THE

ARCHITECTURAL

FORUM

INCLUDING "BUILDING MONEY"

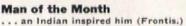
JULY, 1936

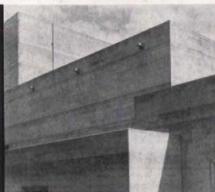
OREGON CAPITOL COMPETITION...MILLES...COLORADO ART CENTER
HEDRICH STUDIOS ... RENT TO SPACE II ... SMALL HOUSES



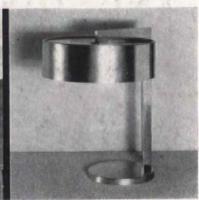
JULY 1936







Building of the Month ... art goes to the mountains (pg. 11)



Product of the Month . . planned purpose, plain prices (pg. 13)

WAR MEMORIAL

Frontispiece

St. Paul's new Statue of Peace by Sculptor Carl Milles.

OREGON STATE CAPITOL

The case for open architectural competitions -premiated and other selected entries in the Oregon State Capitol Competition.

COLORADO ART CENTER

A distinguished public building, conceived as a working center for the Fine Arts and executed in unlabored, monumental architecture.

PHOTOGRAPHIC STUDIO

Chicago's new Hedrich-Blessing studio presents a case-study in plan, design, equipment - photographs, isometric plans, construction outline and data sheet.

DESIGN TREND

Second in the series of portfolios devoted to significant aspects of contemporary design.

MANHATTAN WALK-UP

A 1936 New York apartment house which accents horizontal rather than vertical housing.

37 SMALL HOUSES

Six additional studies in the small house series. Interior-exterior photographs . . . floor plans . . . critical comment . . . construction outlines.

FROM RENT TO SPACE—II

Second in a three-installment study of apartment planning technique: analysis of room design and room combinations, relation of design and building costs.

BUILDING MONEY

Why after 26 years, the U. S.'s largest subdivision is more than ever in the news (66) . . How the activities of the Arcy Corporation foreshadow potent financial backing for prefabrication (70) . . . Portfolio No. 4 in the Remodeling For Profit series—three revamped residential properties (71) . . . What the SEC found wrong with realty bond practice (75) . . . Professor Einstein and Resettlement (76) . . . What Boston has learned about gas and electric equipment (78) . . . 572 houses at \$500 per (78) . . . Charts of Building's volume, material costs, the flow of mortgage money (80) . . . "The home for the woman perfect" (36).

DEPARTMENTS

(in front advertising section)

THE MONTH IN BUILDING

A quick summary of front-page building

FORUM OF EVENTS

Architectural showmanship at the Dallas

PRODUCTS & PRACTICE

Lightolier introduces a new line of low cost "planned-purpose" lighting fixtures . . . technique of earthquake-resisting construction . . . new developments in insulation and other products.

LETTERS

New Jersey opposes the clinic plan . . trade union policy for architects . . . More about small houses . . . Architect Allen recalls the recent A. I. A. convention.

BOOKS

28

Housing and the American Tradition . . . Tennessee houses and gardens . . . Modern house interiors . . . New England atmosphere . . . Technical Publications.

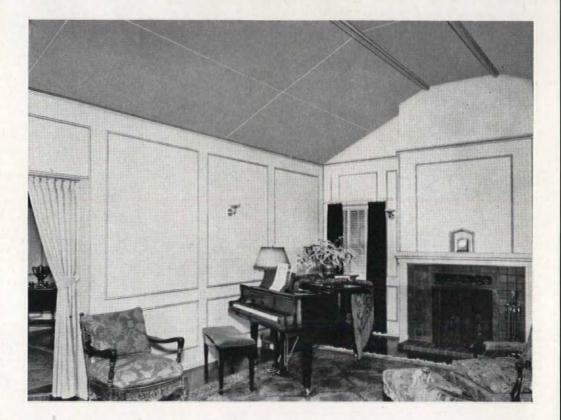
Editor, Howard Myers; Managing Editor, Buth Goodhue; Associates, George Nelson, A. C. Shire, Cameron Mackenzie, Max Forester, Paul Grotz, Madelaine Kroll.

Paul Grotz, Madelaine Kroll.

THE ARCHITECTURAL FORUM is published by Time Inc., Henry R. Luce, President; Robert L. Johnson, Roy E. Larsen, Vice Presidents; Charles L. Stillman, Treasurer; W. W. Commons, Secretary, Publication Office, 160 Maple Street, Jersey City, N. J. Executive, Editorial and Advertising Offices, 135 East 42nd Street, New York. Business Manager, Sheldon R. Luce. Advertising Manager, George P. Sbutt. Circulation Manager, Robert W. Chastency, Jr. Subscription Office, 356 East 22nd Street, Chicago, Illinois. Address all editorial correspondence to 135 East 42nd Street, New York. Yearly subscription, Payable in Advance, U. S. and Possessions, Canada, Cuba, Mexico, South America, \$4.00. Elsewhere \$6.00. Single issues, including Reference Numbers, \$1.00. All Copies Mailed Flat. Copyright, 1936, Time Inc. VOLUME 65-NUMBER ONE

FOR THE WELL-DRESSED HOUSE— MASONITE





One of thousands of attractive schemes possible with Genuine MASONITE. Walls and ceilings are of MASONITE STRUCTURAL INSULATION, painted white, with moulding for panel design. Notice the scoring in the ceiling.

Plans for a new home—or a special room in a present home, such as the popular "game room"—aren't complete without MASONITE products. These grainless wood-fibre boards offer the smartness and versatility vital to modern design. They provide expensive-looking effects at modest cost. They are easy to install, yet last for years. Installations ten years old are still as good as new.

For walls, ceilings, wainscoting, special partitions — wherever smooth, hard surfaces are desired — MASONITE TEMPERED PRESDWOOD can be used in its natural warm-brown finish. Tints or colors you have always desired can be secured with paint, enamel, or lacquer.

MASONITE TEMPRILE, a wood-fibre board similar to PRESD-WOOD, is scored to produce tile effects for bathrooms and kitchens. It can be painted or enameled by regular painter.

MASONITE STRUCTURAL INSULATION combines genuine beauty with the advantages of efficient insulation and unusual structural strength. You can make any home cooler in summer . . . warmer in winter . . . quieter all year round, by using this insulation in walls and ceilings. Masonite Insulating Lath is an ideal base for plaster.

We invite you to find out more about the ways in which Genuine MASONITE Products will fit into your plans. Mail the coupon below for free samples and further details.

| MECONIER CONDONERION D. | |
|--|-------------------|
| MASONITE CORPORATION, Dept. 1 111 W. Washington Street, Chicago | |
| Please tell me more about - | , |
| ☐ TEMPERED PRESDWOOD | ☐ TEMPRTILE |
| STRUCTURAL INSULATION | □ INSULATING LATH |
| | |
| Name | |
| Address | |



GENUINE

MASONITE TEMPERED PRESDWOOD

STRUCTURAL INSULATION . INSULATING LATH . QUARTRBOARD . TEMPRTILE

THE ARCHITECTURAL FORUM

Published monthly by Time Inc., Henry R. Luce, President. Publication Office, 160 Maple Street, Jersey City, N. J. Yearly Subscription: U. S. A., Insular Possessions, Canada and Cubs, \$4.00. Foreign Countries in the Postal Union, \$6.00. Single issues, including Reference Numbers, \$1.00. Entered as Second Class Matter at the Post Office at Jersey City, N. J., under the Act of March 3, 1879. Additional entry at New York, N. Y. Copyright, 1936, Time Inc. Spiral Binding U. S. Pat. Nos. 1516932 and 1942026. Other Patents Pending.

VOLUME 65

THE MONTH IN BUILDING

VOLUME. The value of building permits granted in 1,450 cities during May, as tabulated by the Department of Labor, showed a total commitment of \$19,000,000. This figure represents a less-than-seasonal dip of \$2,000,000 from the record high of April. At the same time the May, 1936, figure is 70 per cent above that for May, 1935. Permits for residential construction advanced fractionally to \$53,400,000, the drop in the total figure being entirely due to a \$5,000,000 drop in non-residential permits, which now stand at \$37,000,000.

Dun & Bradstreet reports revealed that major increases in permit valuations were registered in the Middle Atlantic, South Central, and Pacific Coast States, a distribution roughly following the temperate zone.

Newsworthy permits issued: \$970,000 for a Bronx apartment building; \$1,000,000 for Queens apartment buildings; school buildings at Ann Arbor, Mich., \$1,600,000; \$400,000 for mercantile buildings in Dallas, Tex., \$800,000 for Fort Worth amusement buildings; \$600,000 for Hollywood studios; \$850,000 for a power plant in Spokane, Wash.

TAX LAW. So casually that only the vigilant National Association of Real Estate Boards noted it, the Supreme Court delivered a decision which strikes at the very base of U. S. realty tax theories. Case was that of the Great Northern Railway vs. North Dakota's Tax Commissioner Weeks, on appeal to the Supreme Court. Question was the valuation method used by the State for assessing the value of the railroad company for tax purposes.

Contention of the State was the standard one that property, whether corporate or real, should be taxed according to its capital value. Rejoinder by the Great Western was that current income must rightfully be considered as the basis of taxation. The Court ruled with the latter, declared: "The value of petitioner's property varied with the profitableness of its use, present and prospective." Significance is that this principle can well be applied also to real estate, may ultimately compel its valuation on the basis of productivity.

The principle thus enunciated by the Supreme Court was not by any means new to jurisprudence. As recently as 1934, an amendment to the Michigan constitution was introduced (and later defeated) which called for assessment on earnings. In Delaware from 1830 to 1917 property was taxed on its "clear rental value." And in England the vast complexities of the realty tax system are all based on the theory of assessing for taxation on earning rather

than capital values. Prime and great advantage of the former method of assessment is of course that depression earnings are not wiped out by taxation based on the assessment of boom-time capitalizations.

Not as significant as the Great Northern case but twice as spectacular was a decision handed down by New York's Supreme Court to the effect that the guarantee printed on guaranteed mortgage certificates was in fact a guarantee. In a test case involving the New York Title and Mortgage Company, the contention was advanced that the mortgage company was not responsible for interest of principal on guaranteed mortgage certificates where mortgage payments were not being made on the property.

The Court ruled that the purchaser of a guaranteed mortgage certificate held a certificate and not a lien on land; that this certificate was specifically guaranteed as to interest and principal by the issuing mortgage company; and that it therefore devolved on that company to meet interest and principal payments, regardless of whether or not the mortgage underlying the guaranteed certificate was being paid off by the mortgagor.

The ruling affected claims of more than one billion dollars by 550,000 investors in 27 New York title and mortgage companies.

RIFT. Last month Federal Housing Administrator McDonald issued a formal statement to deny that FHA was opposed to the Wagner Bill. For making FHA thus publicly announce that it had stopped beating its wife, the American Federation of Labor was generally considered responsible. Facts are that many an FHA official has opposed the Wagner Bill, that FHA men are responsible for many a debilitating amendment to it. Further fact is that conservative President William Green of the A. F. of L. thinks that support of the Wagner Bill will give him support from the building trades-a body which he is at present particularly anxious to placate (see p. 4). Rumor is that Labor has countered FHA's sniping on the Wagner Bill* with a threat to introduce a bill of its own calling for prevailing wage rates on all FHA-insured work. Alarmed at the defection of a powerful ally, FHA capitulated, issued the McDonald backdown.

RECORD MONEY. The Treasury's record two billion dollar issue on June 15 discovered an unexpectedly large amount of money ready for five year investment * Adjournment killed the Wagner Bill in the middle of a last-minute spurt.

at 1% per cent, just as much for fifteen to eighteen year bonds yielding 2% per cent. "In all financial circles," crowed Secretary Morgenthau happily, "they were delighted." Persistent rumor was



Wide World

The Secretary of the Treasury

that the Secretary, feeling his oats, had conceived and executed the entire issue without benefit of brain trusts.

At 13/8 per cent, the Treasury's short term offering was so cheap that it actually underpriced the cost of printing and distributing greenbacks, while its long term rate of 23/4 per cent was headlined as a record low. Numerically it was the lowest; but the significance of this fact was small since Treasury offerings are tax exempt, yield about the same as a 3 per cent taxed bond.

New Deal policy has continually depressed money rates for the last three years, partly to make private borrowing cheap, partly to make Government financing cheap. The effect of this policy on private borrowing, especially on mortgage lending, is so far not particularly evident. Largest users of cheap money have been the financing companies and those wishing to refund old securities at lower rates. Well worth watching were the activities of the former group last month. Borrowing funds largely from banks at rates as low as 1 per cent and lending it out at from 12 to 25 per cent, both the Commercial Investment Trust Corp. and Commercial Credit Corp. upped dividends, declared 20 per cent stock dividends. Such prosperity certainly belied the contention that FHA activities in the household field had undermined

private financing in the field of "character"

Most interesting phenomenon in connection with the June Treasury offering was the reaction of the commercial banks. Long the unhappiest guardian of funds in the country, these banks have been having a fling at long term investments, have lately been playing in the realty marketand doing it apparently entirely against their own better judgment. Last month with the appearance of irresistibly cheap Treasury money on the market, they exhibited a complete change of heart, announced that the long term credit of the Government was excellent, and gobbled up Treasury securities as fast as they were issued. With such cooperation as this, the Government can well boast that it will be able to keep money rates as cheap as it wants for another four years.

BRITISH BOOM. Not generally recognized in this country are the totally unprecedented proportions of the building boom which Great Britain has been enjoying for the last four years. A Government subsidy of from \$500 to \$800 a house granted from 1920 through 1923 started the ball rolling. Public housing of one sort or another kept it going through that decade. Three years ago for reasons still shrouded in mystery, building by private capital picked up, has since out-distanced private housing with ease.

Before the War there were standing in England and Wales about 7,500,000 houses. Last month Sir Kingsley Wood, Minister of Health, announced with satisfaction the construction of the 3,000,000th house to be built in England and Wales since the World War. Thus post-War construction was revealed to have increased the total number of houses by nearly 50 per cent. Nearly half of these 3,000,000 houses have been built in the last five years; while 174,609 were completed in the six-month period ending March 31.

Comparisons with the U. S. on the number of houses built are misleading. But to place these extraordinary figures in some perspective remember that more U. S. houses have been destroyed by fire in the Depression years than have been built new. And remember that annual contracts for residential construction have not passed half a billion dollars for the whole U. S. since 1931.

VERTICAL UP. For having its labor organized horizontally into a multiplicity of crafts rather than into one vertical union, Building pays a daily premium in dollars and cents. Such is the price of divided responsibility, duplication of work, the inter-union squabbles of the craft system. For his premium the builder gets only one benefit: his labor is divided and impotent, cannot force the concessions granted to larger, more powerful units. At present the builder generally figures

that the single benefit outweighs the many disadvantages of horizontal unions, is content to let well enough lie.

Last month, however, came the first serious intimation that the building industry may be forced to face the question of vertical unionization sooner than it thought, make up its mind. Within the American Federation of Labor, United Mine Worker John L. Lewis has for the last eight months been leading the fight for industrial, vertical unions against President William Green's stand for the conservative, horizontal unions. Immediate



Vertical Miner Lewis

objective of both sides has lately been the small, independent Amalgamated Association of Iron, Steel, and Tin Workers, keystone organization of the gigantic and still unorganized steel industry. Last month after a short, bitter struggle, Amalgamated announced that it would adopt the vertical union in preference to President Green's horizontal, then adopted a program dictated by Miner Lewis for pushing vertical unionization in the whole steel industry.

When, in full retreat, President Green referred to this scheduled drive as an interesting "experiment," United Mine Workers' blunt, passionate Lewis blazed back: "It is inconceivable that you intend doing what your letter implies, i.e. to sit with the women under the awning on the hilltop while the steel workers in the valley struggle in the dust and agony of industrial warfare . . . Why not . . . return home to the (United Miners) union that suckled you . . . An honored seat at the council table awaits you."

Meanwhile the building trades remained the sole major group of labor not yet formally attacked by the proponents of vertical unionization. And, curiously, of all industries Building today stands most in need of the integrating effects of such a vertical organization. NO BID. The Housing Division of the Public Works Administration will this month accept bids on the largest housing project on its lists—New York City's giant Williamsburg, to consist of 2,000 living units on 21 acres, at an estimated cost of better than \$12,000,000. Anxious to participate as fully and as smoothly as possible in this sizable pot, Manhattan's major contractors—through the Metropolitan Builders' Association—have for the last two months been informally conferring with Assistant Administrator Horatio B. Hackett and Director of Housing A. R. Clas.

Somewhat alarmed at the number of bids being rejected by the Government, the Association made a special examination of the Williamsburg specifications, concluded that there existed three major obstacles to satisfactory contractual relations with the Government.

First, Housing Division work is inspected by the independently operated Inspection Division. Its inspectors had no hand in drawing up the famously high and rigid specifications of the Housing Division nor have they any discretion in allowing a tolerance margin on the work. Result, claims the Builders' Association, is that contractors find themselves inevitably caught short when they are unable to produce the theoretically perfect job demanded by this combination of circumstances.

Closely related to this objection is the further one that the contractor is required in all Housing Division projects to give preference to relief labor, and at the same time forced to accept a contract requiring skilled labor for satisfactory performance.

Finally, Government housing specifications frequently call for as many as 150 alternate bids on one project.

To these major objections and many more minor ones the Housing Division had one general rebuttal: all such regulations were required either by departmental rule or by statute. That PWAdministrator Ickes might do well to amend his rules and agitate for changes in the laws is being amply demonstrated. Because housing projects are so nearly impossible of satisfactory fulfillment, the Government is finding it increasingly difficult to get a respectable array of legitimate bidders. While the Procurement Division continues to average ten bids on its projects, and private promoters can easily get thirty or more, the Housing Division has lately received: Four bids on the \$4,500,000 Lang Field project in Buffalo; no bids on either Charlestown or Columbia, S. C., where eleven and nine sets of specifications respectively were released. Consensus of the Builders' Association in New York last month was that the Williamsburg project would rate no major bidder, not more than a handful of minor ones.

On Jop IN NEW YORK'S

FAMOUS GRAND CENTRAL ZONE



• The regularity with which Barrett Roofs are chosen for America's finest buildings is striking evidence of the confidence architects, engineers and building owners place in them.

Bonded for 20 years by the United States Fidelity and Guaranty Company against repair and maintenance expense, Barrett Specification Roofs are built to last two or three times their bonded period. Staunchly resistant to all weather and atmospheric acids, the longevity of these coal-tar pitch, felt and gravel Barrett Roofs is amazing.

Barrett Specification Roofs are available practically everywhere through Barrett Approved Roofers. Consult with them or with us on any roofing or waterproofing problem.

THE BARRETT COMPANY, 40 RECTOR ST., NEW YORK, N. Y. 2800 So. Sacramento Avenue, Chicago, Illinois Birmingham, Alabama

JULY · 1936

5



Steel made possible the construction of skyscrapers... Coal tar pitch-and-felt made possible the construction of flat bituminous roofs that have lasted 20, 30 and even 40 years.

There are good reasons for this long life:

- 1. Coal tar pitch is waterproof.
- Coal tar pitch roofs have self-healing and self-sealing characteristics.

KOPPERS PRODUCTS CO.
KOPPERS BUILDING, PITTSBURGH



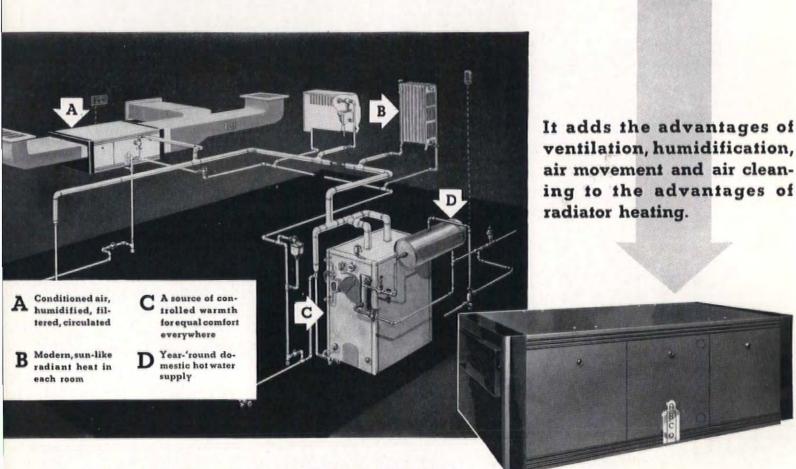
You should specify coal tar products for roofing, just as you specify copper for plumbing and hardwood for flooring.

Specify Koppers Coal Tar Pitch and Koppers Tar-Saturated Felt.

| | , |
|---|---|
| Koppers Products Company, Pittsburgh, Pa. (AF-5) | |
| Send me ☐ Roof Specifications Book | |
| ☐ Don Graf Data Sheets on Roofing and Waterproofing | |
| ☐ Information on Lumino Aluminum Tar-Base Paints | |
| ☐ Creosote for Wood Preservation and Termite Prevention | |
| Your Name | |
| Firm Name | |
| Address | |
| | |

The New ARCO air CONDITIONER

OFFERS A SIMPLE METHOD OF MODERNIZING EXISTING RADIATOR HEATING SYSTEMS



V...TURN RADIATOR HEATING SYSTEMS INTO COMPLETE

AMERICAN RADIATOR ONDITIONING SYSTEMS

- American Radiator makes possible the modernization of existing radiator Systems into complete American Radiator Conditioning Systems through 3 simple steps.
- . PRODUCTS FEATURED IN THE NEW MERICAN RADIATOR CONDITIONING SYSTEMS



boilers for coal, or gas. Include ir 'round domeswater supply.



Ideal Variport Valve regulates venting rate on 1 pipe steam or vapor jobs.



For rustproof, leakproof piping — Arco Wrought Copper Pipe and Fittings.

- Install the new Arco Air Conditioner, adding the advantages of winter humidification, all year 'round ventilation, air cleaning, and circulation.
- Bring heating up to the new modern, 1936 comfort level by installing such products as Variport and Hurivent air valves, thermostatic controls, balancing ells, and concealed radiators.
- Provide year 'round domestic hot water — either the completely automatic built-in System (Taco-Abbott) or an independent hookup. Proper equipment available for every fuel.

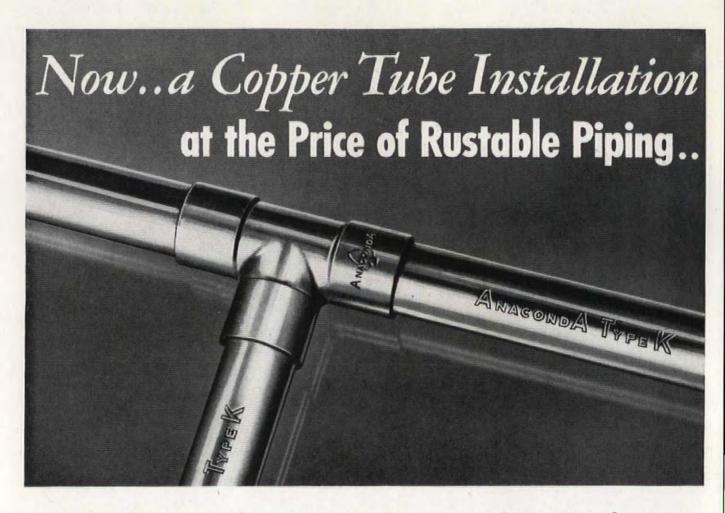
Installation of the Arco Conditioner is simple. It requires a minimum of ductwork, no structural changes. Necessitates no change in boiler capacity. Fresh and re-circulated air is automatically humidified, tempered, filtered and distributed throughout the house. The Conditioning Unit operates independently of the heating, so that conditioned air is continuously available even with the heating off.

Right now the American Radiator Summer Finance Plan facilitates heating modernization. Financing to cover the entire installation may be arranged on FHA terms, with no payment and no interest charges until as late as September 30th. For complete details, write today.



AMERICAN RADIATOR COMPANY

DIVISION OF AMERICAN RADIATOR & STANDARD SANITARY CORPORATION
40 West 40th Street, New York, N. Y.



for plumbing, heating and air-conditioning lines

IN specifying for plumbing, heating and air-conditioning lines, the first cost of non-rust material can no longer be considered a drawback to its use. For the price of Anaconda Copper Tubes, assembled with Anaconda Solder-Type Fittings, is little or no more than that of pipe that rusts.

In addition to low cost, this sturdy tubing offers all the traditional advantages of copper-long life . . . trouble-free service . . . immunity to rust . . . freedom from periodic repair expense.

Copper tubes for heating lines For heating lines . . . Anaconda Copper Tubes are ideal. Hot water conveyed through them loses only about one-half as much heat as is lost when black iron is used. Permanently smooth interiors reduce resistance to the flow. The result is quicker circulation and maximum efficiency.

A complete line of Anaconda Fittings

There is an Anaconda Fitting to meet every copper tube requirement. Solder-type fittings may be had in either wrought copper or cast bronze; flared-tube-type fittings are cast bronze. All are furnished in elbows, tees, couplings and unions, including a complete range of reduction and adapter combinations. Anaconda Copper Tubes and Fittings are carried in stock by distributors of Anaconda Pipe.



Where standard-size, rigid pipe is required, Anaconda Brass Pipe has long been the standard of quality. Two scientifically-determined alloys are carried in stock by leading supply houses... Anaconda 67 Brass Pipe for normally corrosive water, and Anaconda 85 Red-Brass Pipe for highly corrosive water.

THE AMERICAN BRASS COMPANY

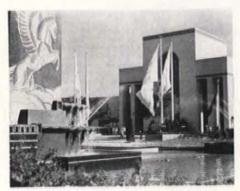
General Offices: Waterbury, Connecticut Offices and Agencies in Principal Cities

In Canada: ANACONDA AMERICAN BRASS LTD., New Toronto, Ont.

ANACONDA COPPER & BRASS

ANACONDA

FORUM OF EVENTS



TRANSPORTATION



"CAPPING A GUSHER"



AGRICULTURE

TEXAS CENTENNIAL EXPOSITION

On June 6, with only a thin white ribbon between swarming thousands and the freshly finished Fair Grounds of the Texas Centennial Exposition, Secretary of Commerce Roper stepped to a microphone at the entrance, and spoke as follows: "The State of Texas sends greetings to all people of the world on the occasion of her 100th anniversary, and invites you to join us here in 1936." Whirled on its way by radio, telegraph, and cable, the message sped around the world to return in two minutes six seconds, breaking all records for the rebound of an invitation, and shearing, by an electrical impulse, the ribbon across the gap. The gates having been already opened by Governor Jimmy Allred with a specially made jeweled key (cost \$50,000), the crowds poured in and the Fair was on.

Proud of their turbulent history, proud of their wide-flung State and the publicity it is getting, Texans sat in the overflowing Cotton Bowl, watched riders on the field unfurl six flags one after another, each a symbol of the governments the State had been under: Spain, France, Mexico, the Southern Confederacy, the Republic of Texas, and the United States. They heard about the 63 buildings, the \$25,000,000 spent, the 10,000,000 visitors expected, the greatest Fair ever held south of the Mason and Dixon line," "the first goat show of any importance in all history." From France spoke Novelist André Maurois, at the microphone in place of harassed Premier Leon Blum; from Madrid spoke Foreign Minister Augusto Garcia, sending greetings from the nation which had first claimed the State after its discovery in 1519 by the intrepid de Pineda.

While the ceremonies continued in the Bowl, larger crowds prowled around the grounds, looking over the buildings, the flags, and the reflecting pool, poking around the Streets of Cairo, Little America, and the Streets of Paris.

Deliberately unlike the architecture of "A Century of Progress," Centennial Ar-chitect Dahl's buildings are "bold and strong; a quality possessed to an unusual degree by the residents of Texas and the Southwest. Broad, low buildings; large smooth expanses of sun-colored walls; brilliant spots of color in historic murals." To express its southwestern character, the architecture combines "the classical refinements of the early Greeks, the basic simplicity of the early Egyptians and Mayan architecture." While the description indicates something of a stylistic miscegenation, the effect is not so bad. The buildings are broadly handled, with simple masses and brilliant color, and the arcades required by the climate provide a pleasant interplay of forms. The plan of the whole was controlled sufficiently well to produce a unified appearance in the main buildings, and landscaping was given much more attention than Fairs usually receive.

The chief emphasis of the Fair is on Cattle, Cotton, and Oil. Longhorns appear on the grounds, there is a million dollar livestock show and cotton and oil receive their due in many exhibits. Texas pride in its history appears in the reproductions of Judge Bean's Pecos cabin, the log ranch building of the Rangers, the realistic, lifesize facsimile of the Alamo.

For the Negro is a special building—
"first time in any national exposition a
building has been devoted to the progress of the Negro race." Amusements include a snow-covered Black Forest Village,
and the usual Streets of All Nations.
To the bare bottoms undoubtedly dis-

(Continued on page 62)



SKY VIEW

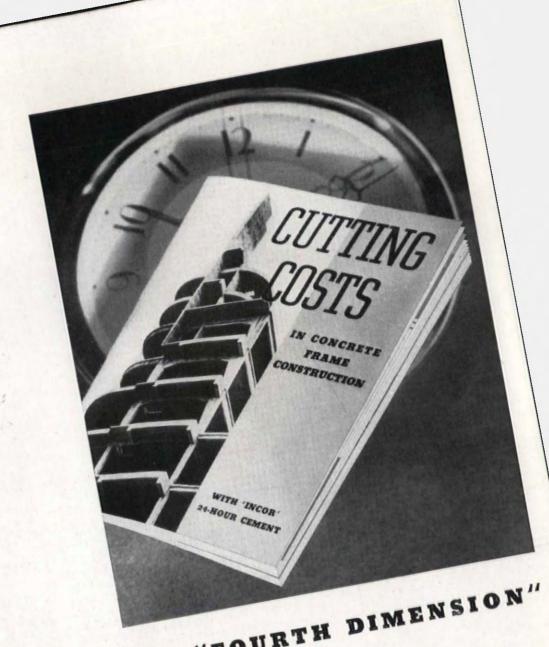
Wide World



ALAMO REPRODUCTION



U. S. GOVERNMENT



TIME - THE COSTLY "FOURTH DIMENSION"

Concrete-frame erection is usually considered a "three-dimensional" problem—so many cubic yards of concrete at so much a yard for labor and materials. But here, too, there is a Fourth Dimension—Time. Forms are built, set and filled with concrete. Then, for a week or longer, the job stands still—waiting for the concrete to become self-supporting, so the forms can be stripped, re-assembled and used for the next floor. Thus, if it takes 81 working days to erect the frame of a 6-story building, 39 of them are non-productive—"dead" days when the contractor's fixed overhead expenses run on just the same, add-

This costly non-productive time is saved by using 'Incor,'* the improved Portland cement, which is self-supporting in 24 hours—permitting continuous construction progress, at a substantial expense saving. Suggesting that contractors be encouraged to estimate under specifications which take full advantage ing to the structure's cost. of 'Incor's dependable high early strength. For simple method of calculating these savings, write for free copy of new, illustrated book, "Cutting Construction Costs"—address Lone Star Cement Corporation (subsidiary of International Cement Corporation), Room 2209, 342 Madison Avenue, New York. *Reg. U. S. Pat. Off.

-'INCOR' 24-HOUR CEMENT

ROOM-AT-A-TIME
AIR CONDITIONING
without plumbing!

THOROUGHLY efficient summertime air conditioning of the single room without any remodeling and without any plumbing connections, is now available.

Where circumstances will not permit the installation of a central air conditioning system, Air Devices Corporation provides the ready answer in the new, air-cooled ADCO Portable Air Conditioner. It cools, filters, de-humidifies and circulates FRESH air.

In the ADCO Portable Summertime Air Conditioner, Air Devices Corporation presents the result of an intensive engineering development, preceded by many years of experience in the air conditioning field.

The ADCO Portable Air Conditioner is rated at one-half-ton capacity—meaning its cooling ability is the equivalent of 1000 pounds of melting ice. This is normally adequate for a room of from 1600 to 2000 cubic feet, depending of course, upon such variables as climate, "exposures" and number of people normally occupying the room.

No Plumbing Connections Needed ADCO is "Air-Cooled"!

ADCO Portable Window Type Air Conditioner is quickly installed—simply placed in the window, with either opaque or transparent panels closing the side spaces, and then plugged in to nearest electrical wall receptacle. No plumbing connections required. Both the ADCO Window and Floor Type Air Conditioners may be moved at will from room to room.

Write for complete information, being sure to mention the size of room in which you plan to install ADCO

AIR DEVICES CORPORATION (Subsidiary of Automatic Products Corporation)

General Factory Offices: 210 So. Clark Street, Chicago, Ill. New York Offices: The Permutit Co., 330 W. 42nd Street

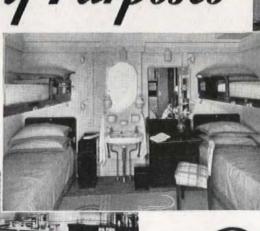






ORMICA serves Many Purposes

Formica splash back behind washbowl, and Formica furniture tops, Tourist State-room Queen Mary



One of the First Class bathrooms on the Queen Mary. Walls finished with Formica B-24, a pearlescent pattern

in the Super-Liner ueen Mai

A large use of Formica for many purposes throughout the ship was made by the builders of the new British liner Queen Mary, who thought it worth while to import this premier American plastic material to get the advantage of its many attractive qualities. In this great ship it was used for wall covering in all the bathrooms through the ship in a white pearlescent finish. It was also

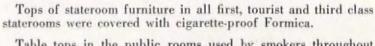
Formica bar counter, Formica wainscot with inlays, and table tops, Queen Mary



Formica table tops First Class observation lounge, Queen Mary



Formica dressing ta-ble and radiator cover tops First Class State-room Queen Mary



used for wall covering in three hair dressing shops.

Table tops in the public rooms used by smokers throughout the ship were covered with inlaid blisterproof Formica. One of the cocktail lounges was built with a complete Formica bar counter, Formica wainscoting, and Formica table tops.

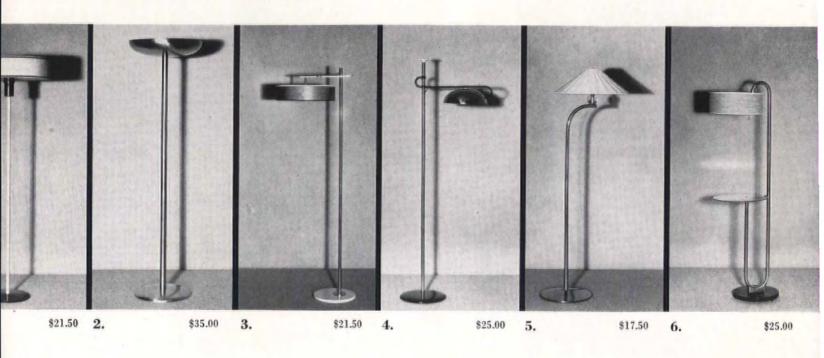
Perhaps the same reasons that led to this choice would interest you. Let us tell you the facts.

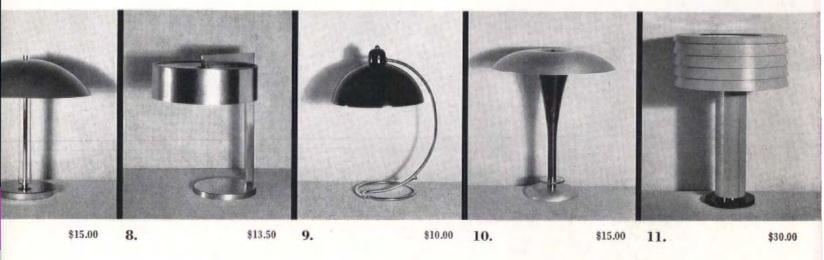
THE FORMICA INSULATION CO. 4620 SPRING GROVE AVE. . CINCINNATI, OHIO





PRODUCTS AND PRACTICE



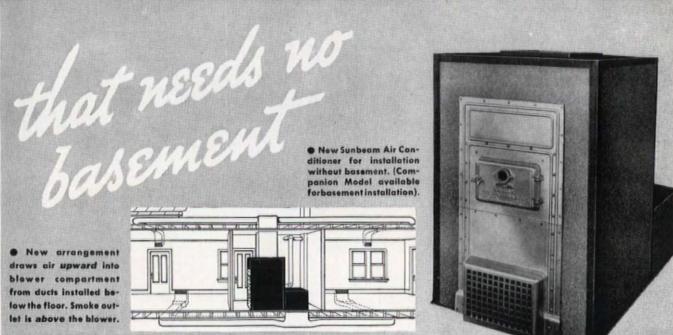


To do good lighting with a limited budget has never been easy. Architects and decorators will therefore find much to commend in the results of a collaboration between Lightolier as manufacturer, and Kurt Versen as designer of a new line of lamps priced to retail from \$10 to \$35. Known as "planned purpose" Lightoliers, the several lamps have a common affinity of design. From this varied selection it is possible to coordinate lighting with the complete ensemble at most reasonable cost. The simple forms used in the lamps permit their use in either modern or traditional interiors.

Reading and Piano Lamp. Height 65½ in. Shade 22 in. spread, linen shade and shaft of oyster white. For direct and indirect light.
 Floor Reflector Lamp. Height 68½ in. Bowl 19 in. spread. Polished

chrome or brushed copper finish. Four bulbs with serial switch. 3. Floor Reflector Lamp. Height 54 in. Drum shades 14 in. spread. Base polished chrome; shade of homespun. Two purpose shade may be reversed for reading or indirect light. 4. Bridge Lamp. Height 61 in., 12 in. dome shade. Base and arm tobacco brown, brushed copper shaft and shade. Shade may be used for reading or reversed for indirect illumination. 5. Floor Lamp. Height 54 in. Shade 17 in. spread. Parchment shade. Base and stem golden brass. 6. Reading Lamp. Height 48 in., 12 in. drum shade. Space for ashtray or book. Glass tray, polished brass shaft, linen shade. 7. Desk Lamp. Height 151/2 in., 14 in. dome shade. Gunmetal finish. 8. Table Lamp. Height 14 in., 10 in. drum shade. Luminous ivory top, brushed copper base and shade, brushed cadmium stem. 9. Table Lamp. Height 163/4 in., 101/2 in. dome shade. Polished chrome tubing. Black aluminum shade. 10. Table Lamp. Height 16% in. Base and shade brushed aluminum. Luminous clear catalin disk on base. 11. Table Lamp. Height 221/2 in. Deep slate blue base. Shaft covered with gray leather embossed with gold, metal shade of pale yellow with louvers to reflect light. Reading and reflecting light.

NEW AIR CONDITIONING









3. Oil burner assembly installed.



2. Slides easily ing element.



4. Lower front panel goes in place.

... COMES COMPLETE WITH READY ASSEMBLED OIL BURNER

Now even small homes, whose heating requirements do not exceed 95,000 BTU, can have the benefits of practical, completely automatic economical Sunbeam Air Conditioning. Sunbeam announces two new models designed specifically to meet that growing demand. One model for homes without basements; another for homes with basements. Both are complete with oil burner and accessories - surprisingly low in price-compact-quiet-attractivecirculate warm, filtered, humidified air in winter - cooling ventilation with filtered air in summer-easily and economically installed,

One especially lends itself to a type of construction rapidly becoming popular. It is installed on the same floor as the living quarters, in a closet or separate heater or "utility" room. Its design is such that there is no waste space: the blower compartment, for example, occupying the space below the smoke pipe outlet. The return air duct is installed below the floor and is attached to the base of the unit.

These two new models complete a line of Sunbeam Air Conditioning for every type of home - every kind of fuel. Sunbeam Engineers will be glad to plan the air conditioning layout for your homes from your building plans. The service is free. Write for the details and for specifications on these two new units.

HEATS IN WINTER . COOLS IN SUMMER





THE FOX FURNACE CO., ELYRIA, OHIO

Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION









FOX FURNACE CO., ELYRIA, OHIO

 Please send details of your free air conditioning layout service and specifications of new Sunbeam models for small homes.

| NAME | |
|---------|----------|
| ADDRESS | |
| CITY | STATEF-t |

DEVELOPMENT FEATURES SEALEX

ANOTHER



KITCHENS STYLED FOR SELLING

with ADHESIVE SEALEX LINOLEUM

and SEALEX Wall-Covering



Adhesive Sealex Linoleum, with a sanitary one-piece cove base and border, styles up this kitchen in the Baldwin homes. Wainscoting of Sealex Wall-Covering and Sealex as counter-tops on working areas are other selling features.

ANY woman looking over a house makes a bee-line for the kitchen. So, in his newest development at Teaneck, N. J., John A. Baldwin decided to get the utmost in "kitchen appeal" with Adhesive Sealex Linoleum. "We have 17 houses in our development," says Mr. Baldwin, "and are featuring Adhesive Sealex Linoleum in every one."

Indeed, leading architects and builders all over the country are using this *modern* inlaid linoleum as a powerful selling aid. Adhesive Sealex Linoleum brings about a substantial saving in the time and cost of installation. It comes with the *factory*-

applied adhesive on the back. Hours and dollars are saved through its elimination of extra paste, felt lining, and heavy rollers. And you get a stronger, longer-wearing installation than ever!

For the walls, Sealex Wall-Covering offers many valuable advantages. Its smooth surface is stain-proof, water-proof and easy to keep clean. It will last a building's lifetime!

Write for full details on these modern materials which will help you build, at moderate cost, houses that sell!

CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

The Luxury of Automatic Heating With the Economy of Coal

NEW HEAT CONTROL Adjustable down to 20-minute frequencies. Furnace never stone-cold—but no overheating or fuel waste. Completely enclosed. Dust and dirtproof. Responds more promptly to thermostat. Durable. Long-lived.

DUAL-DRAFT BURNER Ingenious design with air-holes on outside as well as inside. Permits use of lower-priced grades of local bituminous coal. Fuel spreads out over burner for better combustion. No "fly ash" or "blowholes." Non-clogging tuyeres prevent clinker "freezing."



GAS ELIMINATOR Sucks gases out of coal tube and discharges them into firebox, where they are completely consumed. Consequently, the Whiting Hopper does not need to be airtight. The Gas Eliminator prevents back-firing and back-smoking.



WHITING STOKER



Hopper on Domestic Models is only 25 inches from the floor. Easily filled by a child. Proper-sized stokers for any domestic or commercial use.



WHITING CORPORATION

15630 SOUTH HALSTED STREET, HARVEY (A Chicago Suburb), ILLINOIS

AUDITORIUM PATENTS

COVERING CONTRIBUTIONS TO THE AIR CONDITIONING ART

WILL BE ENFORCED

There need be no misunderstanding of the effect of the recent decision of the Second Circuit Court of Appeals holding invalid certain claims of the Lewis Reissue Patent No. 16,611 and of the Fleisher Patent No. 1,670,656.

The judgment in that suit is personal to the defendants there involved;

it does not invalidate the remaining claims of those patents, two of which have been held valid and infringed in other litigation.

It does not involve or invalidate the

TWENTY-FIVE ADDITIONAL PATENTS

and numerous applications owned or controlled by Auditorium covering other important improvements and economies in the field of air conditioning.

Auditorium has already brought suit against another infringer and expects to enforce its rights wherever evidence of unlicensed use of its inventions is obtained.

Permission to operate under Auditorium's patents may be secured from any of the following Licensees, all of whom have acknowledged the validity of the Auditorium patents and agreed to pay the royalties thereunder.

AMERICAN BLOWER CORPORATION
Detroit, Michigan

CARRIER ENGINEERING CORPORATION 850 Frelinghuysen Avenue, Newark, N. J.

GENERAL ELECTRIC COMPANY Schenectady, New York ROSS INDUSTRIES CORPORATION
New Brunswick, N. J.

THE COOLING & AIR CONDITIONING CORP.
Hyde Park, Boston, Mass.

YORK ICE MACHINERY CORPORATION
York, Pa.

AUDITORIUM CONDITIONING CORPORATION

New York Office - 17 EAST 42nd STREET



THIS COLORFUL SIDEWALK IS "GOOD BOX-OFFICE"

THANKS to fine terrazzo, the lobby of this prosperous theater begins at the curb. As rich and inviting as a fine lobby carpet, the terrazzo sidewalk attracts patrons—urges them inside.

Here, terrazzo has to take the scuffling punishment of thousands of feet day and night. The fact that it can take it, and at the same time add distinctive beauty to the premises, are two reasons why fine terrazzo as a modern flooring material has no peer.

Made with Atlas White portland cement (plain and waterproofed), floors of fine terrazzo are as individual as you please. They are custom-built to your own ideas as to pat-

tern, in any color or combination of colors you desire. They are durable. Their upkeep is easy and inexpensive.

In planning terrazzo jobs, do not overlook the importance of using white portland cement. Only white gives that vigorous life and freshness to the colors of the marble chips. Only white makes each pattern truly clear and clean-cut. Delicately tinted, or used pure white, Atlas White portland cement brings out the full rich beauty of fine terrazzo.

Any terrazzo contractor will be glad to show you samples, in any textures and colors you desire. Or write direct to Universal Atlas Cement Co. (United States Steel Corporation Subsidiary), 208 South La Salle Stree', Chicago.

SPECIFY ATLAS WHITE PORTLAND CEMENT FOR ALL FINE TERRAZZO





pecify an automatic gas water heater for every home requirement. Their modern ppearance and simple connections will grace any basement.

We shall be glad to send you figures on the new economies of modern autolatic gas water heaters. These figures have been compiled by unbiased authories and may be compared with the fuel cost of other systems. Write for comparave costs-and write gas-fired heaters into your specifications.

GAS WATER HEATER DIVISION

ASSOCIATION OF GAS APPLIANCE AND EQUIPMENT MANUFACTURERS . 60 EAST 42nd STREET, NEW YORK

AUTOMATIC GAS WATER HEATER MANUFACTURERS

AMERICAN GAS PRODUCTS CORPORATION CLEVELAND HEATER COMPANY CRANE CO., PREMIER HEATER DIVISION EVERHOT HEATER COMPANY GAS AND ELECTRIC HEATER COMPANY GAS EQUIPMENT COMPANY HANDLEY-BROWN HEATER COMPANY

HOFFMAN GAS & ELECTRIC HEATER COMPANY HOTSTREAM HEATER COMPANY HYNES & COX ELECTRIC CORPORATION LAWSON MANUFACTURING COMPANY LOVEKIN WATER HEATER COMPANY J. W. MOORE VALVE CORPORATION THE PITTSBURG WATER HEATER CORPORATION

RUUD MANUFACTURING COMPANY SANDS MANUFACTURING COMPANY SURFACE COMBUSTION CORPORATION UNITED AMERICAN BOSCH CORPORATION WELSBACH COMPANY WHITEHEAD METAL PRODUCTS COMPANY JOHN WOOD MANUFACTURING COMPANY



THAT Monel Metal kitchen you're planning will make a big saving in the time of the woman who uses it. And now Whitehead offers to save your time in laying out the job.

Follow the example of the architect shown above. Send the dimensions of your kitchen to Whitehead; their kitchen planning service will relieve you of time-consuming details by sending you a complete kitchen to fit those specifica-

Whitehead can now do this because they make not only Monel Metal sink and cabinet units in all standard sizes from 41" to 144" but also steel base and wall cabinets to match.

A saving in time is not all Monel Metal does for the housewife. It gives her kitchen lasting beauty. For Monel Metal is solid, cannot chip or crack. Being two-thirds Nickel and one-third copper, it cannot rust. Ordinary cleaning makes its silvery surface shine more brightly as the years go by.

And time saving is by no means the only advantage to you of installing Monel Metal kitchens the Whitehead way. You know more about high quality materials than your clients. When the houses that bear your name are giving high satisfaction 15 . . . 25 years after they are built, the ultimate rea-

son is usually because you insisted on using quality materials. You know that Monel Metal is that kind of material.

Unless you have seen the prices very recently, you have a

surprise coming there too. Give Whitehead a sketch of the kitchen you have in mind, and let them make the plan and submit an estimate. Address: Whitehead Metal Products Co. of New York, Inc., 304 Hudson Street, New York, N. Y.

THE INTERNATIONAL NICKEL COMPANY, INC.

67 WALL STREET NEW YORK, N. Y.

MONEL METAL

MONEL METAL

is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.

FAIR QUESTION

HOW CAN COSTS BE KEPT LOW WITHOUT SACRIFICE OF PROTECTION?



Ford Motor Company exhibit, Time and Fortune exhibit, and the Colonial Village—three of the many exhibits at "A Century of Progress" in Chicago wired in ELECTRUNITE Steeltubes Conduit. 120,000 feet was used in the Ford Motor Company exhibit.



• The answer is simple—specify ELECTRUNITE Steeltubes—the modern electric resistance welded Electrical Metallic Tubing.

Buildings and exhibits for fairs and expositions may be temporary or they may be permanent. In either case cost is an important factor. From this angle, ELECTRUNITE Steeltubes is ideal—with all fittings it costs less to buy and to install than ordinary conduit. There are no threads to cut—three simple fittings adapt it to any job. It's easy to cut and bend. And the patented knurled inside surface makes wire pulling approximately 30 per cent easier.

You can specify this low-cost raceway for wiring with assurance of full protection. ELECTRUNITE Steeltubes is fully approved by Underwriter's Laboratories and is sanctioned for most every type of construction in the National Electrical Code and municipal ordinances. It is strong, tough and resistant to corrosion—and will last as long as the structure in which it is used.

Consult Sweet's or write us for further information on this economical electrical conduit that offers full protection to wiring.



Knurled inside finish available in 1/2" 3/4" and 1" stres.

Steel and Tubes Inc.

WORLD'S LARGEST PRODUCER OF ELECTRICALLY WELDED TUBING
C L E V E L A N D . . . O H I O





When writing Steel & Tubes, Inc., for further information, please address Department A. F.

Architectural ingenuity, expressed in larger glass areas, is bringing the boon of light and air to thousands of new home owners who, like the average person, spend at least half a lifetime between four walls. And architectural discrimination generally specifies for these ample areas the highest-quality glass available.

Libbey-Owens-Ford Glass Company, Toledo, Ohio manufactures a complete line of flat glass, including Flat Drawn Window Glass...Polished Plate Glass, both clear and in colors...Heavy Sheet Glass...Greenhouse Glass...Safety Glass...Tuf-Flex tempered plate glass...Vitrolite opaque structural glass... Aklo heat-absorbing glass...and distributes the Figured and Wire Glass manufactured by the Blue Ridge Glass Corporation of Kingsport, Tennessee.

SCHOOL FLOORS

-long-wearing, beautiful, quiet, scar-proof!



NO LONGER need school floors be drab and prosaic. Today you can specify new beauty, new warmth, new character in schoolrooms with Goodyear Rubber Flooring—a quality product of the world's largest rubber company that lasts for years with minimum upkeep expense.

Its record in hundreds of public schools, colleges and universities prove it to be outstanding in meeting these special requirements of educational institutions:

DURABILITY — Goodyear Rubber Flooring "stays put"; withstands heavy traffic for years without appreciable wear.

CLEANLINESS — impervious to tracked-in dirt and slush. A damp mop keeps it spotless.

FIRE-AND STAIN-PROOF—not marred by dropped cigarettes or matches; nor stained by alcohol, ink and most acids—ideal for laboratories.

QUIET—its resiliency minimizes noise in corridors, classrooms and libraries.

BEAUTY—rich two- and three-tone colors that permanently retain their hues.

STYLE—wide choice of designs and borders adaptable to any decorative motif.

Available in two types

GOODYEAR RUBBER TILE—laid in individual blocks of any specified size, shape and color in any desired pattern—a de luxe floor that will do you credit for many years to come. GOODYEAR WING-FOOT SHEET RUBBER FLOORING—laid in continuous lengths at about the same cost as good linoleum—the most economical, permanent covering for large schoolroom floors; available in more than 100,000 different designs. For full data, write Goodyear, Akron, Ohio, or Los Angeles, California.

See Sweet's 1936 Architectural Catalogue for complete specifications



LETTERS

Subsistence Wage

Forum:

The letter of your correspondent, Mr. Ralph Erskine, Jr., who with four years of architectural training and a B. S. degree desires experience in an office at a "bare subsistence wage," deserves comment.

We think you will agree with us that such proposals as this one can only have the most depressing effect on the architectural profession as a whole. Certainly the tens of thousands of qualified and highly experienced architectural draftsmen who are now unemployed throughout the country face demoralizing competition indeed when architectural graduates ask to work at a bare subsistence wage. This is not to blame Mr. Erskine. For obviously, he is quite as well aware as the rest of us that as an individual he is powerless to right such a situation.

The members of the Federation of Architects, Engineers, Chemists and Technicians feel that this state of affairs can be corrected. Draftsmen, students and recent graduates belonging to that organization are demonstrating that, organized along economic lines, they can establish healthier standards for all architectural services. Tangible accomplishments in improving salaries and working conditions in various sections of the country were reported at the Federation's National Convention held in Rochester last month.

In WPA, civil service and private employment the Federation has made marked progress in reversing the precipitous decline in technical and professional standards.

