, Boston, Mass.

Cabot's "Quilt"

Heat Insulating

Sound Deadening

FORUM OF EVENTS

(Continued from page 42)

in 1902. His professional accomplishments included a number of railroad stations and steamship terminals, the U. S. Marine Hospital in Staten Island, several clubs and apartment houses. Outside of his achievements as an architect, Ken Murchison became a well loved and important figure in the life of New York City. One of the originators and for many years the director of the Beaux-Arts Balls and other pageants, Murchison's passing, as the *Herald Tribune* says editorially, "leaves the city a less gracious place in which to live." A captain of engineers in the World War, Mr. Murchison was also a past president of The Architectural League of New York and of the Society of Beaux-Arts Architects. He was an officer of the Legion of Honor, and Columbia University had conferred on him the degree of Doctor of Literature.

LESTER B. POPE, 54, supervisor of the Department of Architecture, Pratt Institute, Brooklyn. Mr. Pope had taught at Pratt since his graduation from the Institute in 1907. In later years he had been prominently identified with the survey and pictorial preservation of historical monuments on Long Island under the H.A.B.S. Mr. Pope was a member of The Architectural League of New York and the A.I.A.

HORACE TRUMBauer, 69, architect, at his home in Philadelphia. Born in that city, he left school at sixteen to study architecture as an apprentice in architectural offices. At 24 he began independent practice, and achieved national recognition not only for his important buildings of a commercial and public nature, but also for many of America's more elaborate country homes. Mr. Trumbauer was a member of the A.I.A.

PRIZES INCREASE

Increases in the prizes for the American National Theater and Academy Competition are announced by A. Conger Goodyear. Amounts of the three major prizes are doubled, making first prize \$1,000; second, \$600; third, \$400. The competition closes 5 p.m., January 31, 1939.

PERSONALS

The practice of Slee & Bryson is being continued by John B. Slee, A.I.A., in the same offices, 16 Court St., Brooklyn, N. Y.

Walter Gropius and Marcel Breuer announce the opening of a new office at 1430 Massachusetts Ave., Cambridge, Mass.

Walter Sanders and John Breck announce the opening of their new office for the general practice of architecture under the firm name of Sanders & Breck at 235 East 72nd St., New York, N. Y.

Marcus W. Martin notifies that he has taken into partnership Horace J. Tribe formerly of the Sydney office of Stephenson, Meldrum & Turner. The practice will continue under the title of Marcus Martin & Tribe at 430 Chancery Lane, Melbourne, C. 1, Australia.

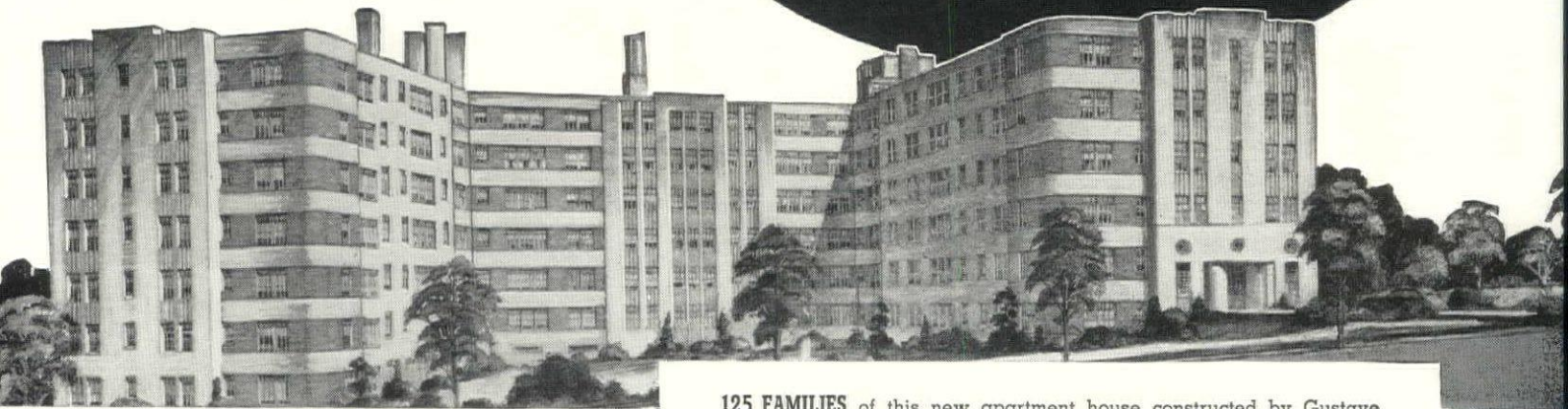
The executors for the estate of Charles Z. Klauder announce that Almer C. Howard and George K. Trautwein have formed a partnership for continuing the practice of architecture under the name of The Office of Charles Z. Klauder, 1429 Walnut St., Philadelphia, Pa. Also continuing in the organization will be Charles Z. Klauder, Jr., Herbert C. Wise, Ellery K. Taylor.

