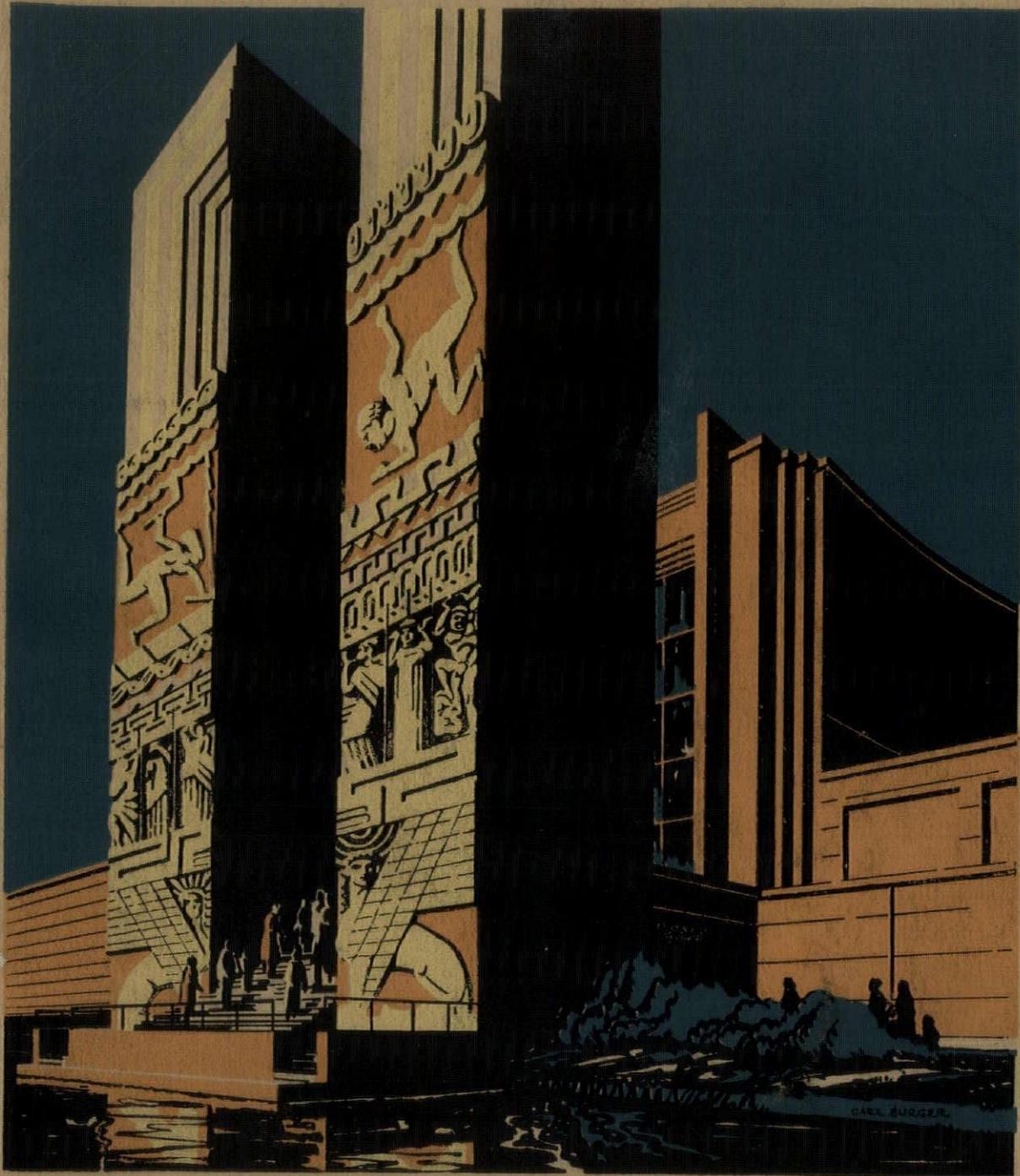
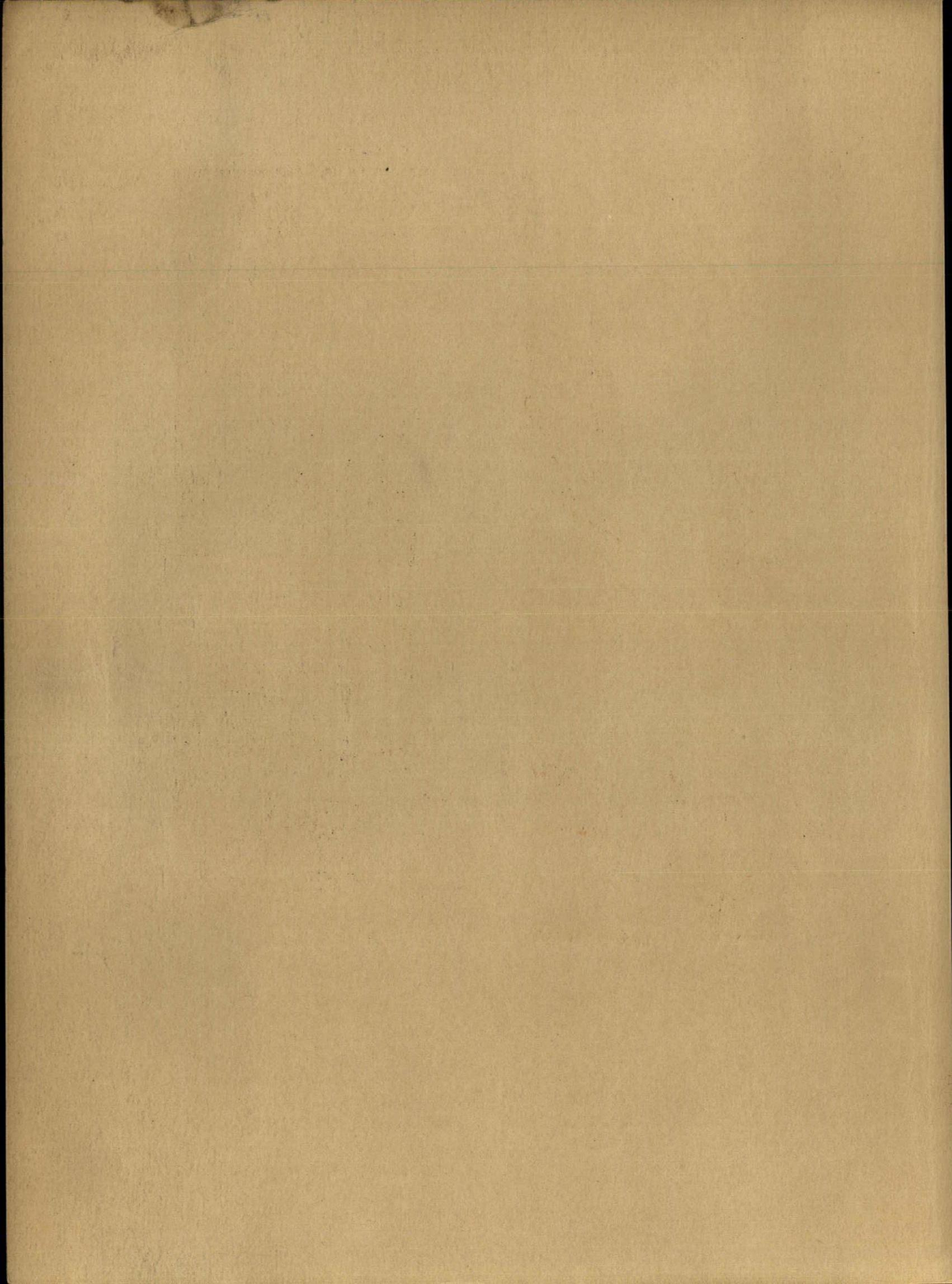


Log Cabins, Interiors, etc.



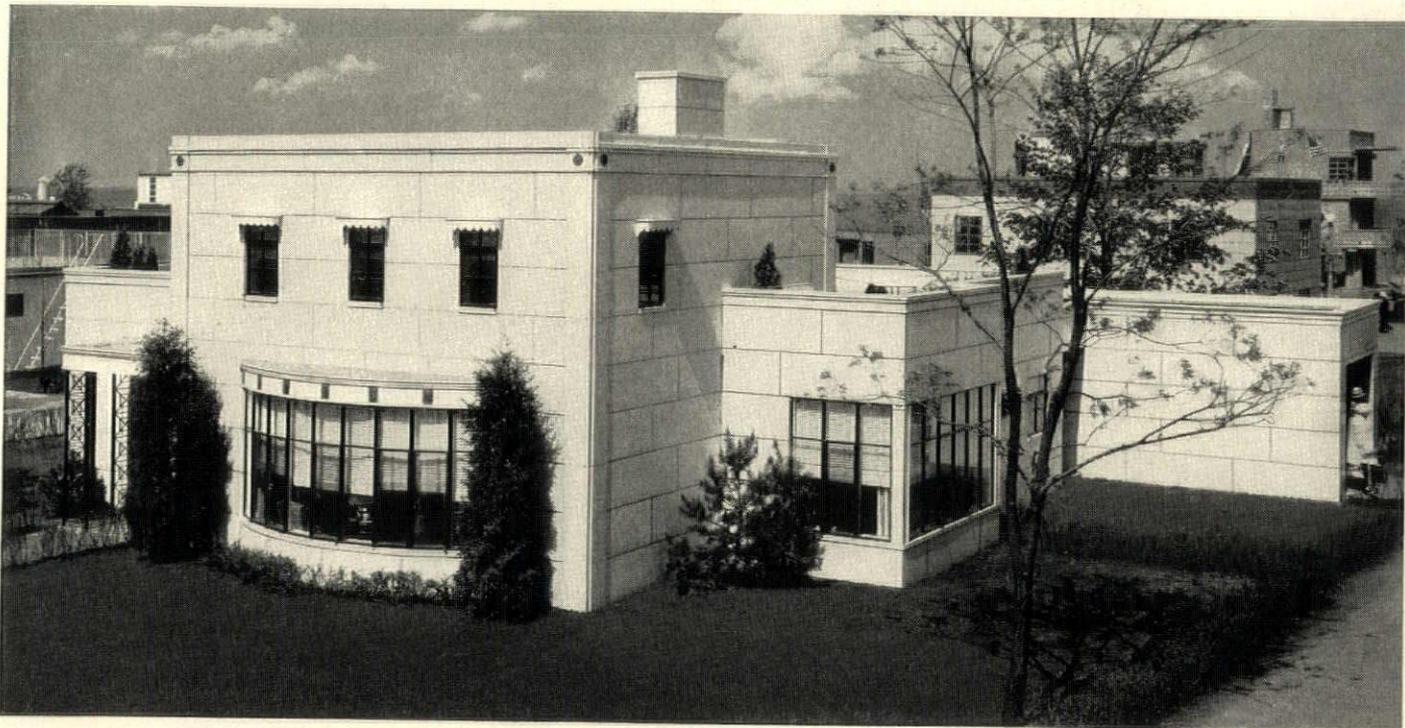
# AMERICAN ARCHITECT

FOUNDED 1876 · JULY 1933



# ... at Chicago

The Stran-Steel Good Housekeeping House at "A Century of Progress." Helen Koues, Director of Good Housekeeping Studio of Architecture and Furnishings supervised its building and furnishing. The Stran-Steel Corporation built it with modern methods and material. Glazed throughout with L-O-F Polished Plate Glass.



A majority of the buildings in the Home Planning Section of the World's Fair are glazed with L-O-F Polished Plate Glass and Quality Window Glass. It would be difficult to find more striking examples of this fact: that, although the cost of glass constitutes but a very small fraction of the cost of construction, the quality of glass influences the appearance of a building perhaps more than any other single item . . . especially when it is used so generously as it is in following the modern architectural trend.

LIBBEY-OWENS-FORD GLASS COMPANY, TOLEDO, OHIO, manufacturers of Highest Quality Flat Drawn Window Glass, Polished Plate Glass and Safety Glass; also distributors of Figured and Wire Glass manufactured by the Blue Ridge Glass Corp. of Kingsport, Tenn.