It is our conviction that a strong trade union policy such as ours must redound, not merely to the benefit of architectural and technical employes, but to the better stabilization of the profession as a whole. In this, we feel, all FORUM readers can agree with us.

ROY WEBER, National Organizer Federation of Architects, Engineers, Chemists & Technicians National Office, New York, N. Y.

"Great Oaks . . . "

Forum:

Refusal of architects to accept minor commissions has placed the profession in its present position of only handling about 6 per cent of the building work of the country. By this indifference we have failed to grasp the broader view of the architectural problem we are facing.

When a small uninteresting piece of work is required of us we are very apt to suggest other channels whereby the client might have prepared for him a set of plans at little cost. We do not realize that our professional imaginations and conceptions of design would but lay the foundation of a vaster appreciation of architecture in the future, and also, often open the very

avenues of contacts and desirable clientele that the average architect is ever in pursuit of. My own experience may be enlightening insofar as it touches on the last.

Some years ago, after completing a large project, and believing my work would from then on be only in the upper brackets, I was confronted with the problem of accepting a commission to design a two-car garage. After deliberation, my reaction was, "Well, even a garage might be made interesting," and forthwith drew the plans, let contracts, and supervised the construction. It so happened that along one side of the garage there was a vacant lot owned by my client, so along this side of the garage wall, I brought the roof down to form a covered and trellised tea porch, finishing the floor with red bricks.

This slightly different design interested the client, and eventually a commission was obtained to develop a garden to go with the tea porch; following the garden work, alterations to the house were made, until finally the entire house was remodeled. Later country homes were designed and constructed both for the client and for his children. Then still more for neighbors, friends and relatives of the original client. Recently, speculating and wondering, I was interested to discover that this original commission, over a period of years, had been the seed of contracts that have amounted to within a few thousand of one million dollars worth of work for the architect.

There are other such cases I might recite, but the main point to consider is no matter how small a commission, it has great possibilities.

Think of being made the architect of churches, clubs, numerous residences, garden and housing developments, and all from a thousand dollar garage.

The small house is now your client, do not let the opportunity pass you by.

Wesley Sherwood Bessell

New York, N. Y.

Architect Bessell received honorable mention in the recent Oregon State Capitol Competition (see Page 2 this issue).—Ed.

Jersey Opposition

Forum:

Our attention has been called to an article entitled "Commercial Banks Try Their Wings" in the May issue of The Architectural Forum. This article refers to the status of the American Institute of Architects' clinic plan, and states that there was some opposition in the Institute, mainly resting on the point of fee reduction. In a box showing the attitude of the Chapters, New Jersey was quoted as being undecided but not opposed.

At the March meeting of the New Jersey Chapter, the question of cooperation with the Federal Housing Administration was considered, and a resolution was passed directing the President to appoint a committee to consider the matter. This committee while appreciative of the FHA's efforts to promote the employment of

architectural service unanimously passed the following resolution.

"This committee feels that it is impossible for the New Jersey Chapter as an organization representing the architectural profession to control, endorse, or participate in any method offering architectural services to the public based upon the use of stock plans or on fees less or other than those recommended by the A. I. A. in the schedule of minimum charges, A. I. A. document No. 177."

This resolution was presented by the committee to the April meeting of the Chapter which unanimously endorsed it.

We will appreciate it if you will publish this letter since the statement that we were not opposed seems to us to have been misleading, in view of the opposition for many years of the Chapter to any plan of architectural service which is based on cut fees, partial service, or stock plans.

CLEMENT W. FAIRWEATHER N. J. Chapter of the A. I. A. Metuchen, N. J.

Posted

Forum:

We were very much interested in the illustration showing a small house planned by the owner and one planned by an architect.

We have cut out these illustrations and posted same in our office in order to convince our customers that it pays to employ an architect.

I. N. R. BEATTY LUMBER CO.

Forum:

. . . Congratulations on the April issue, the most important and valuable you or anyone else has ever published on the difficult subject of small homes.

CLARENCE J. ZINTHEO, JR. Richmond Highlands, Wash.

M. A. A. and A. A.

Forum:

An unusually full attendance of the membership of the Market Avenue Architectural and Asthma Association was on hand last night to hear the report of Dr. F. X. W. Barnsmeller, delegate to the American Institute of Architects' Convention at Old Point Comfort and Williamsburg, Va.

Dr. Barnsmeller established some kind of a record for the trip. He left in a Chevrolet and returned in a quandary.

"I am in a quandary when I attempt to explain the experiences that befell me. You will hardly credit me when I assure you that the hotel at Old Point which served as headquarters for the convention contained NO BAR. In fact, there are no bars in Virginia. Only package sales," stated the Doctor, wiping away a tear.

"Whither are we drifting? A man of the highest professional qualifications, at great personal inconvenience, leaves a large and constantly growing practice (and Horatio Rancid got that porch remodeling job

(Continued on page 44)



Ask TRANE first

Ask TRANE first about all residential heating and air conditioning problems. Many of your difficulties can be worked out easily and quickly and you will then have the assurance that the job will be right—that you will have a satisfied client. The TRANE Company offers you the only complete line of residential heating and air conditioning equipment ever offered. No longer is it necessary to try to fit one system into every type job. Now you can pick the proper equipment at the proper price.

TRANE SYSTEMS

AIR-CONDITIONING and HEATING

We will be glad to send you the newest TRANE Book on "Heating and Air Conditioning the Home." This 28-page booklet has been especially designed for you to present to your clients. It explains all TRANE Systems in simple, easily-understood language and shows just the correct system to use for the

particular type. If you wish, we will be glad to mail it to a select list of your clients at no cost to you. Just jot down their names on your letterhead and send them to us at once.

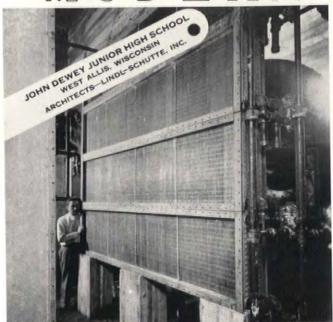
—About all commercial and industrial Air Con-ditioning, Heating, Drying, or special problems pertaining to Heating or Air Conditioning Equip-ment, TRANE Engineers will be glad to help.

THE TRANE COMPANY

BRANCHES IN ALL PRINCIPAL CITIES

WISCONSIN LA CROSSE. In Canada ... Mowat & King St. OY ... Coronto





OR THE MODERN SCHOOL

TRANE Coils were selected for the magnificent new John Dewey High School because careful and discriminating Architects weighed all of the facts of construction and efficiency.

They liked TRANE'S Exclusive Guide Flange features that eliminate the dangers of expansion and contraction.

They liked TRANE'S patented mechanical method of expanding the tubes into the fins in such a manner that solder, welding or brazing are eliminated.

They liked TRANE'S overall ruggedness, light weight, higher efficiency.

They liked TRANE Coil data, so simplified and authoritative that proper coil selection is easy.

TRANE

You can have complete data on TRANE Extended Surface Heating Coils for your files simply by sending your letter-head. We will forward you, by return mail, bulletins on Heating Coils (high and low pressure.) Cooling Coils (Direct Expansion and water) and Cooling and Heating Units of all types.



-about all commercial and in-dustrial heating problems. Trane Engineers will be glad to aid you in the selection of proper equipment.

THE TRANE COMPANY

BRANCHES IN ALL PRINCIPAL CITIES

LA CROSSE,

WISCONSIN

TRANE

PROBLEM No. 2

THE ELTONS ARE YOUNG AND MODERN





THEY WANT A LIVABLE, MODERN HOME





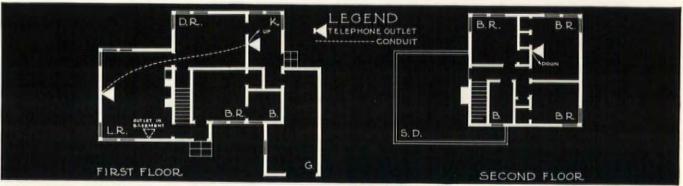
THIS

WHAT TELEPHONE ARRANGEMENTS WILL YOU PROVIDE FOR THEM?

WALLY ELTON'S going places in business. Helen still does fashion drawings. They want a very modern, very livable home — complete with air-conditioning, sun deck and maid. They've approved the tentative plans on this page. What about the telephone arrangements?

Built-in conduit becomes doubly important here. New type structural materials — steel, concrete, glass, asbestos — make it more difficult to install telephones unless conduit has been included in walls and floors, with outlets at strategic points. For the busy, active Eltons, there should be at least four outlets. Master bedroom. Living-room. Kitchen. Basement recreation room. All four need not be immediately connected, but they're ready when wanted. The complete layout costs little, adds neatness, service protection, and lots of living-comfort.

• This is a suggested approach to a typical problem. Telephone engineers will help you customtailor efficient, economical conduit layouts for any of your projects. Just call your local Telephone Office and ask for "Architects' and Builders' Service."



FOR FURTHER INFORMATION ON BELL SYSTEM TELEPHONE SERVICES AND EQUIPMENT, SEE SWEET'S CATALOGUE FILE

INEXPENSIVE FOR EVERY TYPE OF BUILDING



Economical, Free-flowing, Leak-proof hot and cold water lines, heating lines, underground service, air-conditioning, refrigeration, fuel-oil and sprinkler piping.

BRIDGEPORT COPPER WATER TUBE AND FITTINGS

PALSE economy has often led to the use of rustable piping in last-minute efforts to keep within building budgets. Schools, homes, apartment houses and industrial buildings frequently face heavy replacement expense because of this mistaken idea.

Now, with installations of copper water tube and wrought copper fittings comparable to rustable piping in cost, and far exceeding it in permanence . . . the fallacy of such procedure is clear.

Architects and engineers are now specifying

Bridgeport Copper Water Tube and Soldered Fittings for all types of buildings. Hot and cold water lines are but one of many applications. Copper is not too costly for steam and hot water heating lines. Owners are saving money through the many advantages of these rust-proof, easy-to-install materials.

Have you the Bridgeport Copper Water Tube booklet?

A line to us will bring a copy.

BRIDGEPORT BRASS COMPANY BRIDGEPORT, CONN. . ESTABLISHED 1865

BRIDGEPORT

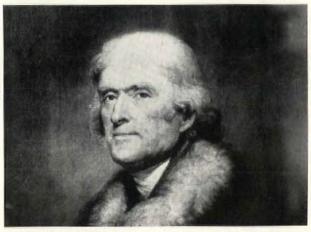
Bridgeport

Housing and the American tradition Tennessee

houses and gardens modern house interiors the New England atmosphere, in photographs brief reviews of technical books and annuals.



Forced private owners to surrender half their lands without compensation.



For "The Right of Property" he substituted "The Pursuit of Happiness."



Carried out the most gigantic confiscation of property in history.

CITY PLANNING AND HOUSING: HISTORICAL AND SOCIOLOGICAL, by Werner Hegemann. The Architectural Book Publishing Co., Inc., New York. 257 pp., $6\frac{1}{4} \times 9\frac{1}{4}$. \$3.75

To the vast amount of housing literature, the late Dr. Hegemann's book is a unique addition. Like most students of housing he felt that almost any methods would be justified by the eradication of slums and the suppression of their causes. That any effective method of producing housing on a large scale meets with bitter opposition from land speculators and others is common knowledge, and the tendency of these groups to brand planning legislation of a social nature as communistic, a Russian importation, is also well known. With convictions that would enrage any real estate speculator to apoplexy, Dr. Hegemann very shrewdly sidestepped the "Red" accusation by finding precedent for his recommendations in the actions and words of none less than Washington, Lincoln, Jefferson, and similarly reputable Americans.

Washington, for example, one of the greatest private real estate speculators in our history, had little sympathy for the "Constitutional" privileges of his class, as he showed by his acquisition of land for the Federal City, when land-owners were forced to surrender half their lands without compensation. "To avoid gorging the private land-owner at public expense, Washington wanted the public to have its own strong real estate enterprise." The numerous laws since made which forbid municipal speculation in land are based on nothing more "American" than the greed of the groups against which Washington wished to protect the public.

Thomas Jefferson's name is invoked today because he believed the Constitution gave the Government no power to engage in public works. What is forgotten is that he wished an amendment to be made permitting this, and that he proposed a public works plan to extend over ten years, at a cost in today's currency of six billion dollars. It was Jefferson, moreover, who introduced "The Pursuit of Happiness" into the Declaration of Independence, a revolutionary break with the Whiggish doctrine of property rights. There is a slight discrepancy, in Dr. Hegemann's opinion, between a slum population estimated at forty millions and the pursuit of happiness.

Alexander Hamilton once went on record with "Whenever a right of property is infringed for the general good, if the nature of the case admits of compensation, it ought to be made; but if compensation be impracticable, that impracticability ought not to be an obstacle to a clearly essential reform." If the precedent of Hamilton were followed, the present course of the Government would seem mild by comparison.

Lincoln's attitude toward property endangering "the general good" was similar, and stronger. His liberation of the slaves was "the most gigantic confiscation of property in history." Dr. Hegemann finds little difference between slavery and slums.

In a similar manner Walt Whitman, Emerson, Henry Ford, and many others are brought in to support the author's contention that precedent for planning is to be found in our own history, and that the means of carrying it out, however revolutionary and "unconstitutional," have already been used by our greatest leaders.

The book has a very misleading title. This is no objective review of planning and housing, no dry summary of facts and dates: it is straight propaganda, and very good propaganda at that. For its comments on the state of housing in this country, on such wretched fiascos as the New York Zoning Law, for its revelation of the extent to which we have departed from the earliest American traditions of government the book deserves to be widely read.

(Books continued on page 38)



Armstrong's Linoleum Floor greets visitors at the Tezas Centennial Administration Building, Field is No. 29 Cadet Blue; map and letters, No. 23 White; star and inner strip, No. 41 Orange; outer strip, No. 22 Gray.

FLOORS with an "idea"—like this one in the Texas Centennial Administration Buildingwin attention, attract new clients. And when you choose Armstrong's Linoleum as a medium for your ideas, you have a free hand because there are forty Plain, Jaspe, and Marbelle colors in grades and gauges for every budget. Furthermore, Armstrong's Architectural Service Bureau is always ready to furnish dependable technical assistance in custom-floor installation.

Armstrong's Linoleum Floors meet every requirement for durability and beauty. Their resilience makes them quiet and comfortable underfoot. They are economical to install and maintain. And with reasonable care, they retain their "just installed" look for years.

Armstrong also offers the only complete line of resilient tiles-Linotile, Accotile, Cork Tile, and Rubber Tile—and therefore can make unbiased suggestions on any job. For complete information, see Sweet's or write, on your letterhead, to Armstrong Cork Products Co., 1203 State

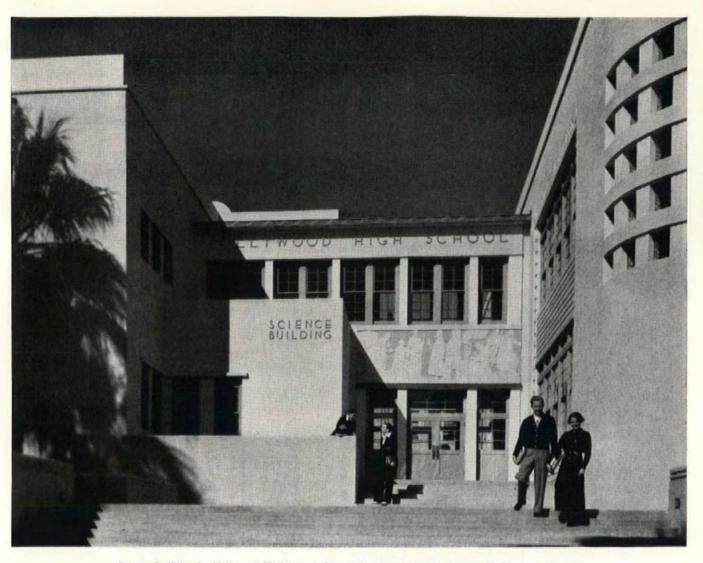
Street, Lancaster, Penna.



Information Desk in the Administration Building, Texas Centennial Exposition. Floor is Armstrong's Linoleum with field of No. 29 Cadet Blue, inner border of No. 22 Dark Gray, and outer strips of No. 23 White.

ARMSTRONG'S and RESILIENT FLOORS

LINOTILE · ACCOTILE · CORK TILE · RUBBER TILE · LINOWALL · ACOUSTICAL CEILINGS



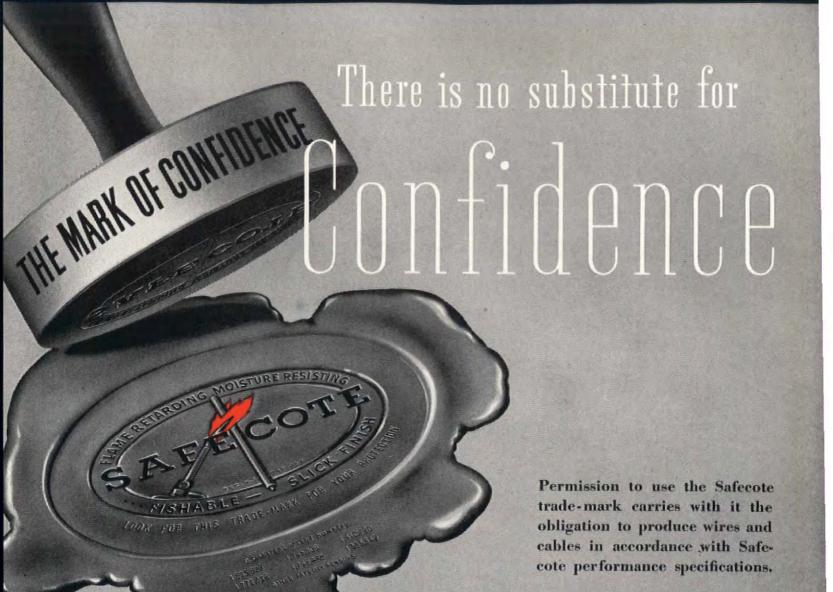
Science Building for Hollywood High School. Marsh, Smith & Powell, architects; R. H. Annin, supervising engineer; Sarver and Zoss, contractors—all of Los Angeles. Frame, walls and floors, as well as sculptured panel, grilles and other detail cast integrally in concrete of rigidly-controlled quality.

A HELPFUL NEW REFERENCE ON SCHOOL PLANNING AND DESIGN

HOW to forecast enrollment—and how to design a floor system. • How to lay out a classroom—In short, how to plan a safe, economical school for any community. • This is the problem covered in our new booklet, "Concrete in Schools—Educational and Architectural Planning." You'll want this book for many reasons—not the least being concrete's growing acceptance as the ideal medium for schools. • Of the scores of concrete schools built recently many are illustrated in this booklet, which gets down to cases on methods of designing floors, framing, walls, roofs and other structural details. There is also a chapter on rural schools. • May we send you a free copy?

PORTLAND CEMENT ASSOCIATION

Dept. A9-7, 33 West Grand Avenue, Chicago, Illinois



THE TRADE-MARKS OF THE MANUFACTURERS AUTHORIZED TO MAKE AND SELL SAFECOTE ELECTRICAL CONDUCTORS

AMERICAN STEEL & WIRE COMPANY





































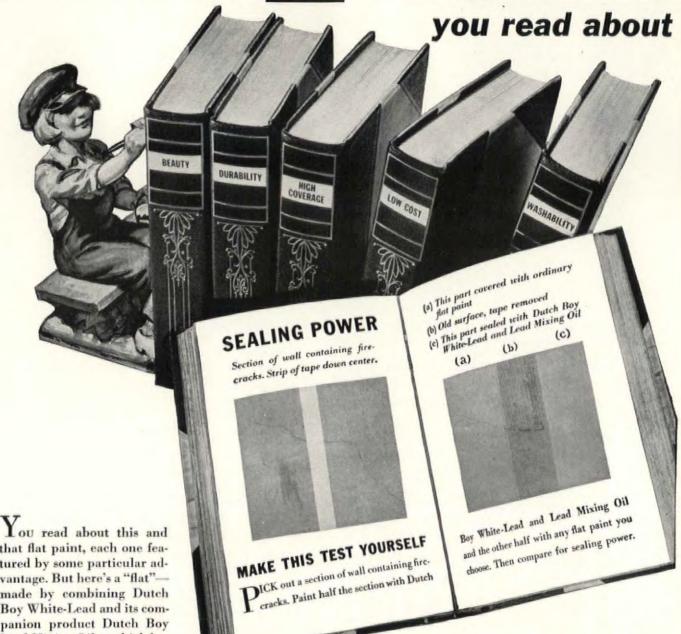
The wiring system is the nerve center of a building—it brings light, heat and power. The failure of the wiring cripples the entire building—lights fail, elevators stop. The installation of a wiring system is costly—its repairs are still more costly. Therefore, selection of the proper wire is most important.

SPECIFY SAFECOTE—the Electrical Conductor that combines the features so essential to building wire—

FLAME RETARDING, will not carry flame — protects braids and insulation; MOISTURE RESISTING, protected against condensation in conduits; FISHABLE, easy to pull into conduits, more wires possible in conduit; FADELESS COLORS, permanent circuit identification. Safecote assures a permanent job—it improves with age.

SPECIFY SAFECOTE
THERE IS NO SUBSTITUTE FOR SAFECOTE.

SAFECOTE PERFORMANCE SPECIFICATIONS AVAILABLE UPON REQUEST GEORGE C. RICHARDS, LICENSOR'S AGENT—155 EAST 44TH ST., NEW YORK CITY A Flat Paint with ALL THE QUALITIES



that flat paint, each one featured by some particular advantage. But here's a "flat"made by combining Dutch Boy White-Lead and its companion product Dutch Boy Lead Mixing Oil-which has all the advantages you read about, plus excellent sealing power.

Because this unusual flat paint seals so well, stopping suction and hiding fire-cracks, it can be used for all coats on interior plaster. This

sealing power is also one of the reasons for its extensive additional use on concrete, stucco and brick.

Its wide use outdoors on these materials is the best possible proof of its great durability. It takes all

the punishment the elements can give, defying the weather year after year.

That sort of service outside gives you some idea of how it behaves inside-how it stands up under repeated washing and other severe use. Also it can be washed completely clean even after being inkstained, pencil-marked, greasesmudged or defaced with shoeblacking and mercurochrome.

Other advantages of Dutch Boy White-Lead and Lead Mixing Oil paint are the following: It has all the richness, solidity and depth characteristic of a white-lead finish -a paint beautiful enough for the finest interiors. It gives high coverage, averaging about 800 square feet per gallon on smooth surfaces. This, added to its quick mixing and easy spreading, makes it low in first cost while its long wear and easy cleanability make it low in cost per year.

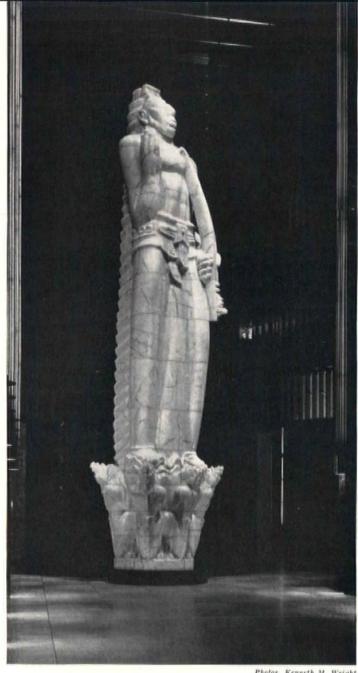
NATIONAL LEAD COMPANY

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



DUTCH BOY

WHITE-LEAD & LEAD MIXING OIL



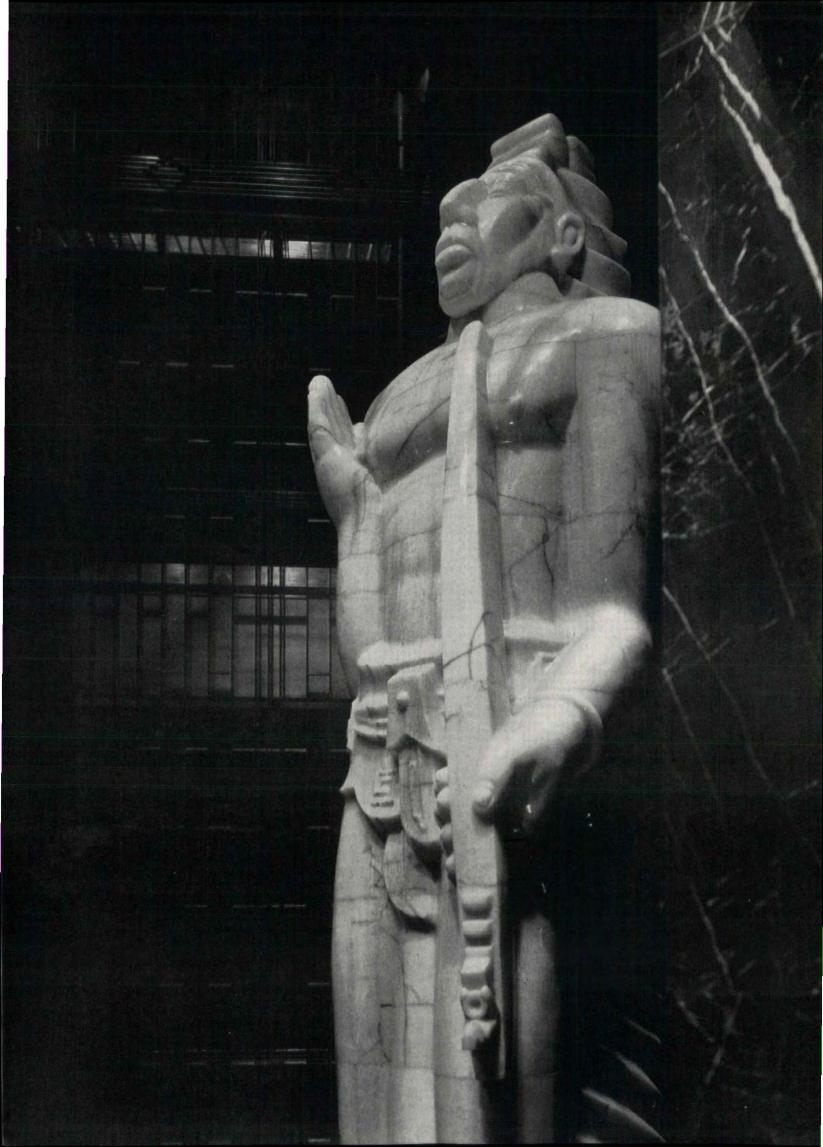
Photos, Kenneth M. Wright

Fifty-five tons of glowing onyx slowly revolving in a black niche make up St. Paul's new War Memorial-a statue of Peace 36 feet in height. It is already the subject of controversy because Sculptor Carl Milles selected an Indian, a choice he explains by a tale of an Indian ceremony in Oklahoma and an ancient chief who spoke movingly of peace in the world. Regardless of the appropriateness of the symbolism, it is a superb composition, carved with a master's feeling for material, greatest of a long series of great works.









EXCERPTS from a letter on an Open Competition for a Public Building —addressed to the Secretary of The Treasury

"... I now have the honor of taking up the points brought out in the interview with the Honorable Assistant Secretary. The gentlemen of the Committee of the Institute who were present on that occasion were Messrs. George B. Post, Charles F. McKim, Arthur Rotch, William Clay, and Samuel Treat; each of them would be regarded as a competent critic of architecture and there is no doubt as to their fairness.

"The design of the Buffalo building was examined by them with a view to suggesting changes to bring it up to the proper standard for a structure of that nature. Their unanimous conclusion was that such a course was not possible . . . that it would be better to start anew . . .

"The entire profession of architecture desires to have the proposed building for Buffalo thrown open to competition, which shall include the architects of the country. This, I am informed, is also the wish of the profession in Buffalo. From what little agitation there has been in that city, it is evident that the people there are quite as eager that this course should be pursued as are the architects themselves,

and it can be proved to you that Congressmen from that place can only represent their people properly by advising it.

"The people are no longer ignorant regarding architectural matters. They have been awakened through the display of the World's Columbian Exposition of 1893, where it was generally remarked that the Government Building was inferior to any of the other large structures . . .

"By authority of the Executive Committee of the Institute, I have the honor to state that the members of the A. I. A. will compete for this Buffalo building without pay, except to him whose design shall be chosen.

"The competition can be carried through in an exceedingly short time if you will order it. The exigency of the case would be considered by the architects and they would be willing to prepare plans much quicker than could ordinarily be expected of them . . .

"We are also ready to assist the Government in the arrangement of a code for the competition. This matter of competitions has been studied from time to time by very able architects, and a code for conducting them has more than once been presented.

"I note by the public press that the Supervising Architect recently informed Assistant Secretary Curtis that it will take three years and a half for his office, as now constituted, to design the buildings already authorized. If this be approximately true, the retaining of the most able architects of the country to assist him is imperative and urgent.

"I now have the honor to request you to name a day when the Executive Committee of the Institute may be heard by you on the questions covered by this memorial. We offer to assist in placing its architecture upon the footing demanded by the country. We will serve without pay, giving our best endeavors to the work.

"I have the honor to remain, yours faithfully,

"I have the honor to remain, yours faithfully,
D. H. BURNHAM, President
The American Institute of Architects"

February 14, 1894

The situation which brought forth this vigorous expression of professional opinion on the matter of giving out public buildings on the basis of competition, was as follows:

In 1884 a bill was presented to a House Committee by Representative Stockslager, proposing a complete revamping of the Supervising Architect's office and describing minutely a method of awarding work on a competition basis. This measure was actively supported by the American Institute of Architects, Messrs. Adler, Bloor, and Burnham coming to Washington for that purpose. The bill never got to the House.

The matter was forcibly urged by Supervising Architect Windrim in 1889 and 1890, and in 1891 the A. I. A. went to work on it again. With Mr. Windrim as chairman the A. I. A. committee drew up a bill, later known as the Tarsney Bill, passed and made a law in 1893.

In March 1893 Messrs. Hunt, McKim, and Kendall, then Directors of the A. I. A., called on Secretary of the Treasury J. G. Carlisle, who listened attentively and said that now the law was passed, the first opportunity to take advantage of it would probably be the Federal Building in Buffalo, N. Y.

Later in the year, however, the Secretary gave the job outright to the Supervising Architect's office. A letter of protest was sent to him by the A. I. A.

An executive committee called on Carlisle in February 1894, but he would not see them, whereupon an elaborate memorandum was sent by D. H. Burnham, giving a complete history of the case. The excerpts above are from this letter.

To this letter Carlisle replied, giving as reasons for his action the urgency of the work and lack of time for a competition, to which Burnham sent a heated reply, protesting Carlisle's action, and refuting his reasons. In answer the Secretary wrote, closing the correspondence, giving as his excuse the tone of Burnham's letter.

The law, after this, was practically abandoned, and in 1912 it was repealed by Congress, "in spite of opposition by the country's entire architectural body."

At the last convention of the A. I. A. a resolution was offered to the effect that "The Architectural Competition is the best method of obtaining designs for and architects to supervise the erection of all buildings and monuments where the expenditure of public funds is involved."

The resolution, as carried, after extended debate, was as follows: Resolved, that the Sixty-eighth Convention does not express itself concerning methods of selecting architects for public work.

COMPETITION FOR THE OREGON STATE CAPITOL

SALEM

JUNE, 1936

THE WINNING DESIGN
TROWBRIDGE & LIVINGSTON AND
FRANCIS KEALLY, ASSOCIATED ARCHITECT

AWARDS

WESLEY SHERWOOD BESSELL

WILLIAM PEYTON DAY

WALTER T. KARCHER & LIVINGSTON SMITH

JOHN A. THOMPSON AND GERALD A. HOLMES

DE YOUNG & MOSCOWITZ,

KARL W. ROSENBERG, ASSOCIATE

JURY:

E. B. MacNaughton Chairman of Jury Mrs. Gordon Voorhies WALTER H. THOMAS

T. H. BANFIELD

DAVID C. ALLISON

CARL F. GOULD Professional Adviser

THE ARCHITECTURAL FORUM also presents in this issue submissions by the following architects:

FELLHEIMER & WAGNER

W. K. HARRISON AND J. A. FOUILHOUX CASS GILBERT, INC.

HAYS & SIMPSON, H. A. HERZOG, ASSOCIATE

J. R. MILLER & T. L. PFLUEGER

WILLIAM LESCAZE

EDMUND B. GILCHRIST, LLOYD MALKUS, ASSOCIATE

SUMMARY OF THE PROGRAM

THE SITE

The State Office building, the Supreme Court building, and the Agriculture building shown upon the site plan are owned by the State and located on State property. However, these buildings need not influence the architectural style or treatment of the site of the main Capitol building.

In developing the plan layout, it is suggested that Summer Street be considered as the axial approach to the Capitol building.

The trees on the site are of mature growth, giving character and adding to the beauty of the grounds. As many of these trees should be preserved as possible.

In preparing and submitting drawings, the entire site including Willson Park may be assumed as level.

MATERIAL

The building shall be of fire-resisting material and constructed according to the best practice. Material to be used for the facing of the exterior of the building shall be left to the discretion of the competitors.

DESIGN

The competitor may accent the traditional, the more functional or modern, or he may combine their influence in his design. An outstanding solution is desired and one that will be looked upon now, and hereafter, with an ever awakening interest by the people of the State of Oregon.

SPACE REQUIREMENTS (square feet)

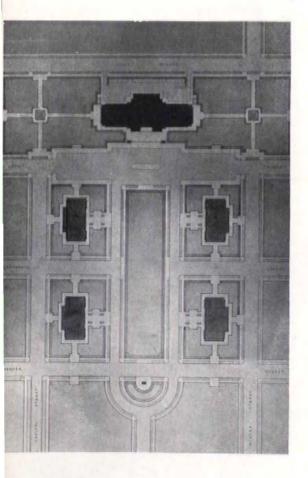
- 1 LEGISLATIVE

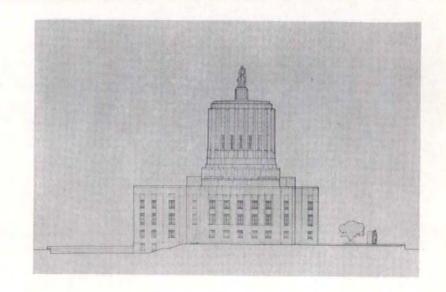
- 2 EXECUTIVE DEPARTMENT
- (B) Budget Department: Offices and storage........... 1,450



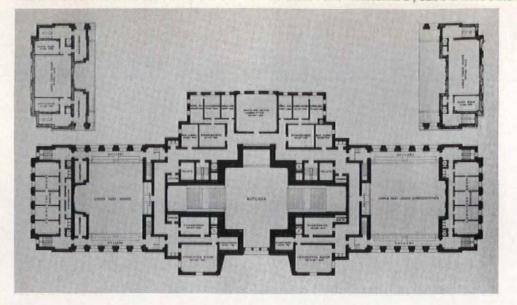
WINNING DESIGN

TROWBRIDGE & LIVINGSTON AND FRANCIS KEALLY ASSOCIATED ARCHITECT NEW YORK



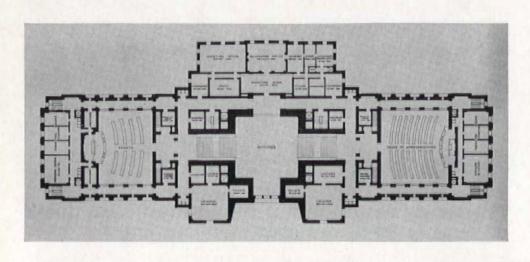


TROWBRIDGE & LIVINGSTON AND FRANCIS KEALLY, ASSOCIATED ARCHITECT

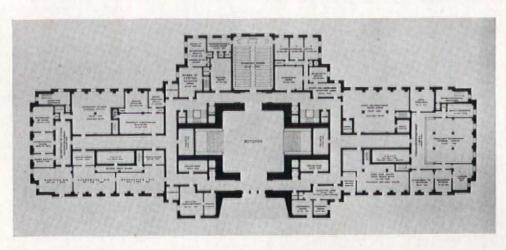


FOURTH FLOOR

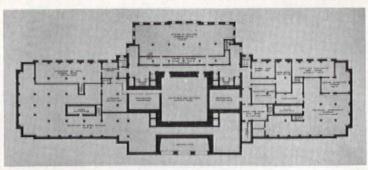
THIRD FLOOR



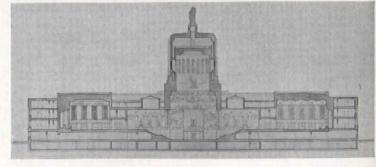
SECOND FLOOR



FIRST FLOOR



BASEMENT

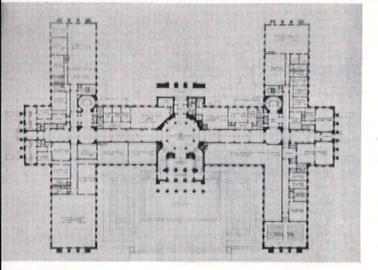


SECTION

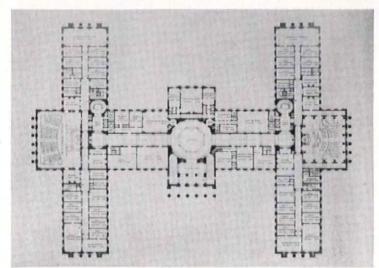


WESLEY SHERWOOD BESSELL, NEW YORK

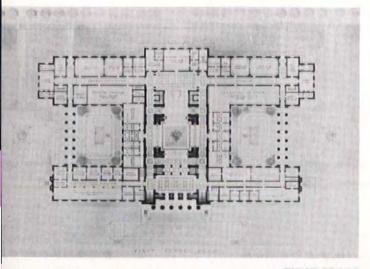
AWARD



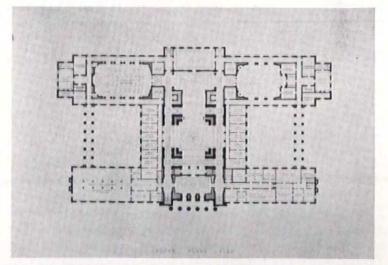
IRST FLOOR



SECOND FLOOR

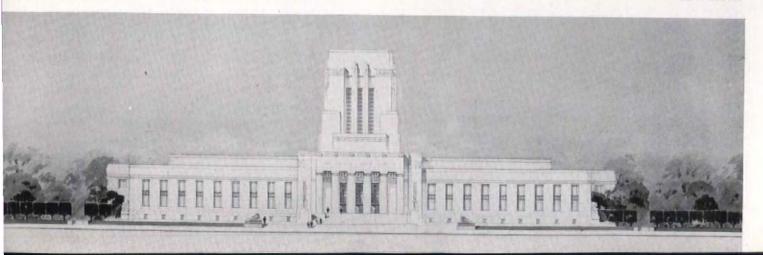


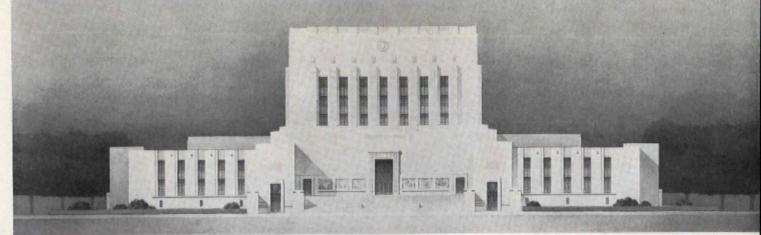
VILLIAM PEYTON DAY, SAN FRANCISCO



SECOND FLOOR

AWARD

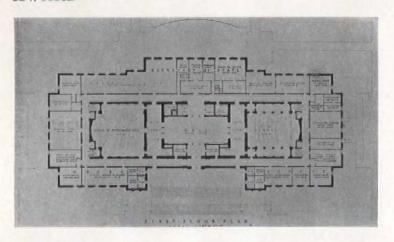


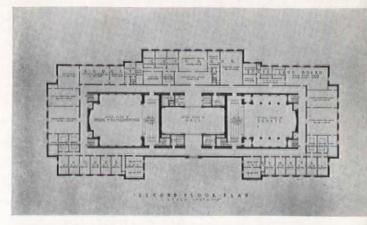


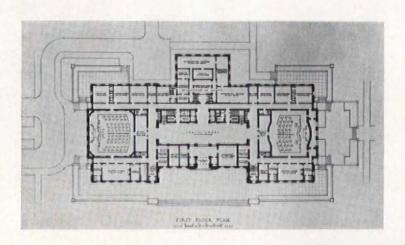
Photos, Frank I. Jone

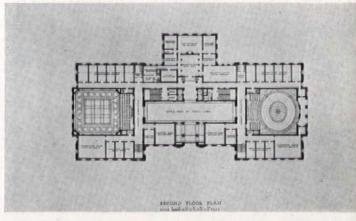
WALTER T. KARCHER AND LIVINGSTON SMITH PHILADELPHI

AWARD





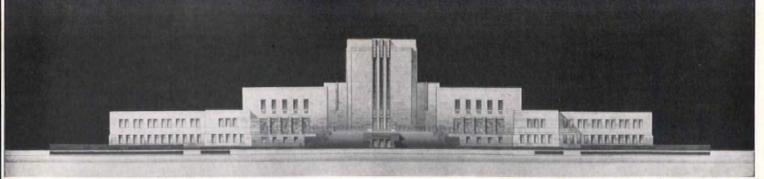




AWARD

JOHN A. THOMPSON AND GERALD A. HOLMES NEW YORK

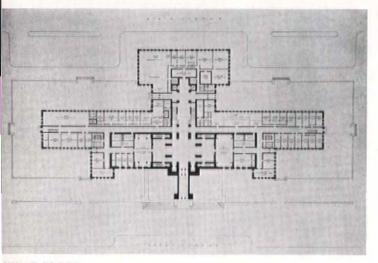




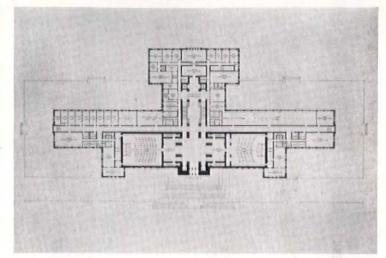
Photos, Frank 1. Jones

AWARD

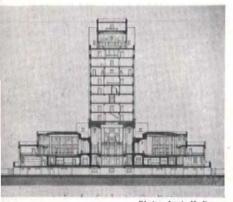
de YOUNG & MOSCOWITZ, NEW YORK KARL W. ROSENBERG, OREGON, ASSOCIATE



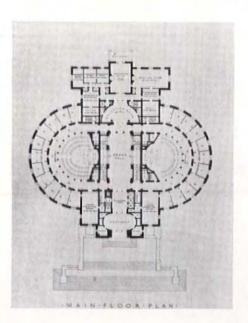
FIRST FLOOR



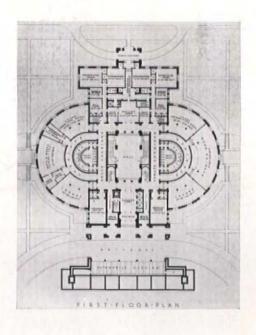
SECOND FLOOR



Photos, Louis H. Dreyer



FELLHEIMER AND WAGNER



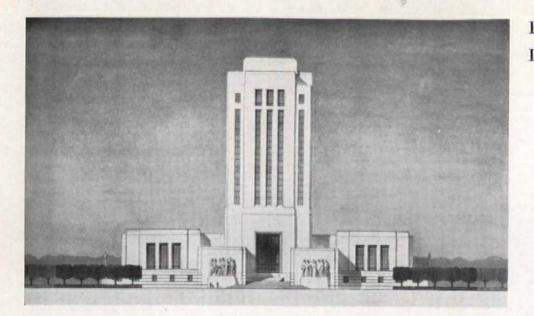
SIDE ELEVATION

FRONT ELEVATION

NEW YORK CITY



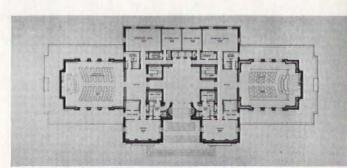




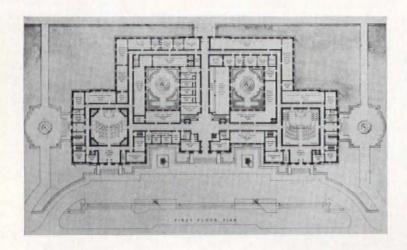
EDMUND B. GILCHRIST
LLOYD MALKUS, ASSOCIATE
PHILADELPHIA



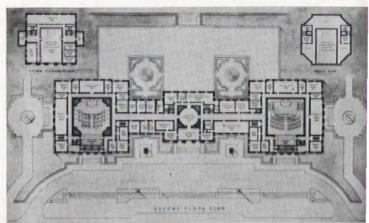
GROUND FLOOR



FIRST FLOOR



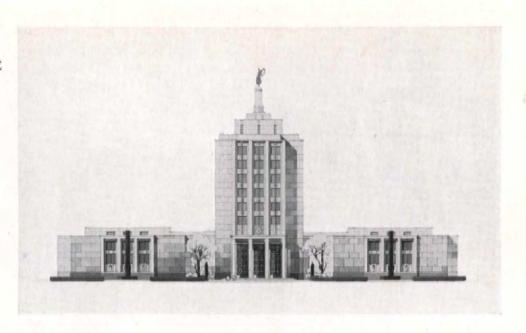
CASS GILBERT, INC., NEW YORK

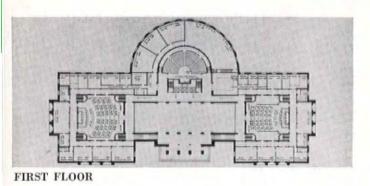


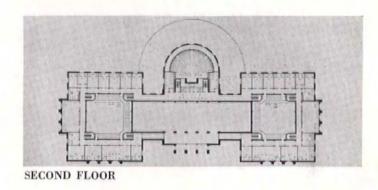
Photos, Wurts Bro.

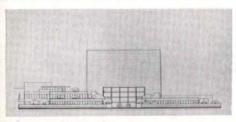


HAYS AND SIMPSON
HARRY A. HERZOG, ASSOCIATE
CLEVELAND



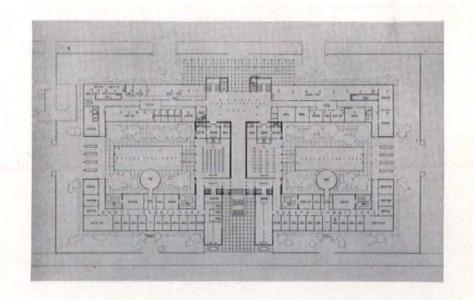




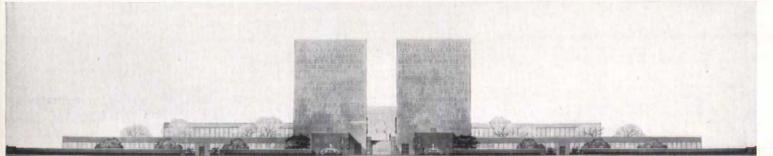


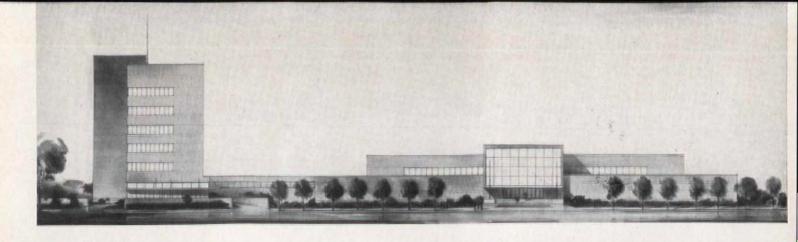
SIDE ELEVATION

W. K. HARRISON AND J. A. FOUILHOUX, NEW YORK

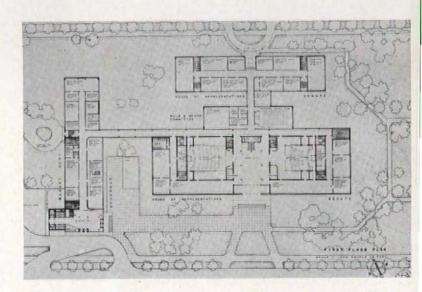


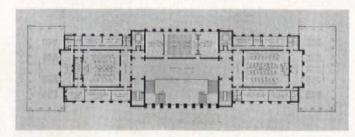




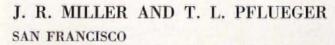


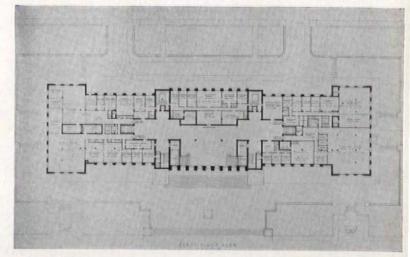
WILLIAM LESCAZE, NEW YORK





SECOND FLOOR



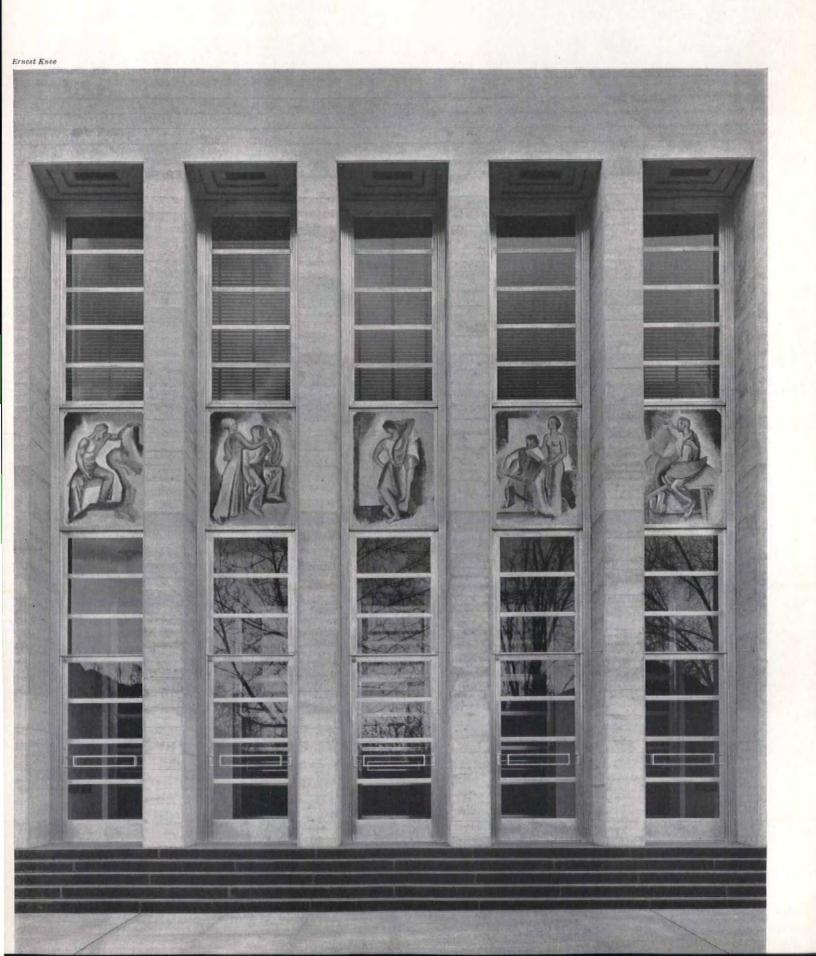


FIRST FLOOR

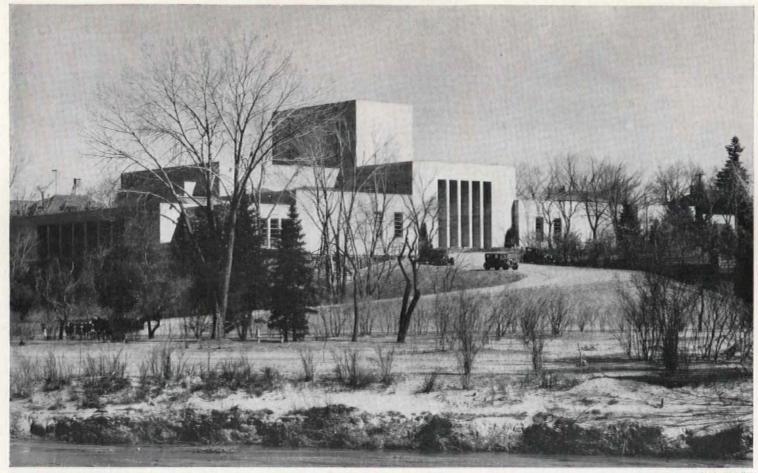


COLORADO SPRINGS FINE ARTS CENTER

JOHN GAW MEEM, ARCHITECT

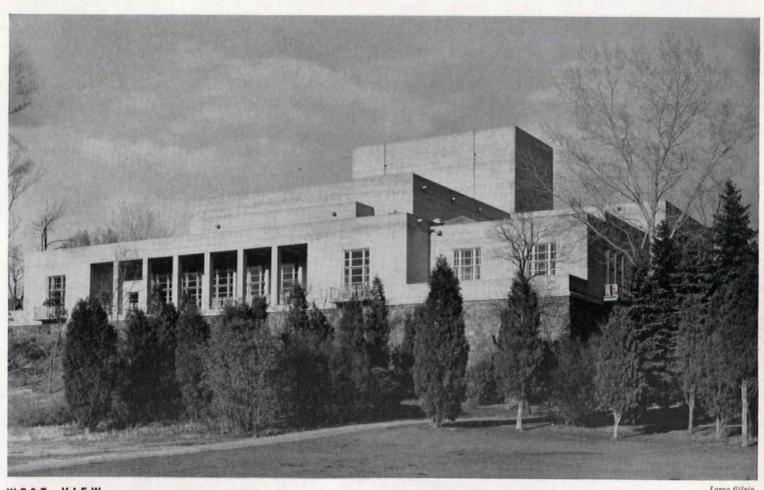


COLORADO SPRINGS FINE ARTS CENTER

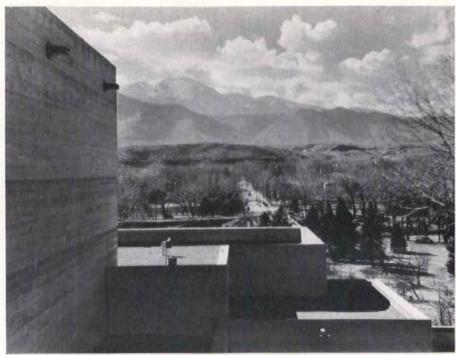


SOUTH VIEW

H. L. Standley



Laura Gilpin



H. L. Standley

Centers of art activity are not numerous in the Rocky Mountain region, and on that score alone this new building would achieve a certain importance. Its chief claim to distinction, however, is more positive: the most complete community art center in the U. S., and, incidentally, one of the first.