Tenants Select Own "Weather"

IN MARLYN APARTMENTS, WASHINGTON, D. C.

Individual Control Ingenious Feature
of America's First Apartment
House Designed For All Year 'Round
Air Conditioning.

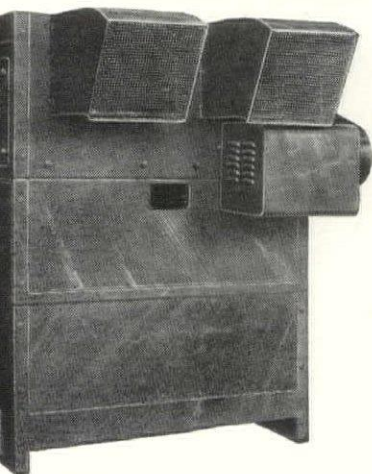
Carrier Air Conditioning



125 FAMILIES of this new apartment house constructed by Gustave Ring have good reason to thank Carrier—and Carrier Air Conditioning! When it's hot and muggy, a twist of a dial lowers the temperature to the desired degree and removes every trace of excess humidity. In cool weather it's just as simple to warm the air, and add the proper amount of moisture. Outside noise is kept out—and all year 'round, the air is clean and refreshing.



PLE AS A. B. C! No ductwork or grilles are necessary with this Carrier System. Occupying no more space than an ordinary radiator, Carrier Weathermakers such as this provide every benefit of true, year 'round air conditioning—exactly as the tenant desires. Central plants in the basement provide heating and refrigeration for the complete Carrier System.



WATER COSTS HIGH? Not here! Carrier Evaporative Condensers use only 5% of the water required for water cooled condensers (none at all in cold weather). Moreover, they increase compressor capacity, and eliminate pumping costs entirely.

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Every test proves Seal-O-San a more economical and tougher floor finish

Architects who specify Seal-O-San know that it can pass every severe test demanded of a gymnasium floor finish.

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Seal-O-San makes the floor non-slippery. Its penetrating seal forms a beautiful, protective surface finish that locks out dirt and moisture. This tough finish will not crack, chip, or peel. Successfully it resists all gymnasium activities.

Also, consider Seal-O-San economies. Applied with a lambs-wool mop, it assures real savings over costly hand-brushed finishes. It offers maintenance savings too, because a Seal-O-San finished floor seldom needs scrubbing.

A detailed folder and specifications on Seal-O-San will gladly be sent to architects. Write for your copy—today.



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Clearlite
SHEET GLASS
A QUALITY
EASY ON THE EYES

ONE PANE WINDOWS

For the best light transmission the advantages of one pane windows explain why the trend is to the undivided window.

This type of window permits the maximum light transmission and eliminates eye strain. In a test conducted by the Pittsburgh Testing Laboratories, it was found that the undivided window transmits from 8% to 30% more light than the divided window.

Consider these advantages and specify one pane windows glazed with Clearlite Quality Glass.

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To Architects

who don't want to be sound-transmission engineers

YOUR MAIN INTEREST in sound distributing systems is in how well they work—not in the equipment that makes them work. We're pretty sure of that.

SO WE DON'T ASK YOU to clutter your mind with a mass of technical stuff that only a specialist needs to know.

YET WE DO ASK YOU to make at least a mental note that Western Electric is ready for 1939 with a full range of new equipment—microphone, amplifiers, loud speakers.

YOU CAN COUNT ON this new equipment—engineered by Bell Telephone Laboratories—for higher quality, greater flexibility, more complete satisfaction than ever before.

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...and costs cut 25%!



White MURAL-TONE Casein Paint is 90% light reflective. A brilliant white . . . it provides a perfect base for clear, flawless tints of lasting beauty. Does not yellow with age. Strong light will not cause graying or fading. Its high reflective value increases light efficiency to the maximum degree . . . reducing lighting costs.