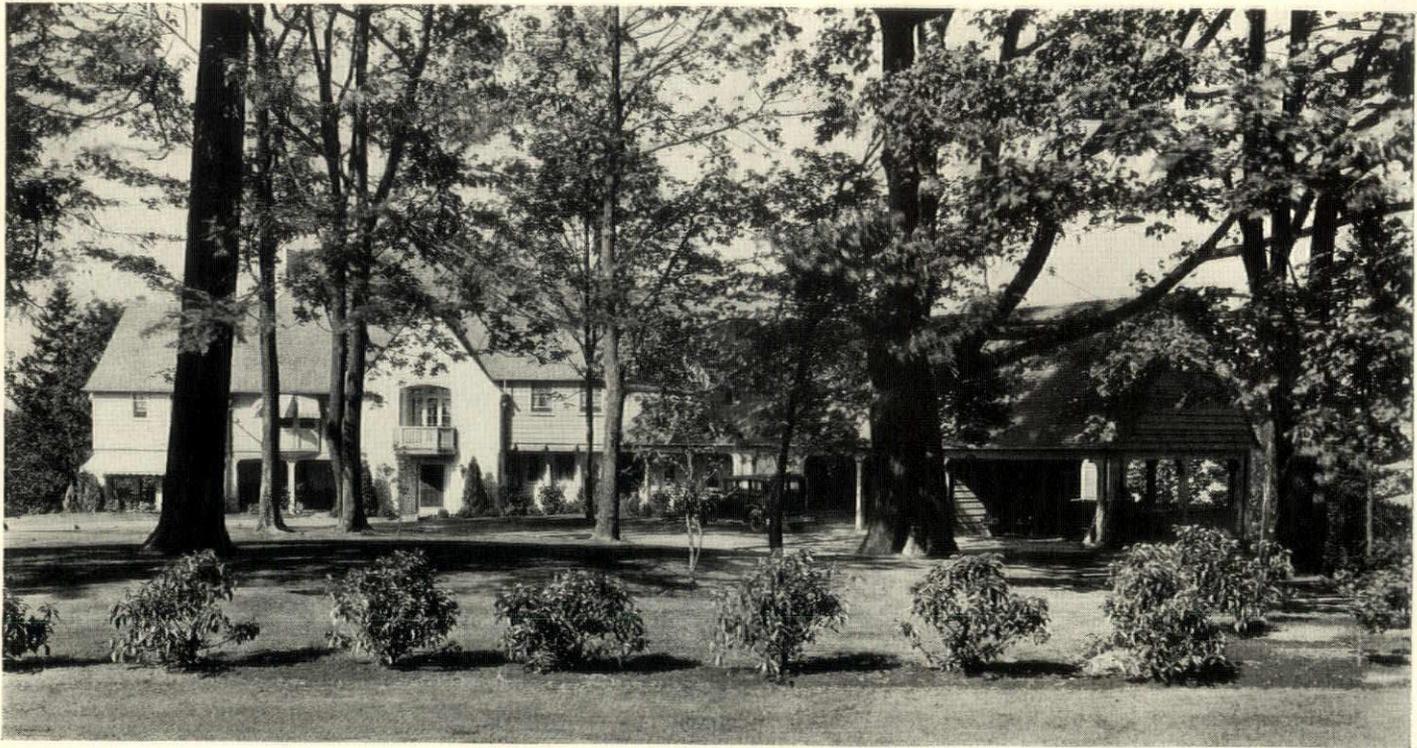
LIBBEY · OWENS · FORD  
QUALITY GLASS



OTIS ELEVATOR COMPANY  
invites you to visit its elevator machine  
rooms now on exhibition at the top of  
each SKYRIDE tower at A Century of  
Progress, Chicago.

You are also invited to inspect a  
new type of high-speed escalator now  
in operation at the Travel and Trans-  
port Building at the south end of the  
Fair. This is its first showing in America.

We believe you will bring back a  
newly crystallized conception of vertical  
transportation.



## Design and comfort appropriate to its setting

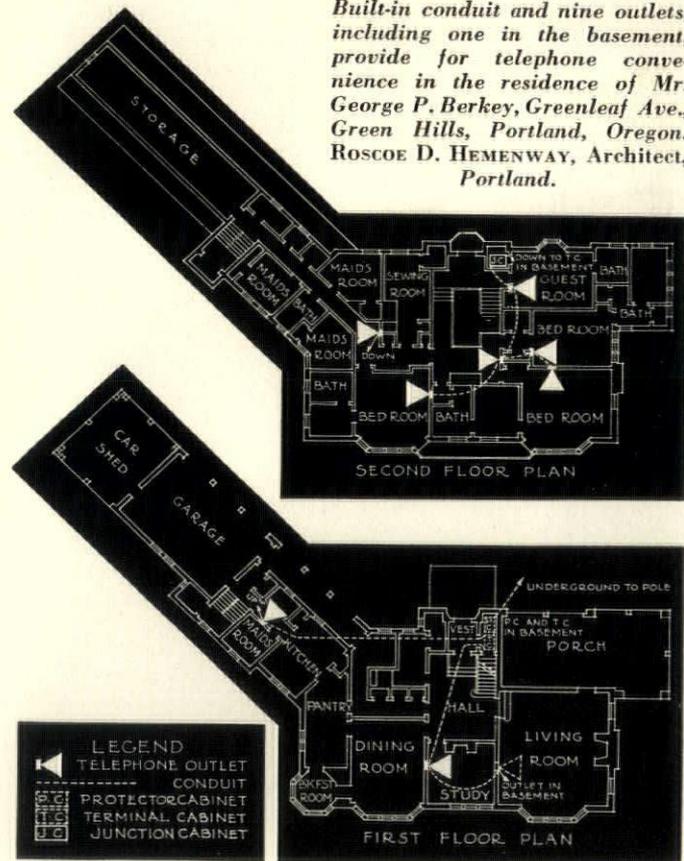
ON THE crest of a wooded hill, beneath tall old trees, architect and owner have fitted this low, rambling home most comfortably into its natural setting. And comfort is the keynote of its interior planning. Everywhere is adequate space. There are separate personal apartments for family and guests — with telephones carefully located for privacy and convenience.

The telephone arrangements were planned and included in the blueprints, with the assistance of the local telephone company. Nine outlets are placed for maximum accessibility. Built-in conduit in walls and floors eliminates unsightly wiring, allows for future additional outlets, and insures against most service interruptions.

Pre-planned telephone convenience is an important factor in the livability of the modern

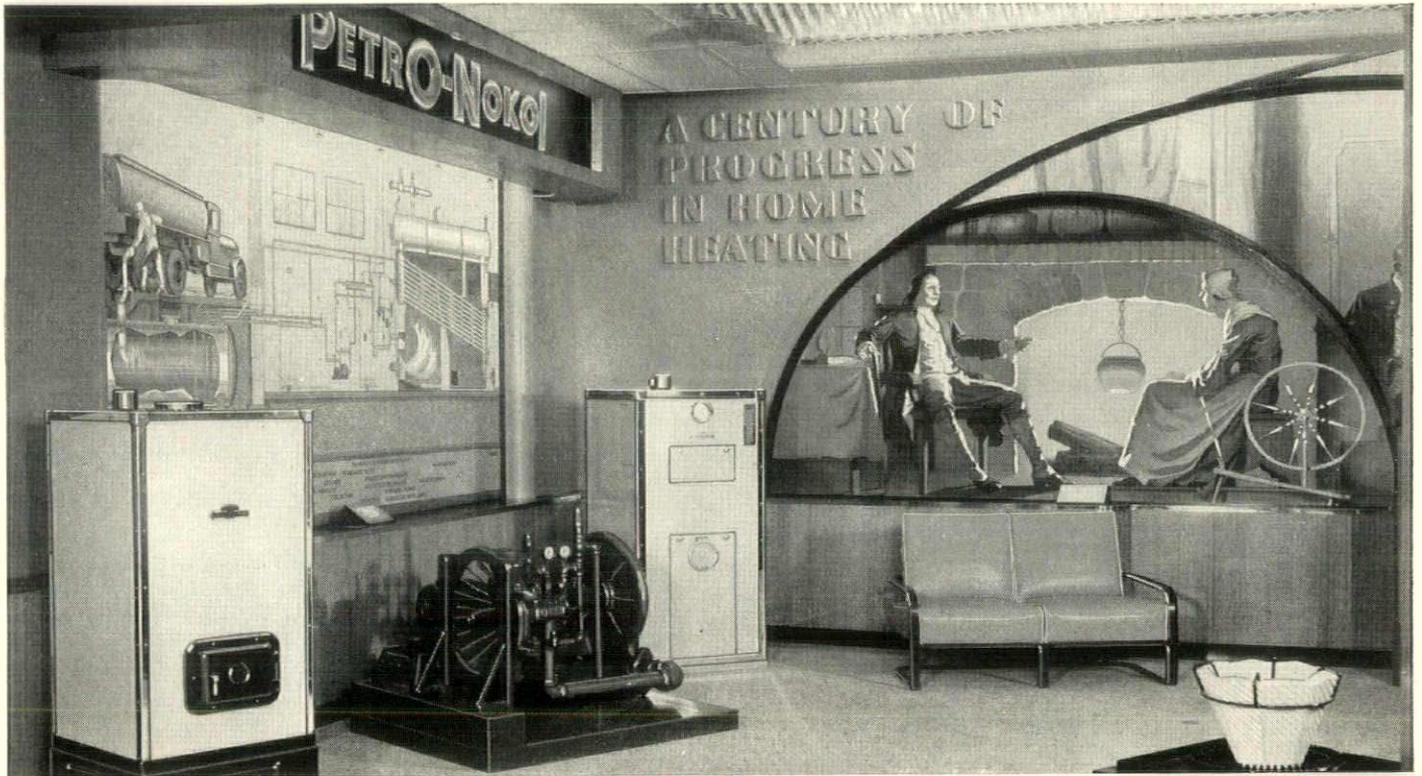


*Built-in conduit and nine outlets, including one in the basement, provide for telephone convenience in the residence of Mr. George P. Berkey, Greenleaf Ave., Green Hills, Portland, Oregon. ROSCOE D. HEMENWAY, Architect, Portland.*



home. Your local telephone company will gladly help you work out its details in projects of any size or character. Just call the Business Office and ask for "Architects' and Builders' Service." No charge or obligation, of course.

# AT THE CENTURY



A view of the Petro-&Nokol Exhibit. The panel on the left shows, in cross-section, the operations of a Petro-&Nokol industrial heating unit. In the rear is seen part of the historical mural depicting the development of home heating.



Another view. The panel on the right shows the Petro-&Nokol Air Conditioning system, operating in a modern home. The other end of the mural is shown in the rear. On the floor, in both these views are seen several pieces of Petro-&Nokol equipment.

# OF PROGRESS . . .

## PETRO-NOKOL

**You are cordially invited to make  
Petro-&-Nokol your Exposition Headquarters**

The Petroleum Heat and Power Company felt a deep responsibility when it accepted the invitation of the Century of Progress to portray the development of oil heating at the Chicago Exposition this summer.

The exhibitors invited by the Exposition management are (with few exceptions) leaders of the industries from which they were chosen. In most cases, they are pioneers who have survived from the earliest beginnings, and undoubtedly are the companies best qualified to present the products and depict the progress of the industries they represent.

In order to measure up to the opportunity, this company obtained the services of an outstanding architectural decorator, and has not stinted in either time or money to make the great advances in oil heating impress the millions of home-owners who will visit the fair.

Every phase of oil heating is depicted: its history, its present status, its future promise. Domestic, commercial and industrial installations are shown: all types and sizes of burners, from the domestic sizes and types suitable for modest homes, to the "giants" that heat many of the nation's largest churches, banks, hospitals, hotels, apartments and office buildings.

Deeply conscious of the strict requirements of the task assigned, the

### A Century of HEATING Progress

. . . the Petro-&-Nokol Exhibit

As you approach the Petro-&-Nokol exhibit space, your attention is immediately caught by a gigantic panorama. A succession of scenes will carry you back to the primitive heating methods of the past, and on into the future...from the open fires of a century ago, to the modern oil heated home of today and the fully automatic air conditioned home of tomorrow.

On the floor of the exhibit, you will see the complete line of Petro-&-Nokol oil burners and air conditioner units.

In addition, you will see an interesting "oil test table" that demonstrates how the Petroleum Heat & Power Company checks up on all the oil it buys for delivery to consumers.

You will find this exhibit in the General Exhibit Building, First Floor, Unit No. 2.

### PETRO-NOKOL

#### OIL BURNERS

Made in 8 types, 16 models, 66 sizes.

Also ARCO-PETRO, complete boiler-burner unit. A joint production of the American Radiator Company and Petroleum Heat & Power Company.

makers of Petro-&-Nokol have designed and constructed an exhibit which in every detail does full

justice to the size and importance of the oil heating industry.

During the next five months, it is estimated that 60,000,000 visitors from every corner of the United States will visit the Century of Progress. Never since the inception of modern oil heating has so great an opportunity been offered to foster a greater appreciation of its progress and an understanding of all its newest developments.

So that every visitor shall have a *full* understanding of what Oil Heating has to offer, this company has carefully selected from among the best informed in its organization the personnel who will be in constant attendance at the Petro-&-Nokol exhibit. It is the duty of this group to make certain that all visitors carry away a thorough appreciation of the history, the progress, and the future of Oil Heating and Air Conditioning.

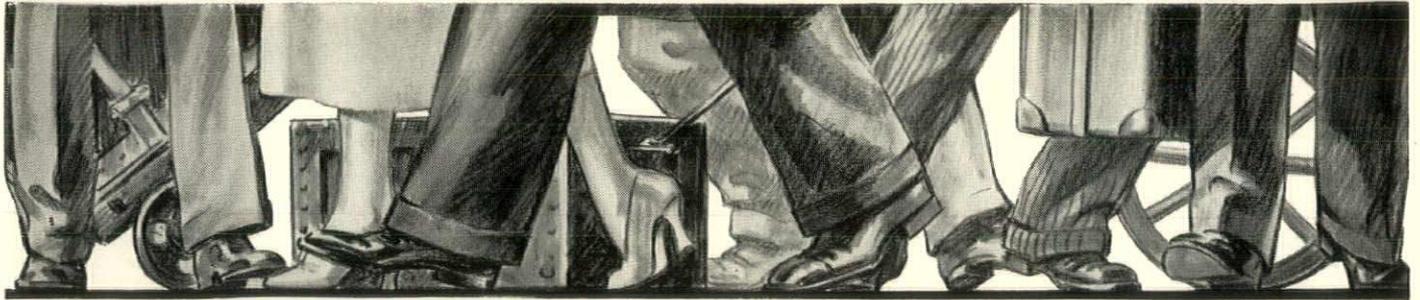
Among the members of this staff, you will possibly find old friends and acquaintances. You are warmly invited to make the Petro-&-Nokol exhibit your headquarters while visiting the Exposition. No matter if you are an utter stranger in Chicago, *here* you will find a resting spot, a friendly community of interest, and a group of people who "speak your language" and who will welcome you sincerely.