Fine Arts Centers are of two kinds. There is the monumental group—theater, museum, opera house, etc., generally spread around a plaza of some sort, and if rarely used, at least pointed to with pride. The other variety is a series of related working units housing the various arts and crafts in a manner which permits active creative collaboration. To the latter category the Colorado Springs venture belongs.

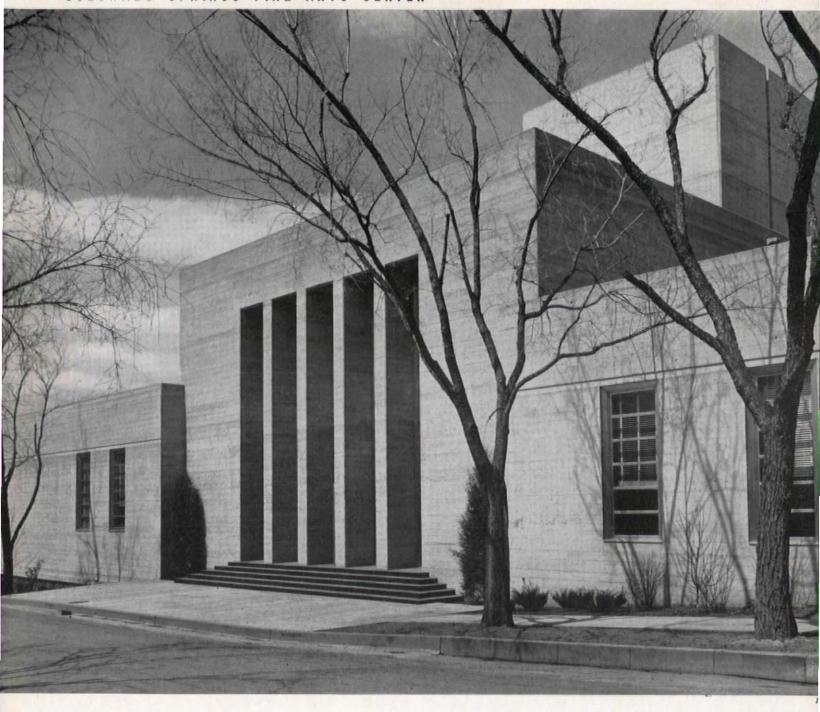
No ready-hatched idea started the Center. Its beginnings go back to an encounter between a lady looking for a museum site and an art school with growing pains. The school was Broadmoor Academy, founded in 1919, and revitalized some years later by muralist-cartoonist-illustrator Boardman Robinson, whose insistence that art was made and not taught led to the closing of its lecture halls and a decided increase in enrollment. Housed in an old residence on a sizable piece of property, the school had plenty of room for expansion but no money. The advent of Mrs. Taylor, who had money but no land, was providential, and an arrangement was made whereby the school was to be given quarters in the new museum in return for a part of the site. Preliminary plans for the building were begun.

At this point another lady entered the picture. To Mrs. Meredith Hare of New York, who had been responsible for Boardman Robinson's appointment as director of Broadmoor Academy, it occurred that if the Academy were inadequately housed, the same might be said of the local dramatic and music societies. Thus came the

idea of grouping all these activities in a single building. The donor agreed to provide the space and plans were revised to include a theater, music room, and the required services.

Late in April the Center opened with a week of swank festivities: foreign movies, a marionette opera by de Falla, recitals by noted artists imported for the occasion gave the townspeople a taste of what was in store for them. The building itself had already passed the test of public approval; obviously modern in treatment, yet familiar and somehow reminiscent of pueblo architecture, its severe mass of almost-white concrete shocked no one, fitted comfortably into its setting. With many groups to please it received its quota of inevitable criticism, much of which was pointless. The building is not perfect; certain peculiarities of plan are hard to explain; some details do not measure up to the promise of the exterior. But in a building so outstandingly satisfying these shortcomings detract little from the architect's achievement.

Here is a building which is modern, monumental, and unlabored. Its simplicity reveals assurance, not sterility. Its character is local, but is not the result of any attempt to fake a pueblo. The painted enrichment follows no trite formula, fits the architecture like a glove. There is a freshness here, a kind of youthful vigor which defies analysis, but which is the building's greatest charm. The frescoes by Boardman Robinson over the main entrance give the key to it: five figure panels symbolizing the arts-a perfectly orthodox thing to do on the front of a museum-but let it be noted that they are not the usual wearily attitudinizing gods filched off dusty pediments: they are busy young people, apparently having a rather good time at their work. It is something of this spirit that characterizes the entire building, a spirit that is the very essence of the new architecture.



The exterior has excellent concrete character, particularly the monumental entrance, whose unadorned pillars accurately reflect the structural methods employed. The surface of the cement was untouched, except for rubbing to remove discoloration, and its warmth of color and texture gives interest to the large unbroken wall surfaces. The severity of the entrance is in fine contrast to the full-toned richness of the frescoes and the brilliance of the doors and windows: further ornamentation would be superfluous. Height was given the central mass by placing a large music room over the entrance lobby, thereby creating a transitional motive between the great tower over the stage and the one-story wings flanking the entrance.



EAST GARDEN

Perhaps the finest view of the building is the one on the left. The broad sweep of the tower, confronted with the delicacy of the glass and aluminum gallery at its base is superlatively dramatic, and the frieze of horses by Frank Mechau is a most unusual and imaginative contribution to a splendid architectural effect. Below is a portion of the entrance lobby, the doors leading out into the East Garden.



ENTRANCE LOBBY

Laura Gilpin Photos

COLORADO SPRINGS FINE ARTS CENTER



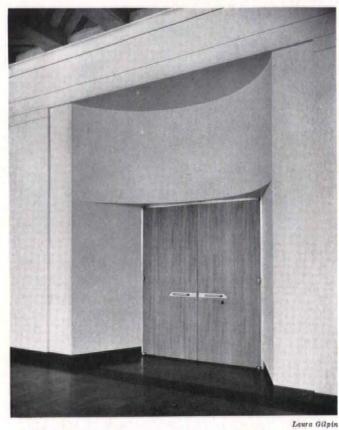
FOYER



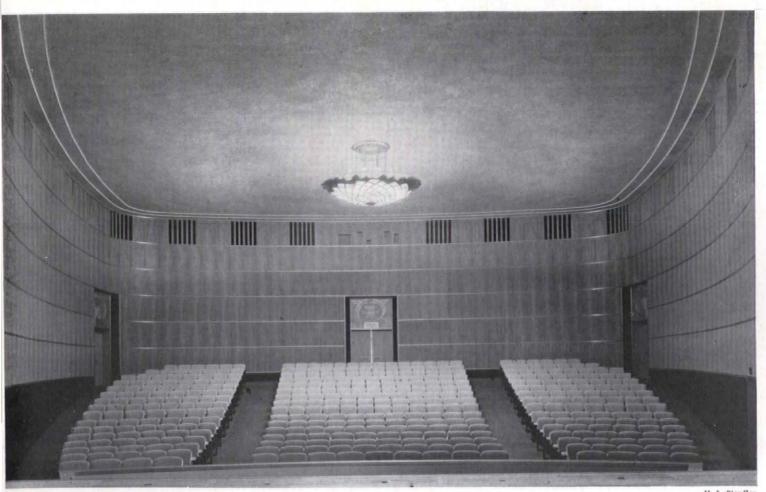
LOUNGE

Laura Gilpin Photos

The gallery interiors have been handled with a keen appreciation of exhibition requirements. Aluminum hanging strips facilitate changes in picture arrangement, although a less obtrusive treatment might have been preferable, and the lighting, from above by night as well as day, leaves nothing to be desired. The auditorium is a more conventional interior, but very clean and direct with its alternating strips of Flexwood and aluminum. Acoustically the room is excellent.

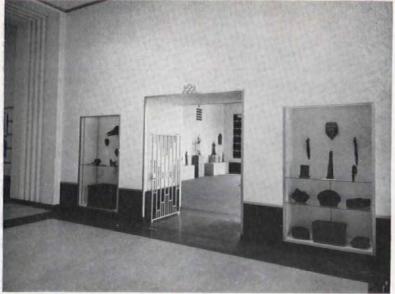


AUDITORIUM



H. L. Standley

COLORADO SPRINGS FINE ARTS CENTER



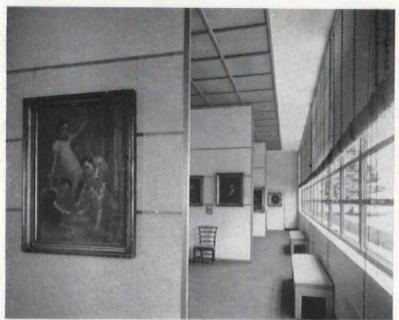
ENTRANCE SOUTHWEST MUSEUM ROOM

Laura Gilpin



CURRENT EXHIBITS GALLERY

Ernest Knee



PERMANENT GALLERY

Laura Gilpin

THE PLAN

Divided into the following parts, according to use:

1-Art school

2-Art museum and special museum

3-Little theater

4-Special library

5-Music center

The plan has a number of characteristics due to the site. The only possible location for the main entrance, for example, was on the south. The west facade is not only the most easily seen, but has the best view; this determined the placing of the lounge. The service entrance is on the north, connecting with a convenient alley. The large East Garden exists because the grant to Broadmoor Academy stipulated that this garden and its trees be preserved. The auditorium, consequently, had to be placed at the west end of the plot. The rather indirect approach to the auditorium was adopted in order to familiarize theatergoers with the Center's picture collections. Such a scheme is quite feasible where the theater is small and infrequently used.

THE ART SCHOOL

Large studios for sculpture, life classes, general use. A number of small studios provided on the second floor. The entrance is through the Zaguan and the East Garden. There is no lecture room, although one of the large studios or a room elsewhere in the building might be used for this purpose. Galleries for current and permanent exhibits. The permanent gallery is located for easy access from school and public space. Offices for the faculty are provided, and living quarters for the director of the Center.

THE ART MUSEUM AND SPECIAL MUSEUM

Used for public exhibitions and for study. The policy of the Center is to emphasize creation rather than acquisition, and the collections are consequently small. The use of movable partitions in the permanent gallery and movable cases in the other galleries gives an unusual flexibility to the museum plan. Picture hanging is facilitated by the use of horizontal strips, which have the disadvantage, however, of distracting attention from the pictures. Skylighting is used extensively in the galleries, and artificial illumination comes from the same source. The Southwest Museum Room is treated as a normal room with no special control of light, as ordinary window illumination was considered best suited to the artifacts on display.

THE LITTLE THEATER

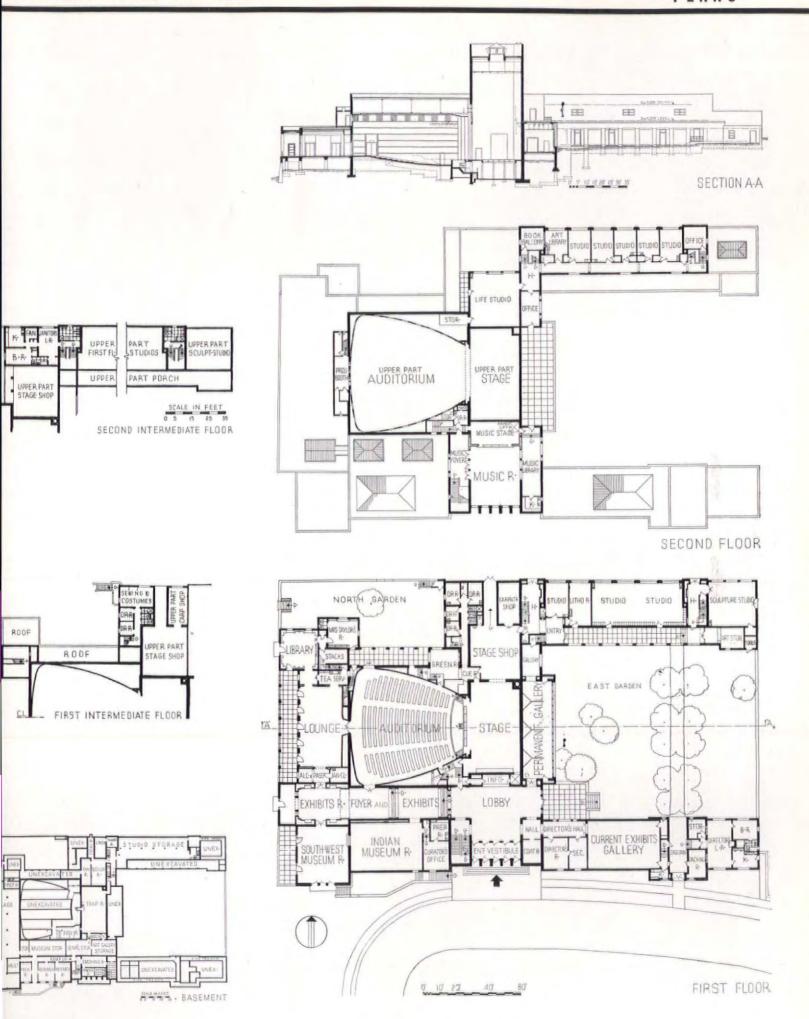
No effort was spared in the design of stage or auditorium to incorporate the best methods of modern theater practice. Visibility is excellent. The acoustics has been commented upon favorably by both performers and audiences. Many problems of theater design were not encountered here since the seating capacity is small—400—and space is ample. The stage is well arranged for handling equipment and scenery, and the stage shop adjacent is large enough to be used for rehearsals. The green room is placed so that it acts as a buffer between audience and backstage. Dressing rooms ample and well lighted.

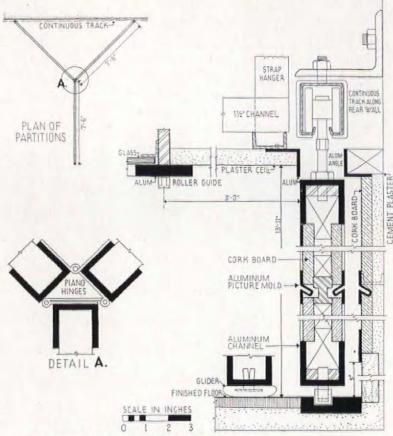
THE SPECIAL LIBRARY

A study library, occasionally used for special exhibits. Treated more like a home than a public library. Stacks, a vault for rare books, and a private room for the donor have been provided.

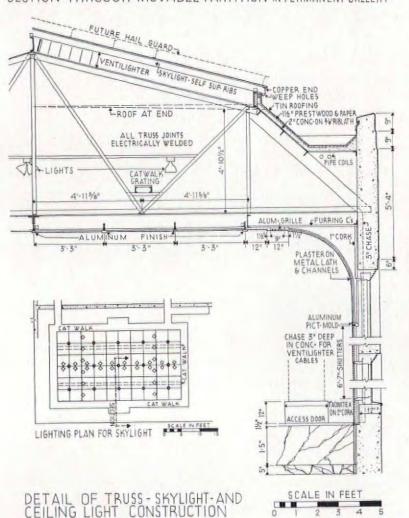
THE MUSIC CENTER

This department is the smallest and the newest. The space allotted is small but complete. A music room seating 125 persons on the second floor. The lift is conveniently placed for moving pianos, etc., on to the stage. There is a small library of music books. It will be noted that in this department, as in the others, there are serving facilities for use at social functions.





SECTION THROUGH MOVABLE PARTITION IN PERMANENT GALLERY



CONSTRUCTION OUTLINE

STRUCTURE

Monolithic reenforced concrete walls, divided by expansion joints, reenforced on both faces and at all openings for temperature. Floor construction-steel pan and T-Joists. Steel girders over auditorium and stage.

DAMPPROOFING

All exterior walls below grade dampproofed with emulsified asphalt.

BRICK AND BLOCK CONSTRUCTION

Hollow tile partitions and 2 in. furring tile for exterior walls, National Clay Products Co. Flue of chimney—fire clay brick, Denver Fire Clay Co.

ROOFING

Genasco bonded asphalt built-up roof manufactured by Barber Asphalt Co. Metal flashing forms, The Barrett Co. Metal decks-Merchant's old style 40 lb. tin. Roof insulation-Temlok, Armstrong Cork Products Co. SHEET METAL

Armco ingot galvanized iron. VENTILIGHTERS OVER ALL SKYLIGHTS

Simon Ventilighter Co., New York City.

FURRING AND LATHING

Metal lath and corner beads by U. S. Gypsum Co.

PLASTERING

All plaster products including Acme hardwall plaster for auditorium wainscot, Certain-teed Products Corp. Acoustical plaster for ceiling of auditorium.
ORNAMENTAL METAL

Satin finish aluminum for all trim, gates, grilles, balcony and stair railings, picture moldings and cast ornamental panels in auditorium, E. Burkhardt & Sons Steel & Iron Works Co., Denver, Colo. ALUMINUM WINDOWS

Hopper type, Campbell Metal Windows Corp., N. Y. C.

MILLWORK

Roddis slab doors, mahogany and birch veneer. Interior trim: Library-walnut. Mrs. Taylor's room-birch. Gallerieslined with California redwood backing. Wood floors: Loungewalnut, Bruce built-up blocks. Music room-red oak, Bruce built-up blocks, remaining wood floors plain red oak. FLOORS

Lobby, foyer, halls, main stairs—Terrazzo, J. B. Martina Mosaic Co., Denver, Colo. Galleries—cork tile, Armstrong Cork Products Co. All studios and studio halls—Accotile, Armstrong Cork Products Co.

MARBLE Flat inserts and borders in lobby, foyer, music room and lounge—Verde Antique and Vermont Champlain black. Wainscots and base in above rooms and all galleries-Vermont Champlain black.

TILE WORK

Floor and base of director's living room—Batchelder hand made tile. Loggia and exposed decks—red quarry tile. Baths and wash rooms-ceramic tile.

PAINT

Walls-lead and oil flat. Woodwork-flat varnish, natural finish. All paint materials, Sherwin-Williams. FLEXWOOD

Walls of theater-mahogany Flexwood.

HARDWARE

White metal, finished to match satin aluminum, P. & F. Corbin Co.

ELECTRICAL WORK

Conduit-Sheraduct, National Electrical Products Corp. Panels and switchboards—Wurdack, Pullman floor boxes and covers. Receptacles—Harvey Hubbell, Inc. Wire, National Tube Co. Lighting fixtures—B. B. Bell & Co., Los Angeles, Calif. Gallery lighting, Curtis Lighting, Inc. Spot lights-Century Lighting Equipment Co., N. Y.

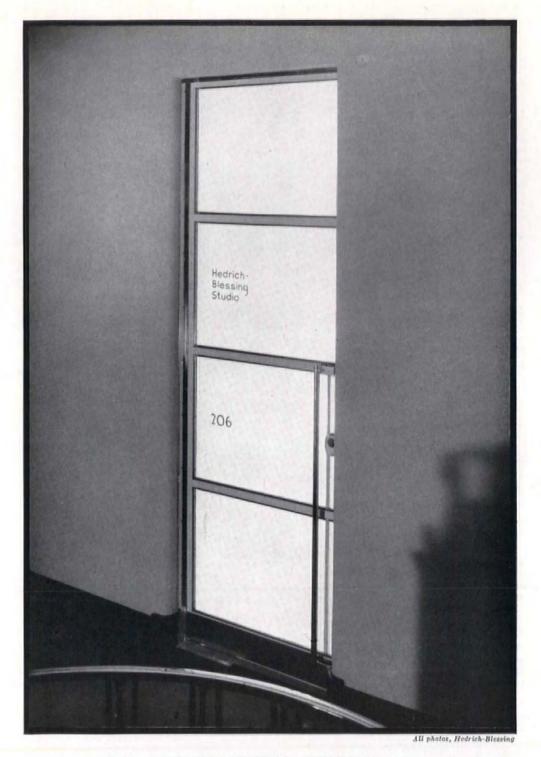
PLUMBING

Fixtures, Crane Co. Steel pipe, National Tube Co. Cast iron soil pipe and fittings, Alabama Pipe Co. Sewage ejector, Nash Engineering Co. Automatic water heater, Ruud Mfg. Co. Hot water pipes, Streamline Pipe & Fitting Co. Pipe covering, Johns-Manville.

HEATING AND VENTILATING

Two pipe system, Warren Webster Co. Condensation pump, Nash Engineering Co. Boilers, Kewanee Boiler Corp. Gas burners, Denver Fire Clay Co. Radiators, Modine Mfg. Co. and American Radiator Co. Fans, American Blower Co. Air washers, Carrier Engineering Corp. Johnson pneumatic temperature control, Oil filters, American Air Filter Co. SPECIAL EQUIPMENT

Theater equipment by Peter Clark, Inc., New York. Theater and music room seats by American Seating Co. Motion picture and sound equipment by National Theater Supply Co. Theater carpet by Mohawk Carpet Mills. Library book stacks by Art Metal Construction Co. Metal partitions—Weisteel, Henry Weis Mfg. Co. Museum display cases—aluminum, walnut bases, Remington Rand, Inc.



ABEL FAIDY, ARCHITECTURAL DESIGNER

Hedrich-Blessing is a young photographic establishment whose growth has been so rapid that a recent move to larger quarters was necessary. Aware of the value of accessibility and a good address, the firm took a large inside space on the second floor of a business building in the heart of Chicago. Normally undesirable, a windowless area is ideal for a photographer's studio, particularly when it is air conditioned, as in this case. The finished studio is a distinguished piece of work, both from a design point of view and as a working layout. The work space is a radical departure from the accepted studio plan, and the reception room and private office are simple, smart interiors, designed with an eye to



RECEPTION ROOM-THE MIRRORED WALL

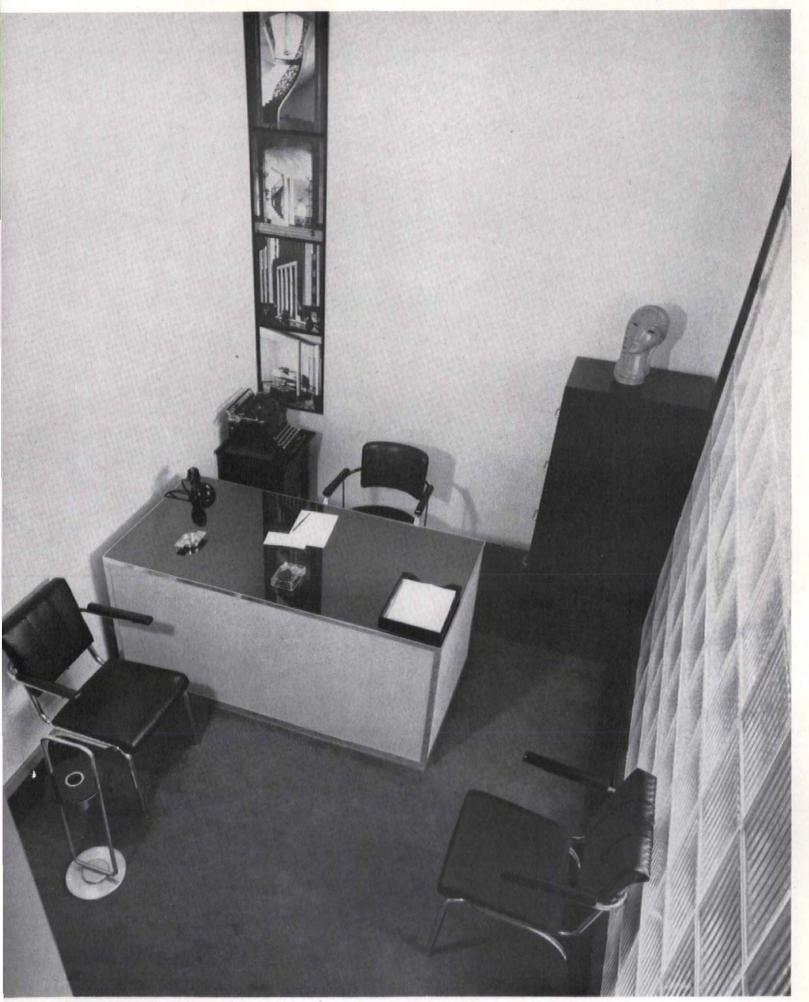
their value as merchandising. A photographer sells a service, rather than a standard product, and with this in mind the architect produced a reception room designed to impress the client with the quality of this service. The main feature of the interior is a large panel of photographs, samples of the firm's work; the mirrored wall opposite not only increases the apparent size of the room, but makes it virtually impossible for the visitor to lose sight of the pictures. Color has been used liberally: the entrance wall is painted dark blue; others are vermilion and yellow. The built-in furniture is black, an accent which repeats the black of the photographs. The arrangement of seats and tables is noteworthy; by breaking up the expanse of upholstery the stands create an air of intimacy, and provide a convenient, out-of-the-way place for magazines and ash trays. The private office has something of the dramatic quality of the recep-



RECEPTION ROOM



tion room. Narrow and high, it emphasizes this proportion by a vertical strip of photographs and by low, simple furniture. The wall of glass, which admits some light from the reception room, is less confining than bare plaster as well as brilliantly decorative. The work space consists of a series of cubicles, each devoted to a separate phase of the photographic process. By the division of the traditional darkroom into a number of units confusion is avoided, and the quality of work as well as efficiency is vastly improved.

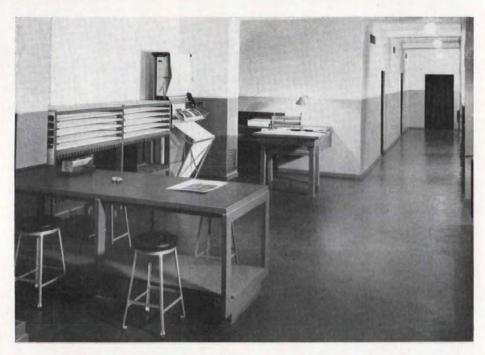


PRIVATE OFFICE

HEDRICH-BLESSING STUDIO



WORKROOMS



CONSTRUCTION OUTLINE

GLASS PARTITIONS

Pyrex hollow glass blocks, Joints are white cement, Corning Glass Works.

FLOORS

Taupe colored Broadloom carpet in reception room and office. Resilient asphalt tile in studio and workroom by Uvalde Rock Asphalt Co., cement in balance of rooms.

Reception room—especially blended by a chemist, 70 per cent pure pigment. Other walls—Luminal, National Chemical & Mfg. Co., New York City.

SEATS IN RECEPTION ROOM

Five ply birch, rubbed ebony finish; uphol-stery—pigskin fabricoid; legs—round brass. VENT GRILLES

All wood.

MIRRORS

By Pittsburgh Plate Glass Co.

Reception room-Curtis X-ray, indirect in

ceiling recess and concealed for illuminating photos on wall, Curtis Lighting, Inc. Louvers and brass shields keep light within photo

ENTRANCE DOOR

Steel tubing $1\frac{1}{2}$ in. square, baked white enamel finish, members mitered and corners welded. Glass panels sand blasted. Pulls and kick plate, brass; Rixson floor check and pivot.

COUNTERS

In dark rooms and work rooms covered with linoleum, Armstrong Cork Products Co. DESK TOPS

Carrara glass, Pittsburgh Plate Glass Co. WATER SUPPLY

Hot and cold supplied by building. Mixing for temperature 65° to 70° is done by operator and checked by thermometer.

AIR CONDITIONING

Supplied by building.

STUDIO LAYOUT (SEE ISOMETRIC)

RECEPTION ROOM

Clients' entrance and waiting room. Reception desk.

2 OFFICE

A small room, containing only a few chairs, desk and filing cabinet. This and the reception room are the only spaces to which outsiders are customarily admitted.

3 STUDIO

Unusually long, to permit long shots and placing of lights at a distance from the object; particularly necessary for photographing architectural models. Each wall painted a different shade of gray. This gives a range of backgrounds to choose from, also strong definition of corners when desired.

4 CHEMICALS

All bulk chemicals stored here. Chemicals mixed in the dark room float in the air, settle or negatives and paper, impair the quality of photographs. One man is in charge; he supplies the dark rooms with all solutions required for developing, etc.

5-6 DEVELOPING

Note light locks, with curtains. Large safelights provide ample illumination. Walls colored, contrary to usual practice. Tan walls, vermilion shelving, black linoleum counter tops.

RETOUCHING

A small table in the hall is all that is required No dark room needed.

8 ENLARGING

Room for enlarging machine, large sink, space for trays.

9-10 PRINTING

Two rooms, as bulk of work done requires contact prints. Printing desks, storage shelves for paper, sinks and tray space.

II WASHING-DRYING

Note sink which passes through wall between 10 and 11. All equipment for washing and drying prints and enlargements here.

12 MOUNTING

Prints mounted on cardboard. Mounting press paper trimmer.

13 SHIPPING

Prints given final inspection, checked, numbered and wrapped.

SEQUENCE OF OPERATIONS

Order placed on file, operator assigned to job familiarizes himself with the subject.

-Waits for suitable weather, proceeds to job c-On return, equipment checked in.

d-Film taken to dark room. Each operator de velops his own film because he knows conditions under which picture was taken.

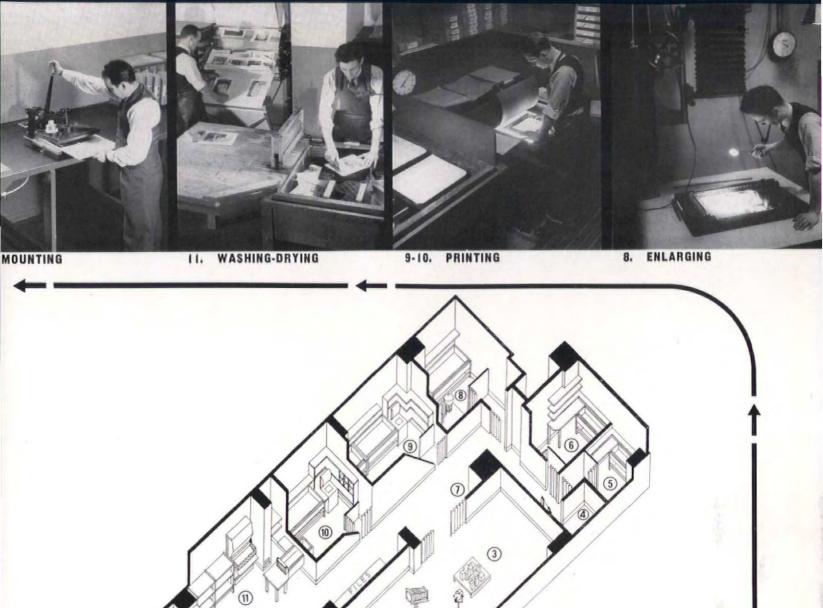
Dry negatives inspected at retouching box If satisfactory, sent to print room with order

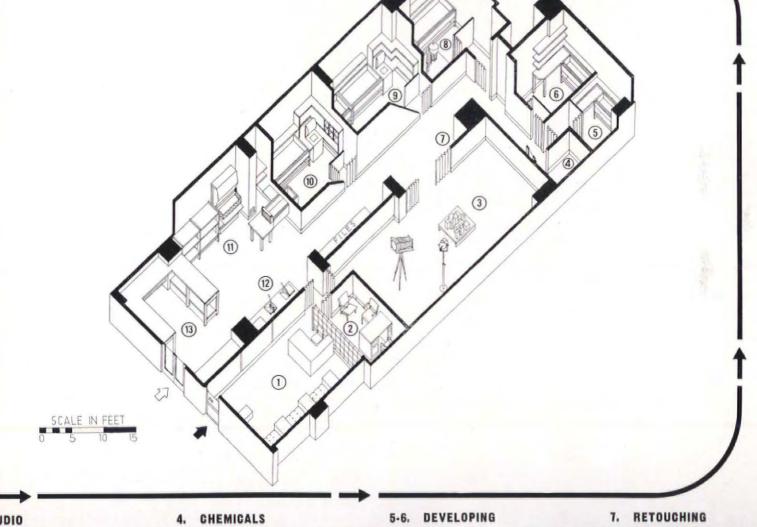
f-Prints made; negatives filed. g-Prints washed, dried, flattened out, sorted spotted, stamped, etc.

Prints dry-mounted, if desired.

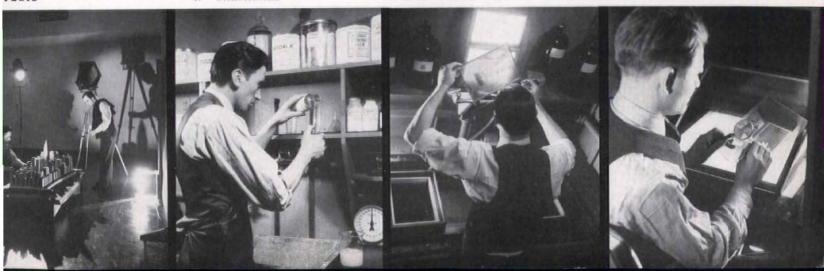
i-wrapped and delivered.

Repeat orders handled in a similar way, starting with "f."

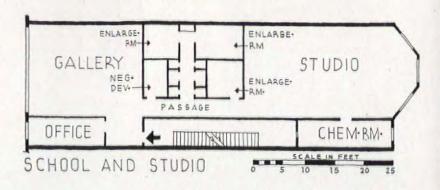


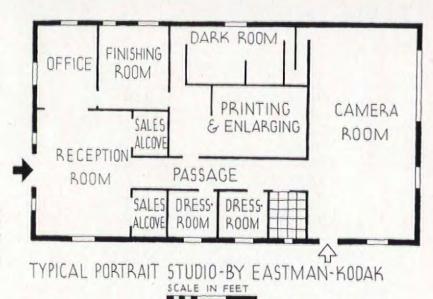


TUDIO



The large gallery for exhibition of photographs may also be used as a lecture room. Dark rooms small because of the number needed. Some lockers and closet space for students' supplies should be provided. The studio is large and contains not only cameras and lights but retouching equipment, mounting press, trimming board and blackboard for lectures. Chemicals mixed in a separate room to prevent particles from dropping on paper or films. Each room must be provided with a sink, shelving, table and lockers.





The long camera room is more or less essential to the portrait studio; where practical, a skylight or large window may be added at one end. Dressing rooms essential for make-up, costume changing. Printing room and enlarging combined to save space. Sales alcoves afford privacy for clients and a better chance for a sale.

SIZE OF STUDIOS—Since the function of a photographic studio is the production of pictures a greater amount of room must be devoted to the mechanical processes than to clerical work or the reception of clients. Very little work is done in the office except filing negatives and doing whatever bookkeeping the business requires.

The size of the studio can be determined by the type of work done. Advertising photography requires the largest studio since the photographer may be called upon to furnish and photograph an entire room or large group of people. A portrait studio need not be as large and one devoted to architectural, news or marine photography can dispense with the studio itself and concentrate on the production of the pictures.

SIZE OF ROOMS AND FIXTURES—If space permits, the three functions for production—developing, printing, and enlarging—should be carried on in separate rooms.

NEGATIVE DEVELOPING—should be carried on in a room not less than 6 ft. square. A sink the length of one wall (at least 12 in. deep, and racked to hold developing and fixing tanks), adequately supplied with hot and cold water taps should be provided. The sink is usually of stone and is partitioned at one end to permit washing the negatives.

THE PRINTING ROOM should not be less than 10 ft. long and 6 ft. wide. A sink about 6 ft. long must be provided, racked to carry trays for developing and fixing and partitioned for print washing at one end. The printing box which is about 2 ft. square is placed at the end of the sink so that the sequence of print-

ing and developing, fixing and washing goes smoothly and with a minimum of walking. A table and some shelving to hold the paper and negatives in use should be located next to the printing machine. Shelving space and lockers must be provided to store paper stocks and the materials used in print production.

THE SIZE OF THE ENLARGING ROOM must be determined by the type of enlarging to be done—for photo murals and display work the room must not only accommodate the large developing trays needed but have sufficient space to project the picture on an easel. For ordinary enlarging a room about the size of the printing room with the apparatus arranged in similar sequence is required. Here too shelves and lockers for material storage are needed.

DRYING, spotting and mounting prints must be done in a separate room. Belt driers for prints are about 3 ft. wide and 4 or 5 ft. long. Heating cabinets are also used for the production of glossy prints; these may be 4 ft. square. A dry mounting press can be located on a bench which may also be used for print spotting and wrapping.

NEGATIVE RETOUCHING can be done in the same room. A retouching easel is as a rule set on a table with side wings to exclude as much light as possible and permit the retoucher to use only the light transmitted through the negative.

WALLS—The walls of the dark rooms should be finished in a flat paint or light absorbing wallboard to avoid under reflection and scattering of light. Doors to dark rooms should be eliminated where space permits and light locks substituted. The light locks will permit easy access to the dark room without the danger of ruining sensitive material. The locks may be curtained or have a door on the exterior wall.

FLOORS—a stainproof flooring for work space, a resilient flooring in the studio.

LIGHTING—Windows unnecessary in dark rooms, ceiling outlet may be omitted, convenience outlets and wall plugs for safelights and apparatus.

VENTILATION—The efficiency of a worker in a dark room has been proved to decrease progressively about 5 per cent an hour; therefore an air conditioning or exhaust system should be used. Some provision should be made to carry off the heat of the lights in the studio.

PLUMBING—Waste pipes, drains and traps large enough freely to carry off water and of a chemical-resisting metal. Provide hot and cold water for mixing chemicals and tampering solutions and wash water.

ELECTRIC WORK—Studio may make use of mercury vapor tubes, arc light or tungsten bulbs—consumption of current will vary with type used. Printing box will usually consume about a thousand watts, enlarging lamp about 200 watts. Studio consumption in tungsten lamps may be up to 10,000 watts. Safelights about 20 watts each.

APPARATUS—The amount and type of apparatus is so varied that no standard can be prepared. Catalogues can be had which list size, weight and types.



MOTOR CRUISER

FOR JAY HOLMES, ESQ.

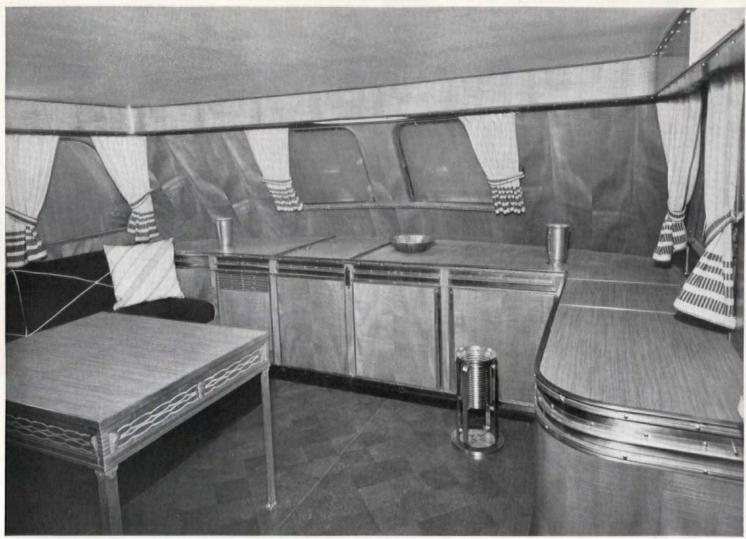
HULL DESIGNED BY GEORGE F. CROUCH

INTERIOR DESIGN AND LAYOUT BY LOUIS L. TIEMAN

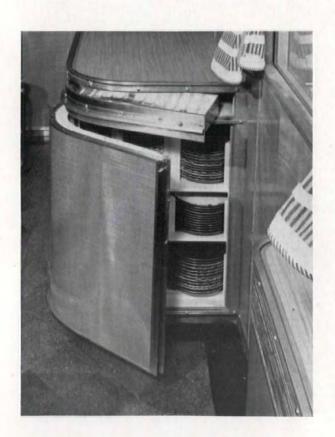
The architect's handiwork does not always rest on a concrete foundation. Her hull laid out by a naval architect, the remainder of "Semloh," including the very streamlined superstructure, was laid out by an architect and a firm of metal workers. Although nearly 100 feet in length, this luxurious cruiser contains berths for only four persons in addition to the crew, is equipped with three Diesels, the first private shipto-shore radio telephone, and a phenomenal quantity of ingenious built-in equipment. While the numerous space-saving contrivances would be applicable only to the small house, where, incidentally, their cost would be prohibitive, the cruiser and its fittings are convincing proof of the fact that the architect's training is adequate preparation for a much broader field than he is accustomed to occupy.

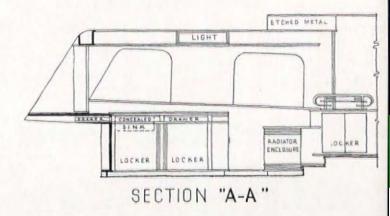


All photos, Frank Randt



DINING SALON



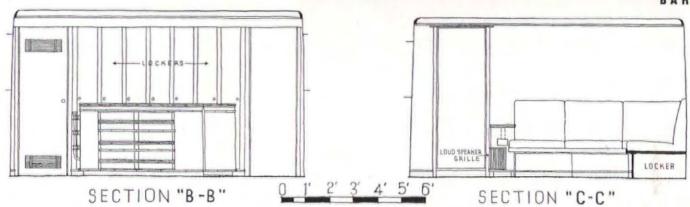


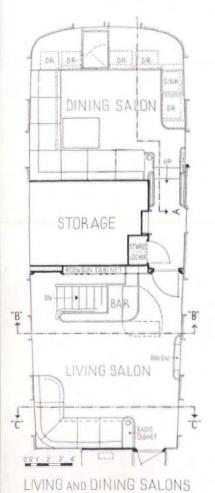
The dining salon is placed forward, on the upper deck. The cabinets contain a sink, storage for quantities of dishes, silver, linen, etc., and one cupboard opens to become a stair down to the galley. Veneers of rare wood, a cork floor, and a colorfully upholstered seat produce a rich interior with an appropriately marine character. Knobs and locks are conspicuous by their absence, all hardware being concealed and of special design.

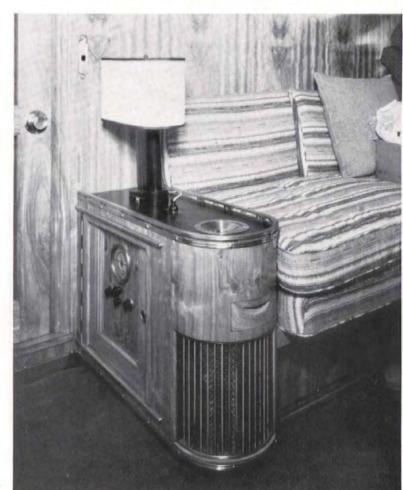
The living room, like the dining salon, contains much built-in equipment. Radio, ash receiver, end table, and lamp are incorporated into one piece of furniture, one wall is a series of shallow closets for fishing equipment, and the seats are designed for use as beds. The raised metal rims are necessary to keep objects from sliding off the table tops.



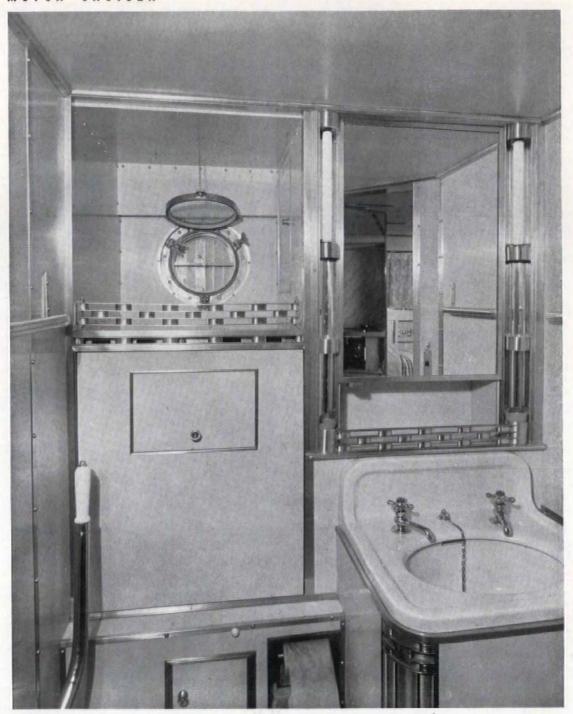
BAR







RADIO CABINET



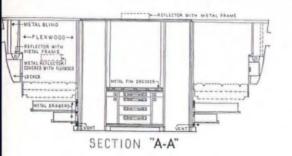
Practically all of the equipment on the cruiser is of metal. In the living quarters it is for the most part covered with wood veneer; in the cabins, however, the exposed parts are of stainless steel. Construction is elaborate: all drawers, for example, are built like filing cabinets, with cantilever arms to allow them to be opened completely. All trim is also of stainless steel, while walls are covered with fabric. There are more baths than cabins; one is shown above.

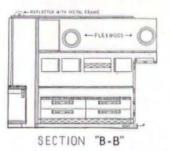


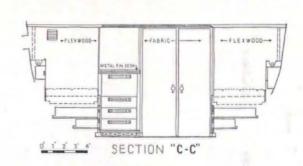
DRESSING TABLE

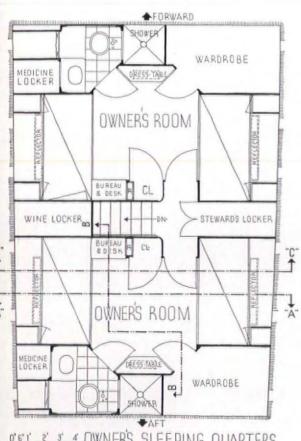


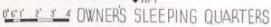
BERTH

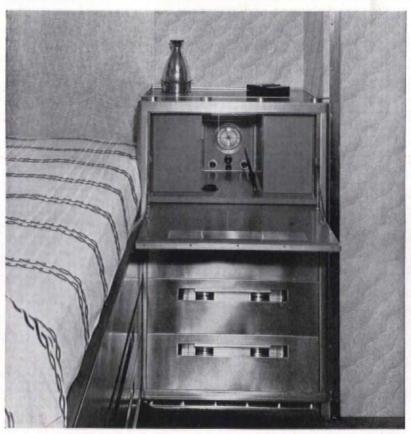












BUREAU AND DESK

MANHATTAN WALK-UP



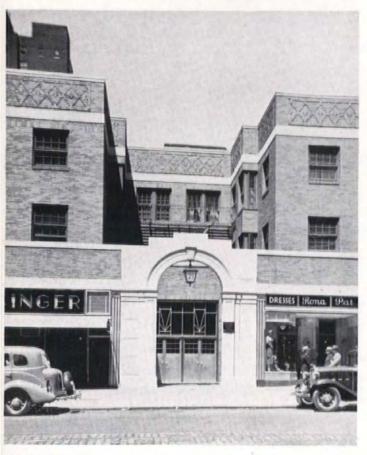
Photos, John Beine

SCOTT AND PRESCOTT, ARCHITECTS

BEFORE



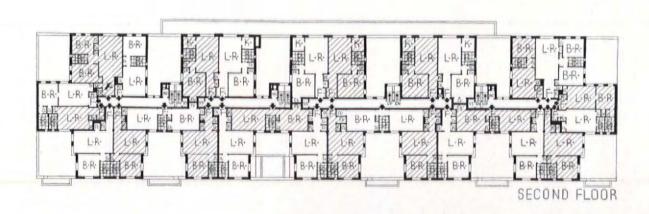
The site of these apartments on 14th Street was once occupied by New York's leading families; the invasion of trade in the late 1800's ended the residential phase of the street's development until depression and the 1930's brought in the small apartment as a solution for the owners' difficulties. Purposely low to produce maximum income for a minimum investment, the building is a pleasant sight in a city choked with misplaced skyscrapers. Two stories are for the residents, the ground floor for shops. The apartments contain one to three and a half rooms, and a garden three hundred feet in length makes the rear, if anything, more desirable than the front. Tenants have a separate entrance and do not have to climb up narrow stairs between the shops. A good example of what can be done with non-paying property, the building is commendable for the comparative openness of its block plan, the good taste displayed in the control of shop signs.

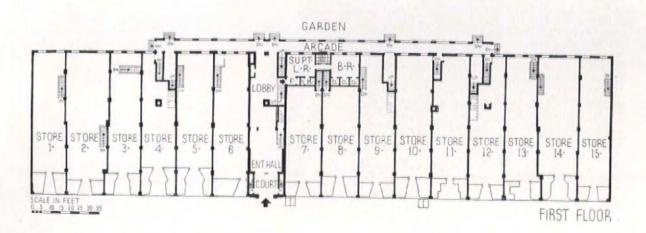


ENTRANCE

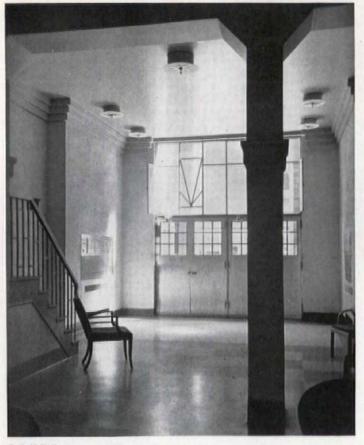


REAR VIEW

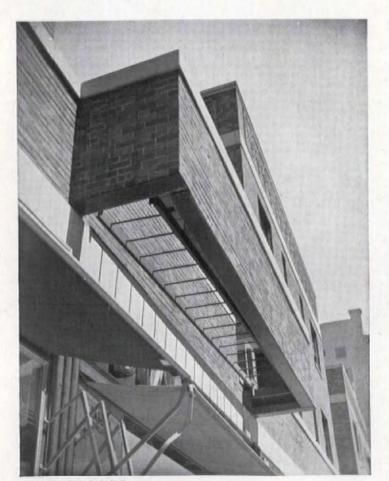




SCOTT AND PRESCOTT, ARCHITECTS



FOYER



FIRE-ESCAPE



ARCADE

CONSTRUCTION OUTLINE

FOUNDATION

Steel piles to rock, concrete walls.

STRUCTURE

Steel frame. Walls—brick, face brick outside, Face Brick Sales Co.; inside—plaster. Floors—concrete arches, cement finish. Fireproof partitions-gypsum blocks, U. S. Gypsum Co.

LATH

Jumbo metal lath, paper backed.

ROOF

Composition, Barrett specifications.

INSULATION

Roof insulated with Celotex.

WINDOWS

Wood, double hung, Weisberg-Baer Co.

DOORS

Fireproof, Aetna Steel Products Co.

FLOORS

Ironbound and oak, laid in Corkushion mastic, Storm Flooring Co., Inc.

HARDWARE

Brass by P. & F. Corbin.

PLUMBING FIXTURES
All by Crane Co. Flushometers, Sloan Valve Co.

ELECTRICAL WORK

B.X. conduit. Switches-Hubbell. House telephone, L. J. Loeffler.

REFRIGERATORS

Air cooled Servel gas, Electrolux Refrigerator Sales, Inc.

RANGES

Quality, Roberts & Mander Stove Co.

PLUMBING

Brass pipes, Chase Brass & Copper Co.

HEATING

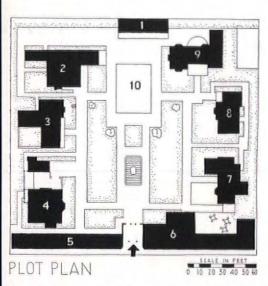
Vacuum system, Edward Muller. Boilers, Kewanee Boiler Corp.

VENTILATION

System of ducts with fan units in copper housings on the roof, Guarantee Sheet Metal Works.