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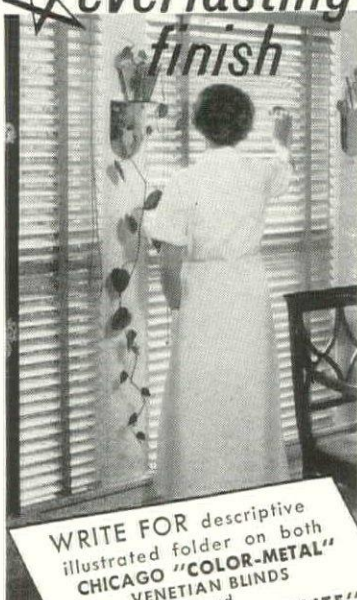
MURAL-TONE Wall Paint can be used on almost every type of surface. Any type of finish can be applied over it. For further information, please see Sweet's, or write THE MURALO CO., INC., 574 Richmond Terrace, Staten Island, New York. *Branches:* Atlanta, Boston, Chicago, Los Angeles, San Francisco.

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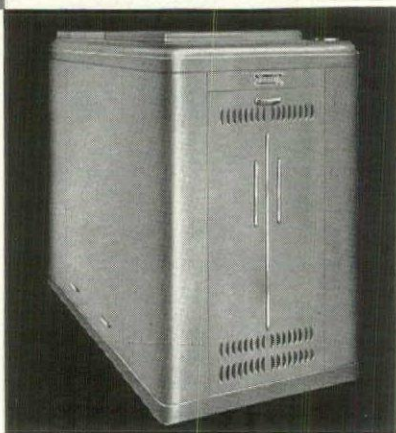


A copy of the Architectural Forum's article on "Insulated Glass", together with a booklet on "Window Conditioning" prepared for the home owner by Tyler Stewart Rogers, has been mailed to all architects on Sweet's list... Additional copies will be forwarded upon request.

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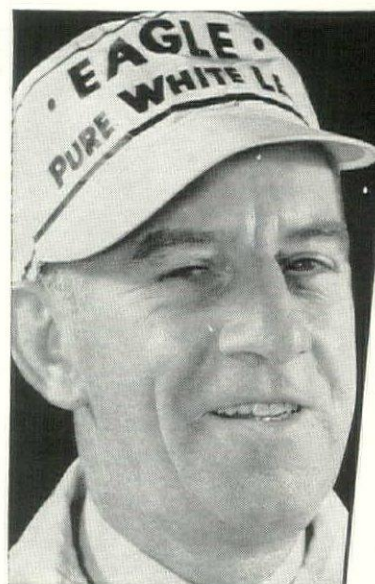
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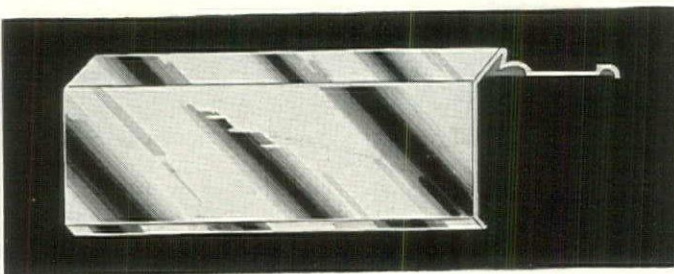
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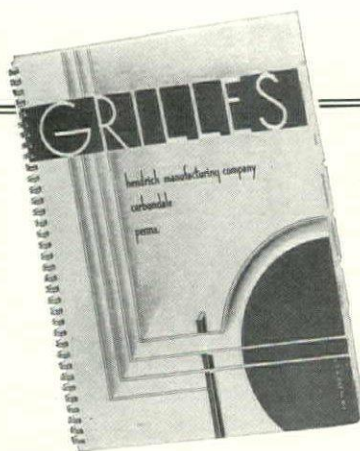


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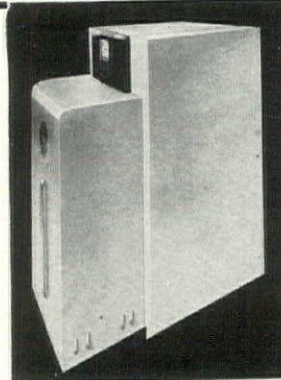
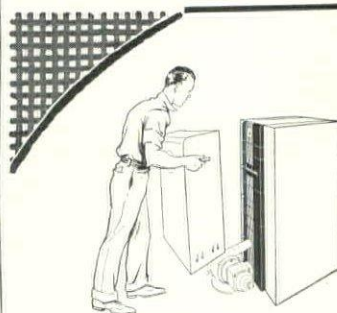
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• Techwood Homes, Atlanta — 604 dwelling units. Milcor Metal Lath, Channel, and Corner Bead used. Photo courtesy of FHA.