### PETROLEUM HEAT & POWER COMPANY

Stamford, Connecticut

World's largest and oldest oil heating organization"

# PUNISHING TRAFFIC



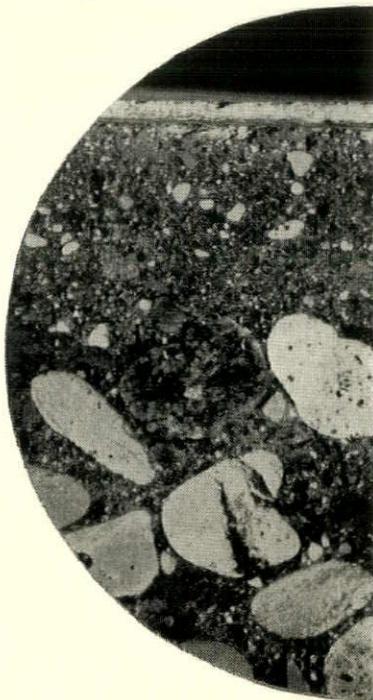
# HOLDS NO TERRORS

For the Floors You Top This Modern Way

Resistance to wear depends on the way you top a concrete floor. Plenty of coarse aggregate at the surface makes a floor that won't scale . . . won't dust . . . even after years of pounding by heavy traffic.

## WRONG

See that white line? It's a "dust on" type of finish, too soft, too porous to stand the gaff of wear. Picture shows a cross-section cut from a slab that crazed in ten days after finishing.



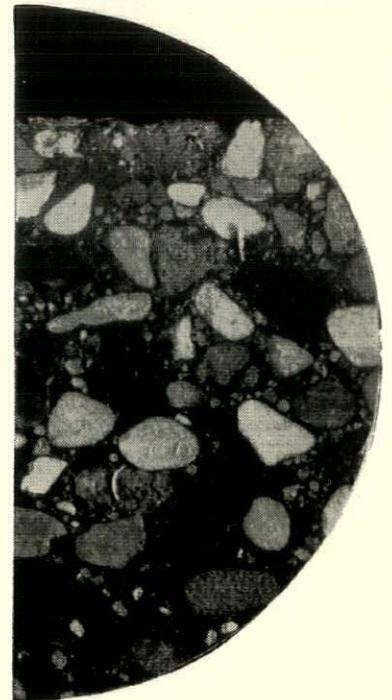
## Top your floors this simple, modern way:

- 1 Two parts coarse aggregate ( $\frac{1}{8}$  to  $\frac{3}{8}$  in. grade) to one part cement and one part coarse-grain sand for your topping mix.
- 2 Be a miser on mixing water—not more than five gallons per sack of cement.  
Float at once. Then give it a rest (usually about 30 to 40 minutes) until the water sheen disappears.
- 3 Then trowel to the desired smoothness. Prevent drying by curing under a wet cover.

Easy? Sure it is. Successful? Thousands of jobs have proved it so. Economical? It usually costs less than the old-fashioned sand-cement topping. More information is yours for the asking. Just write to the Portland Cement Association.

## RIGHT

See the coarse material in the surface of this section? This is the kind of concrete floor that gives lasting satisfaction. Yet it is simple to lay and ordinarily costs no more than the old-fashioned method.



**PORTLAND CEMENT ASSOCIATION**

33 WEST GRAND AVENUE, CHICAGO

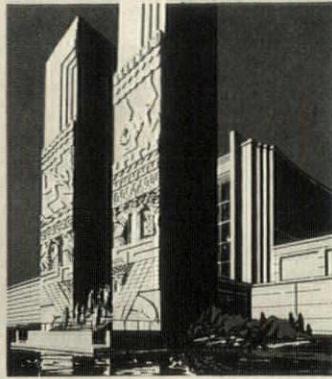


CONCRETE FOR PERMANENCE

VOLUME CXLIII

BENJAMIN FRANKLIN BETTS, A.I.A.,  
Editor

TYLER STEWART ROGERS,  
Managing Editor



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WALTER E. DEXTER,  
Advertising Manager

R. F. GARDNER,  
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# Reflections on a Century of Progress

BY BENJAMIN F. BETTS, A.I.A.

THE Century of Progress in Chicago impresses one with the great advance made in scientific developments during the past one hundred years. Science has provided for the building field new structural materials; scraps once wasted have been made useful; natural resources have been tapped to provide new and valuable products. Man, ever mindful of comfort and convenience, has harnessed nature's forces and produced controlled mechanical power, warmth, cold, weather, acoustics and light. Accomplishments in these directions have come largely in the last third of the century.

- Architecture in 1833 was riding on the crest of the wave of the Greek Revival. Following it came the Victorian Period, and the decline of public taste and architectural skill. Then the pendulum swung the other way. Artistic culture, fostered by expansion in European travel and stimulated by the Centennial Exposition of 1876, culminated in the Columbian Exposition of 1893. That Exposition presented an aggregation of architectural splendor never before seen in America and was largely responsible for the classical renaissance which followed. With further expansion in world travel, and greater dissemination of knowledge, tradition in architectural design obtained a firm foothold. But for a third of a century scientific and technical developments have been altering the very foundations of architecture. The break with tradition that is epitomized in the Century of Progress buildings is built upon these new foundations.

The buildings of the Chicago Exposition, influenced in their design by the "modern" school, crystallize an epoch in architectural history. That they represent a transitional period is evidenced by the wide divergence of opinion as to whether or not they are "good architecture." These buildings contrasted with the Exposition's reproductions of Fort Dearborn and the birthplace of Lincoln, vividly remind us of the part science now plays in architecture and building.

- Architecture as an art cannot stand still, resting on past laurels. As an outgrowth of the results of scientific research, demands of economy, and the interpretation of new social and economic conditions, it seems inevitable that future designers should produce a new architecture. To establish this new architecture on a plane with the best traditions of the past is a task yet to be completed. The real century of progress in architecture has only begun.

# Carnival Architecture

The structures of A Century of Progress were designed primarily as "containers" of temporary exhibits "wrapped in lively colors or labels to attract the eye of the man and woman on a holiday"

BY ARTHUR F. WOLTERSDORF, F.A.I.A.

**A**FTER five years of dogged perseverance during the last three of which the economic conditions of the country were steadily growing more stringent, A Century of Progress has completed its task of creating an exposition on the one-hundredth anniversary of the founding of Chicago.

A Century of Progress is built on a strip of land which was non-existent ten years ago. The filling in of Lake Michigan by the South Park Commission has produced land, temporarily leased to the Exposition company, three miles long and averaging less than one-quarter mile wide, and to this must be added a newly made island separated from the main land by a lagoon. The entire land area covers 426 acres.

Very early an Architectural Commission composed of the following eight men was appointed: Harvey Wiley Corbett, Paul Philippe Cret, Edward H. Bennett, John A. Holabird, Hubert Burnham, Raymond M. Hood, Arthur Brown, Jr., Ralph T. Walker. To these men goes the credit—or the blame—for the general layout and for the larger Exposition structures, though the coloration of these buildings, as they now appear, is the responsibility of Joseph Urban, the exterior color autocrat.

Industry, besides making possible the consummation of what the Commission planned, has also contributed much in individual buildings, such as General Motors, Chrysler, Firestone, Sears Roebuck, Dairy Industries, Horticulture. Building began more than three years ago with the erection of the Administration Building. It is a three- and four-story lightly constructed steel structure enclosed in asbestos-cement board, uses windows for light and air (an exception from the great Exposition structures which are windowless) and has one pretentiously finished room—the Directors' Room. It is the only structure on the grounds provided with heat, for here the Exposition forces worked through three winters.

The Exposition's Publicity Department saw to it that the designs for the principal structures were well advertised throughout the land and comment was rife. The architects had decided, and wisely, that the buildings should not hark back to historic architecture but should be modern. And modern the Exposition is, according to their lights. It cannot be claimed that their designs are original, for motifs used may be found in Holland, the work of Dudok and others; in Germany,

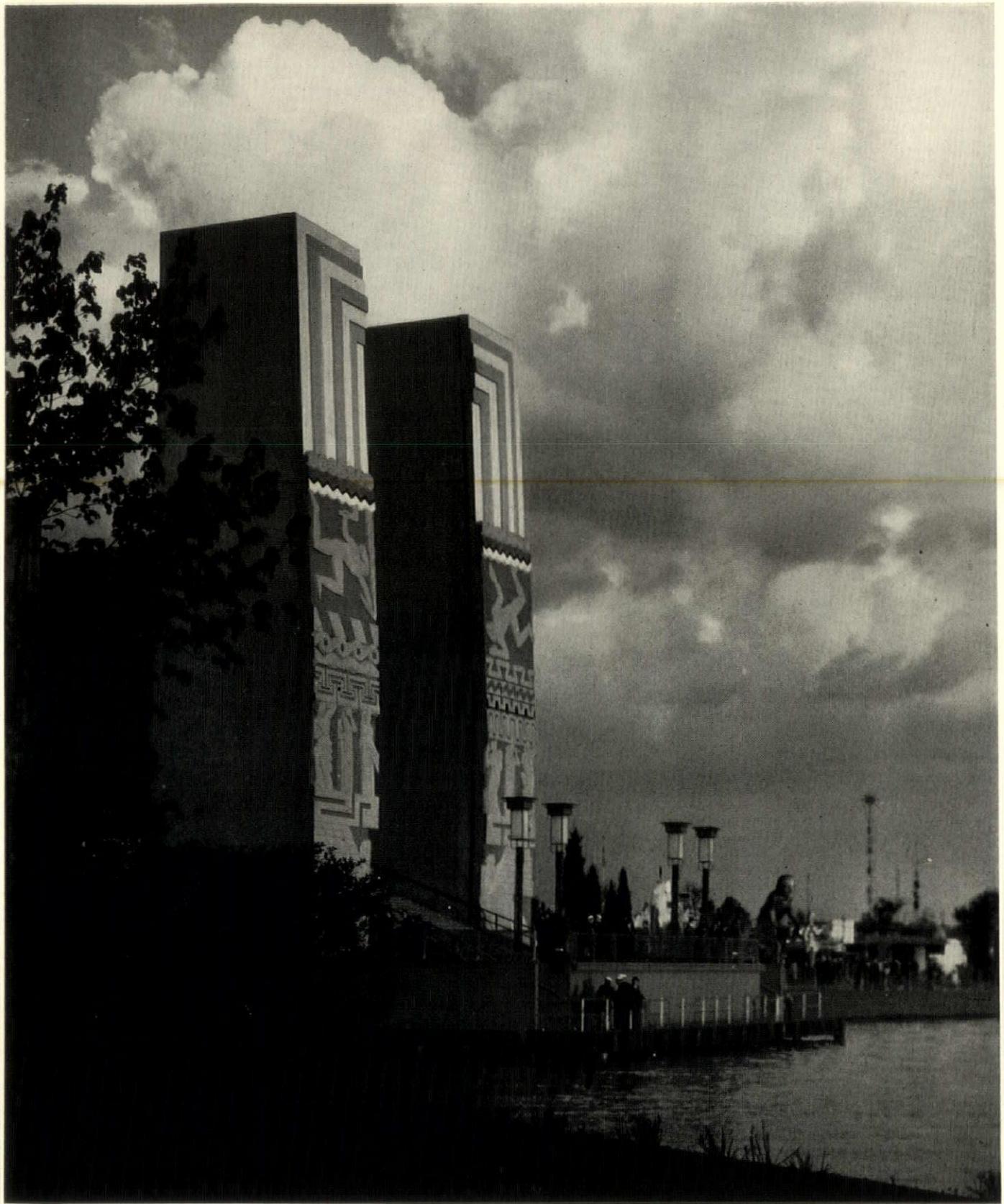
creations by Walter Gropius, Mies van der Rohe, and their school, and the showing of the Bauausstellung in Berlin in the summer of 1931; Sweden, as shown in the Gottenborg Exposition; and of course the work of the Frenchmen Le Corbusier, Perret, and others, to whom the American designers, no doubt, grant first place among their preceptors for modern architecture. The Colonial Exposition at Paris is fresh in their minds.

Daniel H. Burnham, Vice President of A Century of Progress and for some time Chief of Construction, writing of the Architectural Commission says: "All are graduates of the École des Beaux Arts in Paris, the home of the classical school, yet all have had a marked influence on the modern architecture of America. Such men are a sound group to which to entrust the architectural plans of the Fair."

**A**ND now, after having been introduced to the alumni of the École des Beaux Arts, who know if anybody knows, according to Dan Burnham, what the Fair should be, let us consider the structures.