EXHIBITION HOUSE GROUP

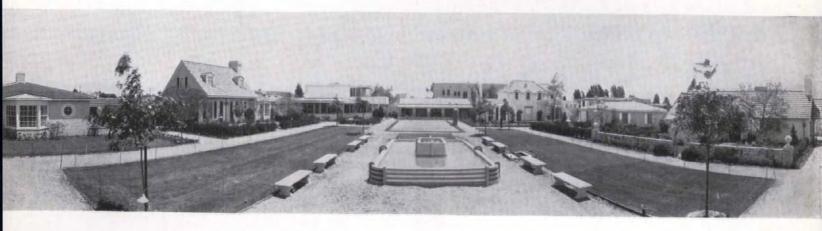
LOS ANGELES, CALIFORNIA. ARRANGED BY MISS MARIE LOUISE SCHMIDT



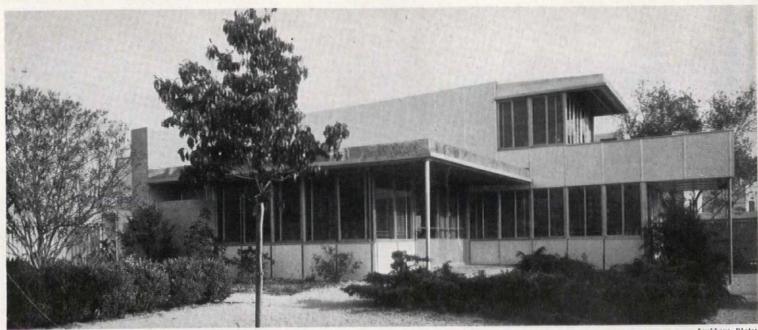
TEA ROOM 2. PLYWOOD HOUSE 3. NEW ORLEANS
COTTAGE 4. CALIFORNIA COTTAGE 5. MATERIAL
EXHIBITS ARCADE 6. ADMINISTRATION BUILDING
7. ENGLISH COTTAGE 8. "BETTER HOME" COTTAGE
9. FRENCH COTTAGE 10. BADMINTON COURT

Recently in Los Angeles there appeared a new and very ingeniously organized small house exposition, whose success in arousing public interest indicates that traditional methods of merchandising small houses may well be undergoing a change in the next few years. Based on the model house, the theory, briefly, is that if one model house is a good idea, six are at least that much better.

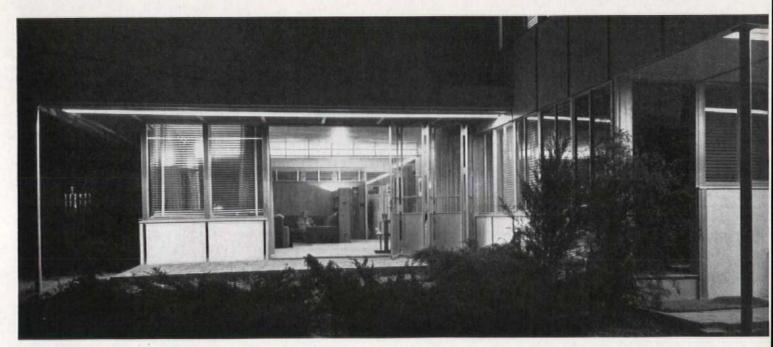
The originator of the exposition was Miss Marie Louise Schmidt, director of the Architects Building Material Exhibit in Los Angeles. She persuaded 200 material dealers to advance materials and labor costs in the erection of six houses on a block along the city's famed Wilshire Boulevard. Each of the six houses was designed by a well-known architect, and each is in a different style; all cost under \$5,000. Nominal admission fees help reimburse the dealers, and a contest is held periodically among the visitors, the winner getting a house which is moved away, thereby leaving space for a new one. By this rotation of exhibits it is expected that public interest will be maintained. Further to ensure continuing publicity the 200 exhibitors hold a monthly breakfast in the patio tea room, discuss new strategies, and launch new campaigns. Up to date there have been fashion shows, a badminton tournament, garden parties, and a radio broadcast. More noteworthy as showmanship is the practice of leaving portions of the houses uncovered to show hidden materials, an excellent means of familiarizing the visitor with building methods commonly used; materials which cannot be conveniently displayed in this manner are shown in an arcade adjoining the administration building.



PLYWOOD HOUSE



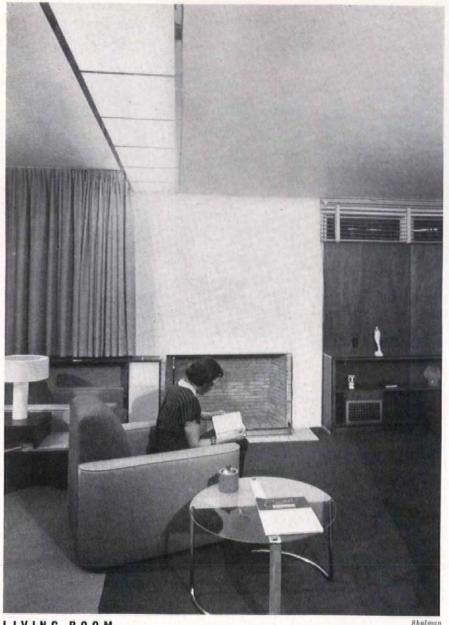
Luckhaus Photo



CALIFORNIA HOUSE AND GARDEN EXHIBITION

In the past three years the office of Richard Neutra has built almost twenty houses costing under \$5,000. All are characterized by a generous use of windows, an open plan, and a skeleton chassis of standard members. The exhibition house shown here is a reduced version of the house which won second prize in the General Electric Small House Competition last year and is finished inside and out with plywood. The plan is notable for the relatively large area allotted to the living room, and the luxurious quality of the interiors due to this spaciousness. The unusual soffit lighting in the overhangs is an innovation introduced by the architect a number of years ago.

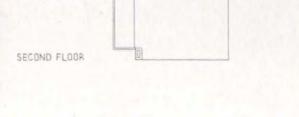
RICHARD J. NEUTRA, ARCHITECT



LIVING ROOM



KITCHEN





CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls-timber chassis covered with Thermax and faced with weatherproof super-plywood outside and 5% in. mahogany plywood in-side. Interior partitions—plywood on wooden studs, Floor construction—wood Joists and T. & G. floor.

ROOF: Wood Joists, Thermax insulated, covered with El Rey compo roofing with aluminum coated, artifi-cially oxidized granulated iron top sheet, El Rey Products Co. Decks—covered with canvas.
SHEET METAL WORK: Aluminum for eave aprons

and aluminum covered molding protecting plywood Joists, Aluminum Co. of America.
WINDOWS: Swing steel sash, Druwhit Metal Products

Co. Glass-double strength, quality A, American Window Glass Co. copper roller screens. STAIRS: Wood covered with linoleum, Armstrong Cork

Products Co., aluminum nosings.

FLOORS: Living room and bedrooms—carpet. Halls—linoleum. Kitchen—vitrified tile. Bathrooms—linoleum, Armstrong Cork Products Co.

WALL COVERINGS: Bedrooms-Sanitas, Standard Textile Mfg. Co. Kitchen-tile. Bathrooms-downstairs, linoleum; upstairs, Sani-Rox structural glass, McClarin

TRIM-snap-on stainless steel, Superior Metal Trim Corp.

HARDWARE: Locks-chromium plated, Schlage Lock

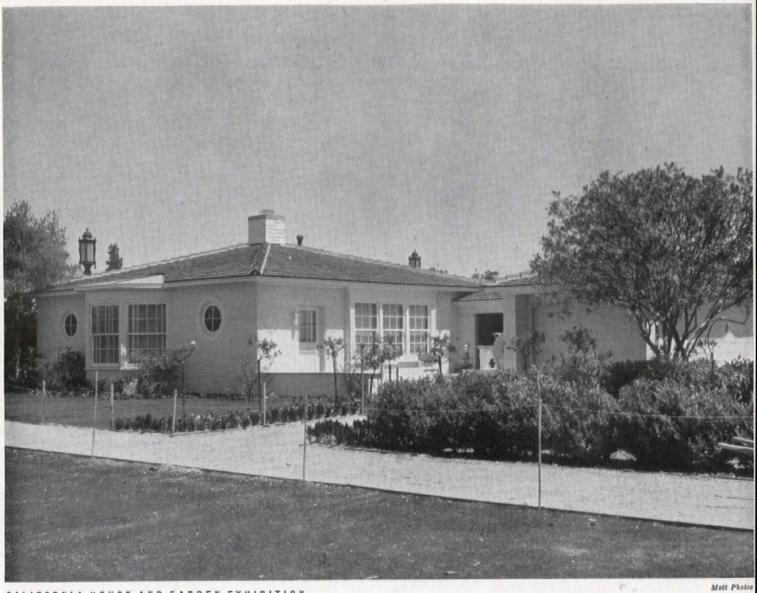
PAINTING: Interior-woodwork stained and waxed. Exterior-walls, roof and sash, 3 coats Alcoa Albron, Aluminum Company of America.
LIGHTING FIXTURES—Lumiline tubes in light trough

and recess ceiling lights. Exterior overhang-Soffit lighting.

KITCHEN EQUIPMENT—all General Electric.

BATHROOM EQUIPMENT—all Washington Eljer. HEATING, Air Conditioning and Hot Water Heaterall General Electric.

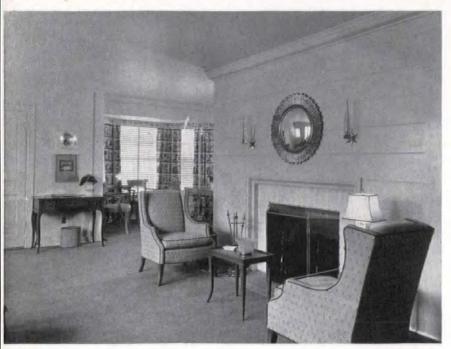
CALIFORNIA COTTAGE



CALIFORNIA HOUSE AND GARDEN EXHIBITION

The well-known lines of the typical one-story California house are repeated here. Light color, a rambling plan, simple lines, a gently sloping roof create the pleasant effect common to this type of domestic architecture. The plan is well organized for use, with a compact arrangement of rooms, spacious living room, and a good relation between the house and outdoor living space. The interiors are simple and interestingly detailed.

WINCHTON L. RISLEY, ARCHITECT



GARAGE PATIO DINING FLOOR PLAN

LIVING ROOM



DINING ALCOVE

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls—hollow reenforced concrete blocks, Graystone Tile, Inc. Interior partitions—wood frame, lath and plaster. Floor construction—wood joists treated lumber sub-floors and plastered ceiling. ROOF: Clay shingle tile on sheathing, San Valle Tile Kilns.

WINDOWS: Wood double hung. Glass-double strength, Libbey-Owens-Ford Glass Co.

FLOORS: Living room—clear hardwood blocks, Bruce Flooring Co. Bedrooms—clear plain white oak. Kitchen —rubber tile. Bathrooms—tile, Gladding-McBean & Co. WALL COVERINGS: Living room, bedrooms and hallwall paper. Kitchen-painted. Bathrooms-tile wainscot, Gladding-McBean & Co.

HARDWARE: Interior and exterior-Yale & Towne Mfg. Co.

PAINTING: Walls—washable wall paint. Ceilings—solid coat. Trim and sash—silken white enamel. Exterior: Walls—bonding cement paint. Sash—Pioneer lead. All paint by W. P. Fuller & Co.

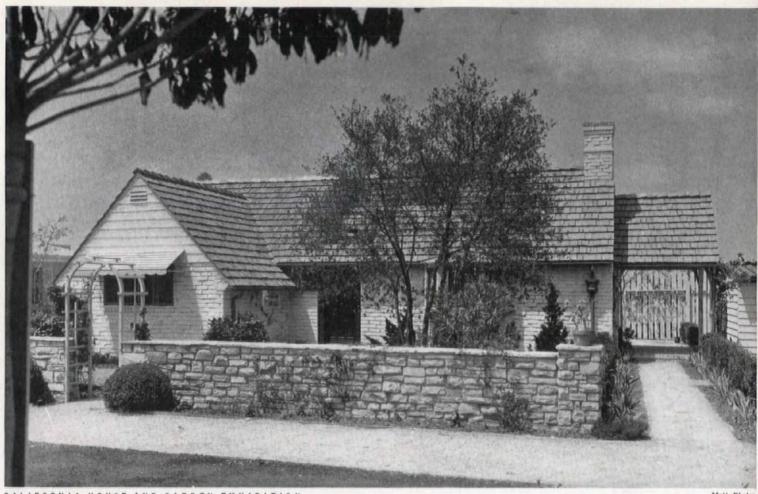
ELECTRICAL INSTALLATION: Wiring system—

conduit.

KITCHEN EQUIPMENT: Stove-Wedgewood automatic gas. Refrigerator—gas, Electrolux. Sink—Monel metal, International Nickel Co.

PLUMBING FIXTURES: All by Washington-Eljer. HEATING: Warm air, gas fired furnace, Payne Furnace & Supply Co.

ENGLISH COTTAGE, ARTHUR KELLY & JOE ESTEP, ARCHITECTS



CALIFORNIA HOUSE AND GARDEN EXHIBITION





LIVING ROOM

The English type residence has never been overwhelmingly popular in California, but requirements of exhibition demanded that style be included, and among the visitors there will doubtless be some who will find the interior shown above to their taste. It is interesting to note the variation in space between this house and the others, although all had the same price limitations.



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls-reenforced Groutlock brick masonry, Simons Brick Co., Los Angeles. Floor construction—junior steel beams.

ROOF: Construction-wood frame covered with split cedar shakes. SHEET METAL WORK: Flashing, gutters and lead-

ers—Leadclad, H. E. McGowan Co. WINDOWS: Steel casements, Lustra glass, American

Window Glass Co. FLOORS: Living room-oak plank. Kitchen and bath-

rooms-linoleum.

WALL COVERINGS: Living room-brick whitewashed Bedrooms—papered. Bathrooms—linoleum. Halls-paneled. Kitchen-tile

WOODWORK: Trim-western red cedar. Shelving and cabinets—sugar pine. RANGE: American Stove Co. REFRIGERATOR: Gas, Electrolux.

PLUMBING: Fixtures by Washington-Eljer, Soil waste and vent pipes-cast iron. Water supply-galva nized steel.

HEATING: Warm air, gas fired furnace, Pacific Gas Heating Co.

NEW ORLEANS COTTAGE, JOHN BYERS, ARCHITECT; EDLA MUIR, ASSOCIATE



CALIFORNIA HOUSE AND GARDEN EXHIBITION





LIVING ROOM

As in the French cottage, the New Orleans touches are fairly inconspicuous, although those that remain are by no means without charm. The intimate scale of the exterior is pleasing and the interior is distinguished by a graceful stair, located in an unusual position. The plan is well organized, with good separation of its various parts.



CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls-brick veneer, Simons Brick Co. sheathing, studs, grip lath and plaster. Floors-pine, oak finish.

ROOF: Covered with 5 in 2 in. Perfection wood shingles. SHEET METAL WORK—galvanized sheet iron. WINDOWS: Sash—double hung wood. Glass—double

strength, quality A.

FLOOR COVERINGS: Living room-carpet. Kitchen and bath-linoleum.

WALL COVERINGS: Rooms-wallpaper. Kitchen-Sanitas. Bathrooms-structural glass wainscot, Sani-Rox, McClarin & Taylor.

PAINTING: Floors—1 coat filler, 2 coats shellac and 1 coat wax. Trim and sash—4 coats paint and enamel. ELECTRICAL INSTALLATION: Steel tube, toggle switches.

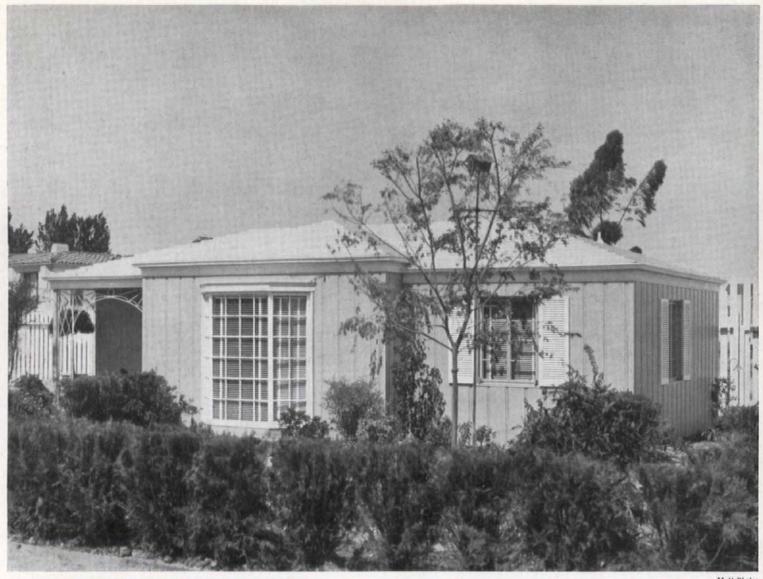
KITCHEN EQUIPMENT: Stove-gas, Tappan Stove

Co. Refrigerator—gas, Electrolux. PLUMBING FIXTURES: All by Washington-Eljer.

PLUMBING: Soil, waste and vent pipes-cast iron. Water supply-steel pipe.

HEATING: Gas blower heater, Pacific Gas Heating Co.

THE "BETTER-HOME" COTTAGE



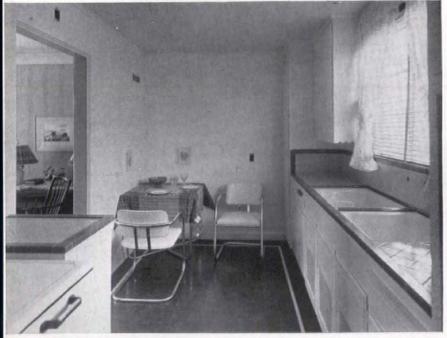
CALIFORNIA HOUSE AND GARDEN EXHIBITION

Where exteriors are treated in a very simple manner, success depends on proportion and the location of structural elements. This house gains the effect of unity through the use of metal siding and metal roofing. Special considerations of exhibition circulation probably influenced the plan. A more convenient arrangement would shift the entry to the left of the kitchen giving direct access to the garage. More storage space would have resulted through better planning of the dressing room.



GARAGE LIVING BED ROOM ROOM SCALE IN FEET FLOOR PLAN

LIVING ROOM



KITCHEN

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls-steel frame with metal siding over Celotex, inside, decorative Celotex paneling. Interior partitions—Lea stud system covered with decorative Celotex. Floor construction—concrete of Lea channel Joists, Celotex ceiling, W. C. Lea-Better Homes Foundation Co.

ROOF: Construction-Lea system steel frame covered with Thermax and metal roofing.

SHEET METAL WORK: Armco and Toncan galvanized iron.

WINDOWS: Steel casements, W. C. Lea-Better Homes Foundation Co. Glass-double thick, quality A, Libbey-

Owens-Ford Glass Co. Roller screens.
FLOOR COVERINGS: All rooms covered with rubber.
WOODWORK: Shelving, cabinets and doors—white
pine. Garage doors—sugar pine, overhead type, Holmes Mfg. Co.

HARDWARE: Interior and exterior-polished brass, Yale & Towne Mfg. Co.

PAINTING: All paint by W. P. Fuller & Co.

ELECTRICAL INSTALLATION: Wiring system-conduit. Switches—toggle type. KITCHEN EQUIPMENT: Stove—gas, American Stove

Co. Refrigerator-gas, Electrolux.

BATHROOM EQUIPMENT: All fixtures by Washington-Eljer. PLUMBING: Soil pipes—cast iron. Waste, vent and

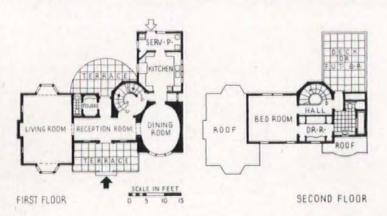
water supply pipes—galvanized wrought Iron.
HEATING AND AIR CONDITIONING—Wat-Air Cor-

poration.

FRENCH COTTAGE, PAUL R. WILLIAMS, ARCHITECT



CALIFORNIA HOUSE AND GARDEN EXHIBITION



The effect of the California climate on imported styles is well demonstrated by the French cottage, "French" only in its vaguely reminiscent roof and the potted trees by the door. The plan, with its circular stair, elliptical dining room, and splayed kitchen is perhaps more characteristic of chateau than of cottage architecture.

CONSTRUCTION OUTLINE

STRUCTURE: Exterior walls and partitions-Emsco system steel frame, Sisalkraft building paper. Inside and outside finish-copper bearing metal lath and plaster, Emsco Derrick & Equipment Co. Floor construction-Junior I-beams. Ceiling-plaster on metal lath, Truscon Steel Co.

ROOF: Construction-Emsco system steel frame covered with wood sheathing and San Valle Tile Kilns' clay shingles. Deck covered with wood sheathing and El Rey composition walking deck, El Rey Roofing Co. SHEET METAL WORK-Armco and Toncan galvanized iron.

INSULATION: Outside walls-Raylite insulating stucco sand, Raylite Aggregates, Inc. Weatherstripping— Securitée bronze weatherstripping.

WINDOWS: Sash-double hung and casement. Glassdouble thick, quality A, Libbey-Owens-Ford Glass Co. Screens—roller screens, Disappearing Roller Screen Co. STAIRS: Main stair-Emsco system steel stringers, oak risers and treads.

FLOORS: Living room and bedrooms-oak. Kitchen-Douglas fir covered with linoleum. Bath—clay tile. WALL COVERINGS; Bedrooms—decorative wall pa-

per. Bathrooms-clay tile. WOODWORK: Trim, cabinets and doors-white pine. HARDWARE: Interior and exterior-aged brass, Yale

& Towne Mfg. Co.
PAINTING: All paint by W. P. Fuller & Co.
ELECTRICAL SYSTEM: Wiring system: conduit. Switches-Arrow toggle.

KITCHEN EQUIPMENT: Stove-American Stove Co. Refrigerator—gas, Electrolux.
PLUMBING FIXTURES: All by Washington-Eljer.

PLUMBING: Soil pipes-cast iron. Water supply-gal-

vanized wrought iron.
HEATING AND AIR CONDITIONING: Forced air, gas fired, Payne Furnace & Supply Co. Air cooling and ventilating, H. F. Haldeman, Inc.

46

FROM RENT TO SPACE

PART II.

BY BERNARD J. HARRISON, JR., HENRY D. WHITNEY, CHLOETHIEL WOODARD

TENANTS' HOUSING NEEDS
Analyze the tenants' needs, translate them into a planning program and establish the rent they can pay.

FINANCIAL TESTS 2 Find out the amount of space the fixed rental will support and judge it by comparison with 1. Establish the land value which the rental

COMPROMISE 1

3 SITE SELECTION
Find a site that fulfills the requirements set in 1 and 2.

COMPROMISE 2

THE BUILDING DESIGN
Study the housing vocabulary of common planning factors. Within the price limits set in 2, form the building units. Analyze their first cost and costs of use. Judge the quality of the accommodations in comparison with program in 1.

COMPROMISE 3

SITE PLAN Study the site vocabulary of common planning factors. Within the price limit set in 2, plan the site. Analyze all first costs and costs of use. Check the quality of the site plan in comparison with the program in 1.

COMPROMISE 4

PROJECT SUMMARY Set up a total project cost estimate and make a final financial set-up. The first three steps in this technique were the subject of the article which appeared in the June issue. Step 1 showed how the tenant's needs could be analyzed, then translated these needs into a desirable planning program, and finally established the rental tenants could afford to pay.

Step 2, by a series of financial tests, checked the feasibility of the planning program against the determined rent and indicated points of compromise. A formula and its solution were given for deriving capital cost from rent and annual charges, and from this capital cost the approximate amount of space which could be supported by the rent was ascertained. This space, expressed as an average area per room, forms the basis upon which the plans will be developed. In addition, Step 2 pointed out a means of determining a justifiable land value.

Step 3 dealt with the selection of site which would fulfill the requirements of the program and would fall within the allowable costs.

In either Step 2 or 3, necessary modifications in the original program were made and thus a completely TESTED PLAN-NING PROGRAM developed. By this method the architect demonstrates the feasibility of the project and established the approximate limits within which he must plan.

THE BUILDING DESIGN

Within the limits defined in Steps 1-3 the planning proceeds. Satisfactory accommodations must be determined for buildings whose first costs and costs of use fall within the established limits.

Since it is absolutely essential that the architect know the effect of each design modification on costs, a system is required which relates the design to costs and hence, to rentals. The closest kind of figuring is necessary because desirable habitations generally cost more than people can afford.

In addition to this rigid cost check, the quality of accommodations must be judged by the standards set up in the Planning Program. Each step in the design is therefore analyzed for (1) quality, and (2) costs, which must not exceed those permitted by the obtainable rental.

COMPROMISE 3.

SOLUTIO

At this stage a major compromise with the original planning program will be necessary if suitable accommodations are not possible at the obtainable rental. Here a knowledge of the relative costs of different plan types is invaluable if an intelligent choice of plans for the

project is to be made. This article presents a method for producing plans of suitable accommodations and analyzing them for quality and cost.

COMMON PLANNING FACTORS.

Heretofore there have been prejudices against the intelli-

gent standardization of plans. The traditional approach to design as a highly individualized expression of the architect's ego does not hold in the planning of housing. Since dwelling requirements, equipment sizes, and desirable orientation and ventilation do not vary so widely that they cannot be studied, the formulation of common planning factors is not only desirable, but quite possible. The housing vocabulary is a working collection of such material which will help the architect in the design of good dwellings.

At the same time a construction vocabulary can be developed so that the designer can have at his fingertips data on first costs and costs of use of various structural systems and building materials. Such a vocabulary could readily be built up as shown under the method of studying costs which follows. This method groups costs according to elements of structure and relates construction costs to costs of use. Thus, with such data at hand, the suitability of a certain wall section, for example, which might be cheap to erect but high in heating and repair costs, could be accurately judged in relation to any specific project.

. . The following brief examples of a planning vocabulary are not offered as data sheets, and such data as are included are merely illustrative. The intention is to assist the designer in the preparation of his own Housing Design Manual by showing the type of material that would be included.

PLANNING THE BUILDINGS

This technique calls for a procedure of planning from the inside to the outside. Room sizes and shapes are developed from the tenants' space requirements, the rooms are combined in desirable arrangements for circulation and privacy, these living units combine with public space to form building units, and by the same method of thinking, a building, and finally a group, is developed. The primary consideration is always the best sizing and grouping of units rather than the dividing up of a preconceived building shape. This procedure is particularly applicable to large scale planning where lot sizes and shapes do not dictate the external form of the building.

ROOM SIZES AND SHAPES

As the basic unit of the apartment or building, the room must be carefully analyzed from all possible points of view. A coordination of the findings will give the size and shape of the room, its best relation to the out-of-doors, and the arrangement of furniture and equipment. Rooms may be studied under the following headings:

USE OF THE ROOM

an analysis of the various activities for which the room is used, and the time of day when principally used.

FURNITURE AND EQUIPMENT

studies of sizes and types of furniture needed in the room. This includes not only built-in equipment, but furniture customarily used by the tenant.

SERVICES AND MATERIALS

lighting, heating, and other services required in each room. Materials most suited for the activities carried on in the room.

RELATION TO OUT-OF-DOORS

studies of orientation, ventilation, privacy, and view requirements.

| LICKB | CBK | L B K C |
|---------|------------|------------|
| LICIBIK | | |
| LKCB | BKC | L K B C |
| LKBC | K C B | L K C B |
| LBCK | | - |
| LIBIKIC | C L K B | L C |
| CILIKIB | C KBL | LBCK |
| CILIBIK | | |
| KILCB | BLK | L C B K |
| KILBIC | K L C B | |
| - | | |

CBL

ROOM RELATIONSHIPS — APARTMENTS

The possible number of room arrangements into apartments is limited. It will be helpful to classify these arrangements and select the most desirable combinations; this need be done only once, since these basic arrangements do not change with the type or size of the accommodations. The accompanying diagrams illustrate this type of study. Blocks of the same size are used for convenience in classification of the various groups. The illustration shows the possible arrangements for a three-room apartment. Possible shapes for apartments of various sizes are indicated below. It is possible in this way to build up a complete vocabulary of individual apartment arrangements which will be of great assistance in planning any class of project.

CLASSIFICATION OF APARTMENT SHAPES

| 2 ROOMS | | | |
|----------------|---|---|--|
| | Ь | | |
| 2½ AND 3 ROOMS | | П | |
| | | | |
| 3½ AND 4 ROOMS | | | |
| шш | Ш | | |
| 41 AND 5 ROOMS | | | |
| ППП | | | |

CANVASS OF

3 ROOM APARTMENTS

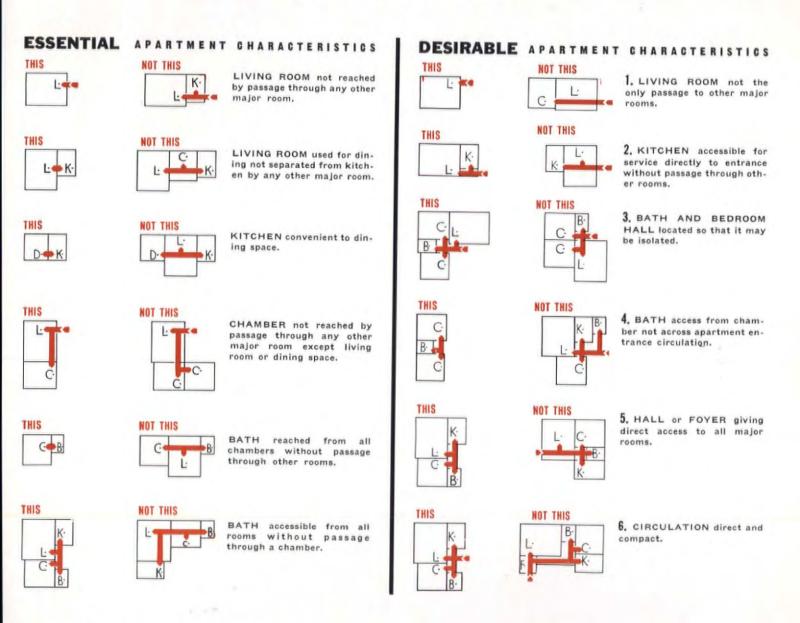
BLCK

BILKIC



VOCABULARY OF APARTMENT ARRANGEMENTS

From this canvass of possible apartment arrangements, room sizes already determined are substituted and the identical blocks replaced by blocks of the chosen sizes. This allows a complete vocabulary of individual apartment types to be built up. The blocks representing the room sizes do not have to remain in the fixed relation of the uniform block diagrams, but rooms may be slipped by each other or turned with the long dimension in different directions. The basic relationship, however, is not changed. These apartments will be of varying degrees of merit. Many of them will be unworkable and may be discarded immediately by inspection. From the good arrangements, it is necessary to determine the best for a given set of conditions. In order to do this, some method of rating the types is convenient.



RATING APARTMENT ARRANGEMENTS

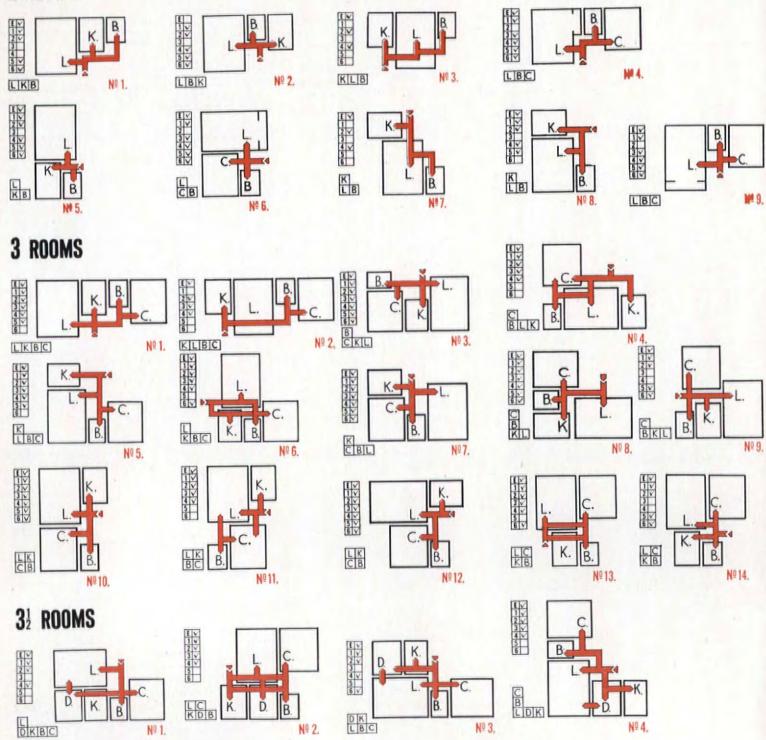
| | E | |
|---|---|--|
| | 1 | |
| | 2 | |
| Ì | 3 | |
| ١ | 4 | |
| ١ | 5 | |
| ۱ | 6 | |

By the above criteria, the apartment arrangements are rated. For convenience, a diagram such as shown at the left is used. E refers to the essentials, and the numbers refer to the desirable characteristics such as listed above. If ALL essentials are present a check is placed opposite E. If not, this particular room arrangement is eliminated. Checks placed opposite the numbers indicate that those desirable characteristics are present. The apartments which have the greatest number of checks in the six desirable characteristics are considered the best. These desirable characteristics can vary in importance and this variation can be allowed for by weighting them according to their importance. Such a weighting system is used in the table of the Quality Analysis on page 62.

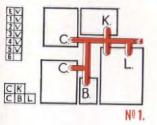
APARTMENT ARRANGEMENTS

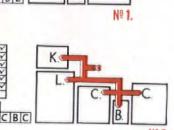
The following apartment arrangements for sizes from two to five and a half rooms illustrate the application of the method. These have been formed by the combinations of blocks of the predetermined room shapes and sizes and no attempt is made to show anything but the arrangement and the circulation among rooms within the apartment. Familiarity with these arrangements is of great assistance in forming building units. This is an important stage in apartment study as it develops private living space in a convenient arrangement of well-shaped rooms. It will be noted in the grouping of apartments that these basic plans will be frequently reversed or inverted, without altering the room relationships.

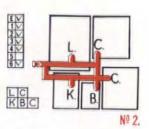
2 ROOMS

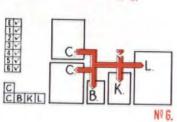


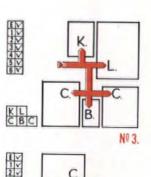
4 ROOMS

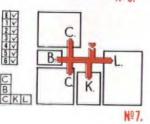


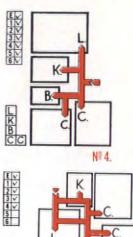


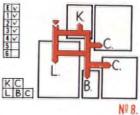




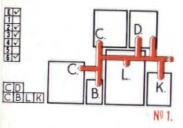


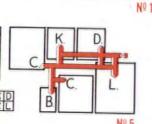


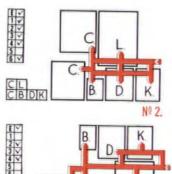


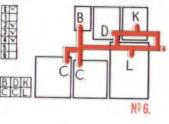


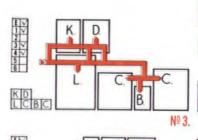
4½ ROOMS

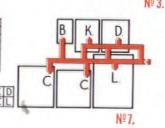


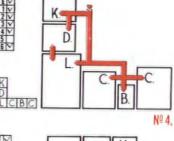


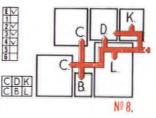




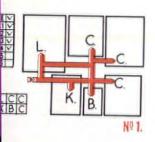


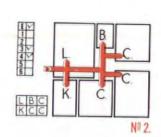


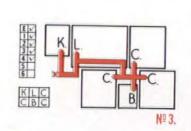


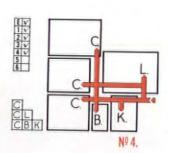


5 ROOMS

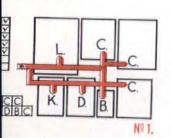


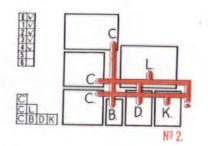






1 ROOMS





BUILDING SHAPES

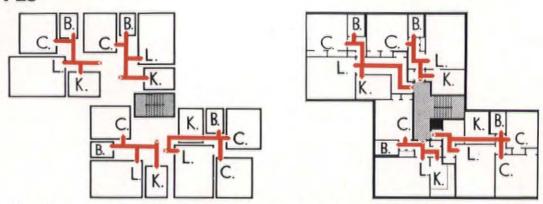
When apartments are arranged around one public circulation space so that each apartment has at least two exposures and light in all rooms, there will be five possible basic building shapes. Other shapes result in arrangements with long interior corridors, producing apartments with only one exposure and excessive areas of unlighted space. The chart summarizes the type of study which should be made. This general analysis shows that the two-apartment Strip, the two or three-apartment L, the three-apartment T, the four-apartment Z, and the four-apartment Cross offer the most desirable locations

for apartments about public space. These combinations will be used in forming the building types shown on pages 53 and 54. The illustrations in the diagram show the simplest forms of these basic shapes and the location of apartments in them. The building shape is judged only as it relates to the desirability of the individual apartments contained in it. Since these units are designed for combination with each other and similar units, it is necessary to consider how the unit may best be attached so as not to affect the internal space.

| | | SUN AND LIGHT | VENTILATION | PRIVACY | GENERAL |
|---------|-----------|--|---|---|---|
| STRIP | 1 1 2 | Simple perimeter. No pro- jections cast shadows. Uniform orientation for all apts. Excellent light. | Complete cross ventila- tion in both apts. | No angles or wings form courts, therefore no corner views between apts. | End walls attached to other buildings without affecting internal space. |
| | 2 3 | Apt. 3 has same qualities as Strip No. 1. Apts. 1 & 2 cannot have similar orientation. Excellent light. | Cross ventilation in apt. 3; corner ventilation in 1 & 2. | Same as Strip No. 1. | One full length end wall connection. Two apt. end connection staggered for ventilation. |
| | 3 2 4 | Orientation similar for only 2 of the apts. Excellent light in all rooms. | Corner ventilation in all apts. | Same as Strip No. 1. | Two apts, have preferred view. Staggered connections for ventilation sacrifice privacy. |
| L SHAPE | 1 2 | Right angle shape pro- duces shadows. One apt. may have pocketed room. Uniform orientation. | Complete cross ventila- tion in both apts. | Corner views between the 2 apts., no drawback if service rooms are in corner. | Both apts. may have preferred view. Internal space not affected by end connection. |
| | 2 3 | Projection casts shadows on apts. 1 & 3 and may cause pocketed rooms. | Cross ventilation in apts. 1 & 3 and corner ventilation in 2. | Corner view between apts. 1 & 3, but service rooms may be grouped there. | Two apts, may have pre- ferred view. Joining end walls does not affect in- ternal space. |
| | 3 2 3 | Projections cast shadows on two apts. May be pocketed rooms. Similar orientation for 2 apts. | Complete cross ventilation in apt. 1 only. Corner ventilation in apts. 2, 3, & 4. | Corner view between apts. 1 & 3. | One end wall attached full length. Other offset but this sacrifices privacy. |
| TSHAPE | 1 3 | Shadows from projecting wing on 2 apts. Uniform orientation possible for all. Pocketed rooms. | Complete cross ventila- tion in all apts. | Corner views among all apts. | Uniform view all apts., if projecting wing faces view. All end walls may be attached. |
| | 1 2 3 4 | Shadows on 2 apts. All apts. may have pocketed rooms in interior angle. Similar orientation for all. | Cross ventilation in apts. 3 & 4. Corner ventilation in 1 & 2. | Corner views between all apts. | Uniform view if project- ing wing faces view. Only end walls 3 & 4 should be connected. |
| | 3 5 4 | Shadows on 3 apts. Three apts, may have pocketed rooms in interior angle. Similar orientation for 3 apts. | Corner ventilation in apts. 1, 3, 4 & 5. Cross ventilation in apt. 2 only. | Corner views between 3 apts. | Connect projecting wing or offset on side of apts. 4 & 5 to prevent narrow court. |
| ZSHAPE | 1 3 4 | Shadows on 2 apts. If in- tersection is wide, pock- eted rooms in 2 apts. | Cross ventilation in apts. 1 & 4. Corner ventilation in 2 & 3. | Corner views between all apts. | Uniform orientation for 3 apts. Full length end wall connections without affecting interior. |
| | 1 2 3 4 5 | Shadows on 2 apts. Pocketed rooms likely in 2 apts. Excessive unlighted space. | Cross ventilation in apt. 1. Corner ventilation in the others. | Corner views between 4 apts. | Unit should be joined on end wall of apt. 1. Corner views if otherwise connected. |
| | 3 5 4 | Shadows on 2 apts. Uni- form orientation for 3 apts. All may have pock- ted rooms except 1 & 4. | Cross ventilation in no apts. Corner in all. | Corner views between 4 of the 6 apts. | Unit Joined by offsetting on apts. 1 & 4 to avoid narrow courts. |
| CROSS | - mm | Shadows on all apts. Un- less wings are offset, 2 apts. have pocketed rooms. | Cross ventilation in all apts. Three exposures likely on at least 2 apts. | Corner views between all apts. | Uniform preferred view 3 apts. End walls joined without affecting internal space. |
| | 2 5 4 | Shadows on all apts. Four apts, likely to have pocketed rooms, excessive unlighted space. | Cross ventilation in 2 apts. Corner ventilation in four. | Corner views between all apts. | Only the two wings containing apts. 3 & 6 should be attached. May be Joined for full length. |
| | 3 7 6 5 4 | Uniform orientation possible for 4 apts. Pocketed rooms and excessive unlighted space. | Cross ventilation in no apts. Corner ventilation in all. | Corner views between all apts. | Connecting unit offset to retain two exposures for all apts. |

4

BUILDING UNIT TYPES



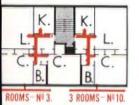
The illustration shows the method of combining individual apartments as studied into a complete building. In this case, three three-room apartments and a four-room apartment are used. The arrangements and room shapes are identical to those already studied. In addition, a public stair has been included. The complete building plan shows this unit as finally worked out.

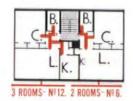
For convenience, in studying the plan after the individual units are brought together, the rooms are still studied by the use of detached blocks. This allows rooms to be shifted slightly or the direction of them changed in order that all the apartments may be fitted together more readily. Minor variations and adjustments in dimensions and sizes may be necessary to allow for closets, foyer space, and the interlocking of the apartments around the public stair and circulation.

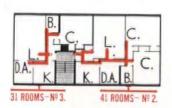
FORMULATION OF THE 5 BASIC BUILDING SHAPES

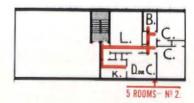
The following plans illustrate the combination of individual apartment arrangements into the five basic plan types. The numbers correspond with the numbers of the apartment arrangements on pages 50 and 51. When the individual apartments are combined into the buildings of various shapes, considerations arise which affect the quality of the living accommodations. It is not until a unit is formed that it is possible to study the number and location of closets, the size of entrance foyers, the compactness and convenience of public circulation, whether some rooms will be badly pocketed in corners or principal rooms will be located in undesirable relation to the building perimeter. While the simplest strip plan is undoubtedly the best unit, it is frequently necessary to combine more apartments about a single core for greater economy. This is particularly true in elevator units where both the first cost and cost of operation of the elevator demand that a number of rooms share its cost.

STRIP

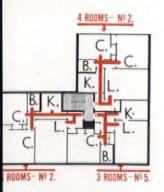


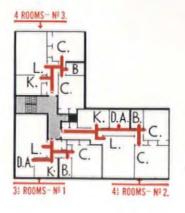


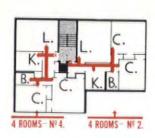




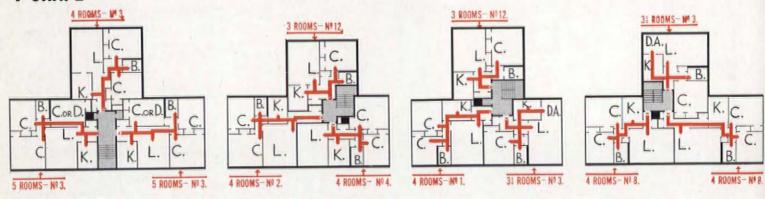
L-SHAPE



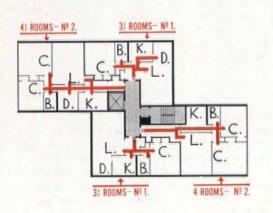


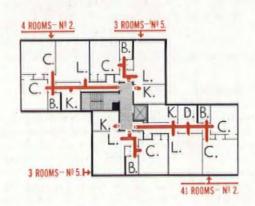


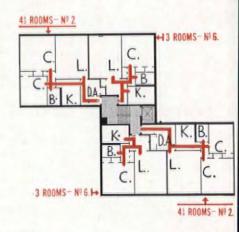
T-SHAPE

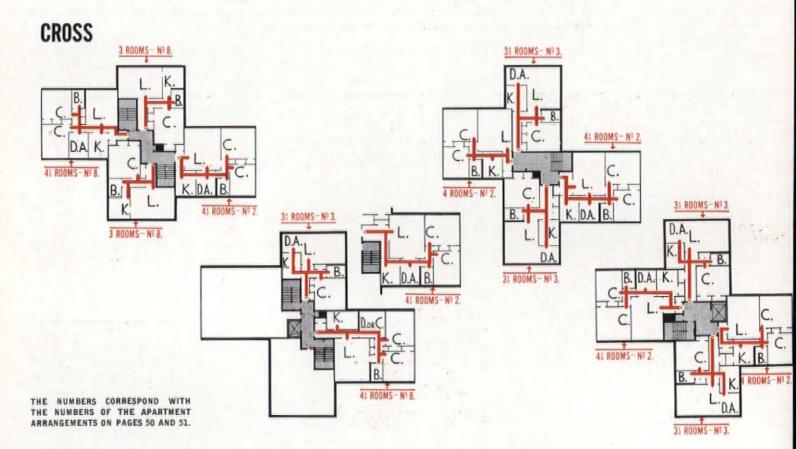


Z-SHAPE









4

COMPARATIVE PLAN ANALYSIS

Building plans have now been roughed out by the inside to outside method, based upon compromises between the most desirable accommodations for the selected tenant group and their ability to pay. At this point it is advisable to make a further check of the rough plans for cost and comparative desirability.

Construction cost should now be checked by a means more accurate than the cubic or square foot method. The method illustrated on the following pages presents cost data in a form from which reasonably accurate estimates are easily made, the changes due to compromises are rapidly calculated, and the costs of different materials and methods of construction readily compared.

The prices used in the following analysis are not conclusive nor applicable to any specific project the reader may be studying. Costs will vary widely in various localities and for various building specifications and types of maintenance. However, all the prices used have a relative accuracy in that they are proportionately correct for the brief general specifications illustrated.

ANALYSIS OF THE QUALITY OF THE ACCOMMODATIONS

Before comparing the costs of the plans, the first consideration is to gauge the quality of the apartments. This is the common denominator upon which any comparison of costs must be based. The desirability of the accommodations in relation to the prospective tenants' needs establishes the most important gauge of both the probable financial and social success of the project. Unless the apartments fulfill most of the requirements which have been carefully studied in the first three steps of the procedure, the project should not be considered suitable for the selected tenant group.

The chart on page 62 gives a visual means of comparing the quality of accommodations. As an aid to this, a method of rating is used in which various considerations and relationships are weighted in proportion to their relative importance for the project under consideration.

ANALYSIS OF THE COSTS OF THE ACCOMMODATIONS

The costs of the accommodations in a given plan are the second basis upon which they must be checked and compared. Construction cost and cost of use for the plans as developed should not exceed the amounts estimated in the Financial Tests if the rental set is not to be exceeded.

The method presented here furnishes a ready means of estimating and analyzing both construction costs and costs of use of a plan or a series of comparable plans. It is developed upon the principle of grouping together items which have approximately the same quantities, since the costs of such items vary with changes in the quantities of the items.

The isometrics (pp. 56-57) illustrate the groupings into which costs of construction and use have been arranged. The drawing of the complete building illustrates the relation of these groupings in a typical building unit; the isometrics show the individual groups.

The elements of a building may, for purposes of estimating, be divided into what we will arbitrarily call Constants and Variables. Constants will consist of two kinds of elements: first, those which vary only with the number of apartments, such as kitchen and bath fixtures, certain equipment, and other small items; second, those which vary with the number of building units, such as stairs, incinerator, lobby, etc. With a given plan the quantities of Constants do not change when the area or cube is altered.

Variables will be grouped under five headings, each of which varies independently. These are: floor area, walls, partitions, interior doors, and plumbing stacks.

FIRST COSTS

Construction costs are built up under the above headings as illustrated on pp. 58-61. Once these costs have been compiled under the groupings given, they may be used for all buildings in a project or any one of similar specification. Various methods of construction and kinds of equipment can be analyzed under each grouping so that the most economical may be determined. Costs compiled on similar forms and kept up to date furnish a ready means of rapid estimating. Once made up they will be applicable to all similar projects. The accuracy of this estimate will depend on the care with which these basic cost data are compiled.

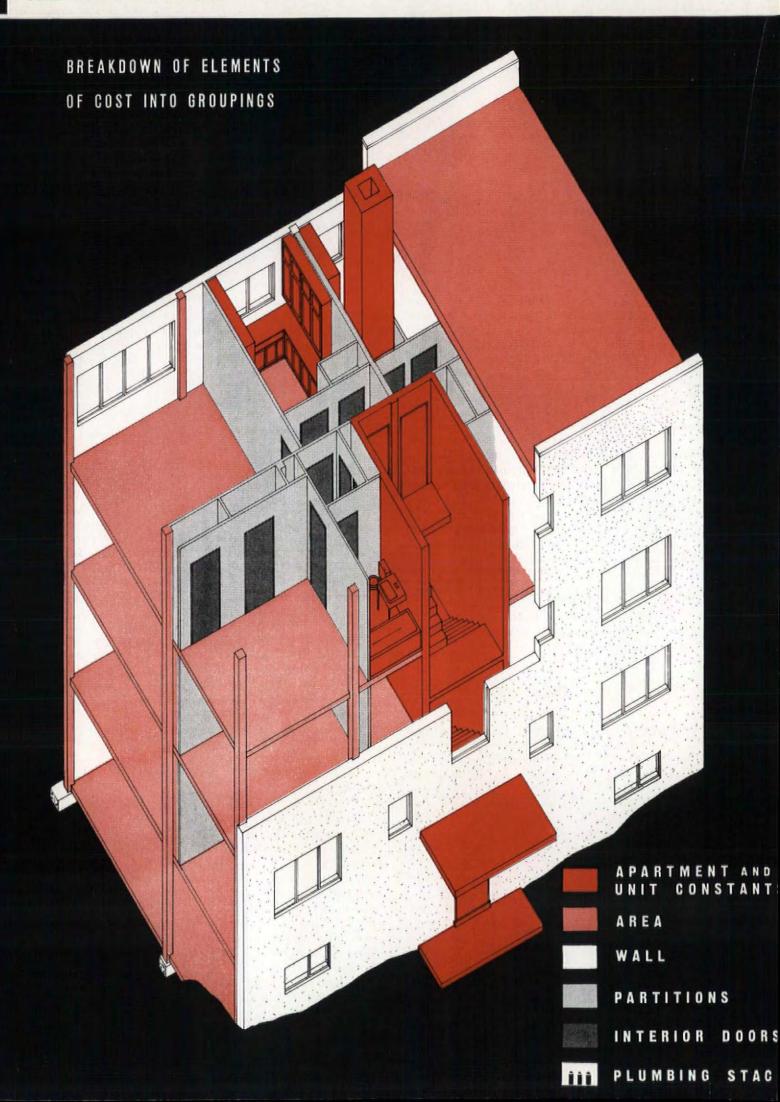
The forms for estimating unit costs for the Constants and Variables are self-explanatory. The in-place unit cost for each item of the building is estimated and converted to the desired unit of measure, so that the total of all costs under one grouping may be multiplied by the quantity for that grouping on a specific plan. For convenience, the typical floor plan is the basis for the estimate at this time as changes due to the first floor plan variations are negligible.

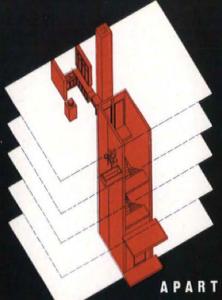
COSTS OF USE

Costs of use are estimated under the same groupings as construction costs. Most costs of operation depend directly on the plan and specification. Redecorating costs are related to the area to be painted periodically; heating costs depend on the volume of space and exposed surfaces of the building; reserves for depreciation result from the equipment supplied and its replacement costs; costs of repairs (for which it is difficult to obtain reliable figures) are dependent far more on the extent of reparable items than on the number of rooms—the factor so often used as a measure. Thus, repairs on the roof are more in relation to the area of the roof than to the number of rooms in the building.