• The Ten Eyck (Williamsburgh) Housing Project. A 50,000-yard installation, of Milcor Solid Plaster Partitions in Buildings 1, 2, 3, 4, 6, 7, 8. Photo courtesy of FHA.

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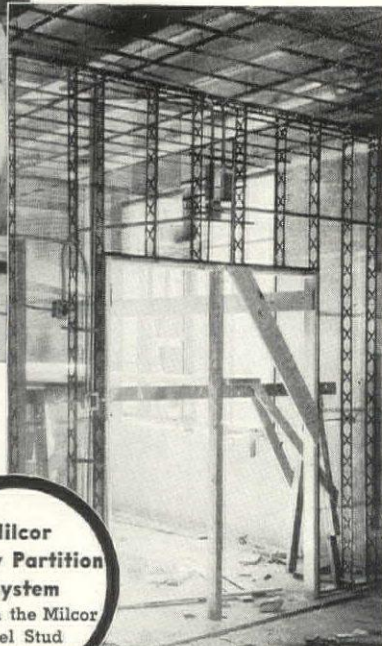
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— with the Milcor
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(Inset shows how metal shoe locks floor track and upright member firmly together)



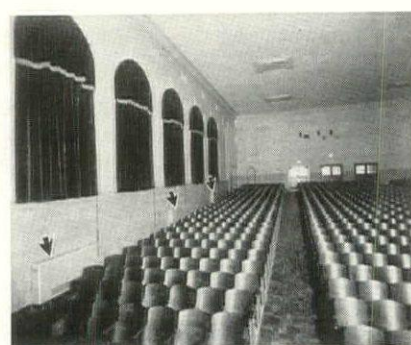
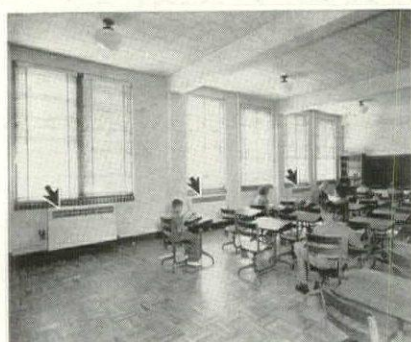
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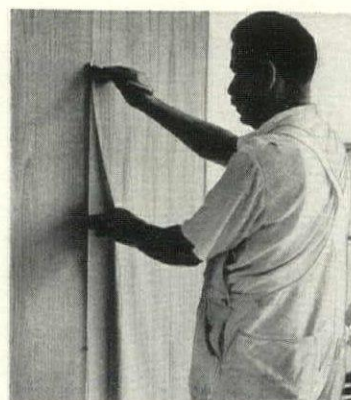