As stated before, they are windowless though there are exceptions to this rule in the Electrical Group and recently many small windows had to be cut into the Science Hall's enclosure. It was argued in a written document that for exposition purposes daylight was not dependable, so electricity was decided upon as the only means of lighting. Perhaps the truth would be more accurately served if it were said that with the material of enclosure adopted generally for this Exposition, namely, synthetic board one-half inch thick, either of wood fibre, plaster or plywood, the cost of windows together with cutting, fitting and finishing around these, would be much more expensive than to apply wallboard to unbroken surfaces. Salvage of building material and rapidity of wrecking and removal have all played a part.

Ralph Adams Cram recently discussed the design of this Exposition in the Boston Transcript, setting up as ideal traditional architecture in the historic styles. He compared the Fair structures of 1933 unfavorably with those of 1893 at Chicago. I think the present Architectural Commission was right in assuming that the Fair was in no sense a model for more permanent structures; that it would have to appeal first and foremost as a carnival prepared for a holiday. The structures do not

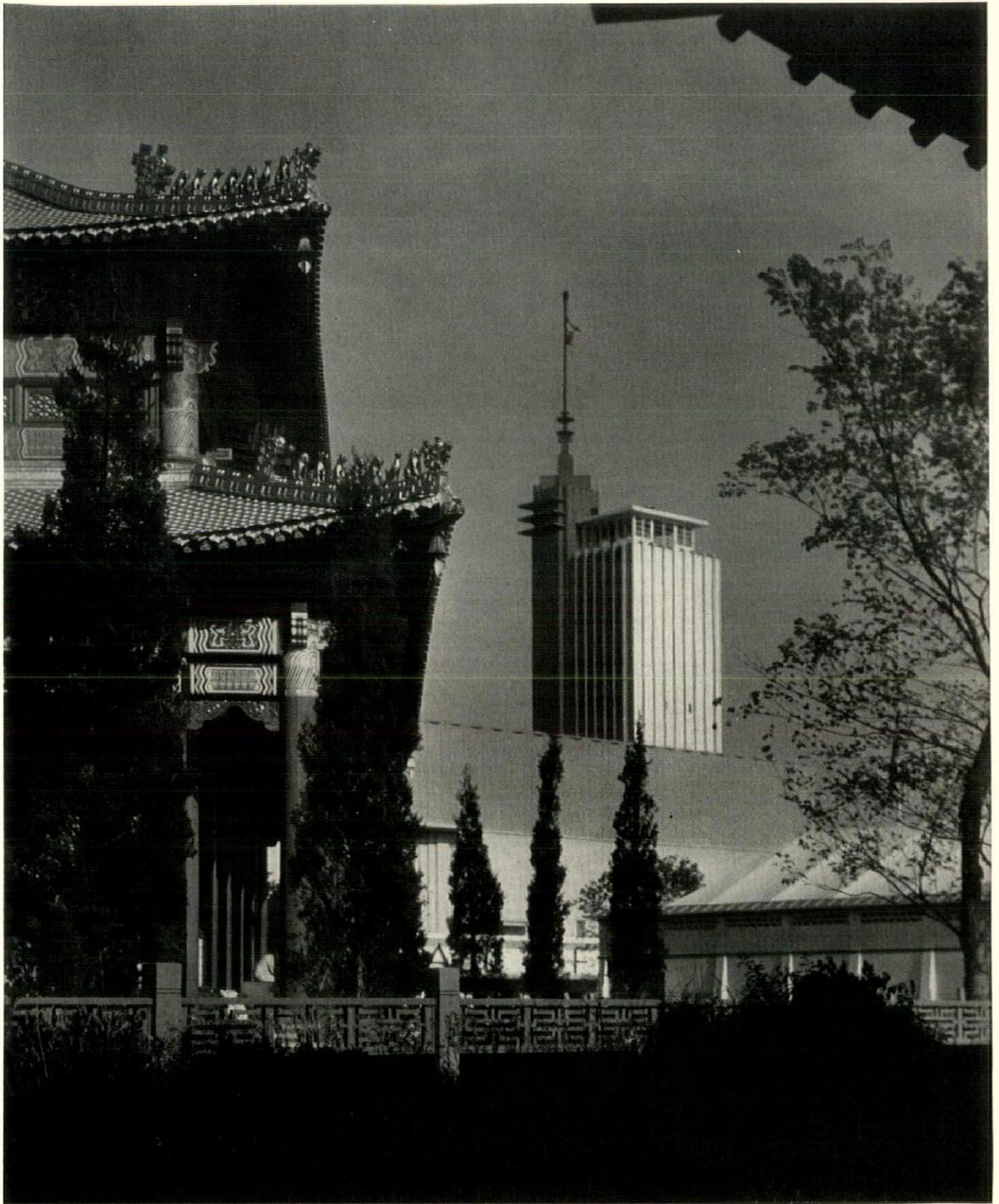


KAUFMANN & FERRY

WATER GATE TO THE ELECTRICAL BUILDING

Hood & Foulhoux, Architects; reliefs by Lee Lawrie, Sculptor

A CENTURY OF PROGRESS, CHICAGO



KAUFMANN & FABRY

In striking contrast to the blue and white tower of the Hall of Science designed by Paul Philippe Cret is the richly colorful gold and red Temple of Jehol, an exact replica of an ancient Chinese temple donated to the City of Chicago as a permanent structure by Vincent Bendix

A CENTURY OF PROGRESS, CHICAGO



KAUFMANN & FABRY



KAUFMANN & FABRY

Another contrast of ancient and modern architecture is to be found between the Belgian Village of Architect Alfons DeRydt, in which the facades of sixty-five historic Belgian houses have been reproduced from plaster matrices, and Paul Philippe Cret's Hall of Science embracing the Court of Honor

give the impression of real buildings. They look like the pasteboard containers that they are, even though, as in the case of Mr. Cret's Hall of Science and the State and Government group, there is architectural quality and proportion of parts. The structures are containers to house temporarily exhibits showing what progress has been made in a century. These containers are wrapped in lively colors or labels that are meant to attract the eye of the man and woman on a holiday.

Mr. Urban, the master of exterior color, appears to have given little consideration to unity in design as thought out for individual buildings. He established a palette of twenty-four colors with casein paint as a medium. In this palette of brightest intensity are one green, two blue-greens, six blues, two yellows, three reds, four oranges, two grays, white, black, silver and gold.

These colors cut in and out of the same building so that disintegration of design rather than harmony is produced. The Federal and States Building (Edward H. Bennett, architect) is perhaps more carefully colored for unity of design than is the Hall of Science, and yet the black stylobate of the Federal Building makes this structure float in some lights where the black disappears.

Mr. Urban is best known in this country through his brilliant stage sets, notably those of the Ziegfeld Follies. The problem here would seem to be different, with changing skies and water as a background. The blacks, heavy

reds and dark blues of the Electrical Group seem almost barbaric; while across the lagoon the coloration of the white Hall of Science seems insipid. Its blue bands, cut into by boxes of bright yellow against a wall of saffron and the treatment of the tower—with east and north faces in two shades of blue, and west and south faces, white—disorganize the design of the building.

The Court of States is triangular, with the Federal Dome at its base. This dome is flanked by three triangular pylons, again as high as the dome structure, that are adapted from the second prize design of the Columbus Memorial light for Santo Domingo. No utilitarian excuse could be found so each of the pylons is ascribed respectively to the Legislative, Executive and Judicial Branches of the Government.

When standing in the Court there comes to mind the prototype of the composition as one looks through a rift in the buildings onto Lake Michigan. The arrangement is that of the forecourt of a tent circus, where you approach the opening into the menagerie tent and are surrounded by the lurid panels of all the sideshow attractions. In the case of the Hall of States the lurid panels are replaced by painting the state flag on each concave unit front from the top of the wall to the terrace level. The surface is then punctured by the seal of the state, bronzed, and the doorway on the terrace level giving onto a balcony within. Mural paintings decorate the



KAUFMANN & FABRY

Suggestive of oil derricks and grasshoppers is the much-discussed and unprecedented Travel and Transport Building. Edward H. Bennett, Hubert Burnham and John A. Holabird, architects



KAUFMANN & FABRY

At the south end of the Avenue of Flags is a statue, "Knowledge Combating Ignorance," by John H. Storrs, sculptor, enframed by a semi-circular facade of the Hall of Science

individual state compartments. Many are terrible. New York State has arranged a very handsome room using enlarged photographs by Edward Steichen of New York State scenery and architecture for its mural decoration; there are strip mirrors sparingly introduced to reflect these pictures, and through an opening in the rear there is a vista of pine forests and mountain stream carried out in a garden. Eugene Schoen & Sons were the architects of the room.

Returning to the 12th Street entrance and looking south in the Avenue of Flags, one sees the series of great white piers with rich blue spandrel walls arranged in a semi-circle forming a setting for a heroic white statue in a blue shell. It is one of the very successful views of the Fair. This is an entrance to the Hall of Science. Before this statue the road turns and the observer has in full view the Chinese Temple of Jehol. This is a permanent structure that will get a more fitting location after the Fair is over. It is brilliant in reds and gold and the interior is competently gorgeous. The structure was made in China, an exact replica of the Jehol Temple. Sven Hedin, the Swedish explorer in Asia, is intimately identified with bringing this structure, presented to Chicago by Vincent Bendix, to the Exposition.

The road swings to the southeast and then continues south on its original axis with the General Exhibits Building at the right. This is the design of Harvey Wiley Corbett. It has four courts open to the east with four light towers. Orange, turquoise blue, yellow, black and white are contrasting exterior colors. Beyond this

is one of the most clever and refined architectural compositions in the Fair. It is the exhibit of the American Radiator Company and its subsidiaries. One enters an open gateway and finds himself in an Italian garden with five cascaded water basins, beyond this a sunken garden enclosed with trees and shrubbery; at focal points statuary occurs and the entire garden is enclosed by buildings and pavilions. The principal building is two stories high with the upper floor a balcony from which the clear two-story high wall covered with photographic murals forms a background for exhibits. All the pavilions open off the garden. Hood & Fouilloux are the architects of the building. George Sakier designed the interiors. The gardens were developed by Vitale & Gieffert, landscape architects.

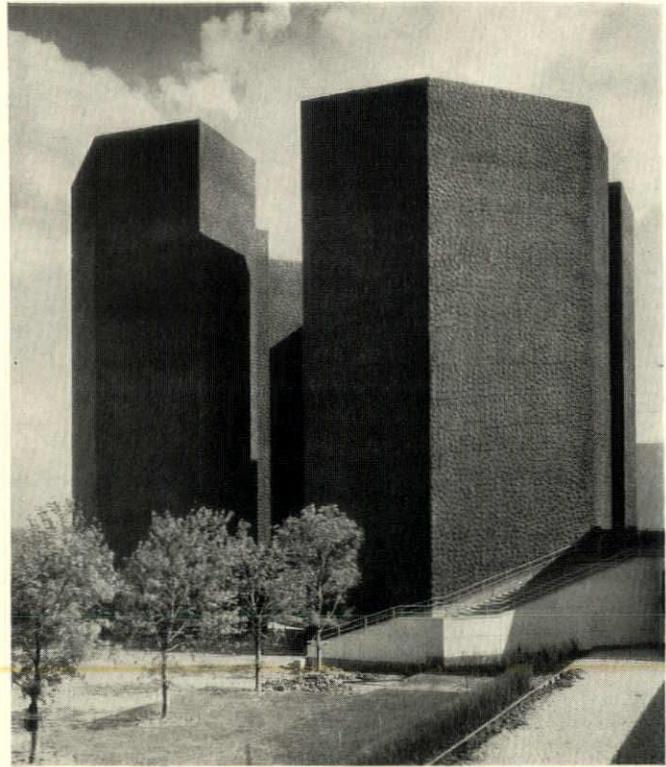
FROM here we continue south, passing the Venetian bridge on our left which leads to Northerly Island. On our right is a most picturesque group known as the Belgian Village, a conception of Architect Alfons Derydt. His scheme comprises sixty-five historic Belgian houses grouped around a paved court. Reproductions of old house fronts were made with plaster matrices brought from abroad. The coloring simulates that of the original buildings. Here begins the Midway, equivalent to Coney Island, which need not detain us.

The Home and Industrial Arts group comes next with the Kohler and Johns-Manville buildings at our right, both designed by Ely Jacques Kahn. Clever, indeed, is the absolutely simple rectangular Kohler front with a



KAUFMANN & FABRY

Stairway leading to the circular terrace of the Electrical Group, showing the relief symbolic of Energy by Ulric H. Ellerhusen in the background. Hood & Foulhoux, architects



KAUFMANN & FABRY

Near the Electrical Group stand these four huge steel and fabric pylons, painted green, enclosing a small pool and framing vistas across the lake. They are called "architectural trees"

continuous glass background for the columns. These columns are simply fluted cylinders without cap or base. The colors are gray and blue. Johns-Manville's building is a semi-circle in plan with smaller appendages to right and left. The exterior is unpainted transite board with entrance piers of the same material. The piers are slightly colored. This also is a successful design and one wonders how Kahn escaped the Urban brush.