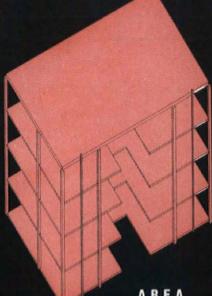
Other items in the cost of use have little relation to the plan but depend on the size of the project. These are cost of management, insurance, taxes on payrolls for social security, and miscellaneous items. These costs are grouped in one estimate as a Project Constant and added to the foregoing costs of use dependent on the plan. The total estimate for these costs will remain constant with slight variations in number of rooms or other slight changes in the size of the project.

In order to estimate the costs per room, the quantities on a given floor plan are divided by the number of rooms on that plan before multiplying by the unit costs.

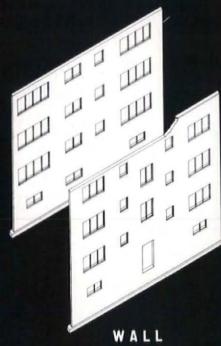


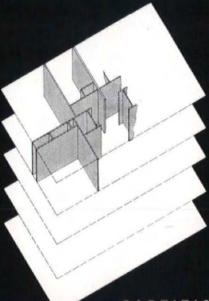


APARTMENT AND UNIT CONSTANTS

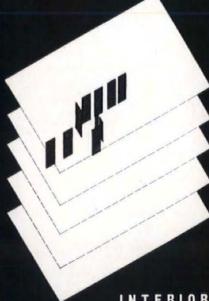


AREA

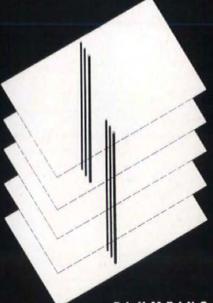




PARTITIONS



INTERIOR DOORS



PLUMBING STACKS

| C | DNSTANTS | | R SUB | COST OF USE ITEMS OF EXPENSE Per Annual Per Item Factor Year | |
|------------------------------------|--|--|--|--|---|
| KITCHEN | (1) (4) (5) (1) (4) (1) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4 | 1. Range (Gas) 30.00 30 2. Refrigerator (Electr.) 80.00 80 | \$ \$.00 .00 .00 .00 .75 | \$ \$ \$ 1. Range { Rep 0.25 1 0.25 | 5 |
| BATH ROOM | | 2. Lavatory 40.00 40 3. Water Closet 40.00 40 4. Medicine Cabinet 5.00 5 5. Accessories 4.00 4 6. Tile Work 0.90/s.f, 50 | | 1. Tub 2. Lavatory 3. Water Closet 4. Medicine Cab. 5. Accessories 6. Tile Work (Rep.) | |
| MISCELLANEOUS | | 3. Outlets (14) Per. 2.25 31 4. Elec. Fixts. (5) Apt. 2.00 10 5. Mailboxes 2.00 2 6. Closet, Hardware, Shelf, etc. (3\(\frac{1}{2}\) clos. per apt.) 2.50 8 7. Meters 8.00 8 | 00 50 | 1 to 7 Too small to estimate, include in general labor 8. Water Rent 1 yr. 8.00 9. Exterminating . 1 yr. 0.90 | 6.3 |
| A | PARTMENT CONSTANTS | TOTAL FIRST COST | 83.25 | COST OF MISC, ITEMS | 8.90 |
| | | The state of the s | 466.00 | I IDIAL GOST OF OSE | 26.76 |
| BASEMENT | (1) (3) (6) (4) (4) (4) (4) (4) (4) (4) (4) (4) (4 | PER BLD ITEM UNI | G. T. 000 000 000 000 000 000 | Per Annual Per Item Factor Per Year | Sub Total |
| BASEMENT | | PER BLD ITEM UNI | G. T. 000 000 000 000 000 000 000 000 000 | Per Annual Per Item Factor Year | |
| ENT | | PER BLD ITEM UNI | G. T | Per Annual Per Item Factor Year 1. Stair (Cleaning Incl. in Main Stair) 2. Partitions (paint) 0.01/s.f. 5 yrs. 2.88 3. Incl. in General Labor 4. Doors (Included in 2.) 5. Laundry Rep 0.20 1yr. 1.00 Tubs Depr. 28.00 30 yrs. 4.66 COST PER B'M'T × % 8.54 B'M'T AREA (50%) 4.27 COST PER B'M'T PER TYPICAL FL. (÷ 3) 1. Stair (Cleaning) 16.25/fl. 1yr. 65.00 2. Partitions, redec. 0.03/s.f. 4yrs.16.20 3. Electric Work (Repairs Incl. in Gen. Labor) 4. Entrance Lobby Cleaning, Redec. Under 1 & 2 Lighting (2 Lights per Fl.) 0.045/kwh. 1 yr. 41.50 COST PER STAIR & LOBBY COST PER STAIR AND LOBBY PER TYPICAL FL. (÷ 3) | Sub Total |
| INGINERATOR STAIRS, LOBBY BASEMENT | | PER BLD ITEM UNI | G. T. 000 000 000 000 000 000 000 000 000 | Per Annual Per Item Factor Year 1. Stair (Cleaning Incl. in Main Stair) 2. Partitions (paint) 0.01/s.f. 5 yrs. 2.88 3. Incl. in General Labor 4. Doors (Included in 2.) 5. Laundry Rep 0.20 1yr. 1.00 Tubs Depr. 28.00 30 yrs. 4.66 COST PER B'M'T * % 8.54 B'M'T AREA (50%) 1. Stair (Cleaning) 16.25/fl. 1yr. 65.00 2. Partitions, redec, 0.03/s.f. 4yrs.16.20 3. Electric Work (Repairs Incl. in Gen, Labor) 4. Entrance Lobby Cleaning, Redec, Under 1 & 2 Lighting (2 Lights per Fl.) 0.045/kwh. 1 yr. 41.50 COST PER STAIR & LOBBY COST PER STAIR AND LOBBY PER TYPICAL FL. (÷ 3) | Sub Total |

| AREA (VARIAI | BLE) FIRST (| PER PER SUB- ITEM SQ.FT, TOTAL EXPENSE | COST OF USE F PER ANNUAL PER SUB- ITEM FACTOR SQ. FT. TOTAL |
|----------------|---|--|--|
| 800F | 1. Paint (2 Coats) 2. Plaster (2 Coats) 3. Slab (2 Way Cinder Arci (6" Stone Concrete 4. Fill (Screened Cinder). 5. Insulation (Cork) 6. Tar & Felt (3 Ply 10 Yr.) 7. Leader (1/500 s.f.) | . 0.075 0.075 2 to 7 Rep h) 0.48 0.48 6. Depreci e) . 0.10 0.10 | Per s.f. 0.03 3 Yrs. 0.01 pairs. 0.006 1 Yr. 0.006 pairs. 0.09 35 Yrs. 0.0025 |
| 1 2 3 | COST OF ROOF PER SQ. COST OF ROOF PER SQ. OF FLOOR AREA (| FT. 0.875 COST PE COST OF 3) 0.292 OF F | R SQ. FT. OF ROOF 0.0185 ROOF PER SQ. FT. LOOR AREA (÷ 3) 0.006 |
| TYPICAL FLOOR | 1. Paint (2 Coats) 2. Plaster (2 Coats) 3. Slab (2 Way Cinder Arc (6" Stone Concret 4. Mastic 5. Oak Blocks (%") | (e) Labor | pairs ded in General |
| 1 TYPII | 2 COST OF TYPICAL FLO | 0.805 0.805 PER | F TYPICAL FLOOR SQ. FT. 0.012 0.01 |
| BASEMENT | 1. Excavation (6' Depth) 2. Floor (Cinder Fill, Cindo Concrete, Cement Finish 4") | 1.30/c.y. 0.29 2. Floor (Included in the Control of | (Cleaning) ded in rai Labor |
| B | COST OF BASEMENT PER SQ. FT. COST OF B'M'T % of B'M'T (50%) COST OF B'M'T PER SQ. OF TYP, FL. (÷ 3) | 0.46 0.23 .FT. 0.077 | |
| | Two Pipe Steam | 1.25 s.f. rad. Operation (Incl. Fuel, Depreciat | n 0.30 1 Yr. 0.024 s.f. rad. uding Labor, & Repairs) tion 0.10/s.f. 30 Yrs. 0.0033 |
| HEAT | HEATING FORMULA: (G + 0.25W + 0.03C) A G = Window Area [20% w = Sq. Ft. Exterior Wa C = Cu. Ft. of Volume t = Difference betw. insit low outside tempera A = Factor for 2 Pipe Ste | of Wall Area] Ill Area de and mean Itures (70°) | |
| | COST OF HEAT PER SQ OF FLOOR AREA | Q. FT. 0.10 0.10 COST OF | F HEAT PER SQ. FT. FLOOR AREA 0.0273 0.027 |
| AREA PER SQ. F | | 2.2.2.1 | OF USE 0.045 |

| WALL (VARIABLE) | BUILDING PER PER S SPECIFICATIONS ITEM LIN. FT. T | SUB OTAL | COST OF USE ITEMS OF Per Annual Per Sul EXPENSE Item Factor Lin. Ft. Tot |
|--|---|-------------|--|
| PARAPET | 1. Common Brick (8" Curtain Wall) 2½' Height 55.00/M. 1.15 2. Stucco (2½') 0.21/s.f. 0.525 3. Coping (Cast Stone) 0.45/l.f. 0.45 4. Flashing (Copper). 0.80/l.f. 0.80 | | 1 to 4 General S.f. Repairs 0.001 1 yr. 0.0025 |
| | COST OF PARAPET PER LIN. FT 2.925 COST OF PARAPET PER LIN. FT. OF WALL PER FLOOR (÷ 3) | | COST OF PARAPET PER LINEAL FT. 0.0025 COST OF PARAPET PER LIN. FT. OF WALL PER FLOOR (÷ 3) 0.000 |
| TYPICAL WALL © © © © © © © © © © © © | 1. Paint | | 1. Paint 0.03 3 yrs. 0.085 2. to 6. General Repairs 0.001 1 yr. 0.009 |
| III O | WALL SECTION × 80% (7.135) 5.70 WINDOW AREA × 20% (7.227) 1.44 COST OF TYPICAL WALL SECTION PER LIN. FT | 7.14 | COST OF TYPICAL WALL PER LIN. FT. 0.09 |
| I'T & NON-B'SM'T | A. BASEMENT cu. yd. 1. Footing (Concrete) | | A. BASEMENT 1. Paint 0.01 3 yrs. 0.028 Cleaning (Included in General Labor) Cost per B'M'T B. NON-BASEMENT (Included in General Re- pairs) |
| B.SM.T | % OF B'M'T (50%) COST OF NON-B'SM'T | 7 | COST PER B'M'T × % OF B'M'T (50%) COST OF FOUNDATION WALL PER LIN. FT. OF WALL PER FLOOR (÷ 3) 0.009: |
| HEAT | Two Pipe Steam (Including Hot Water) 1.25/ S.f. rad. Concealed Radiation Oil Fired Boilers 1.05 X FI. Ht. = 8 Sq.Ft.Radiation .131 X 9' = 1.179 S.f | | Operation 0.30/ 1 yr. 0.353 s.f. rad. (Including Labor, Fuel & Repairs) Depreciation . 1.473 30 yrs049 |
| | COST OF HEAT PER LIN. FT. OF WALL PER FLOOR 1.473 | 1.473 | COST OF HEAT PER LIN. FT. OF WALL PER FLOOR 0.402 0.402 |
| WALL PER LIN. FOOT | FIRST COST | .308 (| OOST OF USE |

| CELLANEOUS (VARIABLES | FIRST COST BUILDING PER PER SPECIFICATION STEM LIN.FT. | COST OF USE ITEMS OF Per Annual Per EXPENSE Item Factor Lin. Ft. |
|-----------------------|--|--|
| | A. 2" Solid (8½' Height) 1. & 2. Plaster, Wire Lath, | A. Paint (8½') 0.03 3 yrs. 0.085 B. Paint (8½') 0.03 3 yrs. 0.085 |
| 2 | 1. Doors (Wood) } 14.00/ea. 2. Hardware \$ | 1. Doors, Paint Included in Partitions Repairs Included in General Labor |
| | Cost of Roughing Only 1. Bath | Depreciation 30 yrs. 1. " 87.00 " 1.83 3. " 110.00 " 3.66 4. " 63.00 " 2.10 5. " 94.00 " 3.13 Repairs Included in General Labor. |
| | ADDITIONAL COSTS—15% (For Overnead, Carrying Charges, etc., see Step 2.) | PER PROJECT TOTAL PROJECT CONSTANT MANAGEMENT |
| | | BULLDING PER ITEM PER IN.FT. A. 2" Solid (8½' Height) 2 1. 6. 2. Plaster, Wire 1. 14.00/ea. 1. Doors (Wood) 2 2. Hardware 2 3. 6. 4. 1½" Channels, Felt. Description only 1. 14.00/ea. PER IN.FT. S.f. Height) 2 1. 6. 2. Plaster, Wire 1. 14.00/ea. 1. Doors (Wood) 3 2. Hardware 3 3. 6. 4. 1½" Channels, Felt. PER IN.FT. PER IN.FT. PER IN.FT. 1. Doors (Wood) 3 2. Hardware 3 3. 6. 4. 1½" Channels, Felt. PER IN.FT. PER IN.FT. PER IN.FT. 1. Doors (Wood) 3 3. 6. 4. 1½" Channels, Felt. PER IN.FT. PER |

The application of the comparative Plan Analysis to the three plans illustrated is shown here.

Since the importance of desirable elements of room relationships varies, their relative importance can be established by weighting each element on a scale from 1 to 10. For example, privacy of access to all rooms may not be considered important in one project and so given a 3 weight, while in another, where tenants use the living rooms for sleeping, it will be given a weighting of 8 or 9. In forming building units, those room relationships which possess more of the important elements for a given project will be preferred.

When individual apartments are combined into buildings, their desirability may change. For example, some building shapes result in pocketed rooms or lack of cross ventilation. The importance of such elements may be weighted as described above.

The proportion of apartments in a unit that contain the element under consideration is noted as a portion of a scale ranging from 0 to 10. The product of this figure and the weight for that element give the rating for

this plan. The sum of these products gives the total rating for the plan and serves, when reduced to a percentage of the highest possible rating (940 in this case), as a comparative index figure upon which the quality of the plans may be judged. The system permits accurate judging of the comparative costs of the different groupings. The cost of a deep plan with less exterior wall for a given area may be compared with a shallow plan that has more exterior wall. The economy of putting several apartments about one stair may be compared with the cost of greater floor area and exterior wall.

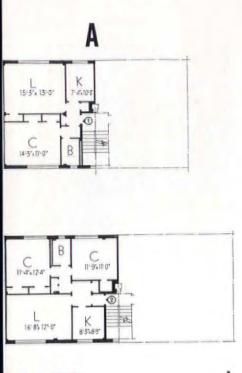
In comparisons based on construction costs, costs of use must also be taken into account.

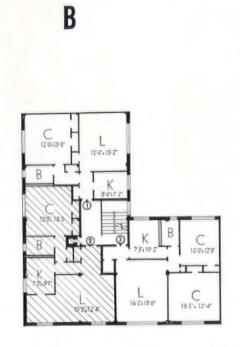
In order to reduce both of these costs to a common denominator, they have been converted into monthly rental by multiplying construction costs by the annual financial factor (Step 2 Article 1), here assumed to be 8.3 per cent, and this amount divided by 12. Annual cost of use is also divided by 12 and the sum of these two monthly amounts is then comparable to similar amounts for other plans.

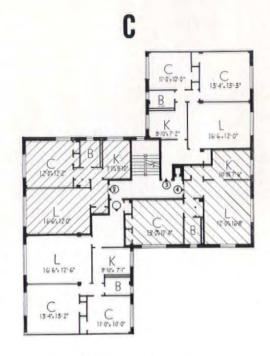
139 sq. ft.

| QUALITY CRITERIA | | | UNIT | A Apt. 2 | Apt. 1 | UNIT | _ | UNIT C | | | | |
|------------------|---|-----------|---------------------|-----------|-----------|----------|-------|---------------|--------------|-------|-------|-------|
| | ESSENTIAL OF PLANNII PROGRAM (See page 49) | NG | | V | 1 | V | v | V | V | V | V | V |
| MS | Malan Barra | Area | Dimen. 12'-4" x | Areas | Areas | Areas | Areas | Areas | Areas | Areas | Areas | Areas |
| 0 | Living Rooms | 190 | 15'-5" 10 x 11 & | 199.5 | 200 | 187 | 190 | 210 | 206 | 198 | 198 | 200 |
| RO | Chambers | 110 & 150 | | 158 | 140 & 129 | 156 | 156 | 120 & 162 | 177 & 110 | 146 | 177 8 | 148 |
| | Kitchens | 65 | 7'-2" x 9'-2" | 74 | 72 | 64.5 | 69.5 | 73.5 | 70 | 70 | 71 | 75 |
| | Baths Dining Areas | 32.5 | 4'-8" x 7' | Identical | Identical | Identica | | cal Identical | Iden- | Iden- | Iden- | Iden- |
| _ | Dining Areas | 50 | 7' x 7'-2" | | | | 56 | | tical | tical | tical | tical |
| • | Average of All Net Room | 125 e | | | | | | | | | | |

| | We | ight | Proportion of Apts. | Rating | Proportion of Apts. | Rating | Proportion of Apts. | Ratin |
|---|---|------|---------------------|--------|---------------------|--------|---------------------|-------|
| - | ESSENTIAL (MEANS O.K.) | | | v | | V | | V |
| L | | 10 | 10 | 100 | 10 | 100 | 10 | 100 |
| | 2. Direct Access to Kitchen from Service Entrance. | 6 | 10 | 60 | 10 | 60 | 10 | 66 |
| 4 | 3. Bath and Bedr. Hall Closed Off from Other Living Areas. | 3 | 10 | 30 | 10 | 30 | 10 | 30 |
| - | 4. Bath Access from Chamber Not Across Main Circulation. | 9 | 10 | 90 | 10 | 90 | 10 | 90 |
| 0 | Major Rooms. | 7 | 10 | 70 | 6 | 42 | 5 | 35 |
| | 6. Circulation Direct and Compact. | 6 | 10 | 60 | 10 | 60 | 10 | 60 |
| A | Adequate Closets (1 per Chamber, 1 Coat and 1 Linen Closet). | 10 | 10 | 100 | 10 | 100 | 10 | 100 |
| L | iving Rooms Not In Inside Corner | 6 | 10 | 60 | 10 | 60 | 10 | 60 |
| L | Living Rooms Not Pocketed (Not More Than 1/3 of Wall Inside) | 8 | 10 | 80 | 10 | 80 | 10 | 80 |
| C | Other Rooms Not Pocketed. | 4 | 10 | 40 | 10 | 40 | 10 | 40 |
| L | iving Rooms' Orientation Similar. | 6 | 5 | 30 | 6 | 36 | 5 | 30 |
| C | Corner Views to Other Apartments. | 3 | 10 | 30 | 3 | 9 | 0 | 0 |
| C | Cross Ventilation. | 7 | 10 | 70 | 6 | 42 | 5 | 35 |
| 0 | Daylighted Stairs. | 4 | 10 | 40 | 10 | 40 | 10 | 40 |
| A | pt. Entrance Door Over 20 Ft. From Stair. | 5 | 10 | 50 | 10 | 50 | 10 | 50 |
| T | OTAL WEIGHTED RATINGS | 94 | The second second | 910 | | 839 | | 810 |
| % | 6 OF 100% BUILDING (940 = 100% QUALITY) | | | 97% | | 89% | | 86 |







| COSTS | | | | UNIT Å AMOUNTS PER ROOM | | | | | | UNIT B AMOUNTS PER ROOM | | | | | UNIT U | | | | | | |
|------------|----------------------|-----------------|--------------------------------|---------------------------------|--------------------------------|------------|-------------------------------------|-------------|-------------|----------------------------------|--------------------------------|------------|-------------------------------------|-------------|---|--------------------------------|------------|-------------------------------------|-------------|--------|-------------------|
| | | Unit of Measure | First Cost Per Unit Measure | Cost of Use Per Unit Measure | Units of Meas- ure Per Room | First Cost | Rental Effect of First Cost PRPM | Cost of Use | of C RPM | First Cost & Cost of Use PRPM | Units of Meas- ure Per Room | First Cost | Rental Effect of First Cost PRPM | Cost of Use | Cost of Use PRPM Rental Effect of First Cost & Cost of Use PRPM | Units of Meas- ure Per Room | First Cost | Rental Effect of First Cost PRPM | Cost of Use | of Use | First Cost & Cost |
| 0 | | | \$ | \$ | | \$ | \$ | \$ | \$ | \$ | | \$ | \$ | \$ | \$ \$ | | \$ | \$ | \$ | | \$ |
| | APARTMENT | 1 Apt. | 466.00 | 26.76 | 2/7 | 133,32 | 0.92 | 7.63 | 0.64 | 1.56 | 3/10.5 | 133.32 | 0.92 | 7.63 | 0.64 1.56 | 4/14 | 133.32 | 0.92 | 7.63 | 0.64 | 56 |
| 5 | UNIT | 1 Unit | 679.79 | 50.26 | 1/7 | 97.12 | 0.68 | 7.18 | 0.59 | 1.27 | 1/10.5 | 64.60 | 0.45 | 4.78 | 0.39 0.84 | 1/14 | 48.50 | 0.32 | 3.60 | 0.30 |).62 |
| OTHE LANGE | TOTAL OF CO | NSTANTS | | | | 230.44 | 1.60 | 14.81 | 1.23 | 2.83 | | 197.92 | 1.37 | 12.41 | 1.03 2.40 | | 181.82 | 1.24 | 11.23 | 0.94 | 2.18 |
| - | AREA | 1 Sq. Ft. | 1.274 | 0.0455 | 209 | 266.00 | 1.84 | 9.50 | 0.79 | 2.63 | 218 | 278.00 | 1.91 | 9.92 | 0.83 2.74 | 212 | 270.00 | 1.87 | 9.65 | 0.80 | 2.67 |
| | WALL | 1 Lin. Ft. | . 11.308 | 0.5061 | 14.9 | 168.40 | 1.16 | 7.55 | 0.64 | 1.80 | 14.8 | 167.20 | 1.15 | 7.50 | 0.63 1.78 | 15 | 169.70 | 1.17 | 7.60 | 0.63 | 08.1 |
| | PARTITIONS | | | | | | | | | | | | | | | | | | | | |
| | 2 INCH PARTITIONS | 1 Lin. Ft | . 2.46 | 0.085 | 27. | 66.50 | 0.46 | 2.30 | 0.19 | 0.65 | 24. | 59.00 | 0.41 | 2.04 | 0.17 0.58 | 23 | 56.60 | 0.39 | 1.95 | 0.16 | 0.55 |
| , | 4 INCH | 1 Lin. Ft | 4.17 | 0.085 | 7.3 | 30.40 | 0.21 | 0.62 | 0.05 | 0.26 | 7.3 | 30.40 | 0.21 | 0.62 | 0.05 0.26 | 8.8 | 36.70 | 0.25 | 0.75 | 0.06 | 0.31 |
| į | DOORS | 1 Door | 14.00 | | 2.43 | 34.10 | 0.23 | | | 0.23 | 2.48 | 34.70 | 0.24 | | 0.24 | 2.43 | 34.10 | 0.23 | | | 0.23 |
| 1 | KITCHEN | 1 Stack | 55.00 | 1.83 | 2/7 | 15.70 | 0.11 | 0.52 | 0.04 | 0.15 | 1/10.5 | 5.40 | 0.04 | 0.17 | 0.01 0.05 | 1/14 | 3.93 | 0.03 | 0.13 | 0.01 | 0.04 |
| | BATH | 1 " | 87.00 | 2.90 | 2/7 | 24.80 | 0.17 | 0.83 | 0.07 | 0.24 | 1/10.5 | 8.29 | 0.06 | 0.28 | 0.02 0.08 | 1/14 | 6.21 | 0.05 | 0.21 | 0.02 | 0.07 |
| 1 | Z BATH-BATH | 11 " | 110.00 | 3.66 | | | | | | | | | | | | | | | | | |
| | KITCHEN- | N1 " | 63.00 | 2.10 | | | | | | | | | | | | | | | | | |
| | KITCHEN- | 1 " | 94.00 | 3.13 | | | | | | | 2/10.5 | 17.90 | 0.12 | 0.59 | 0.05 0.17 | 3/14 | 20.20 | 0.14 | 0.67 | 0.06 | 0.20 |
| | TOTAL OF VA | RIABLES | | | | 605.90 | 4.18 | 21.32 | 1.78 | 5.96 | 1 | 600.89 | 4.14 | 21.12 | 1.76 5.90 | | 597.44 | 4.13 | 20.96 | 1.74 | 5.87 |
| | TOTAL OF CO | NSTANTS | AND V | ARIABLES | | 836.34 | 5.78 | 36.13 | 3 3.01 | 8.79 | | 798.81 | 5.51 | 33.53 | 2.79 8.30 | | 779.26 | 5.37 | 32.19 | 2.68 | 8.05 |
| | FOR COS | ST COST | E | PRPA) | | 962.00 | 6.65 | | 3.85 | 10.50 | | 917.00 | 6.34 | 43.63 | 3.63 9.97 | | 896.00 | 6.17 | 42.29 | 3.52 | 9.69 |

SUMMARY

The three plans analyzed for quality and cost have comparable room sizes and shapes that presumably conform to a Planning Program. Their quality has been rated and the relative grade of each plan shows their comparative desirability. The strip plan offers decidedly better accommodations according to this rating than either the L or the Z. When the amounts estimated for first cost and cost of use are reduced to their rental effects, there is a variation between the rental that would have to be charged for a room in the strip unit and that in the Z of 81 cents per room per month. It will be noted that both the first cost and cost of use are lowered as more apartments are combined about a public circulation space.

No general conclusion should be drawn from this, however, since frequently the increase in floor area, exterior wall, and complexity of structure as more apartments are combined more than offsets the economies in the unit constants—stairs, incinerators, etc. The costs used in this study should not be considered as data as they will vary widely in different localities and for different types of construction.

The quality and cost analyses as presented help the architect to make an intelligent choice between various types of plans. The most economical plan in rental should never be arbitrarily chosen without careful consideration of the quality of the accommodations provided. It should always be borne in mind that buildings are long term investments and that good accommodations are as important a financial consideration as the rent that must be charged during the early years of operation. In this particular example, it will be necessary to balance the difference in monthly rent (of 81 cents) between the Z and the Strip with the variation in quality of accommodations between the two. This decision is a matter for careful judgment.

This system may be applied to the solution of many problems, for example, the familiar controversy over the number of rooms it is necessary to combine around one stair. The same technique will give the answer to the question of how many rooms should be placed about an elevator for the utmost economy, and this "economy" means not only the cost of the elevator but the comparative attractiveness of the accommodations.

This method permits the architect to be constantly aware of the cause of cost variations and to direct his design accordingly. He may select from many units the ones which most nearly fulfill the conditions he has established. SINCE HIS ENTIRE STUDY IS BASED ON THE SPACE THAT A GIVEN RENTAL WILL SUPPORT, IT IS ESSENTIAL THAT THE ARCHITECT KNOW THE RENTAL EFFECT OF EACH ELEMENT IN HIS DESIGN IN ORDER THAT COMPROMISES TO REACH SPECIFIC RENTALS MAY BE INTELLIGENTLY MADE.

The next and final article will deal with a similar type of study for site planning. The best building types derived by the above method will be combined into a complete project plan. These will not necessarily adapt themselves readily to the exigencies of a specific site and so the best units in themselves may not be the best for the plot plan. The "inside to outside" method of planning, however, starts with the most important factor in housing—individual apartments—and the entire success of a plan is built up from this nucleus.

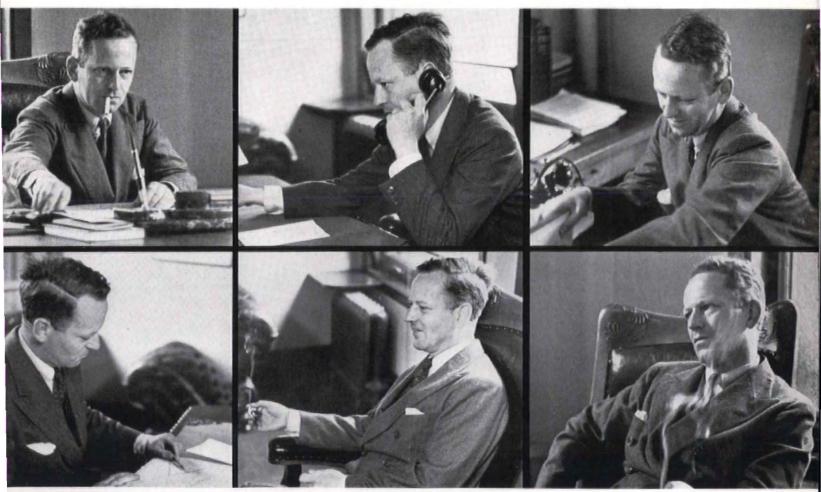
In addition, after the last compromise with the planning program has been made due to special site conditions, a total project cost estimate will be made, a complete financial set-up and an example of the application of the method to a specific project will be given. This will illustrate the degree of accuracy possible with this type of analysis and estimate.

BUILDING MONEY

A monthly section devoted to reporting the news and activities of building finance, real estate, management and construction

CONTENTS

| The Freight Yard that Became Chicago's Biggest Paying Subdivision . | 66 |
|---|----|
| A Steel Unit Patented by the Carnegie Institute Gets Commercial Backing | 70 |
| Remodeling for Profit: Portfolio No. 4 | 71 |
| "One of the Greatest Tragedies in the History of Finance" | 75 |
| Hightstown, N. J. Displays a Government-built Cooperative | 76 |
| Boston Is Shown the Best in Utilities | 78 |
| Boulder Dam Houses in a Shrewd and Large Deal | 78 |
| Charts, Showing a Healthy Month | 80 |
| Deeds and Doers of the Month | 82 |



William Vandivert .

THE RICHEST SUBDIVISION

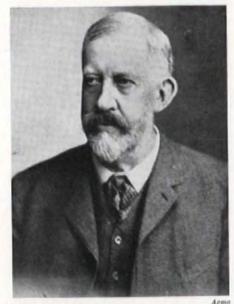
in the U. S. is Chicago's Clearing Industrial District, whose assets rose from rusty rails to \$30,000,000.

Flying into Chicago you circle briefly over mean, sparsely placed houses, then settle on the brown apron of the Municipal Airport. About nine miles northeast, past slums and small factories and the stockyards, lie the Loop and Lake Michigan. About 100 yards in the opposite direction—that is to say, southwest—run the city limits of Chicago. And just a legal foot outside these limits lies the periphery of the Clearing Industrial District, Inc., No. 1 subdivision of the decade.

The private post office substation of the Clearing Industrial District, Inc. is officially named Clearing, Ill. But it is locally better known simply as "The District." Physically it is a strip of sterile land about one mile by three miles, its long edge laid tightly by the city limits. Tucked neatly in the eastern end of this strip are 100 factories. The rest of the 2,800 acres are vacant. To discover wherein the District might justify its grandiloquent title of No. 1 subdivision you have only to examine its north and south flanks. To the north lie the aforementioned city limits; and to the south lie the world's busiest freight yards, Chicago's famed Belt. Cheek by jowl to both city limit and freight yard the District derives full benefit from a simple economy: rural taxes plus perfect freight haulage. Last year this combination netted the District the biggest business in its quarter century existence.

Origins. Although the District is a preeminent example of subdividing today, it began life as a new trick in railroading. That was back in the early 1890's, an age when men took naturally to the heroic, viewing the world in large perspective. To President A. B. Stickney of the Chicago Great Western railroad, for instance, it was even then perfectly obvious that Chicago was to grow into the terminus of the nation, that it would therefore need some sort of clearing yard to untangle its daily miles of freight. Without any more ado, President Stickney assembled four square miles of land hard by the spot where some thirteen trunk lines converged to enter Chicago, and proceeded to build a clearing yard of his own design. It consisted of a vast circle of rail with spurs shooting off both inside and outside the circumference. Where the original Mr. Stickney got his plan is not now known but it seems very possible that he himself sketched it on the back of some casual envelope. At any rate the tracks were not half laid before everybody had indicated their unwillingness to use Stickney's yards, and the venture was dubbed Stickney's Folly. At this juncture the panic of '93 appeared to engulf both Stickney and his folly, leaving the latter to rust red in the short swamp grass that hides it today.

But behind him Stickney had left one legacy of value: the four square miles of land, assembled piece by laborious piece, still remained in one legal packet. And presently that packet caught the speculative eye of another railroading man, Chairman H. H. Porter of the Chicago and Eastern Illinois. Porter too had the idea



Collector Stickney

of a freight clearing yard for Chicago and in the summer of 1899 he formed the Chicago Transfer & Clearing Co. Ogden Mills, Sr. (father of Hoover Secretary of the Treasury Mills), and Benson & Co., private English bankers, held 85 per cent of the stock together with President Porter. The old Chicago triumvirate of Armour, Swift & Field held the remaining 15 per cent for a number of years, finally sold out to the company. In 1901 the new company announced construction of a great freight yard on Stickney's old piece of land, invited any and all railroads to pay for the privilege of using it.

Hump. The new yards were constructed on the so-called "Hump" system, in which small engines push cars up an incline, "hump" them over the summit, let them roll down the corresponding slope under their own momentum, through switches, into the various classifications. The system was practical, the location ideally close to a number of trunk freight roads. But for more than a decade the Clearing Company was unable to persuade so much as one car on its tracks. However, in 1912 thirteen trunk lines running into Chicago terminals combined to form the Belt Railway Co. of Chicago and through the Belt to buy out the Clearing District yards and hump. The Belt Line then added two great classification yards of its own and thus formed what was and still is the greatest hump freight yard in the world, as well as the busiest. In its peak year of 1929 this yard handled for its 13 roads 8,800 cars a day for one solid month, today shunts through a tidy 4,500 each twenty-four hours

Land. The area originally owned by the Clearing District Co. had been about 4,000 acres. In its deal with the Belt it sold out about 1,200 acres—the land covered with its own freight yard, plus more for the two classification yards the Belt wanted to add. This left the District with about 2,800 acres of land on its hands to be disposed of, not as any adjunct to a railroading vision, but purely and simply as real estate. The presence of the Belt yards hard by and the fact that the District was still outside the city limits made the choice of prospects obvious: factories.

In point of fact the first factory had settled in the District in 1909, three years before the Belt deal. President Porter had sold a lot to Corn Products Refining Co., which proceeded to erect in the District a plant which is still the world's largest starch, syrup and dextrine plant. In return for this act of faith the District had drilled thirteen artesian wells, 2,000 ft. deep, a performance worthy of note because it constitutes the first "improvement" in the District, hence the first formal bow to the pursuit of realty.

In the second decade of the new century Founder Porter retired from District affairs to be succeeded in the Presidency by his son, H. H. Porter, Jr. Up to the latter's retirement in 1926 the District acquired a total of 46 factories. It had been a period of consolidation. Fifteen miles of paved roads were laid out within District limits. Its plentiful acres were marked out into fifteen subdivisions, to be opened one at a

time. And the whole District had, up to 1920, in a sense marked time on its destiny, waiting patiently for Chicago to grow out to its own boundaries and bring with it local labor for the District, local transportation, local water supply. In 1926 Henry Porter Isham, nephew of H. H. Porter, Jr., moved up from Treasurer to President, became the third generation of his family in the District's presidency.

Henry Porter Isham was born in Chicago in 1894, son of Founder Porter's daughter Katharine and a local surgeon. Fashionably educated at Hill School and Yale he began work in the District immediately after his return from the War, where he won a captaincy in the 331st Field Artillery. In 1919 he married, now has three sons. He belongs to Chicago's best and most conservative clubs, likes to shoot golf (in the 70's) at fashionable Onwentsia, sail very amateurishly on Lake Geneva. Since he became President in 1926 the District has enjoyed its most phenomenal growth. In 1927 alone 22 new industries came to the District. From 1929 through 1935 the District registered a net gain of sixteen new industries. And carloadings in and out of the District for the first quarter of this year are 33 per cent higher than they were last year. And last year registered an all-time high. All of which cannot but redound to the credit of President Isham. But it must also be chalked up to the patient and canny ground work laid in the 'teens and early twenties by Uncle H. H. Porter, Jr.

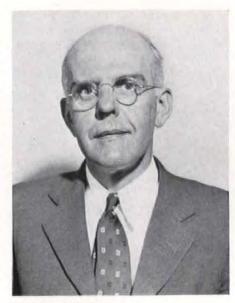
Freight created the District and freight keeps it alive today in the corporate person of the Belt Railway. This line is jointly owned by the following trunk lines: Atchison, Topeka & Santa Fe Railroad Co., Chesapeake & Ohio Railway Co., Chicago & Eastern Illinois Railway Co., Chicago & Erie Railroad Co., Chicago, Burlington & Quincy Railroad Co., Chicago, Indianapolis & Louisville Railway Co., Chicago, Rock Island & Pacific Railway Co., Grand Trunk Railway Co., Illinois Central Rail-

road Co., Minneapolis, St. Paul & Sault Ste. Marie Railway Co., Pere Marquette Railway Co., Pennsylvania Railroad Co., Wabash Railway Co. The Belt also connects directly with every other line passing through Chicago. And its tracks thread right into the District, run right up to the backvards of District plants. To industries located in the District this means first a constant supply of every kind of "empty" known to freight yards for loading. It means that District cars, five minutes from the world's greatest freight yard, are coupled into trains and on their way twelve to 48 hours before those coming out of Chicago proper. And incidentally, because the Belt handles no passengers, but only freight, it is perhaps the fastest classification system in operation.

Furthermore the Belt maintains a universal less-than-carload station within the District, so that if you have small consignments to ship you need not wait for your own plant to fill a car, have instead the cooperation of the whole District. Use of the Belt line assures District plants the Chicago freight rate, also provides direct interchange with all trunk lines. Finally, every major delivery service in Chicago maintains a station in the District to complete the circuit with the Loop—and the airport is next door.

Such superlative transportation facilities might be enough to induce new business to locate within the District, would hardly in themselves be argument enough for abandoning going plants. To cinch the first type and snare the second the District has itself. Of the 2,800 acres owned by the Clearing Corporation, there are now 380 fully developed and 100 partially developed. On this land now stand 111 industries in 100 plants. The District keeps ahead of demand, and today has plenty of vacant sites fully improved, with sewers, water and gas mains, street paving, electric power lines, and railroad lines all installed and ready for instant use.

Far and away the most significant facts



Architect Foltz

about the District, however, inhere in its invisible attributes, in its corporate and in its political status. As we have had occasion to remark before, the District lies outside of Chicago city limits. Technically it lies in Clearing Township in Cook County. For this reason it pays no city taxes, saves its factory owners about two-thirds the taxes they would pay inside the city limits. Theoretically, Clearing may some day vote itself into Chicago as it has every right to do in order to gain what it may in public utilities. That it will not find reason to do so for many years to come seems probable in view of the fact that a majority of Clearing's voting inhabitants also are employed at the District (which occupies only part of the political unit of Clearing). And furthermore there appears to be little to be gained by attaching Clearing to Chicago. Chicago trolleys run to within five yards of the District. Chicago water mains now run along the City line, are tapped and metered out to the District by the Clearing Corporation. Two blocks from



Harry Perry ("Dusty") Phelps-Vice President, General Manager

William Vandiver

the entrance to the District the city fathers of Chicago two years ago erected a \$500,000 school house. An informal arrangement with the Chicago Fire Department renders its services available to the District at all times. Individual plants buy their power from the Public Service Co. of Illinois. Sewers are privately owned. Phones, mail and telegraph service have all been extended to the District.

Ever since its inception at the turn of the century, the District has leased and sold all its property with the proviso that its use will be restricted to manufacturing and warehousing. This move has imposed on the District a physical homogeneity which is indicative of an even greater unanimity about certain other District affairs. All land within the District is privately owned, whether by the Clearing Corporation or by its customers; and the Clearing Corporation builds, dedicates and maintains all the streets within the District. Thus, for the very simple reason that every single inch within the District is privately owned, no picketing or other labor demonstrations are allowed. The better to maintain its legal rights in this respect the District maintains its own private police force, a group of hardies largely recruited from that toughest of training schools, the railway police. In view of these circumstances it is not surprising to learn that the Clearing Corporation can boast to prospects that there is never a strike in the District, that open shop labor is the rule. Labor itself is recruited from the tremendous reservoir of Chicago proper, nowadays easily accessible by trolley, and also from the suburbs which are creeping up around, but will never encroach on, the District. The supply is steady and good, both for skills and untrained. Today the District employs about 10,000 people, 25 per cent more than it did in 1929.

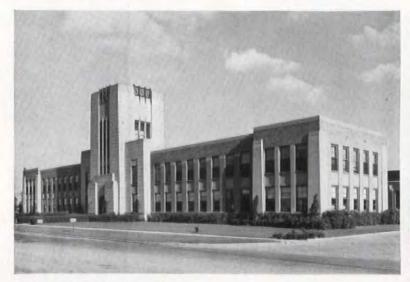
Pulling all these advantages together into a species of loose organization is a voluntary, non-profit organization known

as the Association, to which all of the District's firms belong. For the convenience of this Association the Clearing Corporation has erected a cross between a clubhouse and business office. In deference to its own ruling that nobody may live within the District, the Corporation has placed its clubhouse just outside the District land limit, provides beds for junior executives who work late, a restaurant, billiards, bowling. And there also is room for the office of H. (for Harry) Perry Phelps, vice president of the Clearing Corporation and the right and executive arm of President Isham. Vice President Phelps took his degree in Naval Architecture at Cornell 27 years ago, went straight into the great Newport News Ship Building & Dry Dock Co. where he stayed for eight years in charge of dock and building maintenance. From there he went with Bethlehem Ship Building Corp. for a two-year trick in their Bethlehem works, later at their Sparrows Point, Md., base. Then a friend of his, an executive in Inland Glass Co., asked him to Chicago to do some work and he met H. H. Porter, Jr., at that time still president of the District. The latter promptly snatched Phelps up, put him right in as vice president and general manager of the District, a position he has continued to hold for the last thirteen years. His job is a two-fold one. On the one hand he is responsible for making the District work: for seeing that each tenant gets the full benefit of all the advantages available; for maintaining and running all Clearing Corp. property; for keeping everybody happy. And on the other hand he must be constantly on the lookout for new clients, ready equally with President Isham to sell a prospect. A big, heavy set man, thick-armed and well balanced, Phelps has the combination of drive and polish his peculiar position requires, does a good, aggressive job.

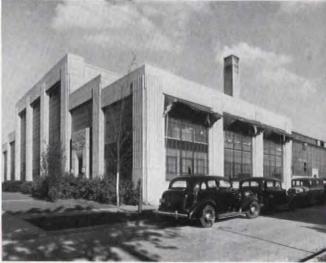
From the start prospective clients had the choice of either leasing or buying land outright from the Clearing Co. Further-

more, within certain loose restrictions, the manufacturer may build his own plant if he feels like it. But to date the Corporation itself has built about 75 per cent of all the plants, selling or leasing them later to the client. When the plants are sold they are usually financed by the Corporation (through the Corporation-backed Bank of Clearing) over an eight year period at 6 per cent. Usual arrangement is a 25 per cent down payment, plus 1.3142 per cent of the outstanding balance every month for eight years. When the plants are leased, it is usually for a twelve to fifteen year period. These leases are based on 6 per cent interest of the total value of plant plus property, plus 3 per cent to cover depreciation and improvements. Thus on a \$10,000 plot of land improved with a \$30,000 building the annual rent would run to \$2,400 plus \$900 for depreciation, taxes, and insurance. Currently 25 per cent of the plants are leased, the balance having been sold. Nowadays there is a greater tendency than ever to buy property outright, the manufacturers putting their money in their own property because they cannot discover any other satisfactory place to leave it. Sample values of District plants, estimated with land, without machinery: Continental Can Co. (largest Continental factory in the U.S.), twenty acres, \$3,500,-000; Johnson & Johnson, eight acres, \$750,000; Cracker Jack, five acres, \$1,000,-000; Buick, Cellufoam, both seven acres, both \$750,000. The average District plant covers about

The average District plant covers about 43,000 sq. ft., has an additional two and a quarter acres of land around it for expansion, and is one story high. Most District land makes it cheaper to build to this height. The one-story building gives about 15 per cent more usable space per square foot of ground by eliminating stairways, elevators, aisles, posts; and also reduces operating costs. To provide for expansion plants are usually built with one wall of glass. Additions are built beyond this glass



Johnson & Johnson Company



The Clearing Machinery Corporation

wall, and the wall knocked through when the addition is completed.

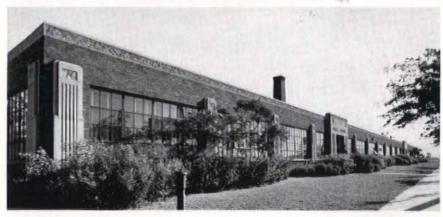
Although the railroad sidings which the Belt Line runs up to each factory are the life blood of the District, not one of them crosses a District road. Tracks are depressed in the ground (a practice not permitted elsewhere) and run into sidings right under the individual factory roofs. In this way spot, one-level loading is possible right from the working level of the factory. For instance, the Crooks Terminal Warehouses within the District can spot 60 cars at once under its roof.

Year before Vice President Phelps left his job as assistant general manager of the Bethlehem Ship Building Corp. to work for the District a tall, thin, graying architect named Frederick C. Foltz was appointed supervising architect and construction manager of the District. Since that day 95 per cent of the building done on Clearing property has been done under his supervision, while three-fourths of the designs are his own handiwork. You may see his sound and practical tastes on these two pages. Major architectural restrictions are face brick on the front of factories, 20 ft. set backs, and landscape gardening. Coal yards are walled in, truck loading platforms are usually inside the factory structures. On the theory that such neatness paid, the Pepsodent Co. last year spent \$6,000 of its own in landscaping, charged it up to advertising. Incidentally, the District seeds and fertilizes all its parkways every spring, plants poplars and elms along its highways.

Finances. The entire original tract of 4,000 acres of Clearing land was bought by Porter and his associates for some \$4,000,-000. Today the developed land still belonging to the Corporation-about 400 out of the 2,800 acres which the Corporation owns-is valued at about \$32,000,000. (Four hundred acres at \$20,000 plus \$24,-000,000 for buildings.) The original land has appreciated to the point where it sells



The Pepsodent Company



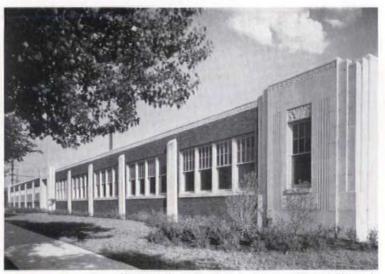
Brunt & Company



Clements Manufacturing Company



Cracker Jack Company



All photographs p. 68 and 69 by Chicago Architectural Photography

today for some 35 cents to 60 cents a sq. ft. Last year an acre fetched \$15,000 as against the original price of approximately \$500 an acre. As a result of this enormous accretion in its land values the Corporation has never had to pass a dividend, is today paying them at 80 per cent of the 1929 figure, From 1912 on, the Corporation added 5 cents per sq. ft. to the price of its land about every two years, stopped the practice only with the depression. Every year brings Metropolitan Chicago nearer, and with it come increased values for the District.

A consolidated balance sheet of the Clearing Corporation for this year might look like this:

ASSETS

| Buildings, etc. | \$5,000,000 |
|------------------------|-------------|
| Marketable securities. | 1,750,000 |
| Accounts receivable | 1,000,000 |
| LIABILITIES | |
| Preferred Stock | \$2,000,000 |
| Common | 3,000,000 |
| Surplus | 9 500 000 |

To this very much oversimplified statement, you must, of course, add many items for completeness. But for our purposes, the only one that holds any interest is a small one showing as an asset of \$61,000 an investment in the State Bank of Clearing. This is the District's one and only bank, and its major customer is the Clearing Corp. itself, which makes use of the bank's facilities to finance many of its land and plant deals.

The 1935 income account of the District is a secret known only to its officers. No secret is the fact that the District has never passed a dividend, that even in 1932 it paid out \$5.80 on its 20,000 shares of \$100 preferred. Today a conservative guess would be that it earns \$4 for its common, better than \$10 for its preferred. The gross income of the District is steady at about half a million dollars per annum. Meanwhile, as we have seen, the over-all value of the District has risen from an initial \$4,000,000 to a figure something over \$30,000,000.

These are good, impressive figures; and they form a good, sound record. But you miss their full significance until you have seen Henry Porter Isham's office. This office is located in the District offices in the Loop. It is furnished with a heavy and venerable oak desk, oak tables, and a chaise longue in the worst and most respectable Borax tradition-one end raised to form a back, the whole covered in black leather. On the walls hang pictures of innumerable Porters and, dominating them all, a large framed map of the District. Unmistakably this office belonged, before Isham, to his uncle, and before that to Isham's grandfather.

This stability, this continuity has an unfamiliar look. It is too weighty, it reaches too far back. It looks a great deal less like Realty than it does like Big Business. Which is a feather in the District's corporate cap; it has 2,400 acres still to go.

ROCKEFELLER BUILDS

again in Cleveland, introducing a new steel frame.

LAST month in Cleveland, Ohio, building began once again on the famed Forest Hills development sponsored in the late twenties by the Rockefeller interests. And as foundations for five houses neared completion, the workmen were getting their first experience with a new and highly unconventional construction system. Basis of the system is a steel unit developed at the Carnegie Institute and now the property of a single licensee, The Arcy Corporation.



George Nelson

President McGarry and Blocks

This company burgeoned prematurely in the press late last year with R. C. Cochran, formerly of American Sheet and Tin Plate, as president. Following a six-month retirement during which it underwent corporate reshuffling, it emerged with Bernard J. McGarry at its top and Mr. Cochran back at American Sheet.

Arcy's President Bernard J. McGarry is a bright, ingenious Irishman with an impressive amount of experience in architecture and design. Graduated in 1919 from Notre Dame he stayed on to take his degree in architecture, found himself soon after engaged in an early form of industrial design. After working in porcelain enamel steel, in lacquers, in enamels for a number of the largest firms, he turned to an intensive study of steel. Thus it was that in time he came across the Carnegie steel unit. With this unit he designed a module system of construction susceptible of mass production. To market both unit and idea the Arcy Corporation was formed in Delaware with a capitalization of \$2,600,000, an issue which President McGarry cryptically describes as "tightly held." To whom besides Mr. McGarry stock belongs is a state secret; but it is perhaps significant that Arcy's first job is for John D. Rockefeller, Jr.'s Forest Hills development, that the second is a house for Lawrence Rockefeller, that the offices are on the 35th floor of Mr. Rockefeller's International Building in the Center.

The Forest Hills houses will have eight and nine rooms, show a cubage cost between 35 and 40 cents, sell for a top price of \$15,000. They are significant only in that they are Arcy's first houses. President McGarry promises great reductions in price on the receipt of mass orders, aims to produce an under-\$5,000 house only if and when production justifies such a price. Because the Arcy system deals only with a frame, the exteriors of the Arcy house can show any design or material. This fact President McGarry takes great joy in explaining to his clients by means of a series of eight wood blocks, each block representing a standard room in his house. With his blocks he will build before your eyes one hundred varieties of the Arcy house, claims that his drafting room does no drawing, only switches plans to match room arrangements. Of future mass orders, of the extent of his backing, of the makers of his steel units President McGarry will say nothing at present, blandly asserting that his sphere ends with the four walls of the 35th floor of the Rockefeller's International Building.

CONSTRUCTION OUTLINE

FOUNDATION

Walls-brick, Cellar floor-concrete, Waterproofing-membrane.

STRUCTURE

Exterior walls-brick. Sub-floors-gypsum. Ceilings-lath and plaster.

ROOF

Covered with slate. Deck construction-Composition.

CHIMNEY

T. C. Flue lining SHEET METAL WORK

Copper

INSULATION

Outside walls-11/2 in. cork. Attic floor-2 in. cork.

WINDOWS

Sash-metal, Campbell Metal Window Corp. Glass-double strength, quality A-Libby-Owens-Ford Glass Co. Blinds-Venetian.

STAIRS Steel

FLOORS

Living rooms and bedrooms-wood sub-floor covered with linoleum or rubber. Halls, kitchen and bathrooms-linoleum. Porches-

tile or cement. WALL COVERINGS

Living room, bedrooms and halls-paper. Kitchen and bathrooms-linoleum.

WOODWORK

Trim-metal. Shelving and cabinets-metal. Doors, interior and exterior-wood or metal. Garage doors-metal.

ELECTRICAL INSTALLATION

Wiring system-steel tube. Switches-flush, tumbler type.