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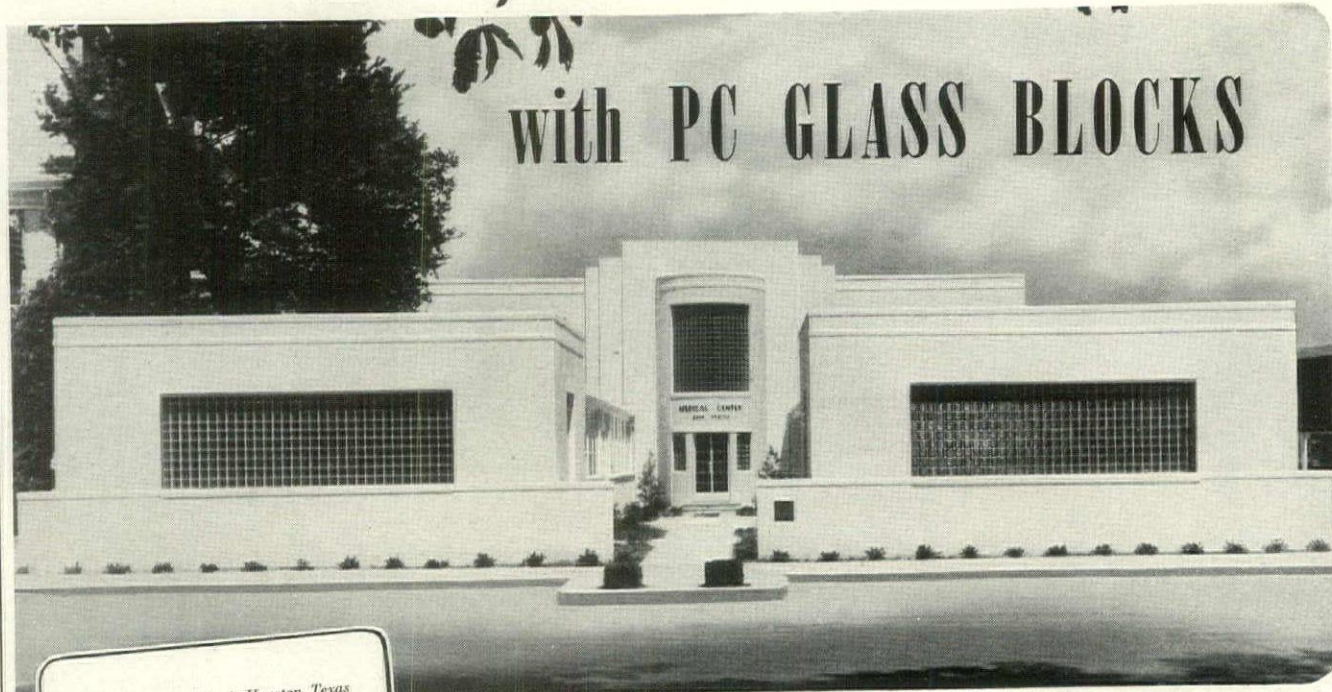
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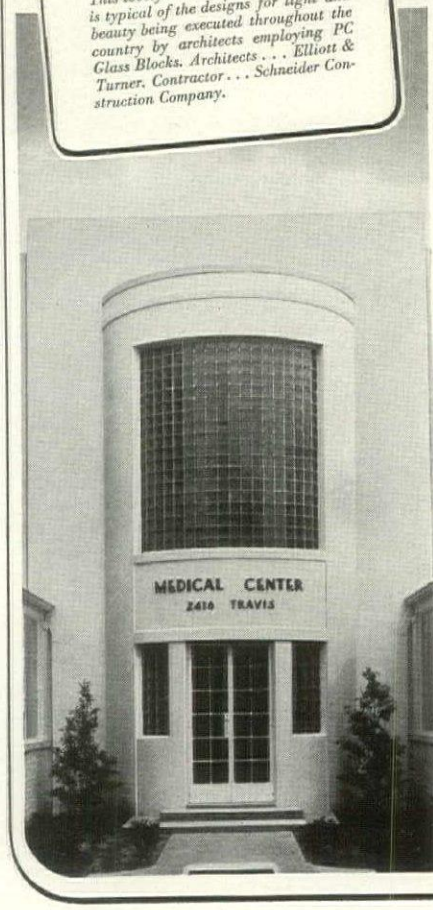
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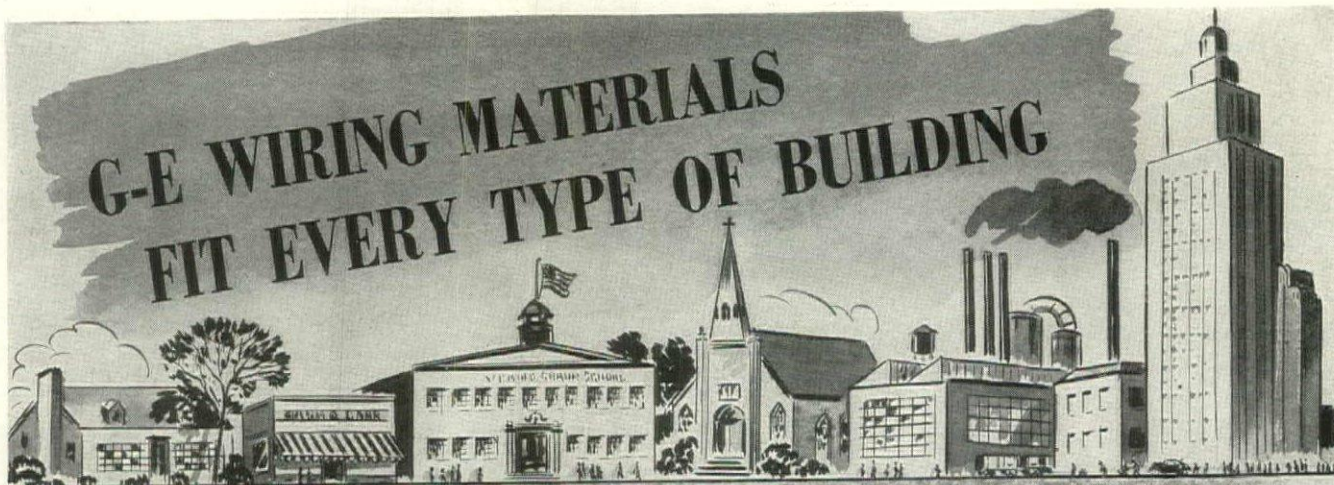
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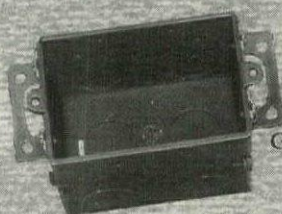
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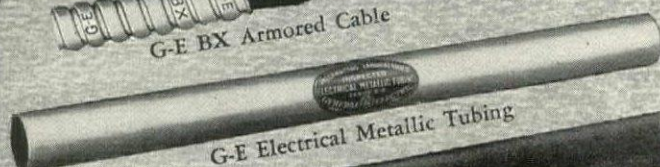
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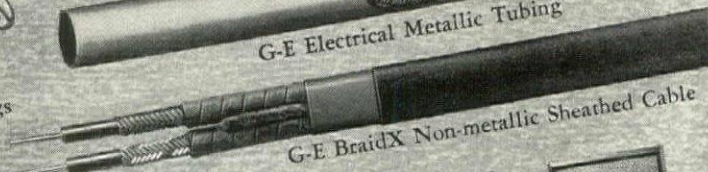