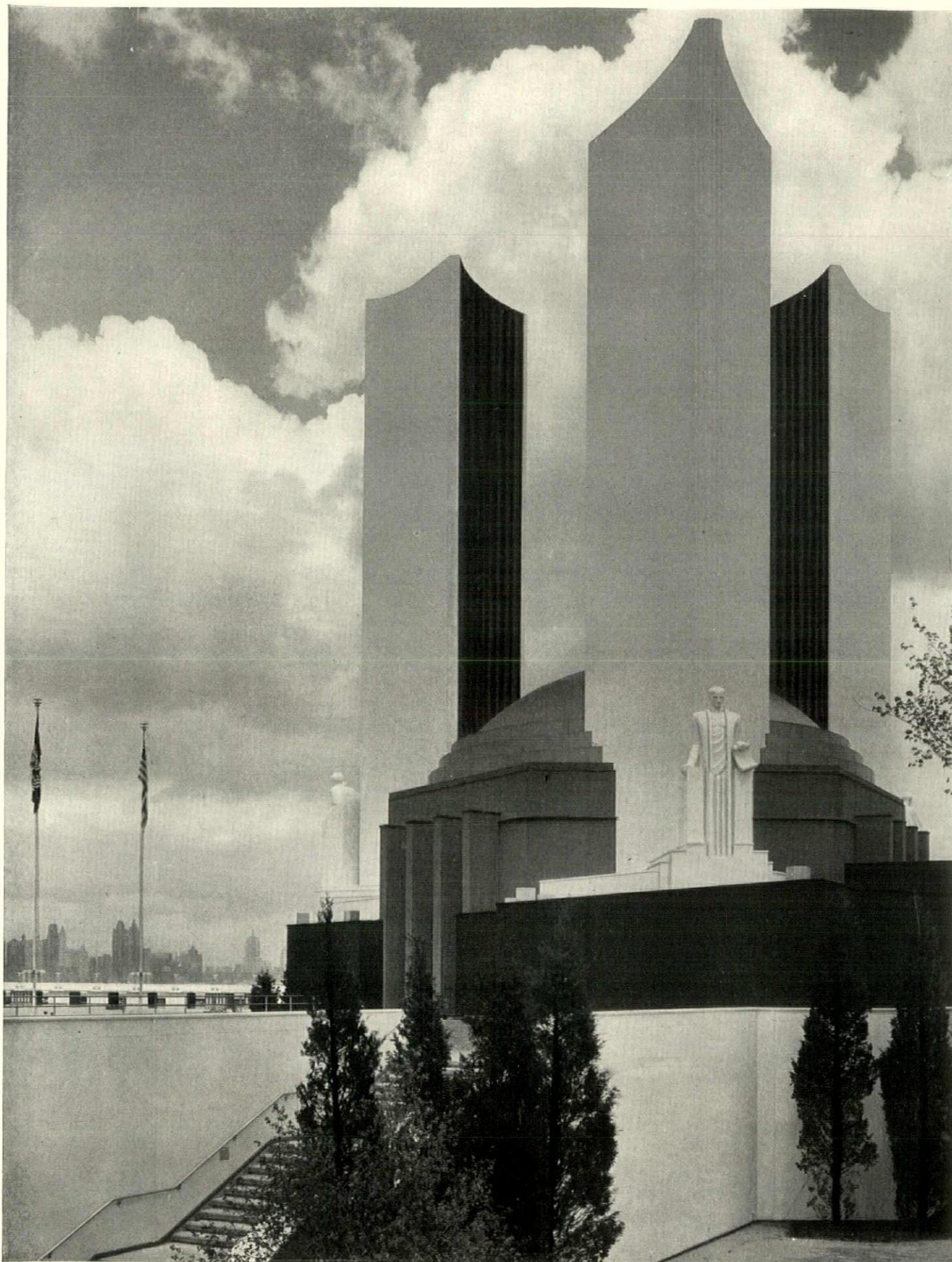
Then comes a whole block of new type small houses, ranging from wood (Southern Cypress and the Lumber House) through steel (Armco, Stran-Steel, General Houses, Inc., House of Tomorrow), the Masonite House, the Rostone House, and finally the Common Brick House. Space does not permit detailed discussion of these small houses; suffice it to say that great crowds pack into the Stran-Steel House which is most attractively furnished and decorated by Good Housekeeping Magazine, and the Armco house, whose dolling-up was undertaken by the Ladies Home Journal. I feel, however, that the real building of this group of small homes is the Common Brick house, with its 6¾-inch thick reinforced brick floors and terrace roof, 4-inch thick canopy and balcony floors, brick stairways, book shelves, fire places and partitions of brick. The floors and steps are finished with a polishing machine, thus achieving perfect levels and in the case of the floor producing a pattern through the marble chips in the mortar joints. Next to this stands an all glass house which can hardly be considered in the small house group.

What! Have they discovered oil in Burnham Park?

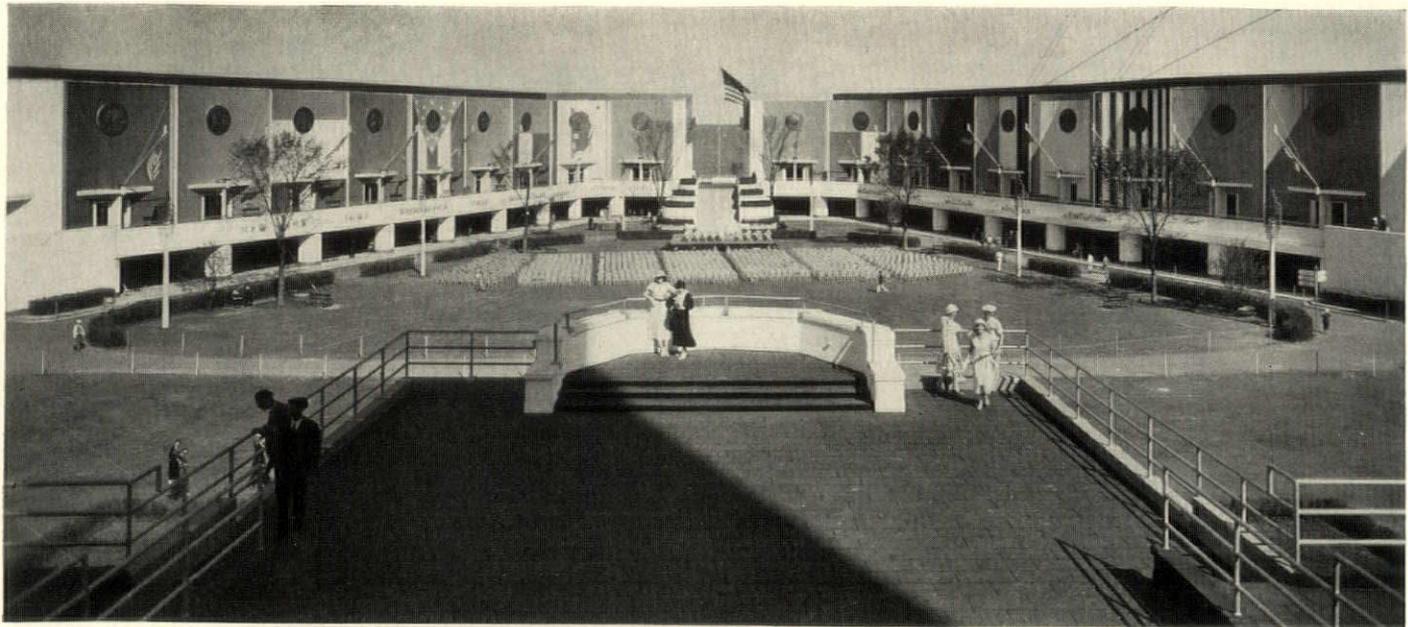
Look at the derricks! No, gentle reader, there are no oil wells. What you see in the distance are the stanchions supporting the cables of the Travel and Transport Dome—so-called. We will come to that later.

Dusk has fallen and before long it is dark. The Mayan Temple or rather the small fragment of a Mayan Temple at Uxmal in Yucatan is reproduced at the right. All that has been carried out is a little building 34 by 124 feet. Set on a high concrete platform, it houses the Mayan relics brought to the Exposition. The exterior has lively colors in yellow and blue. One wonders whether the Mayans used the colors or whether they were applied as part of the Urban scheme.

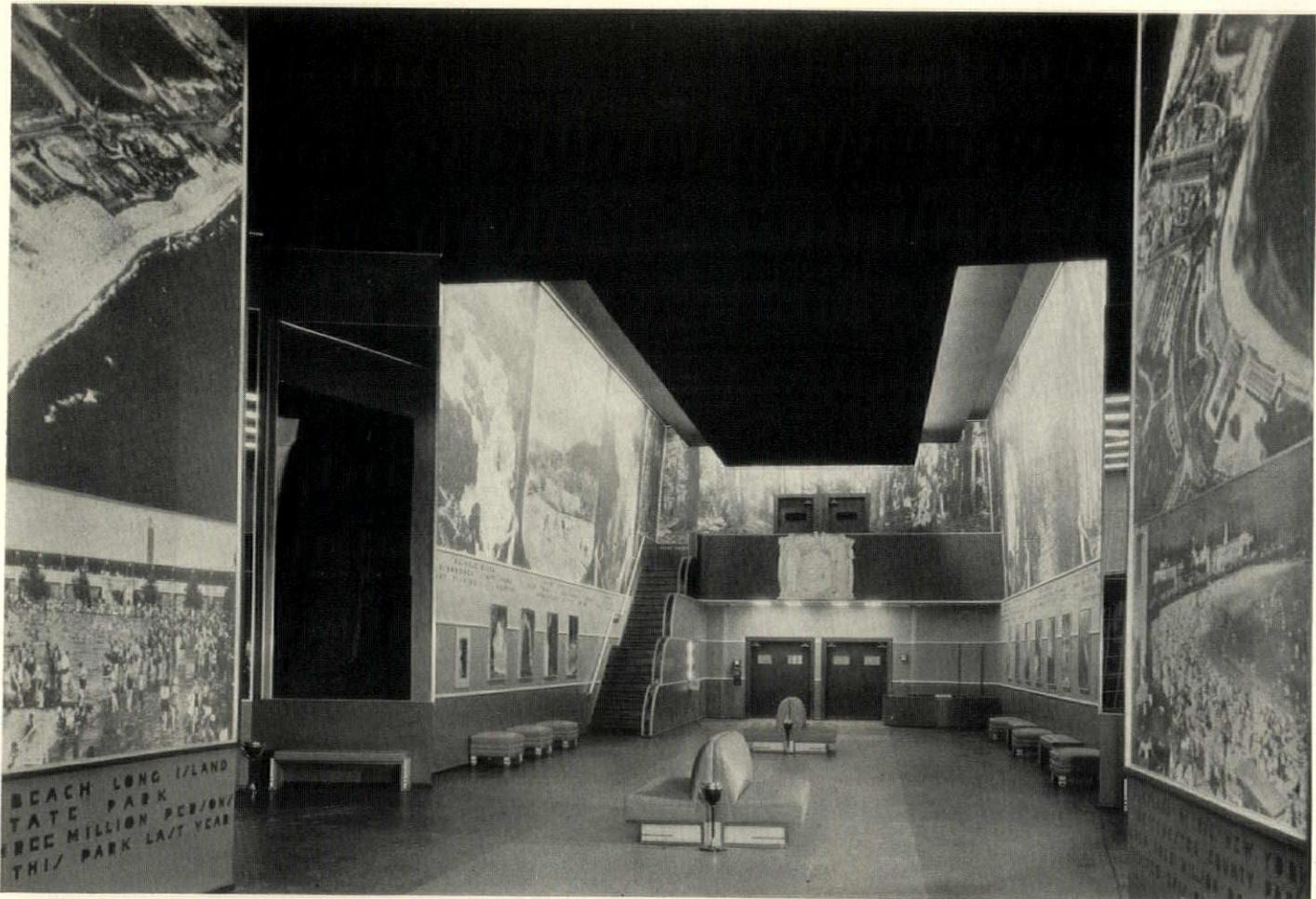
It is now dark and on our left, brilliantly illuminated, rises a structure all glass at the base and out of it shoots a great brownish red tower. The other exterior contrasting color is aluminum. This great structure is the headquarters of General Motors. Before you come to it you enter a fine garden where you discover, spotlighted, handsome automobiles. The approach into this building is a revelation. Unquestionably General Motors is the best designed for practical display, best finished in- and out-side, and probably best built, large structure in the Exposition. The great hall has fine proportions. Indirectly lighted openings to flanking show rooms alternate with piers that carry painted backgrounds and modeled sculpture showing the various processes that the exhibitor's product undergoes. The show rooms are superbly finished with handsome wood screens carrying decorative paintings whose subjects all bear on the busi-



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The Federal Building, shown at the left, stands at the base of the triangular Court of States, shown above. Edward H. Bennett and Arthur Brown, Jr., architects. In the States Building the hall of New York State is decorated with photographic murals by Edward Steichen; Eugene Schoen & Sons, architects



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A decorative detail from the Foods Building designed by Edward H. Bennett is shown at the left. The interior is of the great hall of the General Motors Building, showing the statue entitled "Precision Workmanship" by Carl Milles and a glimpse through the doors into the automobile assembly hall. Albert Kahn, architect

ness of the exhibitor. There is a huge hall, roofed with elliptical steel trusses, where automobiles are assembled, painted, equipped and sold to the customer on the Fair grounds. All honor to Albert Kahn for this splendidly thought out and well executed exposition building.