BATHROOM EQUIPMENT

Standard Sanitary Manufacturing Co. PLUMBING

Pipes-copper, streamline-Mueller Brass Co. HEATING AND AIR CONDITIONING Delco-Delco-Frigidaire Corp.

REMODELING FOR PROFIT: 14

A New Jersey Bank Teaches a Remodeling Lesson



SECOND FLOOR





Photos. G. B. Biggs



The Montclair (N. J.) Trust Co. bought this house outright and remodeled it to demonstrate remodeling profit possibilities for prospective buyers and borrowers. On Architect Arthur E. Ramhurst's advice, it removed the old porch and the second-floor bay window to secure a pleasing facade, completely rehabilitated the interior. On the third day of its exhibition, the house was sold. Original purchase price, \$9,000; cost of remodeling, \$8,000; sales price, \$18,000.



IVING ROOM



BEDROOM BEFORE



-AND AFTER

REMODELING FOR PROFIT: 15

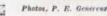
Rickety Flats in Lynn, Mass., Transformed into



COMMERCIAL STREET UNIT BEFORE

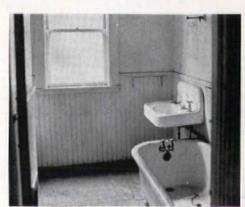


ROCKMERE TERRACE BEFORE





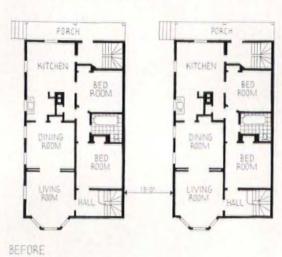
KITCHEN BEFORE

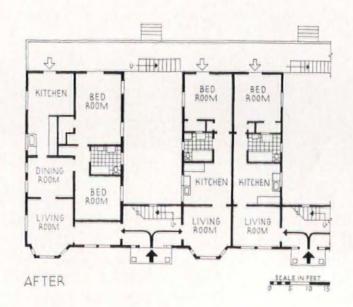


BATH BEFOR

In Lynn, Mass., the founder of Magrane's, the leading department store, built row upon row of flats to house shoe-workers. The job of modernizing these houses now keeps Builder Magrane's son occupied (Arch. Forum, Oct., 1934, p. 38). Latest and biggest of Charles Magrane's jobs consisted of joining together 13 houses in three units, with 60 apartments in all. A central heating plant was constructed to heat the entire development, a garden added to pull it together. Although the project is still a month from completion, 40 of the 60 suites have been rented. Assessed value before remodeling, \$84,500; rents before remodeling, \$3,042. Cost of remodeling, \$113,000; rents after remodeling, \$31,434.

TYPICAL FLOOR PLANS





REMODELING FOR PROFIT: 15

. . . . a Modern Garden Apartment Development



COMMERCIAL STREET UNIT AFTER



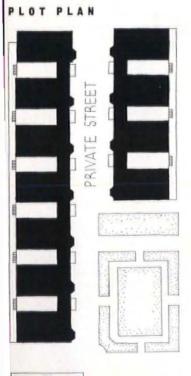
ROCKMERE TERRACE AFTER



KITCHEN AFTER



BAIN AFIEN





COMMERCIAL STREET



GARDEN

REMODELING FOR PROFIT: 16

Modern Apartments from an Old Chicago Mansion



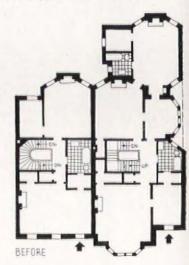


AFTER

BEFORE

With the Lakeward contraction of Chicago's Gold Coast, these 1880 mansions on that city's "near north side" had descended to rooming houses. Early this year, the management firm of Cook & Jackson formed a syndicate to buy them. Their maze of embellishment was a prime remodeling problem which Architect Frederick B. Schmidt has solved by using English beams to attract the eye to street level, smoothing the rest of the facade to innocuity. The compact new layouts rent at from \$35 to \$75 per month. Assessed value before remodeling, \$10,347; rents before remodeling, \$600. Cost of remodeling, \$28,000; rents after remodeling \$10,920.





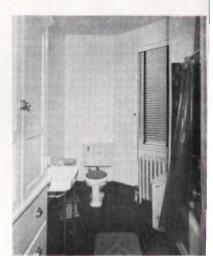




TYPICAL LIVING ROOM



BATHROOM BEFORE AND AFTER



THE BONDHOLDERS' LAMENT

has reached the Securities and Exchange Commission where it finds hearty agreement, potent backing.

In coldly analytical fashion month before last a professor in small Lake Forest College, Lake Forest, Ill., traced the history of real estate securities issued since 1919 in major U. S. cities,* disclosed these facts about that type of financing which today accounts for a fourth of the total U. S. internal debt:

¶An average of 30 per cent of the bonds issued had been retired. Seventeen per cent were called, 13 per cent had matured.

¶Of the average 70 per cent outstanding, 14 per cent were meeting contract terms, 56 per cent were not.

¶Total recoverable value of these bonds, in comparison with face value, averaged 56 per cent.

Vast differences were observed, however, as between various cities. In San Francisco, for instance, the record is good. But cities like Cleveland, whose bonds are worth but 14 cents on the dollar, pull the system's average to a disgraceful depth. The condition of this system today is such as to discourage further investment in the type of construction whose revival must be celebrated before the building industry can call itself entirely on its feet again.

Last month in the second of its five reports on U. S. corporate reorganization, the Securities and Exchange Commission issued a 297-page paper on "Committees for the Holders of Real Estate Bonds," in which it took the occasion to lash out bitterly at the whole set-up for realty finance. An able analysis, this report was mostly based on testimony taken by the Commission from seven companies in the fall of 1935, Significantly, these companies represented only New York and Chicago, and only scantly the West Coast, where realty finance is healthier. But from sprawling S. W. Straus & Co. down, the companies chosen represented important, if not entirely, typical, practice.

Attempting little to confine itself to reorganizations, SEC's analysis was a generous exposition of all the abuses revealed in the testimony. To pave the way for corrective recommendations which it is sure to issue during the next session of Congress, the Commission in clear-cut, forthright fashion indicted the bond houses on fifteen counts:

 Houses of issue almost invariably appointed themselves fiscal agents. The moneys received by them in this capacity were recklessly handled. At times these funds were invested in companies in which the houses of issue were interested.

- The large earnings from these fiscal agency funds were retained by the houses of issue themselves, neither the bondholders nor the mortgagors getting the benefit thereof.
- 3. The indenture trustee was practically never an independent and aggressive champion of the rights of investors, since he was usually an officer, employe, or affiliate of the house of issue.
- 4. Houses of issue concealed defaults from the bondholders for a substantial period of



Wide Wo

Prober Douglas

time in order to create the impression of stability.

- 5. The exclusive possession of the names and addresses of security holders gave the houses of issue a virtual monopoly in the organization of protective committees and in control over the reorganization.
- 6. The monopoly in the formation of protective committees possessed by the houses of issue was utilized to an extent unparalleled in other fields of reorganization. Single houses controlled the fate of hundreds of issues.
- 7. The control of protective committees gave the houses of issue protection against claims arising from fraud committed by them in the issuance and sale of bonds.
- Control over the protective committees enabled the houses of issue to salvage the interests acquired as a result of their advances to the detriment of bondholders.
- The conflicting positions of counsel to bondholders' committees have weakened the effectiveness of these committees as representatives of bondholders.
- 10. The dispensation of reorganization patronage by committee members must be controlled in the interests of the investors.
 - 11. Committee members and their affiliates

have used their inside information for the purpose of trading in securities.

12. The practice of using voting trusts and liquidation trusts is placing the control over millions of dollars of investments in urban property in relatively few hands.

13. The voting trusts and liquidation trusts must be controlled lest the next cycle of real estate reorganizations take place without any supervision or control.

14. The practice of committee members and trustees under voting trusts and liquidation trusts in profiting directly or indirectly from their trusts should be completely abandoned.

 Responsibilities of trustees under real estate bond indentures should be increased.

In examining each point, the report neatly backed up analysis with extracts from testimony, presented a long parade of dialogue between investigators and such luminaries in realty finance as S. W. Straus & Co.'s President Nicholas W. Roberts, Greenebaum Sons' Investment Co.'s President M. E. Greenebaum, Chicago Title & Trust Co.'s President Holman D. Pettibone. The report also drew material from last year's hearings before Congressman Adolph J. Sabath's Select Committee on Investigation of Real Estate Bondholders Reorganization, as well as from two New York State investigations.

Man Who. Responsible for SEC's crisp, bitter diagnosis of last month was its brilliant young Commissioner William Orville Douglas, the Yale professor whom Chairman James M. Landis named to fill the vacancy left by former Chairman Joseph P. Kennedy late in 1934. Charged with the studies of reorganization which Congress directed SEC to make, he has worked ably in aligning the case for further investor-protection. Chicago University's President Robert Maynard Hutchins once characterized him as the nation's "outstanding professor of law," unsuccessfully tried to bait him away from Yale.

Slim, sandy-haired Bill Douglas grubbed his way through Whitman College, Walla Walla, Wash., rode a freight train East to graduate with honors from Columbia Law School. After two years with the big Manhattan firm of Cravath, de Gersdorff, Swaine & Wood, he returned to Columbia to teach. He had accepted a Sterling Professorship at Yale when Chairman Kennedy drafted him to head up SEC's reorganization studies.

Winding up his sharp-tongued report last month Commissioner Douglas acidly observed that "the democratic process has seldom been tried in reorganization." Expressing his personal convictions to newshawks in distributing the bulky copies of his findings, he remarked that they revealed "one of the greatest tragedies in the history of finance." More cool-headedly, the report observed that "the matter resolved itself into the problem of devising a system of checks and balances. Toward that objective our specific recommendations both in real estate and in other reorganizations will be directed."

^{*}The Record of Long-Term Real Estate Securities: by Cities of Issue, by Ernest A. Johnson, Journal of Land & Public Utility Economics, May, 1936, p. 195.

HOUSES FOR NEEDLE WORKERS

designed by Architect Kastner, blessed by Scientist Einstein, built by the U. S. An experiment in cooperatives.

ONE day last month Professor Albert Einstein left his home in Princeton for a trip over to nearby Hightstown, N. J. There he inspected and opened 35 small white houses, and a substantial garment factory. These houses were in many ways the most remarkable houses standing in the U.S. last month. They were built of concrete with flat roofs set in low and graceful lines. They cost up to \$24 a month to occupy and were open only to skilled needle workers. They formed part of a cooperative community, sponsored by Professor Einstein, endorsed by President Dubinsky of the International Union of Ladies' Garment Workers, and built and paid for by the United States Government.

It was back in November, 1933, that six men of widely divergent interests found this plan for a cooperative community so compelling that they banded together formally to petition the Government for \$500,000 with which to create it. These six men were Benjamin Brown, a long-time advocate of cooperatives and consultant to the U.S.S.R.; Professor Albert Einstein; Rabbi Jonah B. Wise of Manhattan; Alfred Wallerstein, retired manufacturer; Maxwell Copelof, onetime executive director of the Children's Wear Code Authority; and Dr. Isador Lubin, U.S. Commissioner of Labor Statistics.

The names and the idea behind the project made quite a showing. Briefly it was planned to move some 200 skilled needle workers from Manhattan to the country and there make them self-sustaining by means of a cooperatively held garment

Sponsor Einstein

International News

factory and a community farm. When the distinguished sextet brought the idea to Secretary Ickes he liked it well enough to up the appropriation from \$500,000 to \$850,000, give them a stretch of Jersey flatland called Hightstown on which to build.

Hightstown began life as a project in the Subsistence Homestead Division of the Department of Interior. By the middle of 1935 it had little to show besides a few concrete foundations, an abandoned concrete block plant, and a visit from Professor Einstein. Furthermore, the foundations had not been laid without some scandalous rumors. So that when, in April,

COOPERATIVES

The U. S. has held some 50 cooperative colonies organized for either religious or economic reasons. First U. S. cooperative colonies: Jamestown, which functioned as a cooperative system for five years, 1607-12, and Plymouth, Mass., which retained its cooperative organization for seven years, 1620-27.

Among the leading U. S. cooperative colonies: New Llano, established, 1914, in California by Jacob Hariman, and moved to New Llano, Louisiana, in 1917. Owner of 16,000 acres in 1920, New Llano is today the U. S.'s largest cooperative.

Bethel-Aurora Community Plan with colonies at Bethel, Missouri, and Aurora, Oregon. The community at Bethel was settled in 1844 by Dr. Wm. Keil and his followers; and in the '50's Dr. Keil led a group of Bethel pioneers westward in covered wagons to Aurora, Oregon. Bethel closed 40 years ago. Aurora was dissolved in 1883, while owner of land valued today at \$3,000,000.

day at \$3,000,000.

The Amana Community, Amana, Iowa, was founded about 1842 near Buffalo by Christian Metz under the name of the Community of True Inspiration, moved to Iowa shortly afterward. In Iowa the movement rapidly expanded and in 1933 comprised seven villages in and about Amana. The community was reorganized in 1932 as a semicapitalistic corporation. Today its property is valued at more than \$2,000,000.

Oneida Community, Sherill, N. Y., was founded about 1848 as a colony of Perfectionists. It existed about 30 years in its original cooperative form, became in 1880 a limited stock company in which no Perfectionist could hold more than a 3 per cent interest. Now located in Sherill, it earns fine profits for a community no longer cooperative through the manufacture of famed Community Plate Silver.

1935, the Resettlement Administration took over Hightstown from the Department of Interior, it knew full well that it was handling dynamite.

Administrator Tugwell immediately called in forceful, independent Architect Alfred Kastner who had already made a good name for himself in designing community living quarters, notably for the American Federation of Hosiery Workers in Philadelphia, the employes of Hookless Fastener Company in Meadsville, Pa. (ARCH. FORUM, Sept., 1933, p. 235; Oct., 1933, p. 328; Feb., 1935, p. 29). Taking the foundations as they stood and utilizing a large backlog of materials already ordered but not used, Architect Kastner began erection of a series of the most modern, functional houses ever erected by the U.S. Government. Besides the 35 now complete Architect Kastner has 71 under construction, foundations laid for 94 more. Flat-roofed, one-story structures of cinder block, each will be placed in one acre of land, on which the owners will raise produce. One hundred and forty-six of the homes will consist of three bedrooms, a combination kitchen and dining room, and a bath. Fifty-four will have an extra bedroom to make six-room plans. Garage and workshops are standard additions. Heating is by hot-air duct system. It is expected that all units will be occupied by September 1. Already Architect Kastner is talking of doubling the capacity of the community, plans to include educational buildings, hospital, community center, cinema and swimming pools. The factory now standing is a one-story glass and steel structure, stands on a 100 x 220 ft. plot, will hold 160 garment workers.

Utilities now installed consist of five miles of water main and a 75,000 gallon water storage tank into which water will be electrically pumped from two artesian wells. The sewage disposal system is geared to take care of a community of 1,500.



Architect Kastner

John Beinert

The houses show a low and graceful line, a good, clean floor plan. Considering the handicaps which Architect Kastner inherited, his figure of approximately \$5,000 a house is far from high. Hightstown families will pay a sum not in excess of \$24 a month, plus taxes and insurance for their homes, can thereby own them free and clear at the end of 40 years, paying 3 per cent interest. Interesting is the fact that the rental figure will be gauged by ability to pay, not value received. A grace period of two rentless months will be granted. Final loser in this prolonged transaction will undoubtedly be the Government.

Hightstown is to be operated cooperatively. Which is to say that the factory is to be owned jointly by every member of the community, as is the land. One hundred and sixty garment workers will run the factory, while the rest of the homesteaders will run the 414 acre cooperative farm. Union wages will be paid in the factory, "prevailing wages" in the field. At present the U.S. owns both land and all buildings. To get rid of them it proposes to form a non-profit "community organization"-more baldly, a holding companywhich will buy the whole project from the Government, collect by individual contract from the tenants. From the factory the Government will collect an annual percentage, apply it against a purchase price yet to be determined. To run the factory each homesteader at Hightstown will subscribe an equal amount to the factory cooperative, will receive in return preferred stock paying not more than 6 per cent. But the Government will receive its percentage, the worker-stockholders their wages before any six per centum is paid on the preferred stock. Thus each homesteader will share both in profits and in management.

To quiet the nerves of those who thought they saw something less than democracy in Hightstown, the Resettlement Administration was at pains to point out that such a "co-partnership cooperative association" was an old English custom. It originated in that country in 1820, has since operated there, in Sweden, and in the unsuspecting U. S. (See p. 76.)

More Resettlement news was made last month when the District of Columbia Circuit Court of Appeals upheld an injunction against construction of a "greenbelt" project in Bound Brook, N. J. Justice Josiah A. Van Orsdel ruled the expenditure of funds under the Relief Act of 1935 to involve an unconstitutional delegation of powers by Congress. Although in law the decision applied only to the Bound Brook project, it was perfectly clear that an appeal on any other Resettlement project would bring a like ruling.

In the grab-bag of Resettlement projects there are four so-called "greenbelts" projects distinguished by the fact that each is to be a whole, self-contained com-



Courtesy, Museum of Modern Art, Photo by Soichi Sunami



Hightstown-Model and Plan

munity set in a belt of trees. While work stopped last month at Bound Brook, it continued unabated in the three remaining greenbelts:

Greenbelt, located at Berwyn, Md., is to contain 1,000 living units on 11,000 acres near Washington, D. C. Designed primarily for the workers in the U. S. Department of Agriculture, this project will cost \$6,950,000, is the largest to be undertaken by R. A. Status: 232 foundations laid, plus 66 houses roofed.

Green Hills, four and a half miles outside of Cincinnati, Ohio, will also contain 1,000 living units, in this case for industrial workers. This project will cost an estimated \$8,750,000, will be the most expensive of the four greenbelts. Buildings and greenbelts together will occupy some 6,000 acres. Status: contracts now being let.

Greendale, near Milwaukee, Wis., will contain 750 living units, cost \$7,050,000, and cover 3,490 acres. Status: contracts now being let.

Greenbrook, at Bound Brook, N. J., is enjoined.

CONSTRUCTION OUTLINE

WALLS—concrete block, 8 x 8 x 16 in. cinder. ROOF—3½ in. reenforced concrete slab, 1½ in. insulation board, 4 ply built-up asphalt and gravel.

FLOOR—reenforced concrete slab 4 in. on gravel, membrane waterproofing, 3 in. cinder fill with cement, $\frac{1}{2}$ in. cement top, $\frac{25}{32}$ wood block floor ($\frac{12}{2} \times \frac{12}{2}$ in.) in cold mastic. FOOTINGS—concrete.

PARTITIONS—2 x 4 in. stud, paper back metal lath, 2C plaster, sand finish, no paint. CEILINGS—casein paint on concrete.

WINDOWS—wood, double hung, spiral sash balances; copper weatherstrip, screens and storm sash.

INTERIOR DOORS—wood, flush panel. Cellular construction, openings connect all cells permitting air circulation.

BATH—Keene cement wall, asphalt tile floor. KITCHEN—asphalt tile floor.

HEAT—Perfection Superfex oil burner, forced circulation of warm air, thermostatic control, tile return ducts under floor slab.

PLUMBING—all brass pipe.
OUTSIDE FINISH—limestone dust, zinc oxide, white cement, water by Gunite machine, ¼ in. thick cured for week.

INSULATION—walls, furring 1 in. finish as partitions.

UTILITOPIA

Gas and electricity feature two swank Boston subdivisions.

Long linked comfortably together in the average U. S. house, gas and electricity have finally acquired complete independence of one another through the inventiveness of the appliance makers. This independence the manufacturers of Boston's two prime household aids were last month both out forcibly to demonstrate. These utilities were ready to popularize their services by sponsoring whole developments of model houses. Scene of this unusual demonstration was suburban Boston's prim and leafy Chestnut Hill section, where developers offered houses bursting with gadgets to prove the contentions of their respective sponsors.

Two months ago the Boston Consolidated Gas Co., a Koppers unit, announced its sponsorship of a dozen houses on the Brookline side of the area, nearest Boston. These houses it proposed to equip with every gas appliance, to promote as "All-Gas" homes. Upon Homer T. Brown, for ten years a builder of fine houses in and about Boston, the gas company bestowed its sponsorship. Besides his good name, Realtor Brown offered access to a choice site, Brookline's old Chestnut Hill golf course. The dozen houses, Colonial and slate-roofed, Architect Raymond Stowell was retained to design.

Same time that Sales Promoter Cadwallader opened the first of his houses to the public, Consolidated's colleague, the Edison Electric Illuminating Co., unveiled a like plan for electricity. In cooperation with a Newton realtor, Edison's promotion manager, Julius Daniels, proposed to build 28 "All-Electric" houses, also on Chestnut Hill. Developer for Edison is Clifford V. Miller, whose firm Homes, Inc., has built approximately 60 houses in Newton's Cotton Street, Bruce Lane and Clements Road developments. Realtor Miller offered the Edison company a fine site in the former Harry F. Stimpson estate, opposite that of Drugman Louis K. Liggett. Architect John H. Parkinson was chosen to design the houses.

With ten Consolidated houses complete (eight were sold) and eleven Edison houses nearly complete last month, real estate pages burgeoned with advertisements and press releases from both companies. Both developments featured houses in the \$15,000 price class. In contrast with Consolidated's twelve Colonials, Edison's 28 were advertised as of "every desirable design." Lay crowds and builder-visitors alike came not so much to see their design, however, as to compare their equipment for heating, air conditioning, refrigeration, cooking and water heating,



Boulder City—Fan and Houses

in each case fueled by a different power. A series of simple, hardheaded competitive moves by the agencies most concerned had provided for all Boston the rare opportunity to investigate the best developments in both fields.

FOR SALE: 500 HOUSES

located at Boulder Dam. Their Utah owners' price: \$250 each.

In Utah last month final details were cleared in a whopping house transaction. In one of the biggest deals of all time a group of 572 single-family houses, all more or less portable, were bought for resale throughout a wide territory. The houses were those which have for four years been occupied by workers on Boulder Dam.

On a flat, sun-baked spot hard by the Colorado River's Black Canyon, famed Six Companies, Inc., the dam's builders, laid out Boulder City, Nevada, and erected approximately 700 workers' residences in 1932. Boulder City was plotted in the shape of a fan at whose apex sit the offices of Six Companies, on a constantly sprinkled lawn. As the fan spreads, the city's structures graduate from the three- and four-room houses occupied by company and Government officials to the neat, one-room cottages which Six Companies built for its workers at approximately \$400 apiece. Six 172-room dormitories, at one side of town, completed Boulder City's residential equipment.

Purchaser of all Boulder housing last month was the Wattis-Decker Co., a firm of Salt Lake City contractors especially organized for the deal. L. R. Wattis, its organizer and second vice president, is the son of Six Companies' first president, hardworking William H. Wattis, a pioneer railroad contractor who died of cancer shortly after the company won the contract for the dam. Young Wattis has been associated, as was his father, with the Eccles-controlled Utah Construction Co. President of the company, presumably the man behind its retailing plan, is Stanley Decker, president and general manager of Salt Lake City's Decker Mortgage Co. Charles A. Peterson and J. G. Vincent, of Vincent & Peterson, General Contractors, were drafted for their knowledge of general contracting. All four men are continuing in their individual businesses, joining in Wattis-Decker operations as a sideline.

Operations are divided into salvaging and reselling. Already the firm has demolished the dormitories and several other buildings, established lumber yards at Boulder and Salt Lake to resell the materials. The 572 single-family houses will be remodeled and sold either in Boulder City or elsewhere singly or in job lots. The company's plans include complete new interior layouts, the substitution of stucco for plaster exteriors, and addition of shutters, landscaping. Prices will depend on destination, quantity purchased, extent of remodeling done. Prospective customers include construction contractors, operative builders, subsistence homesteaders and tourist camps through Arizona, California, Nevada and Utah.

Because of sustained activity in the construction town, Wattis-Decker has already sold 36 houses at \$250 each without remodeling, in Boulder City. Another 300 are currently rented. Contrary to expectations. Boulder merchants have experienced business as usual, aided by a remaining group of 1,200 Government men, incoming power employes, tourist traffic. An outboard motorboat regatta on Boulder Lake this Spring brought 5,000 sportsters. Consensus is that Boulder City, being as good a spot for living as any in Nevada, will slowly acquire a stable population, while many of the structures which housed the workers on its Dam will continue to serve its residents.

"I can't recommend a better insulation for your new home than EAGLE!"



Thick, fireproof Eagle Insulation available in two forms



BATS which fit snugly between studdings and joists. Easily cut to fit around doors and windows.



LOOSE-FILL which is blown between studdings and joists by special pneumatic process.

ARCHITECTS! Eagle Insulation rates +++ on these 5 important points ...

- 1. Remarkable Efficiency. Keeps homes up to 15° cooler all summer . . . soon pays for itself in fuel savings in winter. Eagle Insulation has the remarkable conductivity rating of .27 at 103° mean temperature!
- 2. Easy Installation. Eagle Insulation comes in two convenient forms . . . "bats" for new construction . . . "loose" fill" for homes already built.
- 3. Fireproof. Eagle Insulation will not char or burn. It is absolutely fireproof.
- 4. Moisture Repellent. Eagle Insulation will not absorb moisture. Try dropping a piece in a glass of water ...it will not sink!
- 5. Permanent. Eagle Insulation does not pack or settle. Contains no vegetable matter to attract bugs and insects. It lasts a house-time.

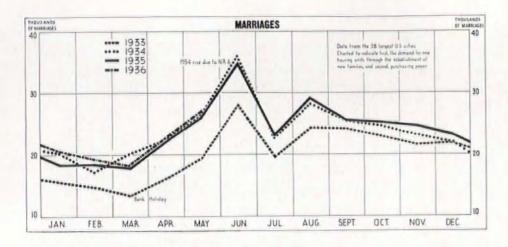
Eagle Insulation

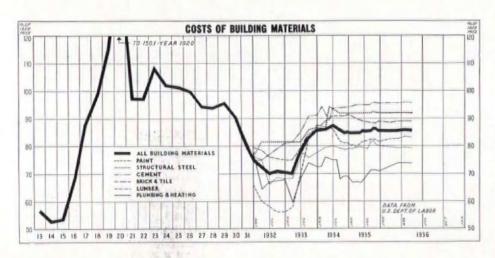
for Homes and Apartments

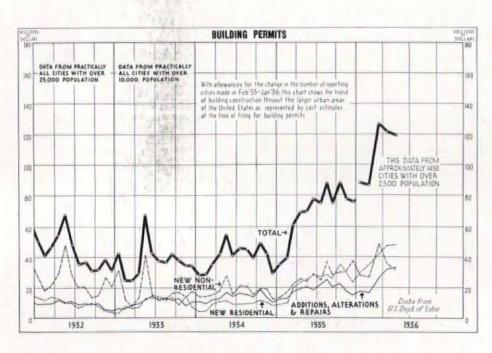
THE EAGLE-PICHER LEAD COMPANY, CINCINNATI, OHIO

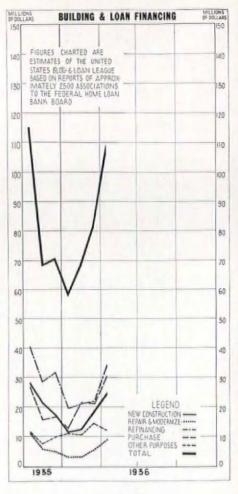
RESIDENTIAL BUILDING RISES

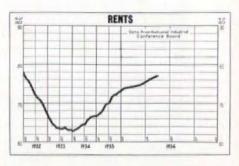
contra-seasonally. Life company loans soar, marriages up, costs constant. Building and loan activity charted.

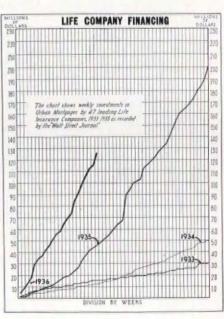




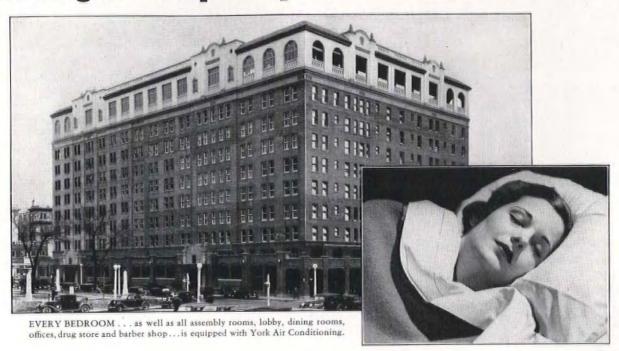








The St. Anthony, in San Antonio, Texas . . . World's largest completely Air-Conditioned Hotel



When Your Specifications Include Air Conditioning . . . Call on York

Headquarters for Mechanical Cooling

You need help, perhaps, on the question of preliminary costs and requirements for the air conditioning you intend including in your specifications. York stands ready to help you.

A letter or a telephone call to your nearest York Headquarters Branch will bring an engineer . . . a man from Headquarters for Mechanical Cooling. There, on the spot, he'll work with you. And, when the time comes for installation he'll be on hand as an aid to you, the consulting engineer and the contractor if need be. Check with fellow architects on this free York Service. They'll tell you this is genuinely helpful.

With York you are assured of True Air Conditioning

You not only enlist unmatched manufacturing facilities, but also command a group of more than 3100 men devoted solely to *engineered* mechanical cooling. And with a York System, whether for summer use only or year-round service, you are sure of true air conditioning. Tempera-

ture and humidity are *always* effectively controlled. In summer the air is cooled and its excess humidity is removed. In winter the air is heated and moisture is *added*. And summer and winter, a York System constantly cleanses and evenly circulates the air while providing filtered outside air for ventilation.

Nor does this tell the complete story. A York System can be engineered so that it even overcomes oppressive humidity although the temperature of the outside air is not particularly high. This is unique and made possible because patented systems permit York to use certain internally developed heat (which otherwise is wasted) to "dry" the air.

York builds a complete line of air conditioning equipment; with Standard Freon Condensing Systems ranging from 1/4 to 400 H.P. Thus York is equipped to give you correctly engineered air conditioning for any structure, be it a small store or a large office building.

YORK ICE MACHINERY CORPORATION, YORK, PENNA. HEADQUARTERS BRANCHES THROUGHOUT THE WORLD

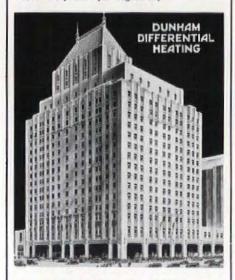


YORK

Commercial and Industrial Air Conditioning . . . Commercial, Industrial and Institutional Refrigeration . . . Dairy and Ice Cream Plant Equipment



THE MANGER HOTEL, Boston, was heated for FIVE YEARS with a vacuum return line system using compressed air type thermostatic control and intermittent (clock) steam control. The steam used for three full years (1931-32-33) totalled 61,064,000 pounds, of which the four summer months' load (June-September) was 8,354,900 pounds. The consumption rate for the heating months was 3,183.24 pounds per degree day.



The hotel contains 500 rooms; 1.564,520 cu. ft.; 21.872 sq. ft. radiation, Steam is supplied from a central station.

A CHANGE-OVER TO DUNHAM DIFFEREN-TIAL OPERATION was completed in November 1935. This included the installation of three zones of Dunham Control Equipment; Regulating Plates; Dunham Drip Traps and Dunham Pump.

Records of metered steam, for all loads, used in the FIVE MONTHS (December '35 - April '36) give a degree day consumption rate of only 2,228.0 pounds or an average saving of 30% with SUB-ATMOSPHERIC STEAM operation. The actual cash value of steam saved in this five months, figured at Boston Edison rates, is over \$4,000.00.

This represents more than a 50% cash dividend in the first FIVE MONTHS of operation, on the total investment for the Change-over. If you have wasteful heating systems in any of your properties, and if you prefer "experience" to "experimentation," the accumulated experience of the entire Dunham organization is at your disposal.

Correspondence invited regarding converting existing vacuum return line systems, in any type of building, to Differential operation.

C. A. DUNHAM CO. 450 E. Ohio Street, Chicago

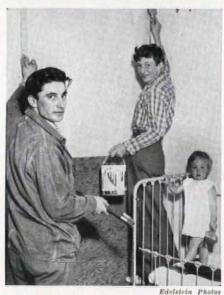
Over eighty branch and local sales offices in the United States, Canada and the United Kingdom bring Dunham Heating Service as close to you as your telephone. Consult your telephone directory for the address of our office in your city.

HORIZON:

deeds and doers of the month.

Tales. On warm summer days, the Press slacks out its belt, cocks its feet on the desk and pounds out "hot weather" items to stir the seasonal doldrums. Best of last month's crop was an item from Madison. Wis. On an average salary of \$12 a week one Martin Raynoha has in the last two



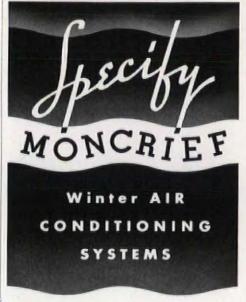


Raynoha Home, and Builders

years: Bought and paid for a \$100 lot, bought and paid for second-hand lumber enough for a home and garage, built a garage, built a four-room house, bought and paid for its furniture, supported a wife, raised a garden, became a father. For seven months, Builder Raynoha was unemployed, had to borrow \$30. He paid that back.

Warm weather's most provocative story was the discovery of six real estate organizations all over 100 years old in New York. The two Cruikshank firms—the Cruikshank Company and William M. Cruikshank's Sons—head the list with 142 years of continued service. Other centenarians: George G. Hallock, Jr.'s Sons, 134 years, James N. Wells' Sons, Inc., 117

(Continued on page 84)



Because modern homes call for air conditioning, and price limitations need no longer bar your clients from enjoying its many benefits.

Because for at practically the cost of a good radiator heating system, a Moncrief Winter Air Conditioning System can be installed to heat, circulate, filter and humidify the air. In summer, the forced air equipment greatly adds to comfort by air circulation and ventilation.

Moncrief Air Conditioning Units are made in three specialized types to burn gas, oil, or coal—hand or stoker fired. All are of modern design, carefully built of quality materials, and beautifully finished. They can be depended on to operate at unusually low fuel costs and to give long satisfactory service.

Moncrief Engineering Service is available without cost to architects and builders for estimating and laying out installations.

Send for illustrated descriptive literature and data sheets for your files.

THE HENRY FURNACE & FOUNDRY CO. 3485 East 49th St. • Cleveland, Ohio





MAYBE your budget warns you to be wary of financial waters, but don't let that stop you in the matter of elevator modernization. We can supply stepping stones to elevator modernization which skirt the pools of financial burden.

We call it our step-by-step plan. It entails, first of all, a careful survey of your installation by the best of elevator experts. This survey (by the way, it is free) shows you exactly the condition of your elevators and just what is needed to make them good as new.

Next, the work of modernization is plotted in logical steps, placing most important improvements first in line.

Then, should you decide to modernize, the work is done one step at a time and paid for as each step is completed. This way, you get at once the benefits of partial modernization. You eventually have elevators that give tenantattracting and expense-saving service. And you have achieved this without unduly burdening yourself financially.

The local Otis office is prepared to outline this step-by-step plan from a practical standpoint as applied to your elevator problems.



(Continued from page 82) years, Houghton Company, 107 years, E. H. Ludlow & Company, who are celebrating their 100th birthday this year.

Alphabetical. Acute and official embarrassment cropped out during the month in two capitals. In Paris, Léon Blum found himself, after years of agitation, Premier of his country on the Pinko Radical Socialist platform. M. Blum has been publicly committed to a public works program calling for the expenditure of 1.5 billion dollars and patently modeled on the PWA. Last month M. Blum received the Premiership at almost exactly the same time that Mr. Roosevelt was cutting off the U.S. version of public works without a penny. Premier Blum stood pat.

Pipe Dream. Following week in Washington, Senator Vandenburg of Michigan stood up and roared: "We are back again boondoggling on 'Quoddy Bay and pipe dreaming on the phantom Florida Canal." Each project had already cost better than half a billion dollars, each wanted a paltry ten million more. Senator Vandenburg's blistering attack and a little faulty log-rolling by the Senators from Maine and the Passamaquoddy Bay Dam was sent begging while the Florida Canal got its bread.

Relict of 'Quoddy dreams are 130 build-

ings, white-sided with pretty green and red roofs. Designed for the executive staff of the phantom dam, they cost better than a million dollars, nine of them running to \$25,000 each. Each is in impeccable Colonial style, each equipped with electric ranges, tiled baths, insulated walls. When last month it became probable that



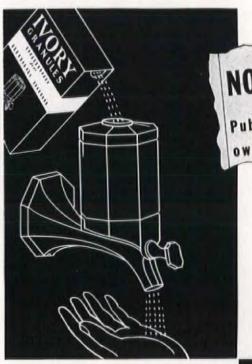
Quoddy Movable House

'Quoddy would never need an executive staff at all, a million dollars' worth of Colonial housing seemed to present somewhat of a problem. This, however, was reckoning without Major Philip B. Fleming, an old time PWA man, latterly in charge of 'Quoddy construction. He has built all houses without basement or chimneys, points with pride to the fact that they can all be moved at will. Undecided as yet is their destination.

Big Change. A new reply to President Roosevelt's tax plans and bills made news last month when a curious reporter arrived in the Bahamas. Poking, he found that the stamp duty levied on incorporating documents had brought in so much revenue lately that the duty had been charitably reduced. Cause of the flurry was the vast number of companies latterly formed for the purpose of investing in Bahaman land. Origin of the new money is known only to H. C. McLean, resident manager of the Royal Bank of Canada, through whom must pass all transactions. But there was no doubt that 90 per cent of the money came in dollars-and in dollars fleeing the U.S. for a better bargain. Reason for the popularity of this new investment field is that the Bahamas are tax-free.

Deeds. A bit happier about their homeland were two other capitalists. After months of rumor, the Chanin brothers, Henry I. and Irwin S., announced their return to the real estate business by buying a 325-acre airport on Long Island. Starting in 1919, this energetic pair have to their credit Manhattan's Chanin Building, Lincoln Hotel, Majestic Apartments, many another office and apartment building. Unannounced as yet is the price range of the Chanin brothers' first venture into homes. Rumor puts it below \$5,000.

(Continued on page 36)



The Ivory Dispenser delivers genuine Ivory Soap in fine, free-flowing flakes or granules. Gracefully designed. Self-contained. No complicated piping system to clog or get out of order. No parts to rust, tarnish or corrode. Always delivers. See "Sweets" for technical details.

NO LONGER A STEP-CHILD

Public washrooms win good-will as alert
owners install Ivory Soap Dispensers

The public washroom is no longer a step-child. Today, far-sighted owners and operators realize that proper wash-up facilities are a decided asset to their buildings.

The Ivory Soap Dispenser offers a distinct contribution to washroom modernization plans. Here is a modern soap dispenser which combines beauty and utility in generous proportions . . . which is economical in first cost and in up-keep . . . which gives definite satisfaction to the user.

Ivory Dispensers add the final touch to a thoughtfully designed public washroom. A folder describing their many advantages is yours for the asking.

DISPENSER

Procter & Gamble Cincinnati, Ohio

Music...when and where you want it!



This Program Sound System belongs in your plans for schools, hospitals, hotels

Announcements...in every room at once!

WESTERN ELECTRIC'S new sound distribu-ting equipment makes big buildings modern—whether they are new or old. It performs many valuable services — for a few cents an hour. And assures highest quality reproduction. In one compact, low cost unit, this new system combines voice pick-up, radio, record re-

producer, and keys for selecting loud speakers

Graybar Electric will gladly help you plan in as many as 60 locations. installations and furnish estimates free of charge. Address your nearest Graybar House, or Executive Headquarters, 420 Lexington Avenue, New York.



Vestern Electr

Distributed by GRAYBAR Electric Co. In Canada: Northern Electric Co., Ltd.

PROGRAM PUBLIC ADDRESS DISTRIBUTION AND SYSTEMS (Continued from page 84)

May Day. June is a month for soberly mulling building statistics. Quarterly reports and May Day moving activities, having been duly digested, reach print together, fruitful and dull. This year the Real Estate Board of New York added a note of variety to the occasion by announcing that hereafter its members will observe no less than five moving days a year—not one of them May 1.

A two-year study of the one-to-four-room apartment has convinced the Board that the small tenant should move on August 31, September 30, October 31, November 30 or December 31. This stagger system makes it impossible for the tenants to high-pressure the landlords by refusing in a body to re-sign leases till the last moment; allows the landlord to organize his agents effectively; spreads redecorating costs over a longer period. The tenant on the other hand can enjoy the novel experience of moving on New Year's Eve.

Jane. This month in Washington, D. C., on his Rollingwood property Realtor Waverly Taylor will open the first Jane Brown house to be finished. A Jane Brown house is just like any other house save in two respects. It has been designed to include certain minimum specifications laid down by Jane Brown Service, Inc.; and its con-



"Jane Brown"

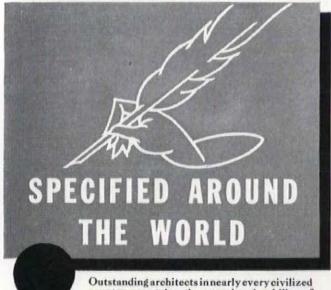
struction has been reported day by day in the local press by pretty Jane Brown.

Pretty Jane Brown was in this case one Margaret Richardson, a hardworking stenographer in Washington. But Jane Brown Service consists almost entirely of a shrewd and affable Southerner, Mrs. Virginia Nowell, who conceived the selling plan of the Service six months ago, has



Creator Nowell

sold it for one house in Washington, five in her native Raleigh, N. C. She it is who writes the breathless day-by-day newspaper reports for Jane Brown, she who lines up products and builders. And she it was who this month sent out a formal, engraved invitation to the opening of the Washington Jane Brown house, featuring, it announced, the "Woman Perfect" Home.



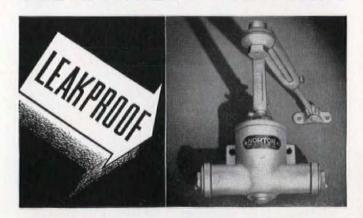
Outstanding architects in nearly every civilized country recognize the superior durability of Berrycraft architectural finishes and specify them. They can do so with complete confidence. Berry Brothers 100% pure paints have proved their worth "on the job" in the world's most rigorous climates. That's why these remarkable products can be depended on to solve your particular finishing problems. Whether it be for a cottage on the coast of Maine or a cathedral in Louisiana, Berry finishes "stand the gaff"! Specify Berrycraft for your next job. You will find the results eminently satisfactory.

BERRY BROTHERS

VARNISHES . ENAMELS . LACQUERS . PAINTS
DETROIT, MICH. . WALKERVILLE, ONT.

NORTON DOOR CLOSERS

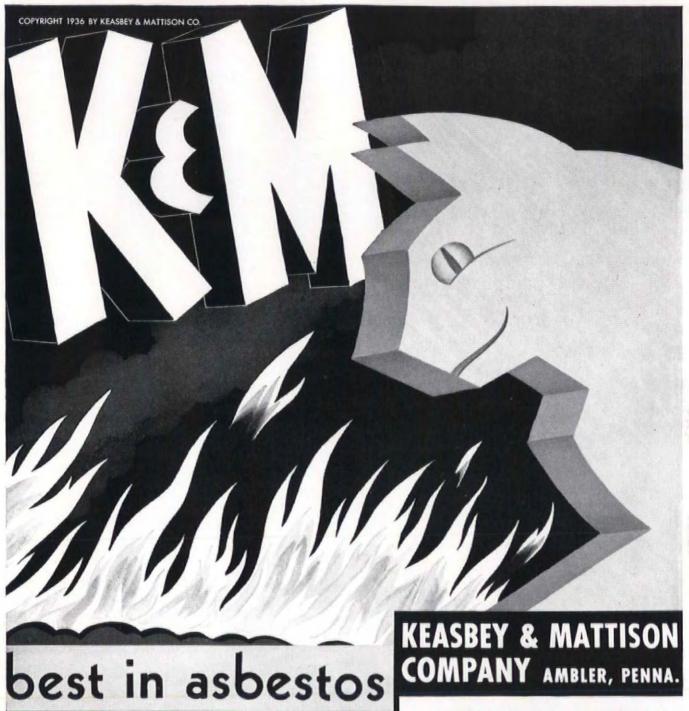
Lubricated with Mineral Oil
THE CORRECT LUBRICANT



POSITIVE CONTROL saves strain on door hinges as well as insuring exacting operation at all times. The Norton form of lubrication, construction and engineering assure the most efficient lubrication and a long life of uninterrupted service. Write for the Norton catalog.

NORTON DOOR CLOSER COMPANY

Division of the Yale & Towne Mfg. Company
2912 N. Western Ave. Chicago, Ill.
DOOR CLOSERS FOR ALL TYPES OF DOORS



Long experience in working with the profession enables Keasbey & Mattison Company to offer Asbestos and Magnesia products that assure unusual satisfaction. More than 60 years of pioneering with insulation and building materials . . . including the production in 1905 of the first asbestos-cement shingles made in this country . . . are behind K & M Products.

As leaders in the development of asbestos architectural and building materials, as well as insulation of all types, Keasbey & Mattison Company offers a complete line.

Asbestos Roofing and Siding Shingles in various sizes, styles and colors

Asbestos Pipe Insulation in sections

Asbestos Insulation in sheets and blocks

Asbestos Insulating Cements

Asbestos Packings and Gaskets

The K&M representative who calls on you is trained to work with the profession.



Akron Savings & Loan Building, Akron, O.

MODERNIZE HEATING IN AKRON BANK BUILDING

Webster Hylo System Is Selected After Exhaustive Investigation

Akron, O.—The engineering experience of the Webster Organization was a determining factor in the selection of the Webster Hylo System of Steam Heating and Webster Heating System Equipment in the Akron Savings & Loan Company Building, according to Building Manager A. B. Crandall.

The heating system in this 12-story office building was brought up-to-date during the 1934-35 heating season after an exhaustive investigation of heating control methods.

"While our primary object in installing the Webster Hylo Control System was to obtain even temperature and tenant comfort, it is interesting to note that a 19 per cent coal saving was also effected."



The Webster Hylo Steam Variator—a simple, rugged central control for use with Webster Systems where distribution of steam to all radiators is balanced by accurately sized metering orifices. The Hylo Variator Valve Operator (illustrated) automatically throttles a rugged motor-operated valve in the steam main.

How this 19 per cent saving was achieved is shown in the performance record below. There was no change in the heating schedule of 91 hours a week.

| H | eating 1 | Performance | | | |
|----------------|----------------|--------------------|---|--|--|
| Before Control | Degree Days | Lbs. Coal Fired | Steam Per D.D. Per M. Sq. Ft. Radiation | | |
| 1933-34 | | 875,000 | 79.5 | | |

After Control
1935-36.... 6,728 730,000 64.5
Data for season 1934-35 is not conclusive, as change was made during the heating season.

If you are interested in heating new buildings, or in improved heating service and lower heating cost in your present building, address

Warren Webster & Company . . . Camden, N. J. Pioneers of the Vacuum System of Steam Heating Branches in 60 principal U. S. Cities . . . Darling Bros., Ltd., Montreal, Canada

BOOKS

(Continued from page 28)

HISTORY OF HOMES AND GARDENS OF TEN-NESSEE, compiled by The Garden Study Club of Nashville. Whitmore & Smith, Nashville, Tenn. 503 pp., illustrated. 10½ x 14. \$10.00

Aside from its own merits, this volume is an imposing testimonial to the vigor and enthusiasm of the Garden Study Club of Nashville, which spent two years in its preparation. Almost every house of any importance in the State is in-



STAIR HALL-THE HERMITAGE

cluded, with old prints, photographs, garden plans, and a wealth of historical data. The book is general rather than architectural in its treatment, and includes few house plans and no detail drawings.

DECORATIVE ART 1936. Edited by C. G. Holme. The Studio Publications, Inc., New York. 140 pp., illustrated with photographs, six color plates. 8½ x 11½. Paper \$3.50, cloth \$4.50

The present issue of this well-known year book is devoted to the modern house, its furniture and accessories. It shows plans and exterior views of representative houses, with the



LIVING ROOM - ENGLAND

larger part of the book given over to photographs of interiors, fabrics, glassware, etc. A useful reference book for the architect and decorator, its examples demonstrate the wide range of the most recent interior design. The English work is particularly good, quite comparable to anything being done in Europe or America.

(Continued on page 40)

Somebody's going to get a roof that will last longer



it is good to have the assurance that products, made by the subsidiaries of comes to repair the roof of an older the time when the job will have to lished reputation for quality and known to the metal industry.

METAL roofings give the most be done over again. For best and service. American roofing terne

satisfactory protection of any most uniform results be sure to plates are furnished in several grades, roofing products on the market. specify USS high grade Copper Steel from 8 pounds to 40 pounds coating, When constructing a new building terne plates, or galvanized roofing and the weight is stamped plainly on each sheet. In the manufacture the roof will last. And when the time the United States Steel Corporation, of these galvanized sheets and roof-Our galvanized sheets for all con- ing terne plates every process is building, metal roofings will put off struction uses have a well estab- marked by the greatest care and skill

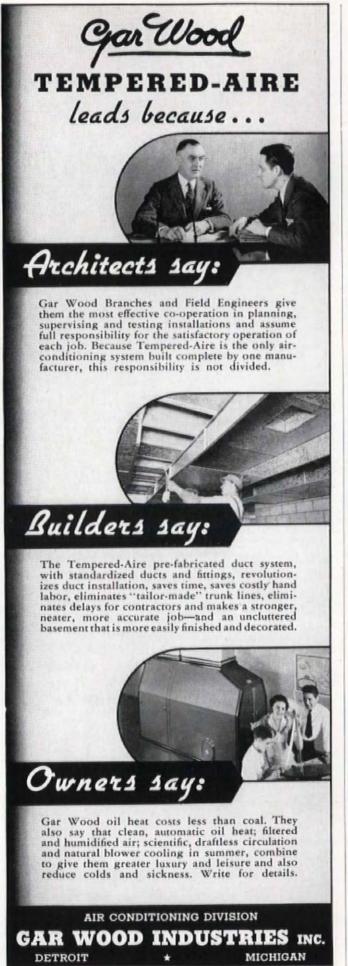
Specify USS Copper ROOFING PRODUCTS



CARNEGIE-ILLINOIS STEEL CORPORATION, Pittsburgh and Chicago With which has been consolidated American Sheet and Tin Plate Company TENNESSEE COAL, IRON & RAILROAD COMPANY, Birmingham COLUMBIA STEEL COMPANY, San Francisco

United States Steel Products Company, New York, Export Distributors

STATES STEEL



BOOKS

(Continued from page 38)

MOATED HOUSES OF ENGLAND, by R. Thurston Hopkins. Charles Scribner's Sons, New York. 236 pp., illustrated. 61/4 x 91/4. \$4.50

An interesting combination of local history and architectural description, illustrated by photographs. The book is divided geographically, with a preliminary survey treating the subject of moated houses in general. Each section contains lists of houses with brief descriptions, in addition to those examples which are dealt with at length in the text.

A SMALL HOUSE IN THE SUN, by Samuel Chamberlain. Hastings House, New York. 96 pp., $9\frac{1}{2}$ x $12\frac{1}{2}$. \$4.00

This book marks Mr. Chamberlain's debut as a photographer. Well known as an etcher, lithographer, and illustrator, he has turned to the camera, applying his knowledge of pictorial composition to this medium with superlative results. Many attempts have been made to catch the distinctive but



peculiarly elusive spirit of New England: "A Small House in the Sun" has succeeded as well as any. The book is divided into sections on the village, the rural scene, seacoast, and the house. There is no attempt to select architecturally impressive examples, and the text, while very brief, is adequate. Without the slightest pretense to exhaustiveness, the illustrations are well selected to show the scope and variety of early New England building.

THE AMERICAN SCHOOL AND UNIVERSITY, Eighth Annual Edition. American School Publishing Company, New York. 499 pp., 7½ x 10½

The standard school annual, with articles on design, operation, equipment, etc., in nine sections, each containing suitable advertising material. Also lists of school architects, directors, college and university presidents, etc.

CIVIL ENGINEERING HANDBOOK, Leonard Church Urquhart, Editor-in-chief. McGraw-Hill Book Company, Inc., New York. 885 pp., illustrated, 61/4 x 91/4. \$5.00

A compact treatise covering the entire field, for use as a reference or textbook. Of particular value to the architect are the chapters on steel and concrete design, foundations, and stresses in framed buildings. A bibliography is given at the end of each section.

(Continued on page 42)

ANOTHER BUILDER GIVES SUPERFEX THE CREDIT

Satisfaction of first two buyers sells eight air-conditioned homes before completed, says George A. Dennis. Read about Mr. Dennis' experience with Superfex Oil Burning Air Conditioning Heating Plants! Here is his letter to WILCOX AIR

CONDITIONING CORPORATION:

GEORGE A. DENNIS Builder BALLSTON - VIRGINIA

May 25, 1936

Wilcox Air Conditioning Corp.,

1212 S. St. S. E., Washington, D. C.

As a stranger I came to this community from Michigan and started my 1935 in March 1934; built and sold two houses by July 1935. Instead of Since that time I have completed and sold ten houses. Instead of being a one residence operator as when I used hot water heat, today being a one residence operator as when I used hot water heat, today in the second start of the second Gentlemen:

First two Superfexed houses were not sold until completed. The other eight houses were each sold before completed in spite of the fact that a number of equally well constructed homes in the same violnity, heated by hot water are not yet sold, selling for a lower price.