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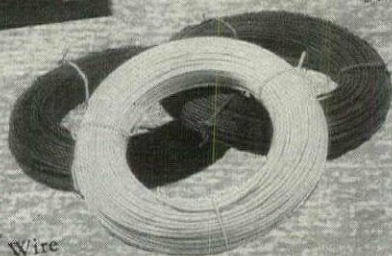
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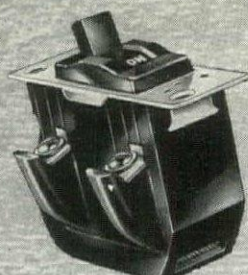
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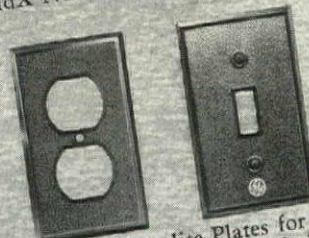
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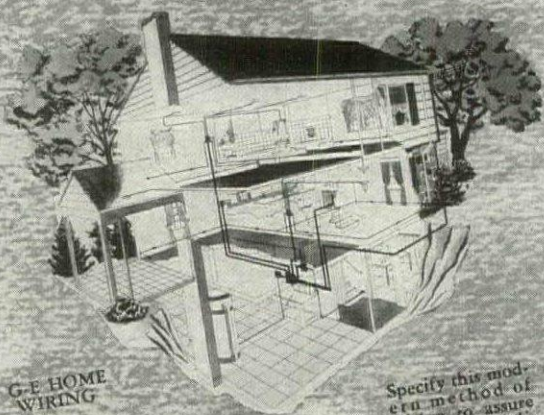
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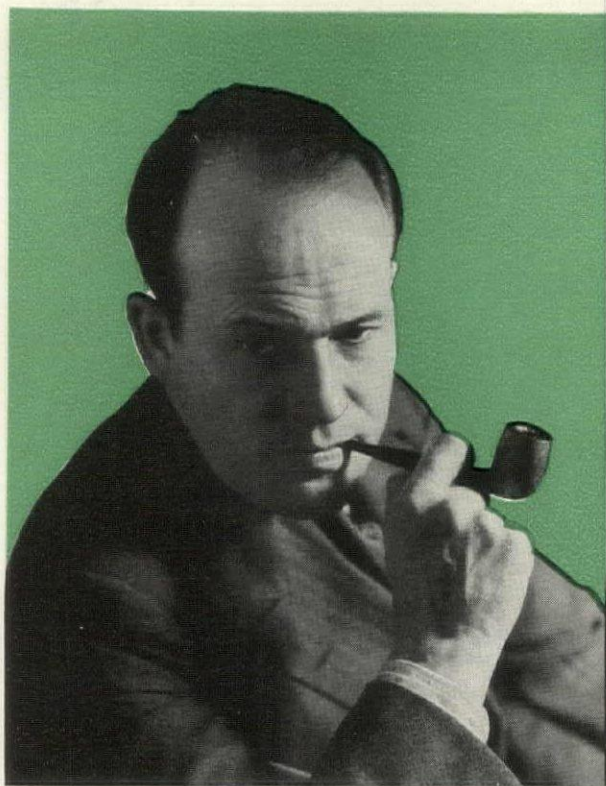
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finished surface
best results are
obtained by use of
DOUGLAS FIR
PLYWOOD
Concrete Form
Panels"**