Across the street from General Motors is Chrysler, a very clever architectural stunt. Four great walls rise, unconnected, each in the shape of an angle whose junction is broken by the arc of a circle. Along the inner face of these angles rise the stairways, reaching to the upper show room. This show room is a complete circle in plan and bridges over where this open angle structure occurs. The circumference of the circle is, of course, all glass. Since this is a summer show, snow and sleet and ice need not be considered in these high precipitous slits. They are of value for color. Holabird and Root are to be complimented. Colors: white, blue and gold.

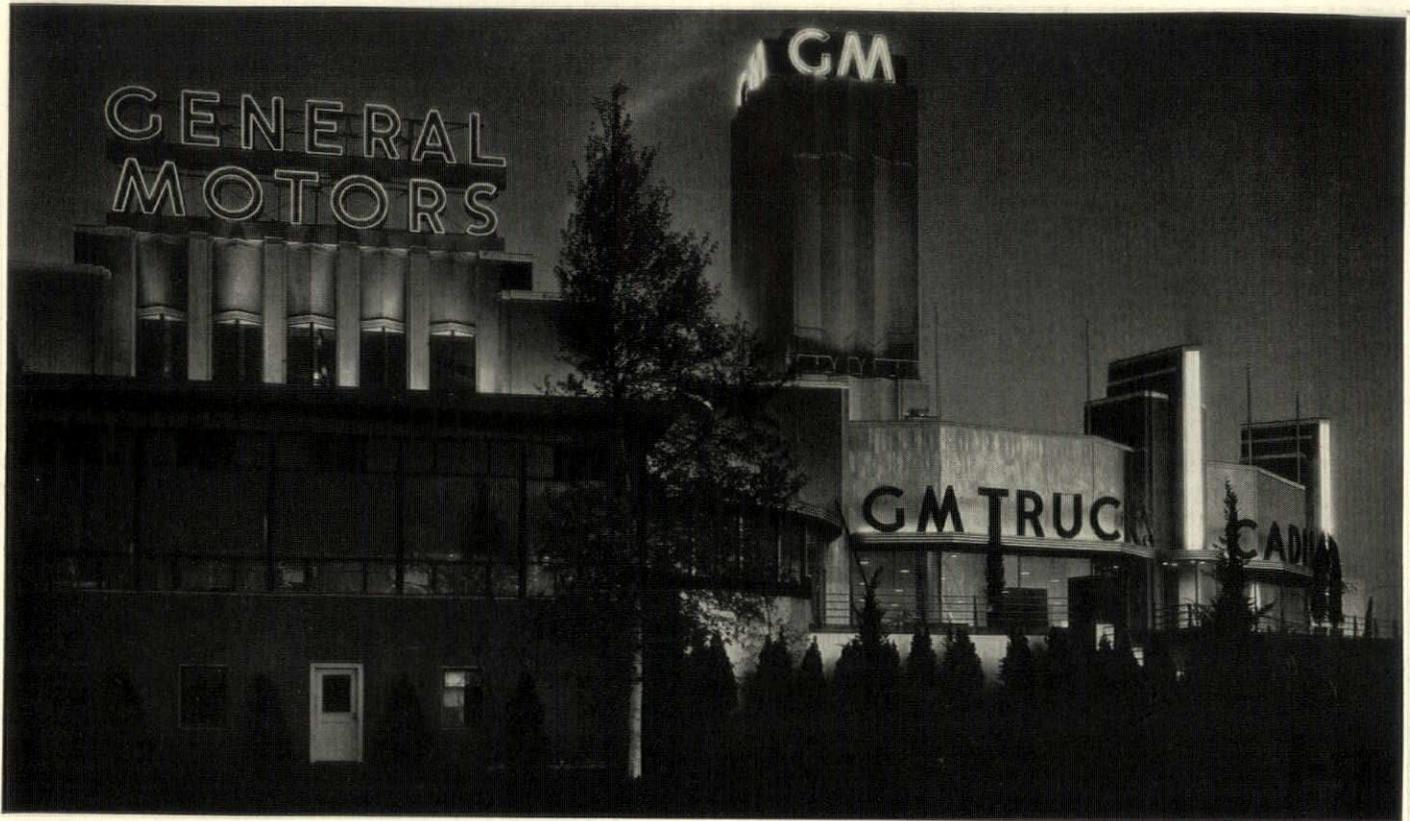
And now the Travel and Transport Building is before us—that structure whose derricks we saw from the distance. There is a long shed-like structure with a roof rising for a distance above the general roof and beyond this a polygonal gas tank surmounted by a ring of stanchions over which pass cables, the said cables anchored deep into great concrete blocks or dead-men surrounding the tank and reaching to the top of the lower zone or stylobate. The tank has four great sunburst windows that light nothing within since the interior is completely enclosed with another lining. The structure has no antecedent and I am sure will have no offspring. It has

been advertised as the "breathing dome," since cables crossing the tank and sustaining the cymbal-shaped roof will expand and contract with temperature. The dome would go up and down with the cables, thus inviting leaks. An unexpected phenomenon developed during the last year and a half of the life of this creation in that reverberation—echo—with many repeats occurred under this roof when noises emanated from a certain spot. That, however, is probably a thing of the past since now there is an interior vertical drum.

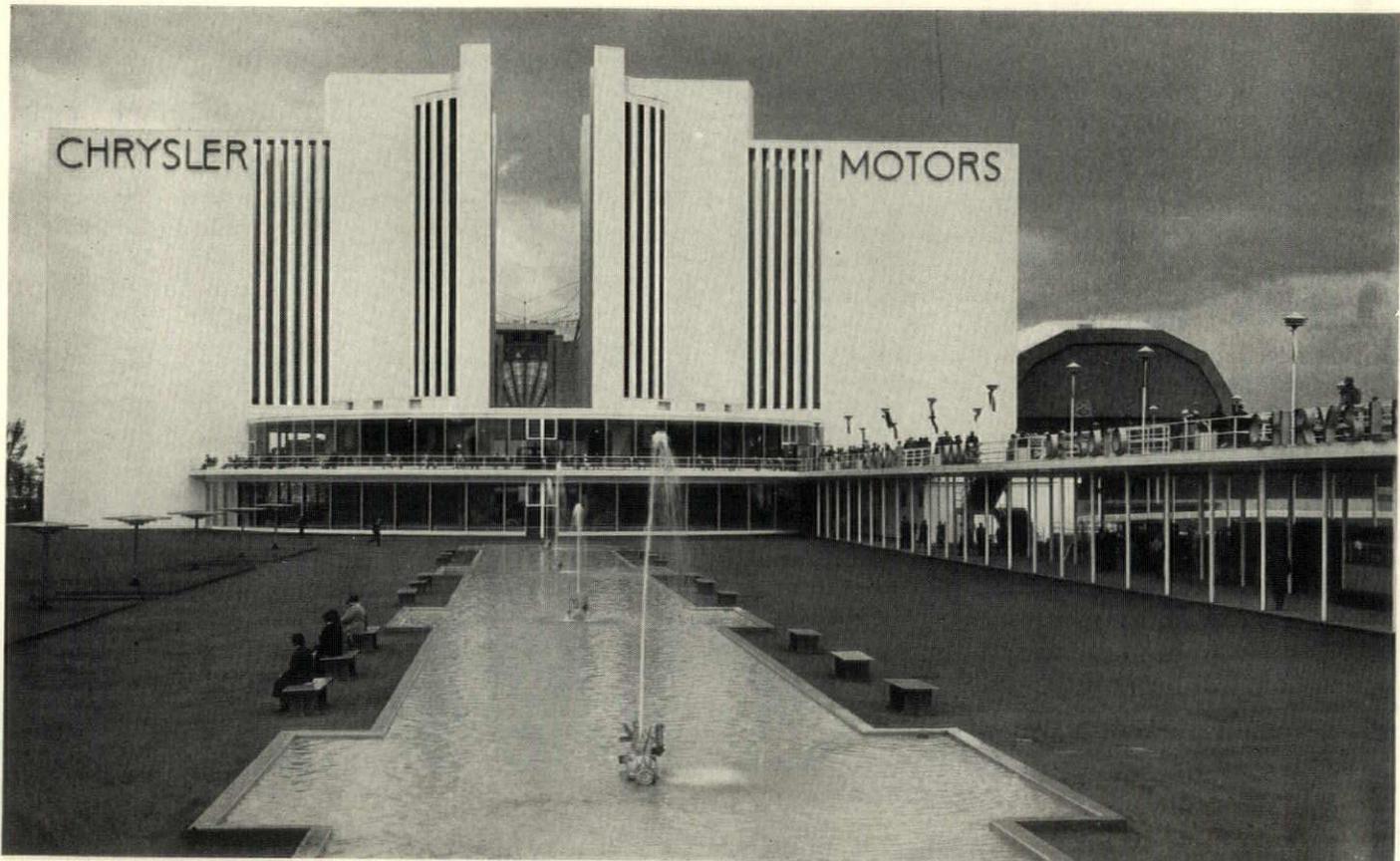
Why, the reader will ask, create monstrosities willfully that have never been before? Is this valuable advertising? Certainly for extravagance of space these concrete dead-men pass all understanding. The roof construction is no great structural achievement. It is an eyesore. Recent European examples of just as large a span—created with light iron ribbing or reinforcement onto which concrete was shot through a gun, creating an inverted saucer with practically no thrust—would have been something to show Exposition visitors. This is the laughing-stock.

At present the main body of the tank is a mossy green resting on a vivid yellow base. The entrances are accented by box furring simulating grasshoppers. You enter the building between grasshoppers.

Let us return and cross over the Venetian bridge at 23rd Street. Tony Sarg has completed a complex of buildings, including a children's theater, known as Enchanted Isle, a fascinating composition in color and form

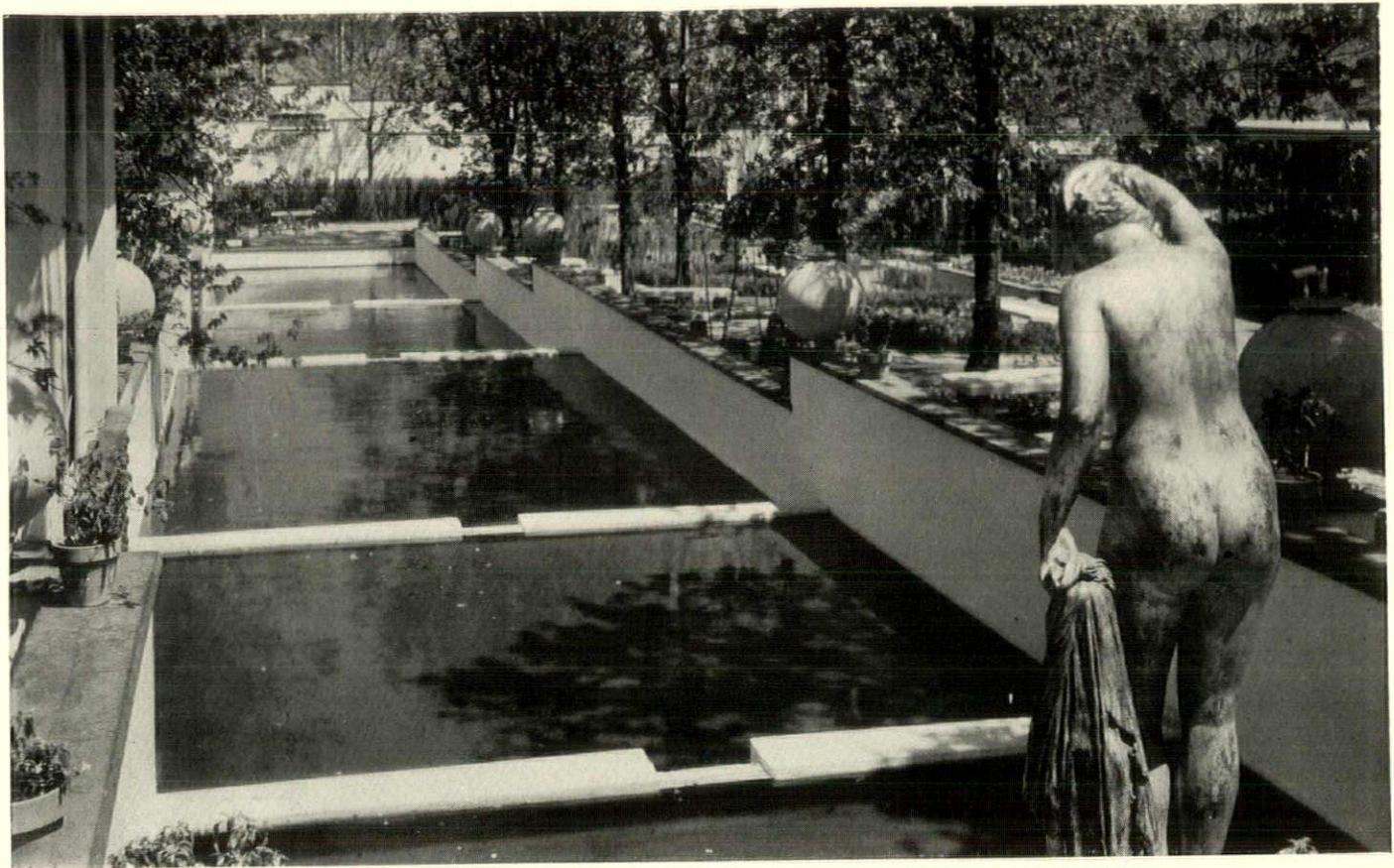


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GENERAL MOTORS BUILDING. ALBERT KAHN, ARCHITECT . . . CHRYSLER BUILDING. HOLABIRD & ROOT, ARCHITECTS



A cool, secluded garden retreat is a pleasant feature of the group of structures comprising the exhibit of the American Radiator & Standard Sanitary Corporation. The bronze Aphrodite by Rudolph Evans is one of five statues by him in these gardens. Vitale & Gielfert, landscape architects

designed to entertain children while their parents are visiting other sections of the Fair.