I have not used any advertising or any cards. People come to me because of the satisfaction enjoyed by those who have bought and are living in my homes.

Each of my houses has an average of 25000 Cu. Ft. consisting of from five to seven rooms well designed and constructed and are located in a favorable community. The average selling price being \$7,800.00. Why present building program calls for ten houses this coming summer.

The operating cost of Superfex in each of my occupied houses has averaged for the entire winter \$64.00 using No. 2 fuel oil. The health and comfort of each family has been immeasurably improved.

I accept the professional responsibility of the builder to so build and equip a residence that it will represent the maximum utility, and equip a residence that it will represent the maximum things to be comfort and protection of health of the occupant, these things to obtained at minimum economy; this is impossible for the conscient obtained at minimum economy; this is impossible for the occupant obtained at minimum economy; this is impossible for the conscient obtained at minimum economy; the required air conditioning plant it is supposed to minimum economy the modern, not only today but in the tious builder unless must be modern, not only today but in the as Superfex. My homes must be modern, not only today but in the years to come. I find that people really appreciate such foresight on the part of their builder.

George C. Dennis



Mr. George A. Dennis, successful builder. Mr. george A. Dennis, successful builder, who by installing Superfex plants in his homes has developed from a one house builder to a six house builder in less than a year.

Illustration shows a few of the George A. Dennis modern homes, equipped with Superfex Oil Burning Air Conditioning Heating Plants.

Send the coupon for additional records of SUPERFEX success and suggestions on what it may do for your business.

*Superfex dealer with estab-lishments in both Baltimore Md., and Washington, D. C.

The mark of Quality

PLANT THAT CONDITIONS AIR. PRODUCT OF PERFECTION STOVE COMPANY

| PERFECTION | STOVE | COMPANY. | 7671-C | Platt Ave. | Cleveland, | Ohio |
|------------|-------|-----------|--------|--------------|------------|------|
| ENITCHON | SIGIE | COMINITI, | 10116 | I luli Miss. | cierciana, | 0 |

I would like to know more about the modern, clean, economical SUPERFEX automatic oil burning heating plant that conditions air.

Please check:

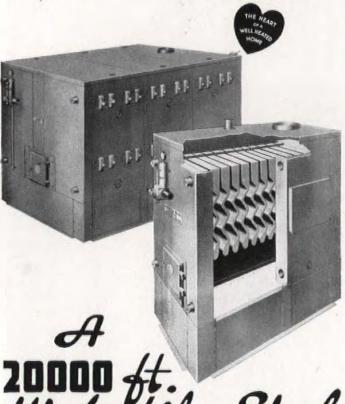
Architect Builder

Engineer Planning New Home

Post Office

State

ATERFILM



One of the main problems before replacing a steel boiler of large size is not only the cost and efficiency of the boiler itself but the tremendous cost of wrecking and rebuilding so that the boiler can be brought into its proper place. There is no such problem with the WATERFILM BOILER, which is assembled from units that can be taken through a 2 ft. door.

This money and time saving operation combined with the following features make WATERFILM BOILERS the most outstanding steel sectional boiler on the market today.

A FLASH BOILER STABILIZED
HEATS QUICKLY
COOLS SLOWLY
CUTS FUEL COSTS
IS OF WELDED STEEL CONSTRUCTION
IS BUILT ESPECIALLY FOR AUTOMATIC FIRING

WATERFILM SECTIONAL SERIES BOILERS are made in sizes ranging from 1250 ft. to 20,500 ft. steam and 2000 ft. to 32,800 ft. water.

BOILERS, INC.

154 Ogden Ave. Jersey City, N. J.

THE FLASH



BOILER STABILIZED

BOOKS

(Continued from page 40)

ARCHITECTURAL GRAPHIC STANDARDS, second edition, by Ramsey and Sleeper. John Wiley & Sons, New York. 284 pp., 91/2 x 113/4. \$6.00

A revised and enlarged edition of this invaluable office manual. The introduction of about 50 new plates covers new materials and practices that have appeared in the past three years.

AMERICAN ART ANNUAL, Vol. 32. The American Federation of Arts, Washington, D. C. 549 pp., 61/2 x 9. \$6.00

The latest edition of this reference book. Gives a summary of art activities in America during 1935, a directory of organizations, art schools, art publications, and a list of paintings sold at auction for \$200 or more.

CARPENTRY, by Gilbert Townsend, American Technical Society, Chicago. 436 pp., illustrated. 53/4 x 81/2. \$1.50

A practical treatise on simple building construction in wood. Written primarily for the carpenter and contractor, it is a useful reference work for architects, particularly in the preparation of detail drawings.

ARCHITECTURAL DRAWING AND DETAILING, by J. Ralph Dalzell and James McKinney. American Technical Society, Chicago. 212 pp., numerous illustrations, 6 x 81/2. \$2.00

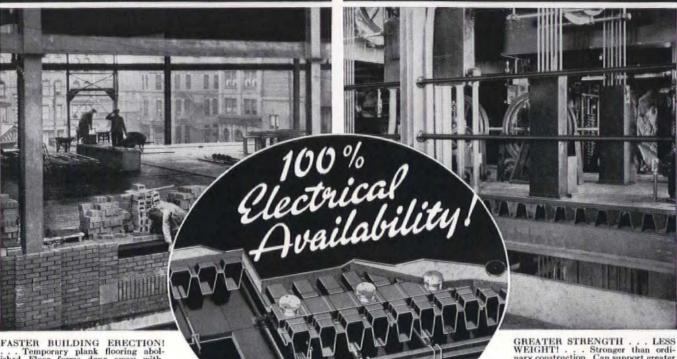
A treatise for the beginner, sufficiently elementary in its handling to be used by the student without supplementary instruction. It presents the accepted techniques of architectural drawing, shows the most commonly used symbols, and clearly explains the procedures involved in the preparation of working drawings. From the chapters on drawing is developed a section on detailing: what are the required details, how they are worked out, etc. Pen and ink rendering and a chapter on landscaping are also included. While the examples of houses selected as models are not the best that might be presented, the book should prove useful to the student who wishes to learn something about what is required of the draftsman in an architect's office.

BIBLIOGRAPHY OF PLANNING, 1928-1935, by Katherine McNamara. Vol. X, Harvard City Planning Studies. Harvard University Press, Cambridge. 232 pp., 7 x 10.

This, the latest volume in this valuable series, is a supplement to the Manual of Planning Information which was published in 1928. The amount of literature on the subject that has appeared during these seven years is prodigious, as the size of the book will testify. The student of city or regional planning will find this bibliography an extremely well-organized guide, with lists of general books, planning board reports, organizations and periodicals, literature on foreign work, all arranged for convenient use. The book is completely indexed.

As a service to interested readers, The Architectural FORUM will undertake to order copies of foreign books or others not conveniently obtainable locally, which have been reviewed in this department. Checks and money orders to be made payable to The Architectural Forum.

Faster building Greater strength ! Greater weight!



FASTER BUILDING ERECTION!
... Temporary plank flooring abolished. Floor forms done away with. Delays incidental to pouring concrete eliminated. No waiting for concrete to set. Once laid, the Robertson Floor immediately provides a solid platform where tradesmen may go to work instantly, where materials may be stacked.

GREATER STRENGTH . . . LESS WEIGHT! . . . Stronger than ordinary construction. Can support greater loads. Yet far more compact, far lighter in weight. Consequently, the Robertson Steel Floor greatly reduces dead weight loss, not only in floor areas, but in all supporting structural steel. That means substantial dollar savings in building cost.

100% ELECTRICAL AVAILABILITY!... Every cellular steel beam a protected wire raceway of generous capacity! Floor completely available for every present or future electrical need. The unique electrical facilities of the Robertson Floor prolong the profitable life of buildings you design.

See what the ROBERTSON STEEL FLOOR SYSTEM Offers the Architect!

Send Coupon for Complete Information

THE Robertson Steel Floor System is the ... that your client gets quicker occupancy, result of concentrated study of floor extra weeks or months of revenue. And the construction. It is not only more practical and efficient than ordinary construction . . . it definitely saves your client money, helps preventing obsolescence. you to design him a better building.

Suppose you are planning a tenant-type structure. The Robertson Floor speeds up building erection so much . . . 20% to 30% installed. Manufacturing operations can

floor's amazing electrical advantages extend the building's profitable life indefinitely,

The Robertson Floor brings equal advantages to the industrial plant. You get a stronger, lighter weight floor, more quickly

start sooner. Old electrical machinery may be shifted, new machinery added, more quickly and economically.

Modernization? The Robertson Floor is ideal for it! Remodeling goes forward in record time. The job is clean and dry. Regular operations in other parts of the building continue as usual, building client satisfaction.

No matter what type of building you are designing, find out what the Robertson System has to offer. Send the coupon below . . . today . . . for full information.

OBERTSON

| H. H. Robertson Company 2004 Grant Bldg., Pittsburgh, Pa. Please send me, without obligation, your booklet "New Life for Buildings" and your technical bulletin on the Robertson Steel Floor System. | | | | | |
|---|--|--|--|--|--|
| Name | | | | | |
| Address | | | | | |
| CityState | | | | | |

LETTERS

(Continued from page 24)

away from me while I was gone) to make the hazardous trip to Virginia to attend this convention. He arrives worn and travel-stained, with his tongue hanging out so far that it entirely conceals his necktie, or cravat. He shoves his weary legs under a table, and what do they offer him? Hot bread and the mixed sea food grill! It is too much!" exclaimed the Doctor and swooned. Tender hands lifted him and deposited him under the sink in the kitchen.

Aghast at these hideous revelations, several hotheads immediately introduced resolutions severing all connection between the A. I. A. and the M. A. A. and A. A. The secretary, however, pointed out that no one can resign from the Institute without first paying up his back dues. A sudden hush fell upon the assembly. It was decided to give the Institute one more chance.

The association then received the report of the judges on the competition recently conducted under M. A. A. and A. A. auspices. The subject of the competition was "A Semi-Detached Residence For an Insomniac With No Children Whose Wife Plays Bridge." Technical adviser was Prof. Asmodeus Bilge, C. P. A., H. E. O. H. (Had Enough of Hoover), head of the Department of Architectural Design and Greeting

Card Verse at Carnarsie College.

"A study of the drawings entered," said Prof. Bilge, "indicated all too clearly that the competitors had not carefully studied the conditions of the program.

"Since the residence is for an insomniac, it ought to be obvious that he will not require a bedroom, as he is unable to sleep anyway. Since his wife is out all hours of the night playing bridge, she won't need a bedroom either. They have no children and will thus require no bedrooms for non-existent offspring.

"Since the client spends all his time walking the streets trying to tire himself out so he can sleep, he will not require a living room. And since his wife never gets home to prepare any meals, this eliminates both the dining room and the kitchen.

"Thus by the exercise of the simplest logic, it is apparent that the winning design must be a blank sheet. This was submitted by a young lady who came to the door selling Ajax Flea Powder. It seems she thought it was a letter of recommendation. She won the competition with this entry. It later developed that she not only could not draw, but she can't read or write either. She has been awarded first prize, a complete set of Sweet's Index for the year 1916."

Light refreshments consisting of macaroni and cheese and sassafras tea were then served, just to clear the hall.

ROGER ALLEN

Grand Rapids, Mich.

Low Cost Blah

Forum:

... Upon thoughtful consideration the aspect of the government coming into the Housing business and deliberately talking about writing down certain fixed costs so as to rent the proposed habitations at ridiculous figures, and then to demand that the tax paying property owner put up the additional money to furnish him water, police service, schools and their attendant expense, paying, etc., etc., ad infinitum would be amusing if not so actually eminent. . . .

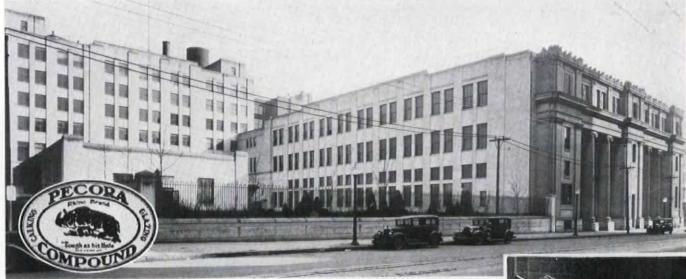
. . . To date, the so-called Housing efforts by Mr. Tugwell and others with absolutely no experience, have we believe well shown the fallacy of any such building operations. One item, to make mention, to build a great group of houses, as in Virginia, near Washington, D. C., and forget the basements, speaks well of his competence in that field. . . .

... This constant blah about "low bracket incomes," low cost housing, and this wild, reckless concern over the poor, is getting rather more than nauseating to a great many persons, . . .

. . . We have had other depressions, and come out of them without political interference, and we would have come out of this one long ago if the politician could have been gagged at the start. . . .

CLAIRE EDWARD HOLMES

Memphis, Mich.



Western & Southern Life Insurance Co. Annex, Cincinnati. Ferro Concrete Const. Co., Gen'l Contrs., Cincinnati. Calking by Everseal Co., Newport, Ky.

Air Conditioning demands Calked Joints

A IR conditioning means temperature control. Openings around window and door frames and other joint apertures must be sealed tight if air conditioning is to function with utmost economy and satisfaction. Pecora Calking Compound is the ideal calking material for air conditioning jobs. It is permanent, for when properly applied it will not crack, chip or dry out. Specify and use Pecora for best results wherever a weather-tight building is required.

For further details see Sweet's Catalogue or write direct to us

Pecora Paint Company, Inc.

Fourth & Venango Streets

Est. 1862 by Smith Bowen

PHILADELPHIA, PA.

Also Makers of

MORTAR STAINS .

SASH PUTTIES

SUCTION MASTIC

This New Type High-Pressure Cartridge Calking Gun (patent applied for) is a great Time and Material Saver. Pecora Calking Compound is packed in Non-Refillable cartridges of approximately One Quart capacity.

HIGH PRESSURE

CARTRIDGE

CALKING GUN



It's a standard requirement - demanded by owners who insist that their homes be completely modern and free from cooking odors and greasy fumes.

The Ilg Kitchen Ventilator is an economical, practical electrical device that appeals to every woman's heart and every man's common sense ... a feature that adds to sale and rental values.

The Ilg line of kitchen ventilators is unquestionably the most complete made; two sizes, four different models for permanent and portable installa-tions in the wall, window, or transom. You'll be particularly interested in the new Ilgette Kitchen Ventilators specifically designed for small kitchens.

When you buy or specify an Ilg Electric Ventilator you recommend the only one made with a fully enclosed self-cooled motor — known everywhere by name and performance - sold under a one-nameplate guarantee by a pioneer manufacturer.

Mail coupon for new file-size binder on the complete Ilg line.

Ilg Electric Ventilating Co. 2899 N. CRAWFORD AVE., CHICAGO





The Express Messenger is the Architects' Messenger

Blue prints, plans, alterations, rush or otherwise, are forwarded and returned by Railway Express with extra special attention at astonishingly low rates. Railway Express picks them up at your office by fast motor truck on your phone call, rushes them at passenger train speed under lock and key, delivers them promptly on arrival, going and coming, and at no extra charges. You get a receipt from us signed on pick-up, with \$50.00 liability included. Railway Express gets a receipt from consignee on delivery, proving arrival on time and in good condition. It's sureness made doubly sure, and with 23,000 Railway Express offices at your disposal across the continent, you can reach about anybody in America. For super-swift speed use nationwide Air Express - border-to-border, coastto-coast, 2,500 miles overnight. Merely telephone the nearest Railway Express office for service or information.

RAILWAY EXPRESS

NATION-WIDE RAIL-AIR SERVICE

PRODUCTS AND PRACTICE

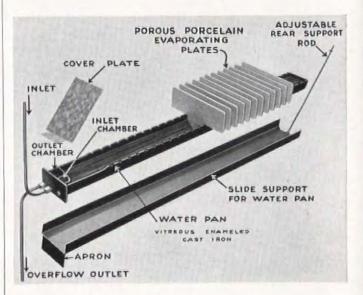
(Continued from page 13)

701. HUMIDIFIER

The Automatic June humidifying system is designed to prevent excessive condensation on windows in cold weather by progressively reducing indoor humidity as weather and windows become colder.

The evaporator of the system is shown in the illustration above. It consists of a vitreous enameled cast iron water pan which is supported level inside of the furnace casing top in a slide support so that the water pan may be withdrawn like a drawer. Crosswise upon the pan a series of porous porcelain evaporating plates are placed in notches. The middle portions of these plates extend downward into the water in the pan. The plates have millions of fine pores which draw up water from the pan by capillary attraction. This keeps the evaporating plates saturated with water and their surfaces constantly wet.

Approximate adjustment for desired humidity under normal operating conditions is obtained by placing more or less of the porcelain evaporating plates in the pan. The amount of water flowing into the pan is controlled by a valve which can be set for greater or less humidity. Should the flow of water into the pan exceed the amount which can be evaporated by



the passage of air from the furnace, the excess water is carried off by an overflow pipe. No more water can be evaporated than comes through the inlet of the pan. The valve which regulates this flow of water is usually placed in a humidity control instrument in one of the rooms and is easily adjusted.

Condensation on windows during very cold weather can be controlled or prevented by regulating the flow of water into the pan, and hence the amount of water evaporated. When the evaporator is set to provide the desired indoor humidity at normal outside temperature, it will be found that the inside relative humidity will decrease as the outdoor temperature drops. While this might appear to lack the advantages of automatic control, it is claimed that this lowering of relative humidity with lower outside temperatures will be found desirable in that the amount of condensation on windows or other cold surfaces will thereby be reduced or entire prevented.

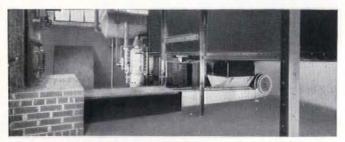
The Automatic June humidifying system is manufactured by The Monmouth Products Co.

(Continued on page 48)

IRON FIREMAN . . THE VERY HEART OF MODERNIZATION



HEN owners think about modernizing, new business is born. The very heart of modernizing is the boiler room because new developments in boiler room equipment have obsoleted old types and old ideas. New Iron Fireman developments have cleared the way for decisions to go ahead with absolute confidence about firing equipment. Everyone knows coal is the cheapest, safest,



This Iron Fireman boiler room modernization job for Republic Bank Note Co., at Pittsburgh, started paying immediate dividends by cutting their fuel costs 33 1/3%, and reducing firing room labor 65%.

most dependable source of heat and power. Now it also holds its own in cleanliness and convenience. Iron Fireman not only fires coal so efficiently as to be in the very top bracket of combustion efficiencies, but it also feeds coal direct from the bin—you never need to see the coal—it flows like other automatic fuels. There is a size and type of Iron Fireman burner for every firing job from residential furnaces up to commercial and industrial boilers developing 500 h.p. Quickly installed. Convenient terms of payment.

Write to 3051 W. 106th St., Cleveland, for catalog and Don Graf Data Sheets. Iron Fireman Mfg. Co. Factories: Cleveland; Portland, Oregon; Toronto. Dealers everywhere.





of Individual Radiators

Sylphon Automatic Radiator Valves—simply used to replace ordinary radiator valves in one room, a suite or an entire building-regulate the flow of steam to each radiator according to the individual room's comfort requirements.

Because these self-contained and self-powered reliable controls cost so little, are so easy to install in new or old buildings without alterations, and return so much in tenant satisfaction and fuel economy—they are a paying investment in any modernization project, large or small.

Made in types for both exposed and concealed radiation. This latter exclusive two-bulb balanced heat control, illustrated, utilizes both incoming cool air and outgoing heated air from the enclosure to maintain desired temperature at the breathing line. Installed entirely within the enclosure, out of sight—only the attractive adjustment knob is visible. See new bulletin below.

NEW SYLPHON BULLETINS OFFERED

Individual Room Temperature Control—Bulletins NA 80 and NA 70...Zone Control—Bulletin NA 70...Space Heat Control in Large Industrial Areas—Bulletins NA 50 and NA 70...Duct Type Heating and Air Conditioning Controls—Bulletin NA 50...Service Hot Water Supply Control—Bulletins NA 20 and NA 40...Drinking Water Temperature Control—Bulletin NA 20.

JLTON KNOXVILLE

Sales Representatives in Principal Cities

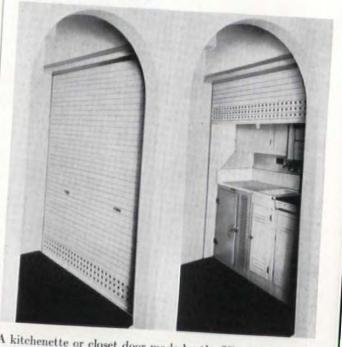
PRODUCTS AND PRACTICE

(Continued from page 46)

702. INSULATION

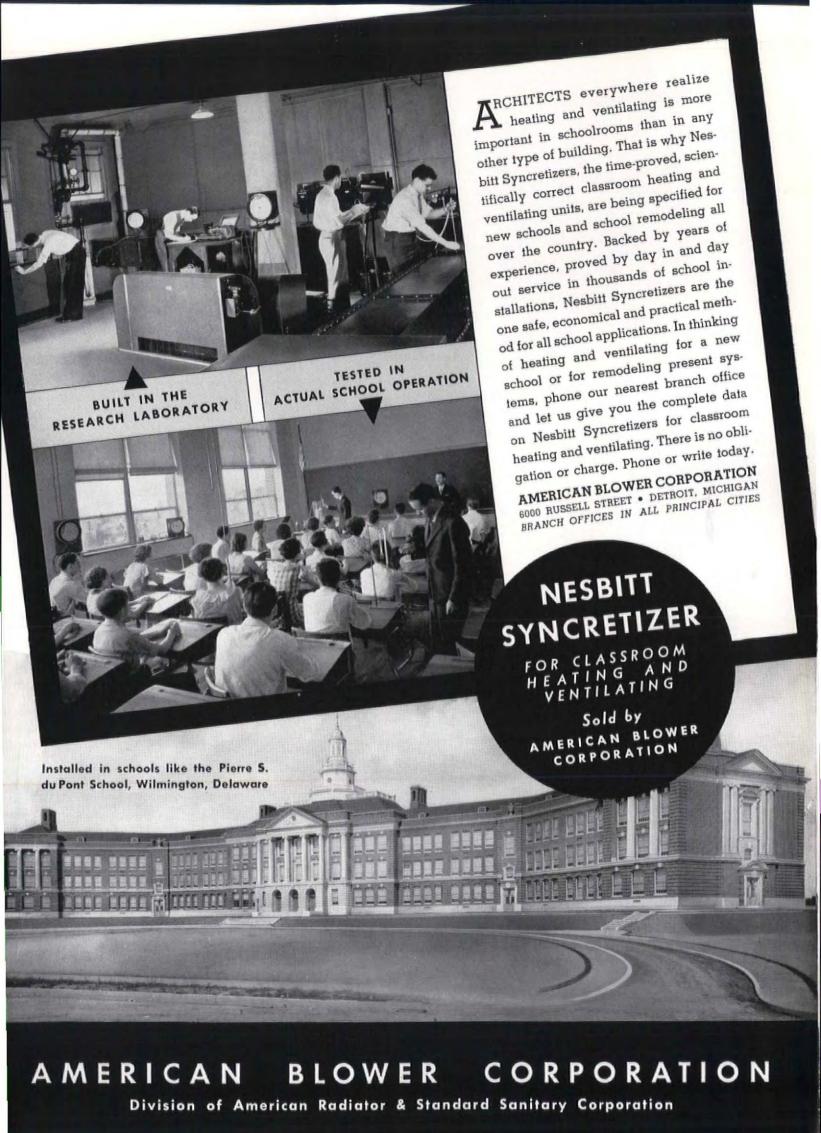
Zonolite, also known as Vermiculite, is the name of an insulating material made from mica. Natural mica, after being ground and graded, is expanded by heat and rapidly cooled. The resulting product consists of light honeycombed granules, somewhat like accordions, with properties which make it a desirable material for both heat and sound insulation. It is light in weight, a poor conductor of heat, has the power of reflecting radiant heat waves, and is almost indestructible. It is not affected by termites, vermin, or high temperatures and is chemically inert. For house insulation, it is sold in loose or fill form in bags from which it can be poured between studs or floor beams. Hot plate tests made by the National Bureau of Standards show it to have a thermal conductivity of .33 per inch of thickness. Tests by other laboratories result in thermal conductivities as low as .27. It has been approved by the Bureau of Buildings of New York City, after being subjected to a standard onehour fire test, for fire retarding existing wood stud partitions. As a thermal insulating medium, Zonolite's field of service has ranged from insulating dry ice containers chilled to 60° below zero to protection for the tops of open hearth furnaces withstanding temperatures above 2800° F. Zonolite may be used as a light weight aggregate for mixing with cement or gypsum or other plastics to form heat insulating and acoustical plasters and concrete. A widely used acoustical tile is made with Zonolite and a binder. Air ducts can be made of wire mesh and Zonolite cement; the Zonolite acts as both a sound and heat insulator. It is processed and sold by F. E. Shundler and Co., Inc.

703. ROLLING DOOR



A kitchenette or closet door made by the Kinnear Manufacturing Co. rolls up like a shade. The door is composed of small interlocking metal slats which have a relatively flat and smooth exterior surface that can be given any type of finish. The ends of the slats travel in metal guides or grooves built into the jambs and roll up on a barrel which contains a helical spring. This rolling door operates like a window blind or a rolltop desk and does not require the wall or floor space of a swinging door.

(Continued on page 50)





New Type Casein Paint Gives Enduring Beauty at LOW COST Texolite Paint

 Because we are leading manufacturers of interior finishes* it is fitting that we undertook the task of producing an ideal paint -the final note to accent the beauty of, and give longer life to, modern interiors.

Our special knowledge of the relationship of paint to the composition of the materials of interior finishes plus our exhaustive laboratory work and field tests permits us to say - Texolite does more for the money than any other type of paint will do.

For 12 years we have manufactured and experimented with casein paint. Texolite is the successful result of our experimentation. Texolite is an entirely new principle paint. Its advent marks a new conception of paint beauty, paint value, and paint performance.

TEXOLITE HAS THESE ADVANTAGES

1. Hides in one coat . . . 2. Dries in one hour . . . 3. Goes 25 per cent farther . . . 4. Leaves no brush marks . . . 5. No paint odors . . . 6. Does not yellow . . . 7. One gallon makes one and one-half gallons of ready-to-use paint.

TRY TEXOLITE AT OUR EXPENSE

Builders and owners everywhere are enthusiastic about Texolite advantages. col wil FUI

| ors, its economy. Mail coupon today. We l send you complete information and a L QUART OF TEXOLITE absolutely FREE. | PEXOLITE AN EXPRESSED AND SERVER TO SERVER SAME THE SAME THE SAME THE SERVER SAME THE SAME THE SAME THE SAME THE SAME THE SAME |
|--|--|
| NITED STATES GYPSUM COMPANY 00 West Adams Street, Chicago, Illinois AF- | 7 |
| lease send me a sample full quart can of Texolit ith a sample of Texolite Deep Color and handy C | |

My Name Address City. Phone No.

*INTERIOR FINISHES MANUFACTURED BY UNITED STATES GYPSUM COMPANY

Finishes

Weatherwood Insulating Board

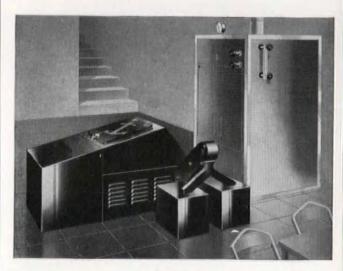
NITED STATES GYPSUM COMPANY

PRODUCTS AND PRACTICE

(Continued from page 48)

704. STOKER

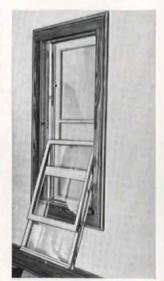
The Anchor Stove and Range Co., New Albany, Ind., has just announced a new Anthracite Model of the Anchor Kolstoker. It is furnished either in the standard type or with automatic ash remover and is designed for use with steam, vapor, warm air, or hot water heating systems, or high pressure boilers.



Special features of the Anchor Kolstoker which are incorporated in the Anthracite Model, are the Oilmotor Drive, which makes for silent but powerful operation; the attractive cabinet, which is lined with special sound-absorbing insulation for silencing the operation of the drive unit; the Feed Worm Inspection Plate, which makes it easy to remove obstacles from the coal feed mechanism; the sectional burner head, which permits expansion and contraction without cracking or warping; the low hopper, which is easy to fill and provides big coal capacity; and the safety of the cabinet design which completely encloses all working parts.

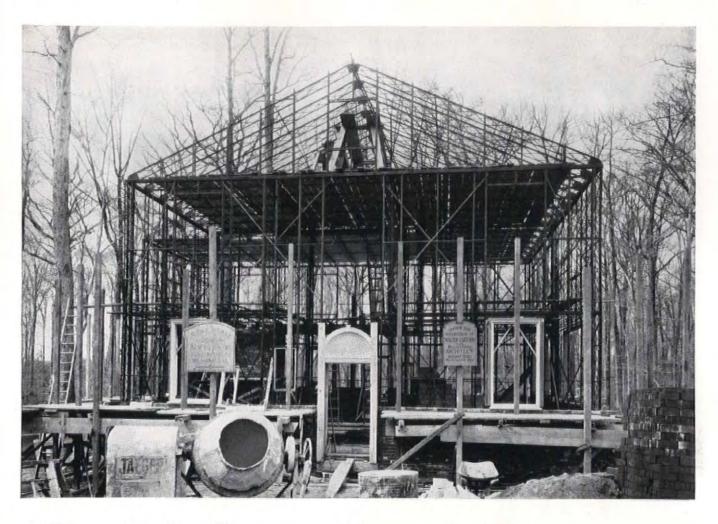
705. SAFETY WINDOW

A device made by the Howard Safety Window Company permits the sash of a double hung window to be swung entirely into the room for cleaning and to be opened so as to hinder drafts. It consists of metal shoes which support the sash and slide in metal channels. The sliding shoes instead of the sash are attached to the sash cords. A pivot pin in the bottom of the shoe permits the sash to be swung inward. The sash may be operated in the same manner as a double hung window, or the lower sash may be pivoted inward so that there is an opening between the meeting rails of the two sash. Either sash may



be held in one of several positions. Both upper and lower sash may be swung entirely into the room for cleaning or may be removed completely from the frame.

This safety device may be installed on any standard window



Bethlehem Steel Frame-

as easily erected as the conventional type

THERE'S nothing complicated about erecting a Bethlehem Light Load Steel Frame. Construction methods are virtually identical with those used with wood, and working time is practically the same. The only difference in procedure is that the torch and the electric arc welder replace the saw and hammer in cutting and fitting the members right on the job. You'll find that Bethlehem Light Steel Members are adaptable to any design, too—that they can be used in every type of light occupancy structure.

Nor are adaptability and ease of handling the only factors which recommend Bethlehem Light Load Steel Frames to your attention. The steel frame house has greater sales appeal today than any other form of dwelling construction. Careful home buyers are interested in it because it represents permanence—lasting security for their investment. Its rigidity staves off obsolescence, reduces upkeep—means a lifetime of freedom from the disfiguring cracks and misalignment of doors and windows that come from warping and shrinking. What is even more important, steel-frame construction is proof against attack by termites and promotes fire-safety.

If you are interested in keeping fully abreast of the newest trend in dwelling construction you will find it highly profitable to investigate Bethlehem Light Load Steel Frame thoroughly.

BETHLEHEM STEEL COMPANY



No Danger of Scalding if you Install

POWERS SHOWER MIXERS

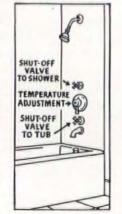


 Use this time saving economical mixer to provide thermostatic control for both shower and tub bath. To fill tub with water at any certain temper-

ature simply close shut-off valve to shower and open valve to tub. Then turn handle of mixer to supply water at the temperature desired.

Write for Bulletin No. 258 which gives details of this and many other types of Powers safety water mixing valves for all kinds of shower baths.

The Powers Regulator Co.... Offices in 44 Cities, see your phone directory...45 years of Automatic Temperature and Humidity Control.



. . Mail to . .

The Powers Regulator Co., 2720 Greenview Ave., Chicago, Ill.

Please send me Bulletin No. 258. Am interested in safety water mixing valves for

Individual Shower Baths

Group Showers

Zone Showers.

| Name | | | |
|---------|--|--|--|
| Address | | | |

TECHNICAL PUBLICATIONS

TECHNICAL INFORMATION ON BUILDING MA-TERIALS, National Bureau of Standards, U. S. Department of Commerce, Washington

For the benefit of those interested in building construction, the National Bureau of Standards has started a new series entitled "Technical Information on Building Materials." This series consists of brief papers which present in a simple and compact form the results of investigations covered in more detailed reports of the Bureau, Technical bulletins issued to date include "Corrosion of Metals Used in House Construction," "Life of Non-ferrous Screen Wire Cloth," several on thermal insulation, "Exterior Waterproofing for Masonry," "Integral Waterproofing for Concrete."

EARTHQUAKE RESISTING STRUCTURES by Edward R. Dye, Associate Professor of Civil Engineering, Montana State College. Bulletin No. 1, Engineering Experiment Station, Montana State College, Bozeman, Montana

Inspired by Montana's recent earthquake experience, Professor Dye has written in simple, non-technical language the general principles underlying earthquake resistant design, and explains the application of these principles to foundations and superstructures, light wood frame construction, reenforced concrete, structural steel, solid masonry, brick and stone veneer, chimneys, plumbing and heating.

The theories upon which the design of earthquake resistant structures is based are two, the "flimsy" and the "rigid." The former method calls for a structure that will wave or swing freely under the action of the earth shock. However, there are so many practical difficulties connected with the use of this theory, such as construction of elastic walls that will not crack under large movements, that Professor Dye prefers the simpler designs possible with the "rigid" theory. The "rigid" technique has received more general acceptance and has stood up under several severe quakes. Its basic principle is that the structure shall be so designed, constructed, and tied together that no part of it can be moved without general resistance to the movement by the entire structure.

All buildings have a natural period of vibration. Those whose natural period is near to that of the earthquake period receive greater damage due to an increased amplitude of motion caused by the earthquake. This is especially true in tall buildings. Professor Dye points out the importance of designing such buildings so that their natural periods of vibration will resist rather than be amplified by the earthquake shock.

In light wood frame construction, continuous studding for the full height of the building and diagonal sheathing and sub-floors are recommended. Diagonal corner bracing is particularly important; partitions should be well anchored to exterior walls; and the frame should be securely bolted to the foundation.

For the aseismic design of concrete buildings, Professor Dye recommends the services of a skilled architect or engineer who is familiar with this type of design. Both bond and mortar are very important in masonry construction. Reenforced brick work is highly recommended, while chimney construction calls for a special technique. Attention is called to the dangers of broken gas and water pipes and the necessity for flexible joints just inside the building.

The author maintains that the increased cost for earthquake resistant construction seldom exceeds 10 per cent of the total.

(Continued on page 54)



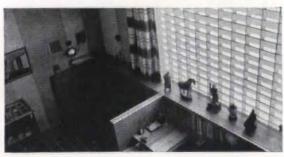
vision in planning calls for INSULUX

lass Masonry

For industrial plants, commercial buildings and homes, Owens-Illinois Glass Masonry—Insulux—brings together in ONE modern building material, major features that are being demanded for present-day and future building. A selection of face patterns is available, the choice depending upon the degree of light transmission required. Insulux Glass Masonry admits diffused light, transmitting the rays to brighten dark corners. Containing approximately 50% vacuum, Insulux is an excellent heat insulator, a feature which is both economical and practical in these days of air conditioning. Glass masonry lends itself admirably to modern design, offering unlimited possibilities. Every architect and builder will want to be thoroughly familiar with the possibilities of glass masonry.

For illustrations and complete details on *Insulux*, write OWENS-ILLINOIS GLASS COMPANY, 307 Madison Avenue, Toledo, Ohio.

OWENS-ILLINOIS



STOPS HEAT



ADMITS LIGHT



THE FINISHING TOUCH

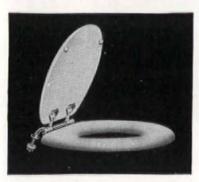
to good bathroom design...

• A Church Sani-Seat is the finishing touch to a good bathroom. Not alone in appearance, but in the eventual satisfaction of the owner. That is why they are the standard specification of architects. They are sanitary, attractive and durable.

A thick sheathing veneered onto hardwood gives Church sheet covered Seats their glistening, ever-clean appearance. They are not varnished or painted. The wide choice of colors, in plain and pearl, places no limitation on your color scheme. Harmonize them effectively with other decorations. Soap and water keep them clean and lustrous.

For commercial and industrial jobs, Church Sani-Black Seats are recommended. Molded of hard rubber over hardwood, they are impervious to acids, time or abuse. They outlast the building in which they are installed. Their first cost is the last.

There is a model of Church Seat to meet every need. Famous Church quality and workmanship are present even in the lowest priced seats. Send today for catalogue showing complete line.



- CHURCH SHEET COVERED SEATS in white and color will not crack, chip or peel.
- CHURCH SANI-BLACK SEATS outlast the building. Absolutely indestructible.



C. F. CHURCH MFG. CO. . HOLYOKE, MASS.

Division of American Radiator & Standard Sanitary Corporation

CHURCH Sani SEATS

TECHNICAL PUBLICATIONS

(Continued from page 52)

In many cases, this increased cost is less than the capitalization of the saving in earthquake insurance.

Included in the bulletin are suggested building code clauses and ordinances patterned after some of the California codes and a table of references, news and technical articles on earthquakes and earthquake construction.

OIL HEATING HANDBOOK by Han A. Kunitz. J. B. Lippincott Co., Philadelphia. $5 \times 7\frac{1}{2}$, 456 pp., illustrated, \$3.50

Han A. Kunitz has written a guide for everyone who designs, installs, sells, or uses oil heating equipment. It answers the questions which the home owner asks about oil heating, explains thoroughly and impartially the principles, installation, and maintenance of oil burners, and provides simple, concise definitions of principles and words used in heating engineering.

The first part of the book briefly explains the oil burner system and the types of oil burners. The second part explains the principles of combustion and the qualities of oil. The third part is devoted to heating and heating systems. It shows how heat losses, pipe, and boiler sizes may be easily calculated and explains the different types of heating systems as well as many of the special types of vapor and hot water systems. Also treated are the subjects of warm air heating and controls.

The author explains the procedure followed in making oil burner installations, reprints regulations of the National Board of Fire Underwriters governing oil burning equipment, and gives points on retail selling. The last part of the book is devoted to tables and terminology.

The material has been arranged for easy reference. Architects and others who are handling the specifications or purchasing of oil burners and heating plants will find this a useful textbook and reference manual.

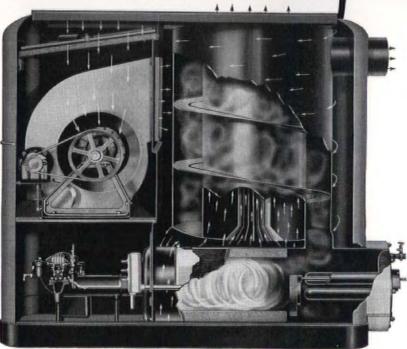
OAK FLOORING, Commercial Standard CS56-36, National Bureau of Standards. U. S. Government Printing Office, Washington

Grading rules of the National Oak Flooring Manufacturers' Association were reviewed in this column last month. These grading rules have been promulgated by the National Bureau of Standards as Commercial Standard CS56-36 for oak flooring. The bulletin of the Bureau illustrates and carefully defines the various grades, sizes, and grooving of oak flooring, explains the methods of inspection, and shows the certificate of grading used by the National Oak Flooring Manufacturers Association.

Of greater importance to the architect and contractor is the part devoted to the essentials of good oak floor construction. The Bureau recommends the use of sub-flooring, gives directions for its installation, and supplies pointers on how to obtain solid, non-squeaking, durable floors. It also makes recommendations for the laying of oak floors where sub-flooring is not used, calls attention to the importance of ventilation under wood floors and the proper installation of joists or sleepers and underflooring.

The Standard has been endorsed by The American Institute of Architects, several branches of the U. S. Government, and many lumber dealers' associations as well as individual firms.

NORGE Fine-Air Conditioning Furnace Unit



- COMPLETE CHANGE OF AIR **EVERY 10 MINUTES**
- 95% OF THE IMPURITIES REMOVED FROM AIR
- OVER 80% EFFICIENCY...AS COMPARED WITH 20% TO 40%
- CONTROLLED HOT WATER THROUGH HEATING SEASON
- QUIET, EFFICIENT FAN TO CIRCULATE AIR

This unit, by actual test, delivers to the rooms of the house from two to four times as much of the heat gen-

erated as the old-fashioned heating plant. That means extremely low operating cost.

In addition to providing heat, the Norge Fine-Air unit automatically circulates, filters, humidifies the air and heats plenty of water for household use. In summer it circulates the air or may be supplemented with cooling and de-humidifying equipment. The Norge Fine-Air Furnace is suitable for homes costing from \$5,000 to \$50,000.

Air conditioning is not just a desire for the future. It is a present demand. Get the facts about Norge heating and conditioning equipment. Call a Norge distributor or write direct to us.

NORGE HEATING AND CONDITIONING DIVISION Borg-Warner Corporation, Detroit, Michigan. WARREN NORGE CO. Inc. Apariment and Builders Sales Division, 315 Fourth

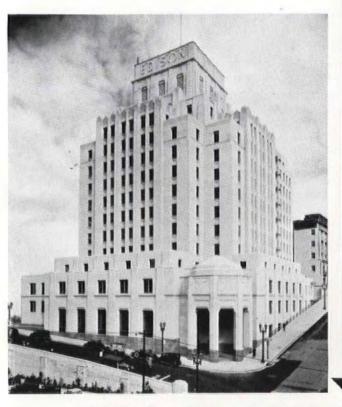
Get the complete story of Norge Home Appliances for apart. Tel. STuyvesent 9-5000 ment or home installation. There are distinct advantages in standardizing on Norge equipment—apart from the exceptionally high quality of the products themselves.

HEAT AND CONDITIONED AIR Amazingly Low Cost

ROLLATOR REFRIGERATION (DOMESTIC AND COMMERCIAL) . GAS AND ELECTRIC RANGES . WASHERS AND IRONERS WHIRLATOR OIL BURNERS . FINE-AIR FURNACES . AIR CONDITIONING . CIRCULATOR ROOM HEATERS

THE BEST CROSS-COUNTRY TIME

Telechron
(Reg. U. S. Pat. Off. by Warren Telechron Co.)



LOS ANGELES

General Office Building, Southern California Edison Company, Ltd.—this modern building is equipped with a Telechron ADFR (Automatic Double Frequency Resetting) system consisting of 68 clocks and central control equipment. Installed, 1931. Allison and Allison, Architects.

BOSTON

Hotel Manger, one of Boston's newest, equipped with a Telechron AT (Automatic Throwover) system consisting of 510 clocks—491 of which are in guest rooms—and central control equipment. Installed, 1930. Architects, Funk and Wilcox, Boston, Mass. Electrical Contractor, Lord Electric Co., Boston, Mass.



● From coast to coast, new structures are enhanced, modernized buildings brought up to the minute—the same minute in every room—by the precision of the Telechron system. A single clock or a thousand are as easily operated. Centrally controlled, 68 Telechrons point the same time throughout the Edison Company building. Hotel Manger serves its guests with 491 clocks indicating time as a unit.

Each clock is an independent timekeeper, synchronized by impulses of regulated alternating current. Yet each system may be reset—manually or automatically—from a central point.

The initial cost is low—the up-keep hardly worth mentioning.

We will gladly send you detailed information or, if you prefer, our representative will personally discuss any of your projects without obligation. Other timekeeping devices, such as program clocks, time recorders, etc., may be included in the system where needed. Address the Warren Telechron Company, 776 Main Street, Ashland, Mass.

MANUFACTURERS' PUBLICATIONS

A mong the manufacturers' publications recently received of interest to the architectural profession were the following:

KITCHEN AND BATHROOM EQUIPMENT

706. Crane Co.—a manual for the kitchen planner, professional or amateur, showing kitchen equipment and their sizes, suggested arrangements, locations, kitchen sizes, and location of doors and windows.

"Planning The Small Bathroom" is a booklet telling how to plan the small bathroom and describing Crane fixtures.

707. Briggs Manufacturing Co—a catalogue of the new Brigsteel Beautyware, attractively illustrated in color, with suggestions for color combinations for the bathroom and kitchen.

708. Kleensan Corp.—a booklet describing and illustrating the Nu-Bidet, which is a combination toilet seat, bidet, and toilet lid.

709. Frigidaire Division of General Motors Corp.—a catalogue of new refrigerator models and their fittings, a booklet of information about commercial refrigerators (Frigidaire Corp.), and a folder on a new water cooler.

710. Kelvinator Corp.—a folder illustrating Kelvinator products—refrigerators, gas and electric ranges.

711. Kohler Co.—"Planned Plumbing and Heating for Better Living" is a booklet describing Kohler bathroom and kitchen fixtures and their fittings with suggestions for their arrangement, and Kohler boilers, convectors and radiators.

712. Westinghouse Electric & Manufacturing Co.—folders illustrating the Adjust-O-Matic electric roaster and electric iron, the Mobilaire room cooler, and Westinghouse electric ranges and their fittings.

HEATING, AIR CONDITIONING AND REFRIGERATION

713. General Electric Co.—a handsomely bound, illustrated, and easily understood description of General Electric boiler, burner, and air conditioning equipment for the home; also a companion piece on air conditioning equipment for all purposes.

714. Kelvinator Corp.—a folder illustrating heating and cooling equipment.

715. Williams Oil-O-Matic Heating Corp.—an attractively set up manual on oil burning explaining the reasons for Oil-O-Matic equipment.

716. Reynolds Corp.—illustrated descriptions of their heating and air conditioning.

STOKERS

717. The Will-Burt Co.—three folders of Will-Burt mechanical stokers.

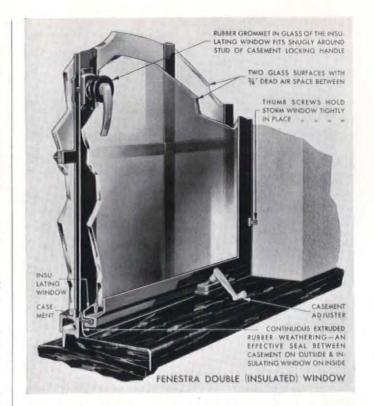
WATERPROOFING

718. Standard Waterproofing Corp.—a pamphlet which illustrates buildings, the exterior walls of which were waterproofed by this company.

CASEMENT HARDWARE

719. Casement Hardware Co.—a catalogue of Win-Dor casement hardware.

(Continued on page 58)



INSULATE YOUR WINDOWS

as well as your walls

Modern ideas of winter comfort and fuel economy demand that houses have insulated windows as well as insulated walls. Double glass with at least $\frac{3}{4}$ " of dead air space between the panes is the best window insulation yet devised.

That's why Fenestra Inside Insulating Windows applied to Fenestra Steel Casements are arousing such widespread interest.

They eliminate condensation and frost under all ordinary conditions (70° inside temperature, 45% relative humidity, 5° below zero outside temperature). They reduce heat loss through windows 60%. They save fuel. Put them on, quickly... from the inside... when the screens come off in the fall. Remove them any time with ease and safety for washing or storage.

Specify that all Fenestra Steel Casements you are buying now shall be equipped for Inside Insulating Windows. You can get the Insulating Windows themselves any time later.

DETROIT STEEL PRODUCTS COMPANY 2248 East Grand Blvd. • Detroit, Michigan



THERE'S ARCHITECTURAL



 Where limited budgets must produce completely artistic effects, Marsh Wonder Walls solve a hundred problems.
 Their application to renovation and new construction is almost limitless.

MARLITE, large sheets in plain color, and MARSHTILE, tilemarked sheets of color, are the Marsh Wonder Wall materials which permit the widest latitude in modern design, making possible the rapid transformation of outdated rooms into the modern mode.

The sheets are large, easily cut and installed by any good carpenter, using his customary tools. The glazed and burnished surface is durable, easily cleaned, and impervious

to moisture and grease. Send for complete descriptive literature and visit our display (illustrated below) at Shop No. 15 Concourse, R. C. A. Bldg., New York City.





MANUFACTURERS' PUBLICATIONS

(Continued from page 57)

TOILET PARTITIONS

720. The Mills Co.—a folder on Mills metal toilet partitions.

LIGHTING

721. Kurt Versen, Inc.—a catalogue of modern glass and metal lighting fixtures.

722. Benjamin Electric Mfg. Co.—a manual of service station floodlighting.

ROOFING

723. The Barber Asphalt Co.—a booklet telling all about Genasco Resurfacer for roofs, with some mention of other Genasco roofing products.

CELLARS

724. American Radiator & Standard Sanitary Corp.—"The Cellar Reborn" is a manual for utilizing the cellar for hobby, play, utility, study, rumpus, or sports, with many interesting before and after photographs.

PAINT

725. Technical Coatings, Inc.—a pamphlet describing Technical Coatings' products and services.

726. United States Gypsum Co.—a pamphlet about Texolite, a quick drying, highly reflective casein paste paint.

DRAWING MATERIALS

727. Koh-I-Noor Pencil Co., Inc.—a catalogue of Koh-I-Noor pencils of all kinds.

FOLDING WALLS AND WARDROBES

728. American Car and Foundry Co.—folders illustrating Fairhurst folding walls and wardrobes.

TRIM

729. Trimpak Corp.—a pamphlet telling why trim should be Trimpak.

TILE

730. Franklin Tile Co.—a really complete tile catalogue showing types, colors, designs, and dimensions.

DOORS

731. Ellison Bronze Co., Inc.—a booklet illustrating the Ellison balanced aluminum and bronze doors.

ELECTRIC WIRING

732. Standard Electrical Porcelain Mfrs.—a condensed manual of concealed knob and tube and open cleat wiring.

733. General Electric—a reference manual for architects and engineers on radial wiring.

REGISTERS AND GRILLES

734. The Independent Register Co.—a catalogue of registers and grilles.

METAL LUMBER FRAME

735. Reynolds Corp.—illustrated descriptions of Reynolds metallation, Ecod fabric, metalumber, and precast slabs.

(Continued on page 60)



Even in Mild Climates . . .

Automatic Temperature Regulation is Recognized!

In California, where the number of "degree days" in the heating season is only one-third to one-half of that found in New York and Chicago, there are hundreds of schools and countless buildings of other types equipped with *Johnson* systems. While the moneysaving in fuel may not be as great as in the northern states, the Comfort, Convenience and Healthfulness of accurate, dependable temperature control is recognized and appreciated.

Johnson thermostats are visible on the walls of these interesting rooms in two new and modern California Schools. A total of 72 Johnson room thermostats control Johnson valves on 93 radiators and valves and

dampers in 13 unit-type ventilators in the two buildings . . . Ventilating systems for auditoriums are also Johnson-controlled.

From the tip of Maine to southern California, from the Pacific Northwest to Florida, and from coast to coast in Canada, boards of education and other building owners of every type have availed themselves of the services of the Johnson organization. Whatever the temperature or humidity control problem — in heating, cooling, ventilating, air conditioning, or industrial processing — there is Johnson equipment, tried and tested, ready for application by a thoroughly trained staff of engineers and mechanics.

AUTOMATIC HEAT & HUMIDITY CONTROL

JOHNSON SERVICE COMPANY . . . MILWAUKEE, WISCONSIN . . . OFFICES IN ALL PRINCIPAL CITIES A SINGLE NATION-WIDE ORGANIZATION DEVOTED TO ONE LINE OF BUSINESS FOR MORE THAN FIFTY YEARS

Announcing

AEROFIN

Direct Expansion Cooling Coils with Exclusive Centrifugal DISTRIBUTING HEADER



Aerofin Direct Expansion with new Centrifugal Distributing Header, designed to meet changing conditions in air conditioning practice.

Below: Aerofin Direct Expansion with standard distributing and suction headers allowing control for each row.

THE new Aerofin Centrifugal Distributing Header for di-rect expansion cooling coils is the result of extended research and extensive field tests.

It provides a proven method for automatically distributing the refrigerant evenly through all circuits of the evaporator where only one connection for each coil is required. It saves costs on installation, is simple and fool-proof.

This distributing header, like all standard Aerofin equipment, minimizes pressure loss. Made in 2 to 6 rows of tubes in standard 10" depth casings.

New Supplement to Bulletin D. E. 34, gives complete tables and curves for selecting proper

size and type. Permits accurate determina-tion of final air condition leaving coil. Send for your copy today.