... William Lescaze

WILLIAM LESCAZE was recently awarded a silver medal by the International Award Jury of the 1937 Paris Exposition for the famous Philadelphia Savings Fund Society building, the first modern skyscraper, which he designed with George Howe in 1932. Among some of his other works are his house in New York—where glass blocks were used for the first time—the Ansonia High School in Connecticut, the Aviation Building and the Pavilion of Switzerland, the two latter being now under construction at the New York World's Fair, 1939.

For Mr. Lescaze, modern architecture is more than a way of building. It is a way of thinking not only about building, but also about man and life. He is convinced that contemporary American civilization will find its plastic expression in the works of modern architecture.

A GAIN Douglas Fir Plywood demonstrates the freedom of design permitted the architect who uses this versatile material. Plywood Concrete Form Panels were used to create the mass effect and unusual surface treatment of the new Columbia Broadcasting System studios in Hollywood.

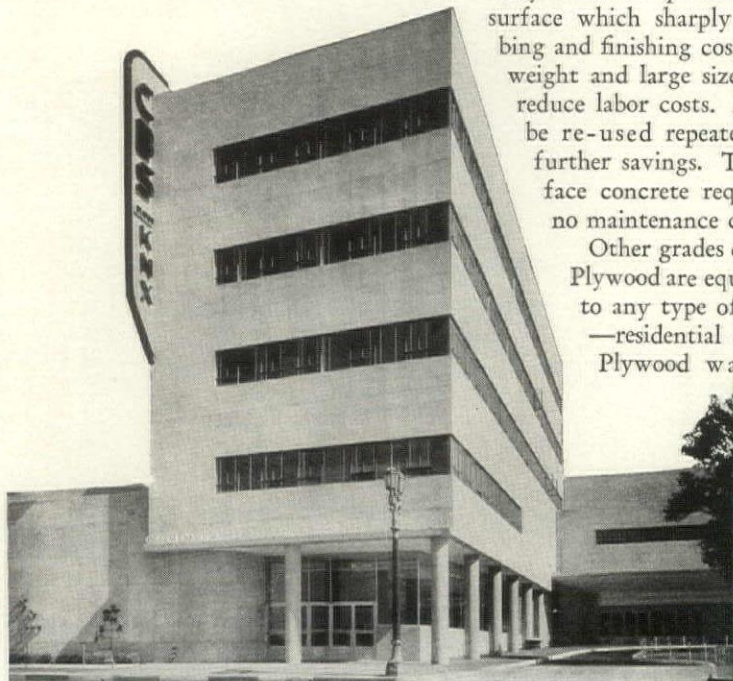
Plywood form panels give a smooth surface which sharply reduces rubbing and finishing costs. Their light weight and large size substantially reduce labor costs. And they can be re-used repeatedly, effecting further savings. The finish surface concrete requires little or no maintenance cost.

Other grades of Douglas Fir Plywood are equally adaptable to any type of construction—residential or industrial. Plywood wall and roof

sheathing and sub-floors add extra strength and rigidity in home construction—substantially reduce labor costs. For interior finishing Douglas Fir Plywood may be used for wall paneling, cabinet work, built-ins, ceiling and walls of playrooms, etc.