The Electrical Group on the island has a semi-circular plan at the south end and a large, liberal corridor flanked by exhibits. Here we find the Westinghouse and General Electric exhibits, both very extensive. Architects will be interested in the handsome wall paintings at Westinghouse, symbolizing various functions of electricity. Black and white are dominant on walls and columns. The General Electric is noteworthy for the huge drums, like Karnak columns, that run from balcony to ceiling. The ceiling is black and the corridor floor a rich red carpet. The drums are covered with murals by Charles Falls that are impressive. At the northern end of this corridor, which is perhaps 40 feet wide, is an imposing stairway leading to an upper level whose walls and ceilings are red and gold. On the balcony there is a model in perspective with painted background, about 100 feet wide across the front, showing Architect Charles G. Beersman's conception of the future city. It is shown by night, at dawn, midday, dusk and evening with the varying lighting effects. Unfortunately, spectators cannot stand at a sufficient distance to encompass the diorama in its entirety. One passes within six feet of the picture.

We cross the court and see four huge pylons painted green and confining a little water basin with decorative floor. The pylons are said to be "architectural" trees.

Hood and Fouilhoux designed the Electrical Group.

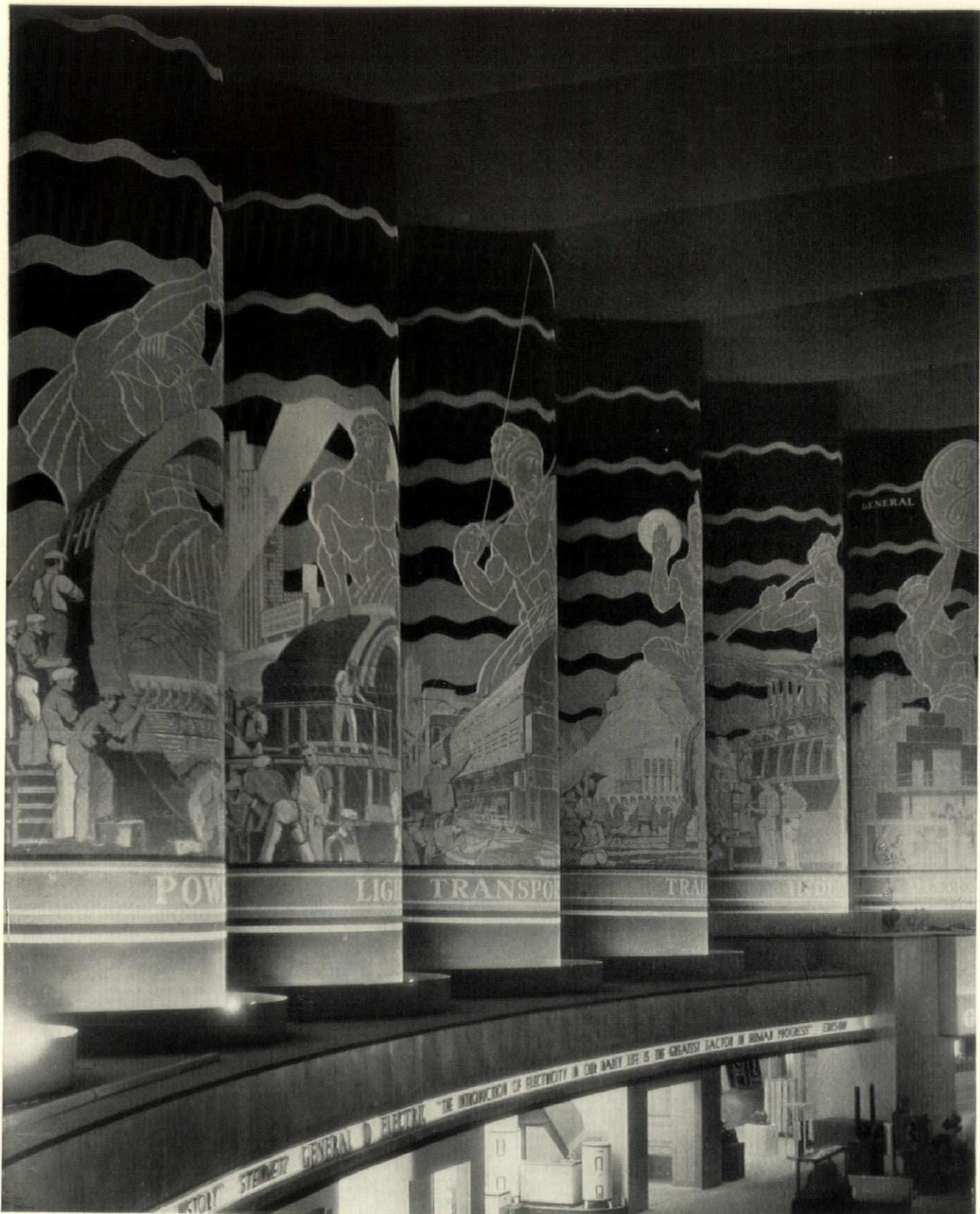
The Agricultural Building, accredited to Architects Arthur Brown and Edward H. Bennett, is an interesting structure well suited to exhibition purposes, but the exterior coloration in stripes is beyond my understanding.

All the larger buildings, particularly the Agricultural and General Exhibits Buildings, contain finely designed exhibition structures and booths showing clever use of the newer building materials. One of these is the Fleishmann exhibit in the Agricultural Building, a round structure with conical roof, the upper surfaces covered inside and out with artistically painted Salubra.

We cross to the west tower of the Skyride along roads and bridges not brilliantly lighted from which fine illuminating effects are seen in many directions. Ascending to the 600-foot level of the tower, the observer looks down upon an illuminated map of the entire Exposition, which at night is beautiful. The harshness of the colors by daylight is softened and at midnight this is a picture from the Arabian Nights.

In reflecting on its entirety, the thought persists that the Exposition was conceived in the spirit of the roaring, smashing Twenties that came to a crash in October 1929, that the symbol of that time as expressed in the architecture and coloration is the lipstick, the hip flask and the cocktail shaker; that it expresses psychologically a passing era. Every architect should see it.

Architecture is on its way, but whither is it going?



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Huge drum-like columns covered with murals by Charles Falls dominate the architectural treatment of the General Electric exhibit in the Electrical Group. Hood & Fouilhoux, architects



## The Trend of Progress In House Design

Demonstration Houses at A Century of Progress reveal new methods of construction, new materials and new trends in design and decoration

WHAT progress has been made in the design and equipment of houses during the last one hundred years is indicated in ten houses erected for demonstration purposes at A Century of Progress, Chicago. It is significant of the times we are living in that these houses might equally well portray the progress made in the last decade, so far as their important features are concerned. All have been influenced in general design by the modern trend in architecture; nine of them have flat roofs and are frankly "modern," while the tenth, the sole supporter of the traditional sloping roof, effectively blends the old and the new. Even this modestly modern house of the Lumber Industries would have seemed strange a dozen years ago; the others would have been impossible to build and equip at that time.

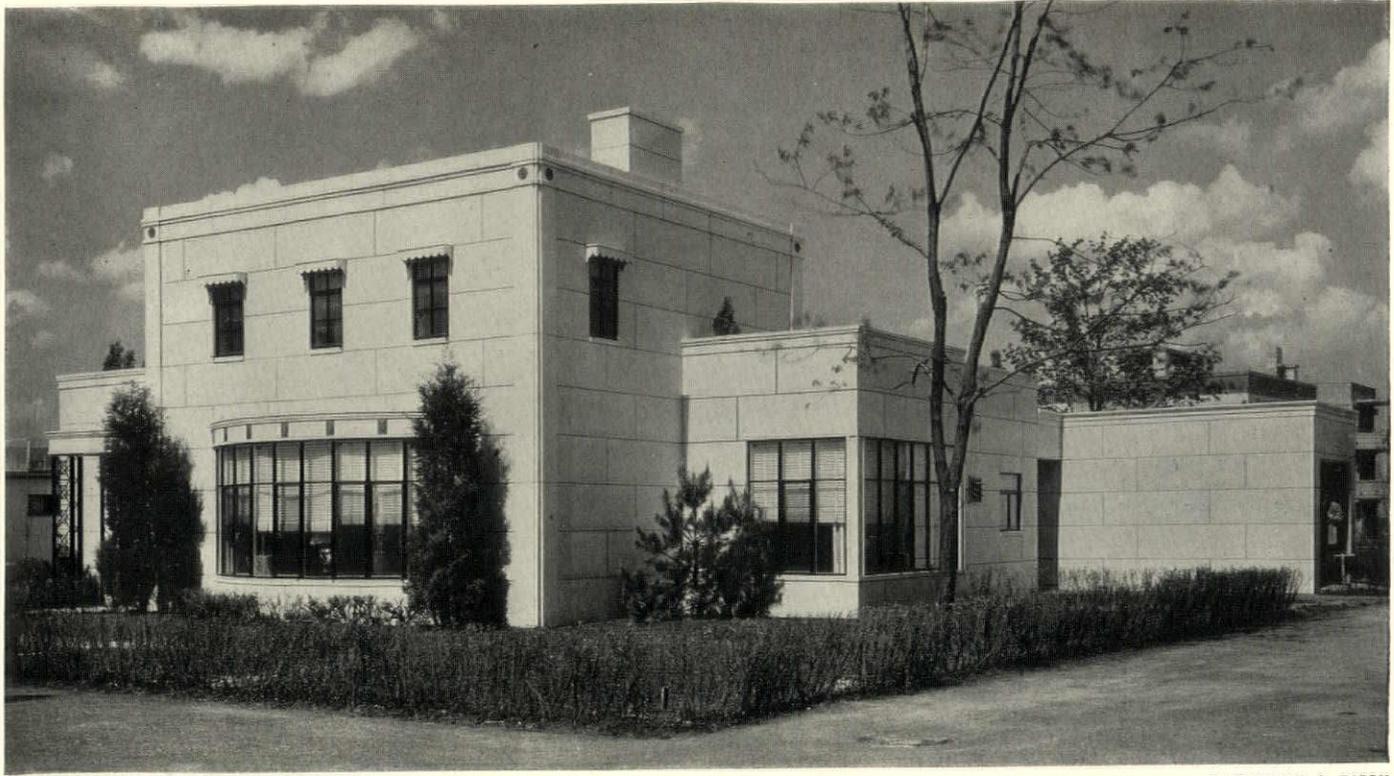
Primarily these exposition houses were erected to demonstrate the merits of specific materials or construction methods. Five of them employ steel as the principal structural material; one is of reinforced brickwork and four have wood structural frames. Several, however, have been erected to demonstrate other things than materials, such as the Florida House which demonstrates the comforts possible in a semi-tropical climate; "Design for Living" which seeks a fresh start in the planning and equipment of houses, and "Tomorrow's House" which is frankly an attempt to depart from precedent in materials, planning and all other traditional aspects. In examining these houses one should constantly bear in mind not only the reasons that brought them into being, but also the exigencies of exposition conditions.

In most cases the plans have been arranged to permit a steady flow of traffic through the building; a consideration not present in the normal house. The lack of cellars is another reflection of site limitations.

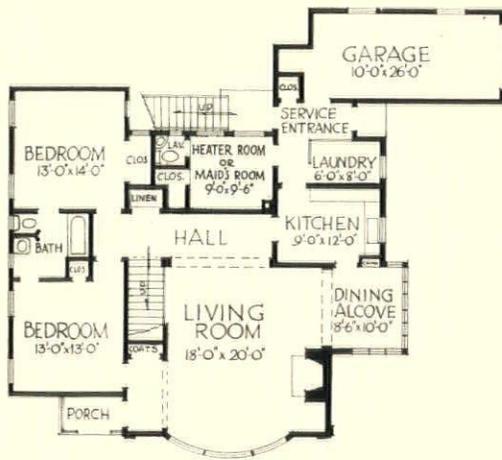
Of particular interest from a structural point of view are the Common Brick House, the Good Housekeeping-Stran-Steel House, the Rostone House and the Ferro-Enamel House because each of these departs from traditional methods of construction. The Good Housekeeping-Stran-Steel House employs pressed metal studs and beams which have a double web of corrugated pattern into which special nails can be driven to permit the attachment of surface materials. The Rostone House uses standard structural shapes, mostly channels, arranged to form wall panels which support floor beams after the manner of the usual structural steel frame. The Ferro-Enamel House uses sheet metal throughout for both walls and floors. The Brick House is unique in its use of brick both structurally and as a finishing material. Floors, walls, ceilings, and even interior details are of reinforced brickwork with both faces of the masonry exposed and decoratively treated.

Only six of the ten demonstration houses at the Exposition are illustrated in the following pages. The remaining four were not sufficiently completed for adequate presentation in this issue.