AEROFIN is sold only by Manufacturers of Nationally Advertised Fan System App AEROFIN CORPORATION 850 Frelinghuysen Avenue Newark, N.J. Detroit Philadelphia

MANUFACTURERS' PUBLICATIONS

(Continued from page 58)

GYPSUM LATH AND SHEATHING

736. Gypsum Association—a booklet of interesting facts about gypsum lath as a fire resistant material.

737. United States Gypsum Co.-a folder about Gyplap sheathing.

738. Atlantic Gypsum Products Co.—a folder describing Rockwall acoustical plaster, its advantages and method of application.

739. American Cyanamid & Chemical Corp.—a new catalogue of Gypsteel products-Gypsum plank, slab, tile, plaster, and wall board.

GLASS

740. Owens-Illinois Glass Co.-a condensed catalogue of Insulux glass masonry illustrating various designs and how to use them, with details and specification data for the architect and contractor.

FLOORING

741. Industrial Silica Corp.—a pamphlet on Silicrete for hard, durable concrete floors.

742. Congoleum-Nairn Inc.—Three books of samples— Veltone linoleum, battleship and plain linoleum, and wall covering-arranged for filing in an A. I. A. or other catalogue file. A catalogue of Sealex linoleum showing colors, designs, patterns, and suggested color combinations.

COPPER SHINGLES

743. New Haven Copper Co.-a booklet illustrating Kenmar copper shingle roofs.

CONCRETE

744. Portland Cement Association-"Concrete in Schools" is a manual containing data for the architect and structural designer on school planning and the use of concrete in schools.

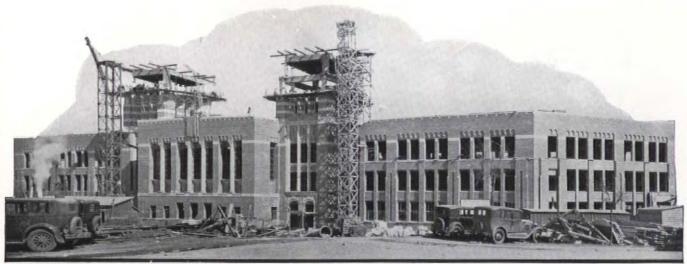
LATH AND SHEATHING

745. Metal Lath Manufacturers Assn.—a booklet describing the uses of metal lath and plaster for both new construction and modernizing work told in simple language so that anyone can understand it. Contains cost figures which will be helpful to the layman.

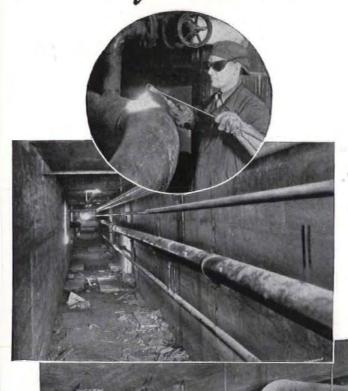
EXPANSION BOLTS

746. The Rawlplug Co., Inc.-a looseleaf booklet of architectural and engineering data on expansion bolts and devices for holding to masonry.

| A | ı | 3(| CI | 1 | IT | E | C | T | τ | T | 1. | 11 | L | 1 | 1 | O | R | U | N | 1 | , | 1: | 3 | 5 | 1 | £ | a | st | | 4 | 2 | n | d | 2 | 31 | t. | , | 1 | V | e | W | | Y | C |
|---|-----|------|----|----|----|---|---|---|---|---|----|----|---|----|---|---|---|---|---|----|---|----|---|---|------|---|---|----|---|---|------|----|---|---|----|----|----|---|---|----|---|----|---|---|
| | | | | | - | | | | | | | | | | P | | | | | 91 | | | | | * (* | | , | | | | - 10 | | | | | | 9 | | | | | | | |
| | 100 | . 61 | | | | | | | | | į. | | | | * | | | | | | | | | | | 7 | | | | | . 4 | 18 | 1 | | | | 14 | 7 | | 7. | | | + | × |
| , | | | | | | | | | | | | | | | i | | × | ÷ | | i. | | * | | ě | | i | | | * | * | á | | | | | 4 | | | | , | | | | , |
| N | V. | A | N | 11 | 2 | | | | | | | | | 11 | | | | | | | | | * | * | * | * | | * | | | * | | | | | , | | * | | | | i. | | |
| S | 7 | F | RE | E | Т | | A | D | D | R | E | S | S | | | 4 | | | | | | | | * | | | | • | | | | | | | | ÷ | | ú | | | | 4 | | , |



Of course they're putting WELDED PIPING in this up-to-the-minute \$2,000,000 High School



When completed, this Wyandotte High School, now being erected in Kansas City, Kansas, will take its place as one of the finest school buildings in the country, thoroughly modern in every respect.

In keeping with this modern note is the inclusion of welded piping which assures to any building in which it is installed, permanent freedom from leaks and maintenance and lower operating costs.

Installation costs will be lower too, because the welding is being done throughout with AIRCO Oxygen, Acetylene, Welding Rods, and Welding Apparatus and Supplies. The Interstate Plumbing and Heating Company of Kansas City, Missouri, is the piping Contractor.

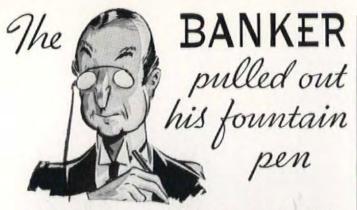
Write for "THE FACTS ABOUT WELDED PIPING," an illustrated bulletin that gives details including complete Pipe Welding Specifications.

AIR REDUCTION

SALES COMPANY

GENERAL OFFICES: 60 East 42nd Street, NEW YORK, N. Y. DISTRICT OFFICES and DISTRIBUTING STATIONS in PRINCIPAL CITIES

At top: 2", 4", 6" steam lines in tunnel. Above: 14" distribution header with 8" and 10" branches. Right: 6" steam main in attic.



Architects welcome the new decorative qualities of Patrician two-tone hardware. The new durable plastic knob material in its jewel-like "setting" of natural metal finishes adds charm to any home.

Although black or ivory are standard, Patrician is available in delicate pastel tints, mahogany, or Chinese red if a bright touch is desired.

Patrician is practical in that the knob material will not fade or tarnish and is unaffected by moisture or perspiration.

Offered in a complete line of pendant or sectional trim, Patrician is well worth investigation. We refer you to Sweet's Architectural Catalogs for further details.



LOCKWOOD HARDWARE MFG. CO.
DIVISION OF INDEPENDENT FITCHBURG, MASS.

FORUM OF EVENTS

(Continued from page 9)

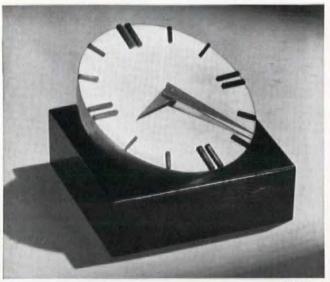
played for visiting firemen, little publicity has as yet been given. A "Rocket Ride" imported from England is the thriller of the show, with small trains in which visitors palpitate, upside down, under the rim of a huge goldfish bowl. Art is represented to the tune of \$10,000,000, and is full of Rembrandts, Titians, Tintorettos, and Goyas, as well as more modern painters. Art applied on the buildings consists of murals by Eugene Savage, whole regiments of statues, Pierre Bourdelle's 40,000 square feet of painted bas-reliefs.

On the whole, Dallas is pleased. One feature of the show, proposed by Fort Worth, doubtless at the instigation of that peer of wowpunchers, Billy Rose, has met with less enthusiasm. The idea was a sign—second largest in the world—to be placed opposite the Fair entrance, suggesting that after going to Dallas for their education, visitors motor to Fort Worth for relaxation, where the entire cast of Jumbo, "50 Eye-Bedeviling Coryphees," and a "Nude Ranch" are only a few of the tidbits offered to tired tourists, worn down by a day of livestock, art, and Texas sun.

DESIGNERS GRADUATE

The first group to graduate from an American university with a B. A. degree in Industrial Design has just emerged from Carnegie Institute of Technology in Pittsburgh. Five strong, the graduates have four jobs; the fifth is temporarily unemployed only by choice.

Two years ago the Department of Painting and Design, under the leadership of Professors Dohner and Kostellow,



Luke Swank

ADJUSTABLE CLOCK

organized a new course. Reason: a tremendous field for activity, in all likelihood a permanent part of industrial activity, with preparation for it available in no school in America. Fine arts courses, with their handicraft tradition and emphasis on individual production, are not only useless but definitely harmful. A field devoted to the immensely multiplied anonymity of mass production requires (a) a new esthetic sensibility attuned to the creative possibilities of machine operations, (b) trained designers with this approach.

Carnegie industrial design students begin as all others in the Painting and Design department. They draw, model,

(Continued on page 64)

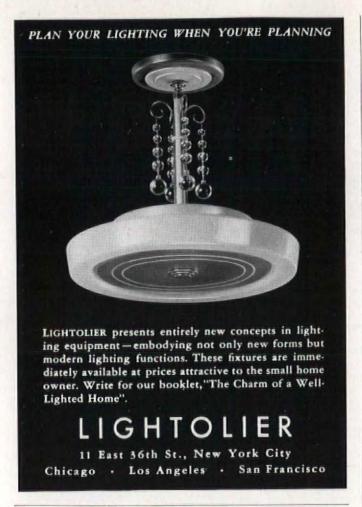


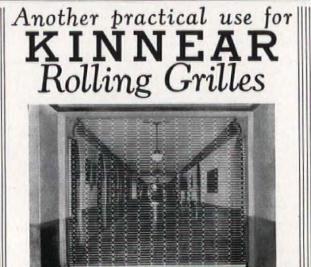
The new Kelvinator aircooled units for cooling single rooms or offices, can be installed any place where an outside air connection can be made. They will be especially interesting to clients who hold short-term leases ... because they require no plumbing connections, and are as easily moved as other office or household equipment. Two sizes are available, 1/2 horsepower and 1 horsepower.

These simplified air-cooled room coolers do not supplant the time-tried Kelvinator water-cooled units and self-contained air conditioners. Where a water supply is practical, water-cooled units offer advantages in lower cost per B.t.u. extracted. Kelvinator provides both types so that you can give each client the equipment which exactly fits his individual needs.

For new construction and permanent installation, of course, Kelvinator has equipment to meet every requirement of duct or remote-unit systems. It will pay you to get in touch with your local Kelvinator Air Conditioning Dealer and learn how the new developments in Kelvinator Air Conditioning equipment are opening new fields for architects. Or write direct to Kelvinator Corporation, 14250 Plymouth Road, Detroit, Michigan for a complete file of air conditioning data.







Close-Off Corridors

A dependable barricade with window-shade convenience and advantages of air, light and vision. Out of sight when not in use. Attractive design. Built in any size or metal. For old or new buildings. You'll find the Kinnear Rolling Grille just the thing for many uses... and as to quality, a worthy companion to the famous Kinnear Steel Rolling Door. Be sure to have the A. I. A. File on Kinnear Grilles and Doors. Gladly sent with no obligation.

Offices and Agents in All Principal Cities

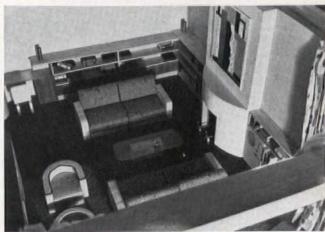
THE KINNEAR MF

MFG. CO.
Columbus, Ohio

FORUM OF EVENTS

(Continued from page 62)

paint, study history of art, languages, etc. Specialization starts the second year, when they study advanced design, without relation to products. This abstract study trains the student to think of a material as a material, to investigate its possibilities before becoming enmeshed in the

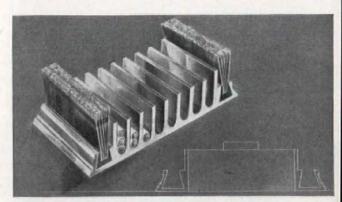


MODEL OF LIVING ROOM

Photos, Luke Swan

complexities of practical design. By the third year the student is deep into this study of materials; he knows what tools will and will not do; he knows how metals are worked and which process is best suited to a given material. Out of abstract color designs he develops linoleum patterns, out of studies of the element of motion applied to the shape of a solid he can produce a radiator cap. And so on. Weekly trips with Professor Müller-Munk take in the numerous factories in the Pittsburgh area. In the fourth year all paper design is dropped and working models are built by the students.

Factories have been kind to the school, have showed interest. The Aluminum Co. of America sponsored a competition for a cigarette box, won by Miss Maude Bowen, who made the box out of a single extruded piece, a brilliant solu-

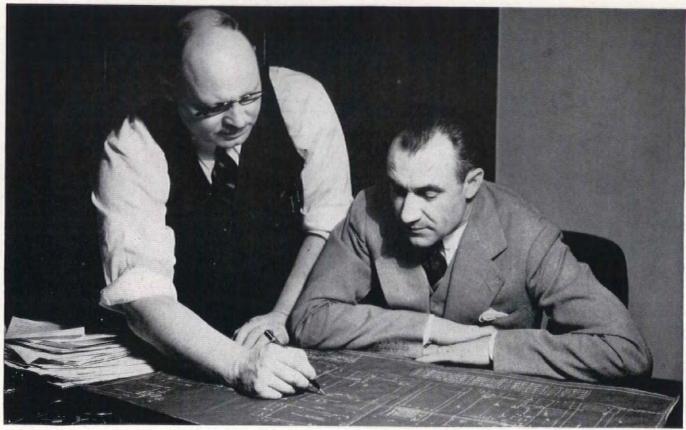


ALUMINUM CIGARETTE BOX

tion, since extrusion is an ideal process for aluminum, and means that the boxes can be turned out by the mile. They are going into production with the design.

Carnegie Tech is pleased with the new department, has high hopes for its future. From one worry of educators they are free: no good student need fear for a job. Industrial designers are as scarce as veterinaries.

(Continued on page 66)



E. A. Jones, Chief Engineer, L. J. Mueller Furnace Co., Milwaukee, points out a few vital facts about heating and air conditioning plans to President Harold Mueller.

GOOD FROM THE BLUE-PRINT UP

"M ISUNDERSTANDINGS are caused by not having understandings in the beginning." That's a maxim my father taught me when I still had to stand on tiptoes to reach the doorknob. It's true in the building of furnaces and boilers, just as it is true in building business and social relationships with human beings.

Long ago my father and his father before him practiced the policy of starting at the drafting board to build good furnaces and boilers. And I have made it a point to follow the pattern which they so wisely cut.

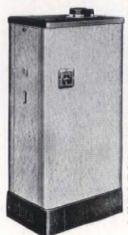
Some people think I lean over backwards in insisting that quality begin at the blue-print — but fortunately Ed Jones, our Chief Engineer, is a stickler for precision, just as I am. You have no idea how vital this thoroughness has been during the days of pioneering automatic heat and air conditioning.

There has been such a lot of confusion and so much hysteria in the field of air conditioning that our policy of "good from the blue-print up" has proved to be a fine stabilizing influence. It has kept us out of the stampede of the inexperienced and has helped to augment our reputation for dependability in this vast new automatic heat and air conditioning market.

You have my personal assurance that you can buy, sell and recommend Mueller products with confidence.

Remember that Mueller makes the most complete line of heating equipment in the industry...newly styled Climator Air Conditioning Equipment and Gas Era Furnaces and Boilers as well as the standard line of furnaces and boilers, registers and fittings...so you can rely on impartial advice. Drop me a line and I will send you our new catalog G-7.

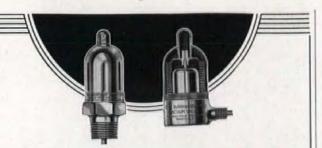




New Mueller Gas Era Boiler

Adaptable to steam, hot water or vapor heating. The new Series "A" (54 inches high and 28 inches deep) are ideally suited to small home heating. They are also adaptable to any system of heating or air conditioning employing radiation, convectors, pipe coils, unit heaters or blast heating surfaces. Get all the facts about these remarkable new Mueller Boilers. Write at once.

MUELLER-MILWAUKEE



That Gentle "Ping"

-What It Means In Heat Savings -

When you sit by a radiator equipped with a Burnham Bellows Air Valve, when the air is out it gives a little "ping." You at once know it actually is out. As more air is liberated by the steam there may follow some lesser "pings." You have the satisfaction of knowing the full efficiency of your radiator is not the least air-hindered.

That "ping" also tells you the Bellows-acting valve pin is forced in place tightly. No steam sissing. Also that no air will be sucked back in, when radiator cools down.

Every part of the valve is made to prevent corrosion and to give long lastingness. Regardless of what price you may pay, we honestly believe no valve is its better.

Burnham Boiler Corporation,

Irvington, New York

Zanesville, Ohio

Representatives in All Principal Cities of the United States and Canada

With Track Doors, it is the "flap" that makes, or breaks, them



This is the York Track Door Flap in "Open" position. Note the simple but positive mechanism which operates the flap . . . keeps gasket on flap tightly compressed when door is closed.

Exclusive with York, this Cold Storage Door "track flap" brings you these advantages: 1. Positive in action, both in opening and closing. 2. Foolproof, no adjustment necessary, nothing to get out of order. 3. Long life, because of simplicity of design, minimum number of moving parts which are made of malleable iron. 4. Improved appearance... nothing but the hinges are visible on outside of door. 5. Track flap is fully opened with approximately 15 de-

gree opening of main door. 6. Can be made inoperative without affecting the operation of the main door.

For Refrigeration Accessories use York's Nation-wide Service

Through Headquarters Branches, in every important center of demand, York provides Doors, Fronts, Hardware, Valves, and Fittings, everything for refrigerating plant operation and repairs. Also engineers to help you with your problems. Ask for a copy of the York Accessory Equipment and Supplies Catalog. Write Dept. AF-7.

YORK ICE MACHINERY CORPORATION, YORK, PENNA. HEADQUARTERS BRANCHES THROUGHOUT THE WORLD

YORK

FORUM OF EVENTS

(Continued from page 64)

STARS

ONE recently formed moving picture company (The Laburn Co. of New York) will not have to worry much about tempestuous antics of their star performers. Firmly rooted to concrete footings and deep foundations, these subjects will submit passively to whims of camera and director. Purpose of the company is to record a complete pictorial moving story of any given building operation. In order to insure an accurate record of the progress day by day, they work pretty much in the traditional picture production manner. The scenario is blocked out in advance with the aid of blueprints and time schedules, and so are caught scenes a-building which can never be rehearsed. To put the completed picture in the hands of architect and owner, for advertising and record, the services of a decorator, writer, architect, and other artists and technicians are required. Reports are submitted at regular intervals and after final shots have been made, the films are reassembled into a single sequence.

COMPETITIONS AND AWARDS

In a field narrowed down by the withdrawal of Richard Ayers of Jefferson, Ga., winner of the current Rome Prize, three remaining finalists competed for the 1936 Paris Prize. Three thirty-six-hour problems were given to the men who worked, en loge, on the third floor of the Beaux Arts Institute, under the watchful eye of Acting Massier Frederick B. Clarke, sculptor. Placing first and winning the \$3,600 award for study abroad was Frank Montana of N. Y. U. Runners up were William R. James of Princeton and R. L. DuBrul of N. Y. U. Greatest upset of the competition, to all three competitors who had practiced on plan problems, was the fact that the last two of the three problems were decorative rather than plan organization. Two of the men including the winner were former students of Lloyd Morgan while the other was a student of Jean Labatut.

Governmental art continues in the news with the announcement of the winners in the Bronx post office sculpture awards and opening of a sectional competition for the new Santa Barbara post office. Sculptors Charles Rudy of New York City and Henry Kreis of Essex, Conn., will each receive \$7,500 for relief carving which will be done on 4 x 14 ft. blocks of stone to adorn the Bronx post office facade. Rudy is an instructor in sculpture at Cooper Union while Kreis has been an assistant to Paul Manship.

To glorify the transcontinental postal service, six sculptured panels will be placed on the Santa Barbara post office. Offering \$3,900 in fees, and limited to American sculptors west of the Mississippi, the competition is intended to spur the efforts of Western sculptors.

One of the largest recent sculpture competitions has just been won by a woman, Mrs. Laura Gardin Fraser of New York. In a limited competition for a \$100,000 equestrian statue of Generals Robert E. Lee and Thomas (Stonewall) Jackson she won under National Sculpture Society rules. Not by any means net profit, the prize money will also defray material and labor costs of the project.

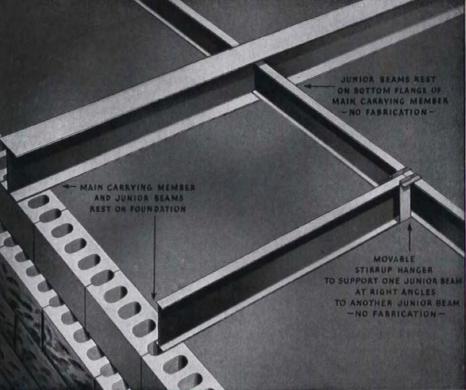
Awards of the Rinehart School of Sculpture of the Maryland Institute went to Mildred Caplan, first; Mary Hazlehurst, second; and Mathilde Mylander, third.

The Museum of Modern Art announces two architectural exhibitions. The first, keyed to the plans for the 1939 New York Fair, is an exhibition of Modern Exposition Architec-(Continued on page 68)

J&L JUNIOR

STEEL FLOOR CONSTRUCTION FOR RESIDENCES





without

TECHNICAL RESTRICTIONS

The J&L Steel and Concrete Floor System offers the advantages of steel construction in the first floor of any residence or other light occupancy building without imposing any restriction on either architect or builder. No specialized experience or special equipment is necessary. This system is also applicable to upper floors when solid masonry walls or steel framing are used.

There are many important advantages in this type of floor construction that have gained wide acceptance for it among architects and builders, and made it popular among owners. It is modern. It is completely and permanently termite-

proof, shrink-proof, rigid and fire-resistant. It costs no more than other types of floor construction.

Its simplicity and ease of installation mean added structural values. The concrete slab engages the top flanges of the beams, anchors the floor rigidly to the foundation and provides a continuous

You will want to specify J & L Junior Beam Steel and Concrete Floors. They mean added values to your client and profits to you.

For further information on J & L Junior Beam Floors, send for descriptive bulletin.

For Complete Details on Junior Beam Floors for Residences and other Light Occupancy Buildings, See Sweet's Architectural Catalog (1936 Edition) Section 5, Catalog No. 6.

OTHER J&L CONSTRUCTION PRODUCTS

Steel Pipe ... Bars for Concrete Reinforcement . . . Assembled Road Bar Mats . . Standard Structural Shapes . . . Light Weight Channels . . . Tie Wire . . . Nails . . . Steel Piling . . . Fabricated Structural Work.

JONES & LAUGHLIN STEEL CORPORATION

AMERICAN IRON AND STEEL WORKS

JONES & LAUGHLIN BUILDING, PITTSBURGH, PENNSYLVANIA

Sales Offices:

Atlanta Boston Buffalo Chicago Cincinnati Cleveland Dallas Denver Detroit Eris Houston Los Angeles

Momphis Milwaukse Minnespolis New Orleans New York Philadelphia Pittsburgh Sestile St. Louis San Francisco Tulsa

Werehouses: CHICAGO CINCINNATI DETROIT MEMPHIS NEW ORLEANS NEW YORK (Long Island City)* PITTSBURGH

*Operated by National Bridge Works Division of Jones & Laughlin Steel Service, Inc.

Canadian Representatives: JONES & LAUGHLIN STEEL PRODUCTS COMPANY, Pittsburgh, Pa., U. S. A., and Toronto, Ont., Canada





Available in a wide range of exceptionally beautiful colors. Estimates

with Kyanize are always low.

Architects. Write for your free portfolio — 12 measured drawings of authentic colonial details.

BOSTON VARNISH COMPANY

Everett Station, Boston, Mass.

Veribrite SINKS

ONE PIECE Any Size or Shape Custom Built to Fit Any Space

A decided improvement in kitchen designing for beauty, long life and usefulness—no joints to pull apart—no cracks to catch dirt or hold water. Smooth areas all at one level are thus provided. Acid resisting porcelain enamel surfaces on heavy gauge Armco Iron. Wide range of bright modern colors including pastel shades to harmonize with any desired color scheme.

Makes any kitchen show to advantage in keeping with the advance in building science.

Write for free descriptive literature and prices.



VERIBRITE PRODUCTS

Division of

General Porcelain Enameling & Mfg. Co.
4131 West Parker Avenue Chicago, Illinois

FORUM OF EVENTS

(Continued from page 66)

ture—from the Cologne Werkbund Fair (1914) to the plans for the Paris Exposition (1937). The other is a selected group of Government Housing designs. Both will continue through the summer.

Twelfth National Exposition of Power and Mechanical Engineering will be held during the week of November 30 at Grand Central Palace, New York.

Twenty-first annual National Hotel Exposition, October 26 to 30, will also be held at Grand Central Palace.

The ninth annual Small House Competition of House Beautiful closes October 15. Open to all architects and architectural designers, conditions and specifications were given in the June issue of that magazine.

Art Students League of New York in cooperation with the Grace Line announces \$500 poster contest. Option of cash prize or all-expense 39 day cruise from New York to Chile and back, is offered.

Entries in the Modern Plastics Competition will be accepted until August 15.

Arthur W. Wheelwright Fellowship (\$3,500 for travel and study outside U. S.) has been awarded to Walter Egan Trevvett, of Washington, D. C.

Brooklyn Chapter of A. I. A. twelfth annual architectural competition scholarship awarded to Grant Edmonds, senior in Pratt Institute School of Fine and Applied Arts.

New York University announces the formation of a center for the study of community planning under the direction of the department of architecture. Chief purpose will be to bring together those interested in the broader concepts of urbanism.

SUMMER COURSES

Headed by Harvey Wiley Corbett and C. Grant La Farge, and Dr. Edith Elmer Wood, architecture and housing studies, embracing surveys of family needs, will be held this summer at Columbia. The course, which opens July 7, will continue for six weeks.

Syracuse University will conduct a six weeks summer course in architecture starting July 6. Work in design and construction will be stressed along with a study of Early American Architecture in the central New York area.

DEATHS

Edgar Chambless, 65, city planner and writer, in New York City, May 31.

Edgar Chambless was widely known as the "Roadtown Man," as a result of his plan, which he had developed over a period of 25 years, for a new kind of city. It involved a program of laying down homes, villages, and cities in straight lines like ribbons. It was to give all of the advantages of urban living and yet be close to farms.

ROBERT WHITTEN, 63, city planner, in Albany, N. Y., June 6.

Robert Whitten was born in South Bend, Ind., in 1873. He received a Bachelor of Laws degree from the University of Michigan in 1896, and two years later a Ph.D. from Columbia. During the next nine years he was legislative librarian for the New York State Library.

His eminent position was in the field of city planning. After three years as secretary of the City Planning Commission of New York, during which time he helped establish the first zoning system in the city, he acted as consultant to many cities. In 1933-34 Planner Whitten was professor in the School of Land Economics of the Institute for Eco-

(Continued on page 70)

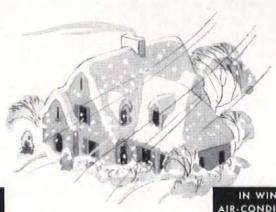
Now AUTOMATIC HEAT AND

AIR CONDITIONING

to fit your client's needs and his pocketbook



IN SUMMER COOL HEALTHFUL AIR



IN WINTER
AIR-CONDITIONED
WARMTH

You know, of course, that the basic problem in the development and application of automatic heat and air-conditioning equipment is the proper distribution and diffusion of conditioned air to maintain any desired degree of comfort. You know, too, that the Herman Nelson organization, for years, has specialized in the solution of this fundamental problem.

And now the full value of this vast and intensive pioneering experience in the field of air conditioning is being brought to bear upon the production of a complete line of automatic heat and air-conditioning equipment for the residential and small commercial building market. Regardless of the requirements of your clients in this market, you can

recommend Herman Nelson products of the same quality and efficiency you have known for years. They are made available through carefully chosen distributors, trained to the Herman Nelson standards of engineering and workmanship, and operating direct to the purchaser through you.

You are cordially invited to call the distributor nearest you for details of the full and complete line.

I'm glad we can getall these products from one unbiased source



Write for details. Feel free to write us for complete information for your files

HERMAN NELSON

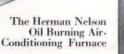
Automatic Heat and Air Conditioning
GENERAL OFFICES AND FACTORIES AT MOLINE, ILLINOIS

A COMPLETE LINE OF PRODUCTS

from one manufacturer



The Herman Nelson Self Contained Summer Air Conditioner







The Herman Nelson Oil Burning Boiler

The Herman Nelson Coal Burning Air-Conditioning Furnace and Automatic Stoker





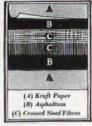
The Herman Nelson Conversion Oil Burner



The Modest Purse may have the protection of SISALKRAFT because such protection costs so very little compared to the total cost of the building. For that reason no Architect need hesitate to write "SISALKRAFT" into his specifications and drawings for

use over sheathing, under roofing and under flooring. It is a most effective "stop" to dust, wind and water because it goes into place without rips, tears or punctures. Those facts make the basis for its economy. SISALKRAFT provides a clean wrapping of asphalt which will protect for the owner what is perhaps the most expensive purchase of his lifetime-

the most expensive purchase of his lifetime-The Modest Purse welcomes SISALKRAFT. Contractors will also welcome it for its quality and because it handles easily.



Cross-Section

SISALKRAFT: Plain, Treated or Copper Armored. Sold by lumber yards everywhere. Write for full information, specifications, samples and AIA Bulletins.

THE SISALKRAFT CO.

205 West Wacker Drive, Chicago, Illinois New York San Francisco

A Vault Door WITHOUT

AN ESCAPE DEVICE IS LIKE A SHIP WITHOUT LIFE BOATS

The harrowing experience of being locked in the vault need never come to those for whom you are the designer.

You can assure your clientele that they need never fear being locked in a vault that is equipped with a Herring-Hall-Marvin insulated vault door. Why? Because, at no extra cost, all Herring-Hall-Marvin insulated vault doors are equipped with an escape device that operates from inside the vault.

Only Herring - Hall - Marvin offers this necessary equipment as standard. See that you get all that is coming to you.

Write for descriptive literature.

HERRING-HALL-MARVIN SAFE CO. HAMILTON, OHIO

Dealers in Principal Cities

FORUM OF EVENTS

(Continued from page 68)

nomic Research. He was formerly a president of the American City Planning Institute. Among his writings are "The Cleveland Thoroughfare Plan," "The Boston Thoroughfare Plan," and one of the Harvard City Planning Studies.

His most recent work was done as consultant to the New

York State Planning Board.

PERSONALS

HOBART B. UPJOHN, designer of All Souls Unitarian Church in New York and many other church buildings, was reelected president of the New York Chapter of the American Institute of Architects at its recent annual meeting.

Kenneth MacKenzie Clark, director of the National Gallery in London, has been appointed Ryerson Lecturer at Yale for next year. Lecturing on Leonardo da Vinci, he will be a marked contrast to the eight lecturers this year, all of

whom discussed modern architecture.

Columbia University, in accordance with prevailing architectural trends, has reorganized its course "To make design a living art." J. André Fouilhoux, Arthur Loomis Harmon, George Howe, William Lescaze, Edgar Williams, John C. B. Moore and Donald A. Fletcher have been appointed to the staff as a result of this plan.

Emilio J. di Rienzo of Mount Vernon has been reelected president of the alumni association of The School of Archi-

tecture of Columbia University.

Daniel Higgins, architect in the John Russell Pope office, was awarded the Meritorious Medal of the Boys' Club of America in recognition of his aid to needy youth during the last thirty years.

Josiah P. Marvel, who organized the first exhibition of decorative arts held by the American Union of Decorative Arts & Craftsmen, has been appointed co-director of the

WPA Design Laboratory.

Irving R. Brown, registered architect, has opened the following offices: Federal Trust Building, 24 Commerce St., Newark, N. J., room 622 at 248 Center St., Nutley, N. J., in Monroe, Orange County, N. Y., P. O. Box 1033.

M. Martin Elkind, architect, has opened an office at 40-09

82nd St., Jackson Heights, N. Y.

Earl H. Beling announces the formation of the Beling Engineering Co., 2428 13th St., Moline, Ill., contracting, heating, ventilating and air conditioning, specializing in school work.

Wilbur Henry Adams, industrial designer, 2341 Carnegie Ave., Cleveland, O., announces that Charles H. Stark, architect, is now associated with him for the practice of general architecture.

Guerino Salerni wishes to announce the opening of an office for the general practice of architecture at 101 Park Avenue, New York. Manufacturers' samples and catalogues are requested.

Lewis J. Sarvis, architect, has moved his office to 201 Bailey Building, Battle Creek, Mich.

S. R. McCandless has opened an office at 101 Park Avenue for consultation in lighting.

Philip L. Goodwin, architect, has moved his office to 32 E. 57th St., New York.

ERRATA

Through an unfortunate error in the May issue, the "Hall of Progress" at the Great Lakes Exposition was credited to Walker & Weeks. It was done by Hays & Simpson.

In the May issue, page 409, under Plumbing, James B. Clow & Sons should have been given the credit for furnishing the plumbing fixtures used in the Cochrane's Beauty Salon.



SPECIFY THE GENERAL ELECTRIC RADIAL WIRING SYSTEM

"Oh cut down on the wiring. You can save money there." Even today you can hear men saying that especially in regard to home wiring. But it's false economy. Modern living requires the extensive use of electrical equipment and appliances. If the wiring installed when the house is built isn't adequate to supply enough electricity then more wiring must be added later. The confusion, annoyance and expense which this will cause can well make the home owner dissatisfied with his new home.

Now as never before attention must be paid to adequate wiring because the efficiency of the modern home depends upon it. To provide this adequacy, specify the G-E Radial Wiring System. The new arrangement of circuits and ease of control, the adequate copper sizes, and large number of outlets assure economical and efficient electrical service.

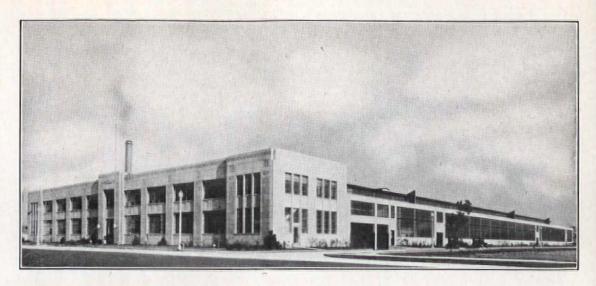
The G-E Wiring Materials which compose the G-E Radial Wiring System are built to General Electric's high standard of quality. The line is complete. The G-E Radial Wiring System is easy to specify and to check during installation. Complete information may be found in "Sweet's 1936 Architectural Catalog", in the "American Architect Time-Saver Standards", or in our bulletin "The G-E Radial Wiring System Manual for Architects". Write for the bulletin to Section CDW-917, Appliance and Merchandise Department, General Electric Company, Bridgeport Connecticut.



APPLIANCE AND MERCHANDISE DEPT., GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

Pepsodent Company Plant, Chicago

Genasco Trinidad Bonded 10-Year Built-up Roof. Architect: F. C. Foltz, Chicago... Roofing Contractors: Knauf & Weber Roofing Co., Chicago... General Contractors: Clearing Industrial Districts, Inc., Chicago.



Genasco Ber. U. S. Pal. Of.

STANDARD TRINIDAD

Built-up Roofing

it's "the tops" | for good roofs.

For a really fine roof on a really fine industrial plant, the Pepsodent people selected a Genasco Standard Trinidad Built-up Roof.

Genasco Standard Trinidad Built-up Roofing is constructed with alternate layers of Genasco All-Rag Felts and Trinidad Lake Roofing Asphalt. Trinidad Lake Roofing Asphalt, the waterproofing factor of a Genasco Standard Trinidad Built-up Roof, has been used successfully for almost half a century. This material is stable and resistant to roofing's worst enemy—the ultra-violet rays of the sun. That's why Genasco gives such long service.

An interesting book—"For Your Roof"—will be sent if you send us the coupon below.

THE BARBER ASPHALT COMPANY PHILADELPHIA

NEW YORK

CHICAGO

ST. LOUIS



Built-up Roofing

Roof security is felt with Trinidad

Send this Coupon today

| | RBER ASPHALT COMPANY St., Philadelphia, Pa. | AF- |
|----|---|-------------------------------|
| | Please send me a copy of your illust Your Roof" which carries illustration nent buildings in all parts of the c with Genasco Standard Trinidad E | s of many promountry protecte |
| N/ | | |

Before you specify an oil burner compare them on these 7 POINTS!

MORE architects own Williams Oil-O-Matics more architects specify Oil-O-Matics than any other oil burner. Today this leading oil burner has a record of more than 200,000 "Around the World" installations!

This mass production has enabled us to reduce Oil-O-Matic prices 50% in the last five years. Yet the new improved Oil-O-Matic is the finest ever built. It costs less to run because it is precision-engineered to burn the low cost fuel oils with unusual economy. Due to exclusive patents Oil-O-Matic provides the 7 important advantages that insure longer life, greater freedom from repairs, lower running cost, quietness, safety, cleanliness and dependability.

Specify Williams Oil-O-Matic, the oil burner tested by 18 years of successful performance. Oil-O-Matic is built in five different sizes. For new construction it is provided in combination with well known makes of boiler-burner and furnace-burner units. Among them—Orr & Sembower, Inc., National Radiator Corp., The Waterman-Waterbury Company, Kruse Company, The George Evans Corporation, Abram-Cox Mfg. Co., International Heater Co., Bastian-Morley Co., Inc., Mayor Furnace Co., and South Bend Range Co.

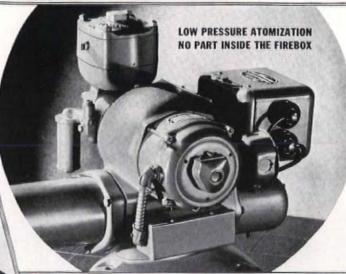
For remodeling jobs it can be quickly installed in any furnace or boiler; steam, vapor, hot water or hot air. For useful and precise data for your files, mail the Architect's coupon below.

OLLO-MATIC
HEATING

Also manufacturers of Ice-O-Matic Refrigeration and Air-O-Matic Air Conditioning

7 "Musts" For Oil Burners

- Does it atomize at low pressure, insuring quiet and complete combustion and long life?
- Has it projected flame burning in mid-air away from the burner, with all mechanism outside the combustion chamber away from the heat?
- Has it diffusor to insure, with any oil, a perfect blending of oil and air, producing a steady, unwavering flame?
- V 4 Has it positively operated automatic safety shut-off valve?
- Will it burn the economical, heavier, low-priced fuel oils?
- Has it metering pump feeding unvarying quantity of oil regardless of viscosity or temperature?
- Is the manufacturer financially responsible specializing exclusively in temperature control devices?



MAIL THIS COUPON TODAY

WILLIAMS OIL-O-MATIC HEATING CORPORATION Dept. 15-7, Bloomington, Ill.

Please send me for my files, "The Architect's Handbook of Williams Oil-O-Matic Heating".

Name

Address _____

ity.......State.....



tion because of their higher efficiency.

FIRST-Because they are felted to correct uniform density - scientifically. In specifying Gimco Sealal you specify absolutely uniform protection against heat flow.

FIRST—Because of their correct felted density and absolutely uniform dimensions, Sealal Bats are easier to install.

Gimco Sealal Bats are cut to unvarying, uniform sizes:
15" x 18" x wall thick, 15"
x 23" x wall thick and 15"
x 23" x 2".

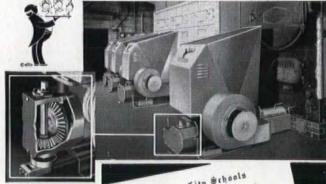
May we send you complete data about all Gimco RockWool House Insulations?





GENERAL INSULATING and MANUFACTURING CO. ALEXANDRIA. INDIANA WORLD'S LARGEST EXCLUSIVE MANUFACTURERS of ROCK WOOL PRODUCTS

AUTOMATIC BUTLER STOKER

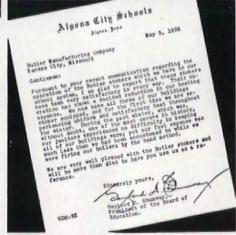


Model 45 of AUTOMATIC

BUTLER Hits New High In Combustion Efficiency . . . With Exclusive New PULSATOR and Zoned Air Control System!

HEATING COSTS HIT NEW LOW

Ask Your Secretary to Write today for ARCHITECTS' MANUAL



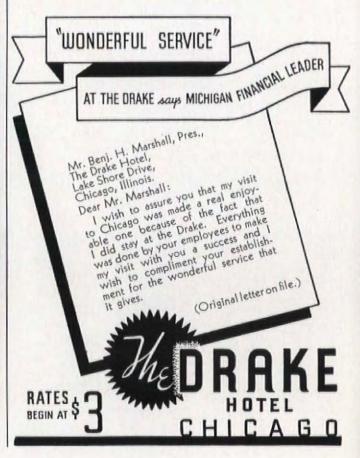
BUTLER MANUFACTURING COMPANY 1248 EASTERN AVE., KANSAS CITY, MO.





a new copper alloy, corrosion resisting

American Radiator introduces Arcoloy, a new metal which can be welded, which combines corrosion and acid resisting qualities with the tensile strength of carbon steel, and is easy to fabricate. It comes in tubes, sheets, or ingots. Fits requirements of many commercial and industrial uses. For details write to Non-Ferrous Dept., American Radiator Company, 40 West 40th Street, New York, N. Y.



Specialized Knowledge about Air Conditioning

The record shows that Delco-Frigidaire leads in air conditioning fundamentals

2 ACCEPTED FACTS ABOUT AIR CONDITIONING THAT POINT TO ONE CONCLUSION

Summer air conditioning is basically cooling and dehumidifying.

The accepted method of accomplishing this is by electric refrigeration.

CONCLUSION

Buy air conditioning from Delco-Frigidaire—the organization representing most experience in electric refrigeration.

DELCO-FRIGIDAIRE CONDITIONING CORPORATION

AUTOMATIC HEATING DAYTON, OHIO AIR CONDITIONING
PRODUCTS OF GENERAL MOTORS



The point where specialization is most important in air conditioning is in the creation of the equipment which makes it possible. There is no mystery about this. The basis of summer air conditioning is the cooling and dehumidifying of air. The accepted method of accomplishing this is by electric refrigeration.



It was the discovery of FREON, under General Motors sponsorship, which made possible modern developments in electric refrigeration. FREON is the safe, efficient liquid refrigerant which first made low-cost, trouble-free electric refrigeration practicable. Not only FREON itself, but the compressors and coils required for its use are General Motors developments.



Without resorting to tub-thumping sales arguments the conclusion is self-evident. In that basic phase of air conditioning in which extensive experience and large facilities are essential, Delco-Frigidaire holds unchallenged leadership. To the other phases, often veiled in mystery, Delco-Frigidaire brings the straightforward tradition of sound engineering and manufacturing integrity which is unsurpassed.



Frankly, we like to discuss air conditioning with architects. When we do we stick to facts. We find that when ALL the facts are considered, Delco-Frigidaire is specified with gratifying regularity.

See Sweet's Catalog File (Section 26/7) for details on our air conditioning equipment. Write our headquarters at Dayton, Ohio, or telephone our New York office at CIrcle 7-1367.

ADVERTISING INDEX

JULY 1936

| Aerofin Corporation | 60 | Keasbey & Mattison Company | 3 |
|--|----|--|----|
| Air Devices Corporation | 11 | Kelvinator Corporation | 6 |
| Air Reduction Sales Company | 61 | Kinnear Mfg. Co., The | 6 |
| American Blower Corp | 49 | Koppers Products Company | (|
| American Brass Company, The | 8 | | |
| American Radiator Company | 74 | Libbey-Owens-Ford Glass Co | 2: |
| American Telephone & Telegraph Co | 26 | Lightolier | |
| Armstrong Cork Products Company | 29 | Lockwood Hardware Mfg. Co | 62 |
| Association of Gas Appliance and Equipment | | (Division of Independent Lock Company) | |
| Manufacturers | | M 1 W 11 (F2) C | - |
| Auditorium Conditioning Corporation | 17 | Marsh Wall Tile Company | |
| D. | | Masonite Corporation | 6 |
| Barber Asphalt Company, The | 72 | mucher Furnace Company, L. J | U |
| Barrett Company, The | 5 | National Lead Company | 32 |
| Berry Brothers | | Nelson, Herman, Corporation | |
| Bethlehem Steel Company | 51 | Norge Heating and Conditioning Division | |
| Boston Varnish Company | 68 | (Borg-Warner Corporation) | |
| | 27 | Norton Door Closer Co | 36 |
| Burnham Boiler Corporation | 66 | | |
| Butler Manufacturing Company | 74 | Otis Elevator Company | |
| C | | Owens-Illinois Glass Company | 53 |
| Congoleum-Nairn, Inc. | | D | |
| Church, C. F., Mfg. Co | 54 | Pecora Paint Company, Inc. | |
| | | Perfection Stove Company | 41 |
| Delco-Frigidaire Conditioning Corporation | 75 | Portland Cement Association | |
| Detroit Steel Products Co | 57 | Powers Regulator Co., The | |
| | 74 | Procter & Gamble | 84 |
| Dunham, C. A., Co | 82 | Railway Express Agency | 16 |
| | | Republic Steel Corporation Cover | |
| Eagle-Picher Lead Company, The | 79 | Richards, George C | |
| | | Robertson Company, H. H | |
| Formica Insulation Company, The | 12 | | |
| Fox Furnace Co., The | 14 | Safecote Electrical Conductors | 31 |
| Fulton Sylphon Co | 48 | Sisalkraft Company, The | 70 |
| | | Sonneborn Sons Inc., L | 78 |
| Gar Wood Industries, Inc. | 40 | Steel & Tubes, Inc | 21 |
| General Electric Company 71, Cover | IV | | |
| General Insulating & Mfg. Co | | Trane Company, The | |
| C 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 | 68 | Truscon Steel Company Cover I | Ш |
| Goodyear Tire & Rubber Co., Inc., The | 23 | | |
| | | United States Gypsum Company | 50 |
| Henry Furnace & Foundry Company, The | 99 | United States Steel Corporation 18, 3 | |
| Herring-Hall-Marvin Safe Co | 70 | Universal Atlas Cement Co | 18 |
| Holland Furnace Co | | | |
| | | Warren Norge Co., Inc | 55 |
| Ilg Electric Ventilating Co | 45 | Warren Telechron Company | |
| International Cement Corporation | 45 | Waterfilm Boilers, Inc | |
| International Nickel Company, Inc., The | 20 | Webster, Warren & Co | |
| T | 47 | | 35 |
| company | | Whiting Corporation | 16 |
| Lines | Hu | Williams Oil-O-Matic Heating Corporation 7 | 73 |
| Johnson Service Company | 59 | V | |
| Jones & Laughlin Steel Corp | 67 | York Ice Machinery Corporation 81, 6 | 56 |
| | | | |

FREE GRAF DATA SHEETS

on New HOLLAND AIR-CONDITIONING Systems



BECAUSE of the Holland Furnace Company's enviable record of achievement with warm-air heating, every progressive architect will naturally want to know what this company has accomplished in the related field of home air-conditioning. This information is now available in brief, data form prepared by the well-known Don Graf, B. S., M. Arch., to conform to the popular "Pencil Point" series. Only basic facts are presented in a

way to make them most accessible for easy reference.

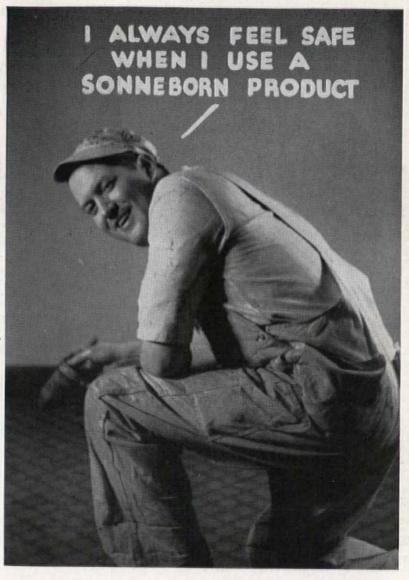
We are confident you will find these data sheets invaluable in specifying and detailing. We believe they will also reveal a development which should make the major benefits of air-conditioning available in a far greater number of homes than ever before. A complete set is yours for the asking. Avoid delay by filling out the coupon below and mailing it at once.

HOLLAND FURNACE COMPANY HOLLAND, MICHIGAN

World's Largest Installers of Home Heating and Air Conditioning Systems

| Contract to the contract of th | |
|--|--------------------|
| HOLLAND FURNACE COM Dept. AF-7, Holland, Mich. | IPANY, |
| Mail me a set of air-condition formation on other Holland E | |
| Holland Heating System | Holland Automatic |
| Holland Oil Burner | Have Engineer Call |
| Name | |
| Address | |
| City | State |

The man on the job knows he can depend on SONNEBORN



There is no more severe critic of a product than the man who works with it. He can detect the slightest flaw both in quality and service.

For over a quarter of a century SONNEBORN'S WATERPROOFING, DAMPROOFING, and PAINT PRODUCTS have won not only the praise of the man on the job, but have been repeatedly chosen by architects, plant superintendents and builders because their proved record of efficiency is assurance of satisfaction.

SONNEBORN'S Engineering Department will be pleased to give you the benefit of years of experience in solving your WATERPROOFING, DAMPROOFING, or PAINT problems. This obligates you in no way whatsoever.

Write today for literature of SONNEBORN'S tested products.

SONNEBORN'S Tested Products

LAPIDOLITH

The guaranteed method of securing dustproof concrete floors.

LIGNOPHOL

A scientific penetrating preservative and finish for wood floors.

HYDROCIDE COLORLESS

For exterior waterproofing of masonry walls.

KAUKIT

Non-shrinking waterproof caulking compound.

CEMCOAT

Light reflecting enamel for interiors, also waterproof coating for exteriors and floors, is outstandingly superior for masonry surfaces.

HYDROCIDE WATERPROOFING AND DAMPROOFING

AND DAMPROOFING
Integral admixtures; foundation and plasterbond coatings.

ARCHITECTURAL FINISHES

(Paints and Enamels)
Special acid and alkaline resisting paints
for conditions peculiar to any industry
or need.

L. SONNEBORN SONS, INC. 88 Lexington Ave., New York City



Guardians of PUBLIC SAFETY



TRUSCON OPEN TRUSS STEEL JOISTS PROTECT THE THREE FLOORS AND ROOF OF THE HORTICULTURAL BUILDING, GREAT LAKES EXPOSITION, CLEVELAND, OHIO

TRUSCON

STEEL JOISTS



● From everywhere come throngs of sight-seers to visit the Horticultural Building at the Great Lakes Exposition, Cleveland, Ohio. Humanity is on the march...absorbed in the marvels of horticulture. Who among them gives a thought to the strength of the floors that support them? Who among them knows that under these floors are invisible guardians of their safety... Truscon "OPEN TRUSS" Steel Joists?

But public safety... the major factor... was only one of the reasons why Truscon "OPEN TRUSS" Steel Joists were used. Maximum spans were neces-

sary to minimize the great number of columns and thereby release the greatest amount of floor areas for exhibit purposes. Ease and rapidity of installation with resultant economy were important factors. The 100% salvage value of "OPEN TRUSS" Joists was considered in the event that the structure might be sometime dismantled. The open webs of the joists make it easy to install pipes and electrical conduit in any direction.

These and other advantages make Truscon "OPEN TRUSS" Steel Joists ideal structural members for all types of light occupancy buildings. See Truscon's 80-page Catalog in "Sweets" for further information on Truscon "OPEN TRUSS" Steel Joists, or write direct to Truscon Steel Company, Youngstown, Ohio.

Truscon Steel Company

GENERAL ELECTRIC COMPLETES THE ELECTRIFICATION OF THE SI



• Now the kitchen sink goes 100% electric and General Electric's design for better

living marches on! Here is the newest contribution of the General Electric "House of Magic"the amazing new G-E Disposall. Easily and quickly attached beneath any kitchen sink it reduces food waste to a thin pulp and flushes it out the drain like dishwater! No more wrapping and carrying out of garbage. No more unsanitary, unsightly, unwanted garbage can!

A flip of the Disposall switch and food scraps, fruit and vegetable peelings, eggshells, coffee grounds, bones, etc.,

quickly disappear as if by magic! The G-E Disposall is thoroughly sanitary and automatically cleans itself. No odors.

Truly this is modern electrical magica miracle of sanitation, of convenience, of better living. The G-E Disposall belongs in every modern home in America-in every new plan for a modern kitchen. Its operating cost is less than 1/2c a day. Descriptive fiterature and detailed specifications may be had from your nearest G-E Home Appliance Distributor or write direct to General Electric Company, Appliance and Merchandise Department, Sec. CG7, Nela Park, Cleveland, Ohio.



GENERAL GELECTRIC

Cood RIDDANCE
TO BAD GARBAGE"