Stock panels of Douglas Fir Plywood (3, 5 and 7 ply) are manufactured in various thicknesses, as large as 4 x 8 feet, and even larger on special order. Standard grades include Wallboard, Sheathing, Standard Panel and Concrete Form.

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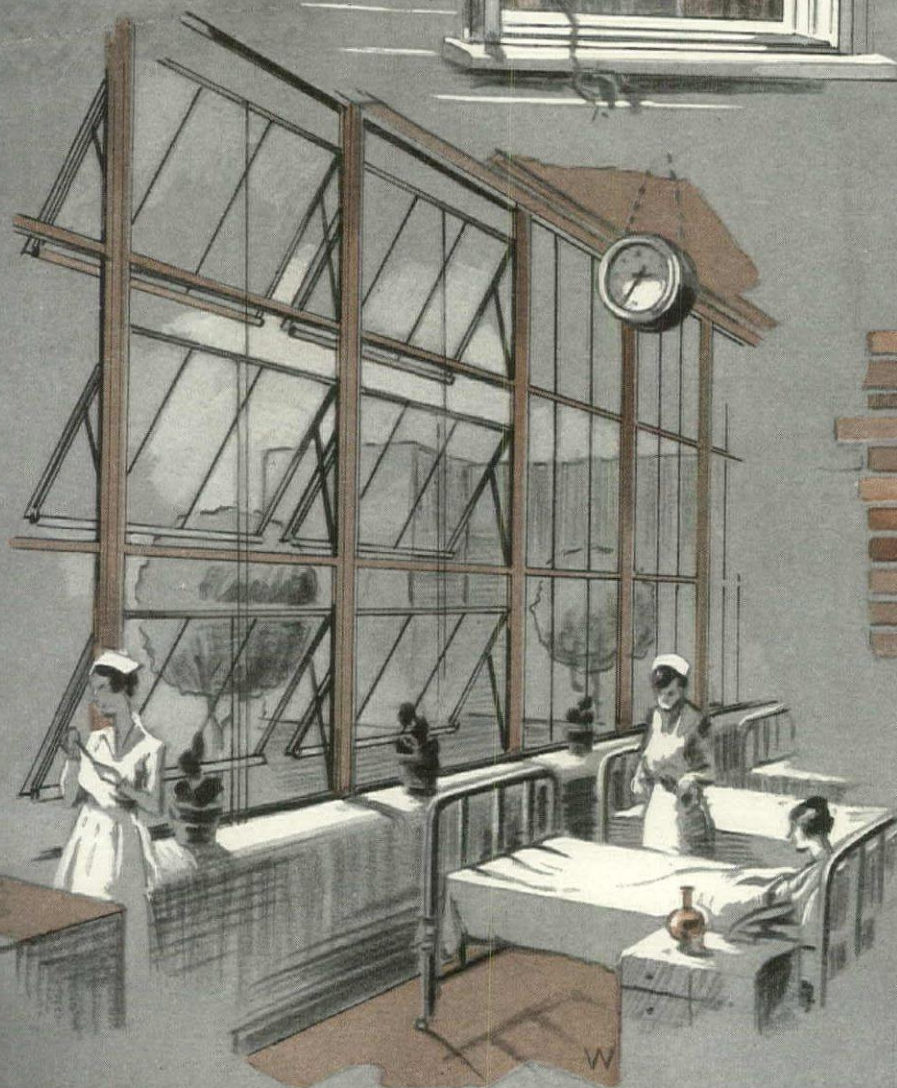


Above: The new Columbia Broadcasting System studios, Station KNX, in Hollywood, designed by William Lescaze, architect; Earl Heitschmidt, associate. William Simpson Construction Co., builders. "Experience has taught me that if exposed concrete is to be the finished surface, best results are obtained with Plywood forms," says Mr. Lescaze. "We are extremely pleased with the results achieved."

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MEMORANDUM: This is the first of a series of messages relating to current developments of Truscon Steel products for the building industry. Watch for the next . . . in the February issue.

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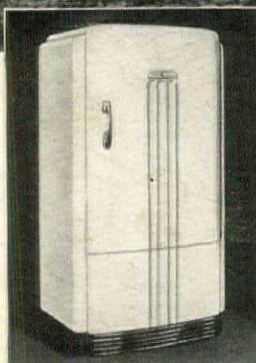
{Reproduced from page 223, "The
Architectural Forum," Sept., 1938}

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● The house construction outline reproduced
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