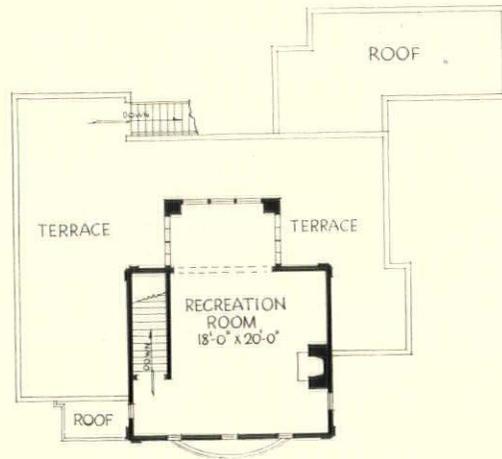
The popular reaction to these ten houses and to other housing products demonstrated in the general exhibits will be of utmost significance to the architectural profession. Perhaps these houses will dramatically change future architectural requirements in the residential field.



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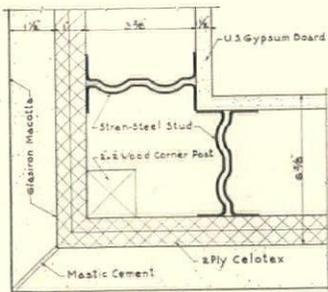
First floor plan



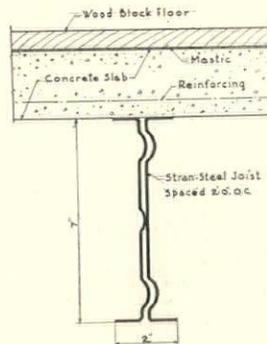
Second floor plan



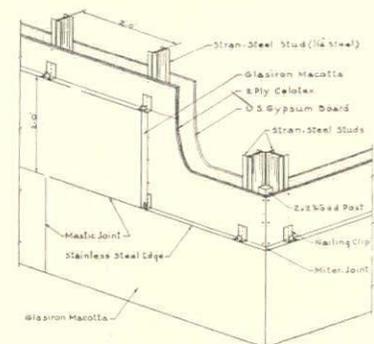
Alternate second floor



Typical floor section



Typical wall section



Assembly of wall materials

GOOD HOUSEKEEPING - STRAN-STEEL HOUSE, A CENTURY OF PROGRESS, CHICAGO

The recreation room on the second floor of the Good House-keeping-Stran-Steel house has a floor of blue linoleum with inlaid border and game patterns of yellow; walls painted in three shades of yellow; Venetian blinds, white with yellow straps; furniture upholstered in blue and yellow



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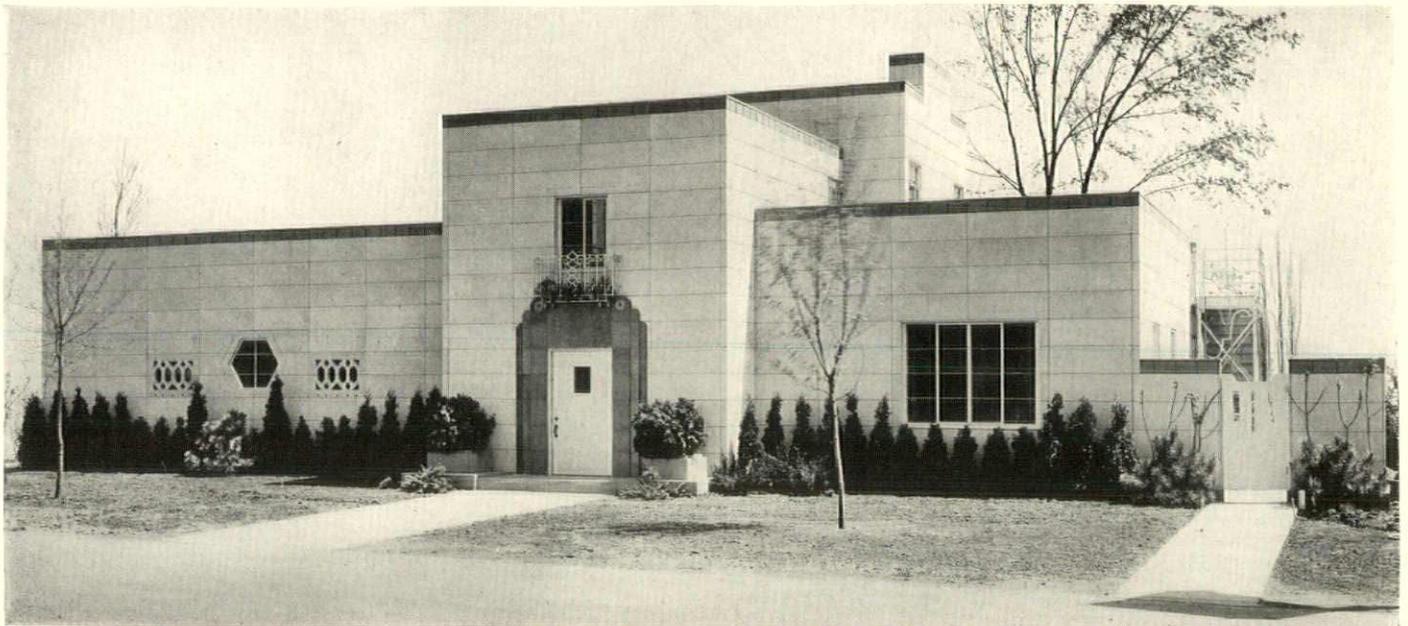
H. Augustus O'Dell  
and Wirt C. Rowland,  
Architects

Dwight James Baum,  
Consulting Architect

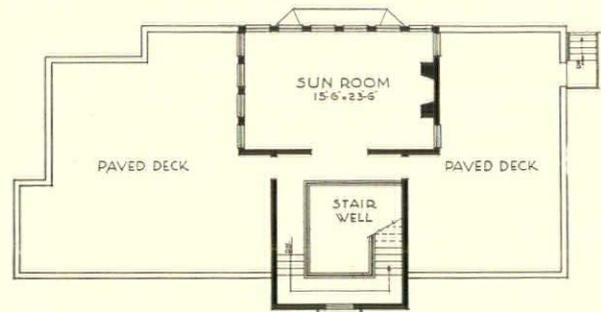
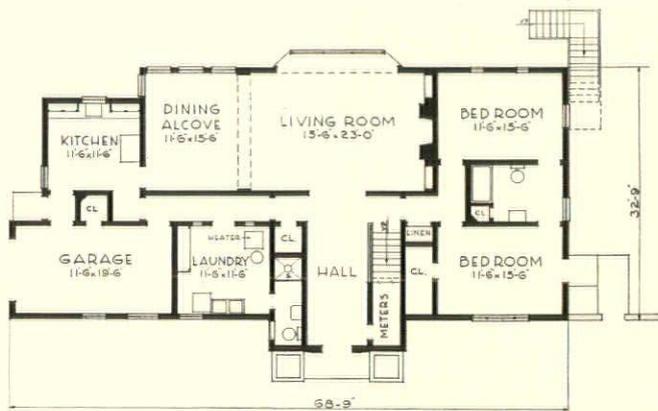
Helen Koues, Direc-  
tor, Good Housekeep-  
ing Studio of Archi-  
tecture and Furnishings

FRAMING: Studs, joists and rafters of 16 gauge steel, rolled and assembled to form a double web with corrugations as shown in details. Nails are driven into the nailing grooves to hold surface materials, a gripping power twice that of wood being developed. Members are assembled as for wood construction, but with wider spacings. WALLS, EXTERIOR: Two plies of Celotex are nailed to the studs. The exterior surface is composed of panels of Glasiron Macotta made of Haydite concrete with a facing of porcelain enamel on Toncan iron, edged with a beading of stainless steel. Color: cream with lighter trim. WALLS, INTERIOR: U. S. Gypsum board nailed to studs and plastered. FLOORS: Concrete structural slab surfaced with wooden blocks laid in mastic, or linoleum. CEILINGS: Same as walls. The fabricated construction can be erected without special tools. The living room shown above has a floor of black marbled linoleum with inlaid border of white; white walls; blue ceiling; yellow linen curtains; gold mirror; furniture in the contemporary manner.

GOOD HOUSEKEEPING-STRAN-STEEL HOUSE, A CENTURY OF PROGRESS, CHICAGO



C. & C. PHOTO SERVICE

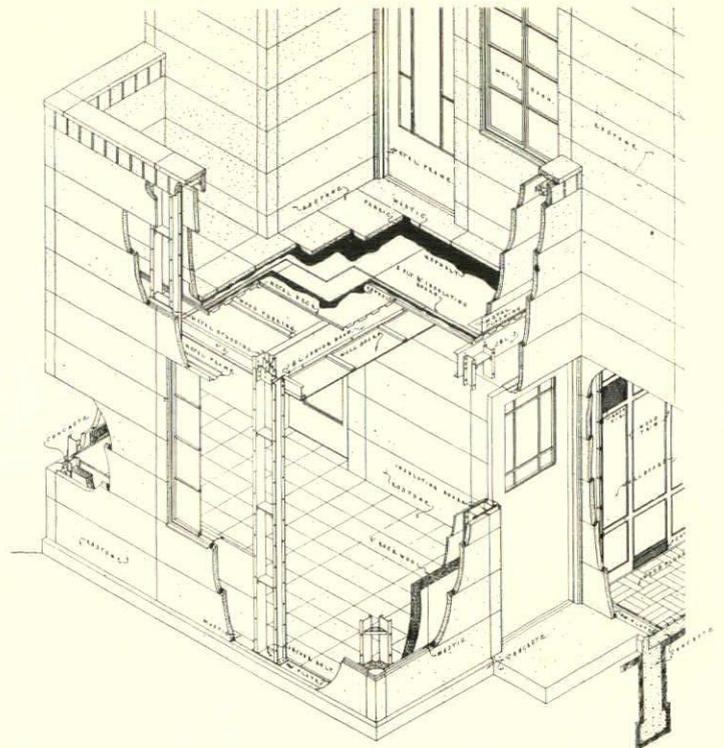


## A HOUSE OF ROSTONE

A CENTURY OF PROGRESS, CHICAGO

Walter Scholer, Architect

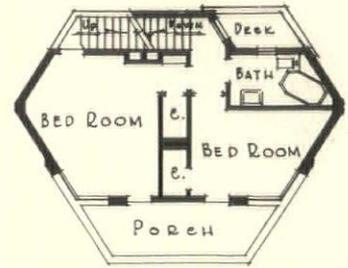
FRAME: Studs are made of two channels separated by spreaders and are set on four foot centers; joists and rafters are light I-beams or channels. WALLS, EXTERIOR: The house is faced with standardized slabs of Rostone, a new synthetic material manufactured by a process that simulates the natural formation of stone. The slabs are cast with threaded metal thimbles in the back faces, by means of which the slabs are bolted to the frame. Joints are ship-lapped and sealed with mastic. COLOR: Wall slabs cream-buff, with red-brown copings. WALLS, INTERIOR: Board insulation between studs, with interior surfaces of Cornell board, Rostone, etc., according to room. FLOORS: Concrete structural floor, finished with Rostone slabs, wood mosaic blocks or Tiletex. ROOF: Robertson Roof Decking with two layers of insulating board, paved with Rostone roof and decking slabs



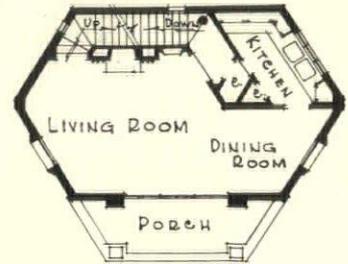
ISOMETRIC VIEW SHOWING METHOD OF ASSEMBLING UNITS



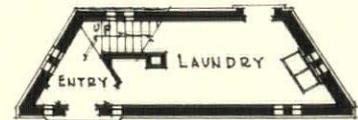
KAUFMANN & FERRY



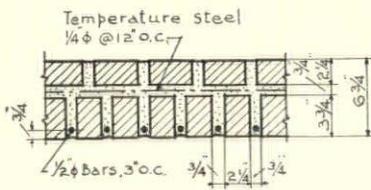
BED-ROOM-FLOOR



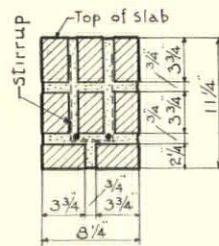
LIVING-ROOM-FLOOR



ENTRANCE FLOOR

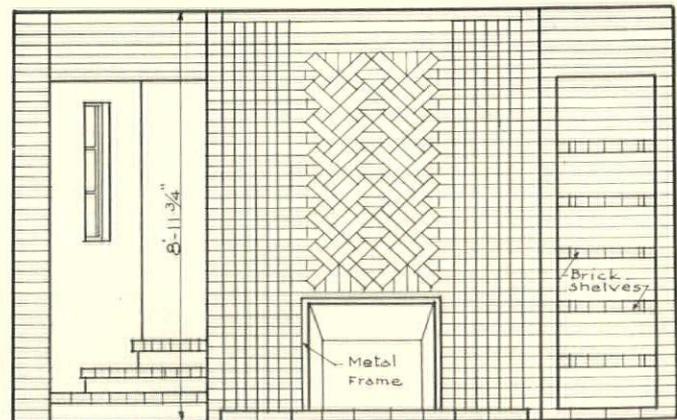


Typical section, reinforced brick floor slab



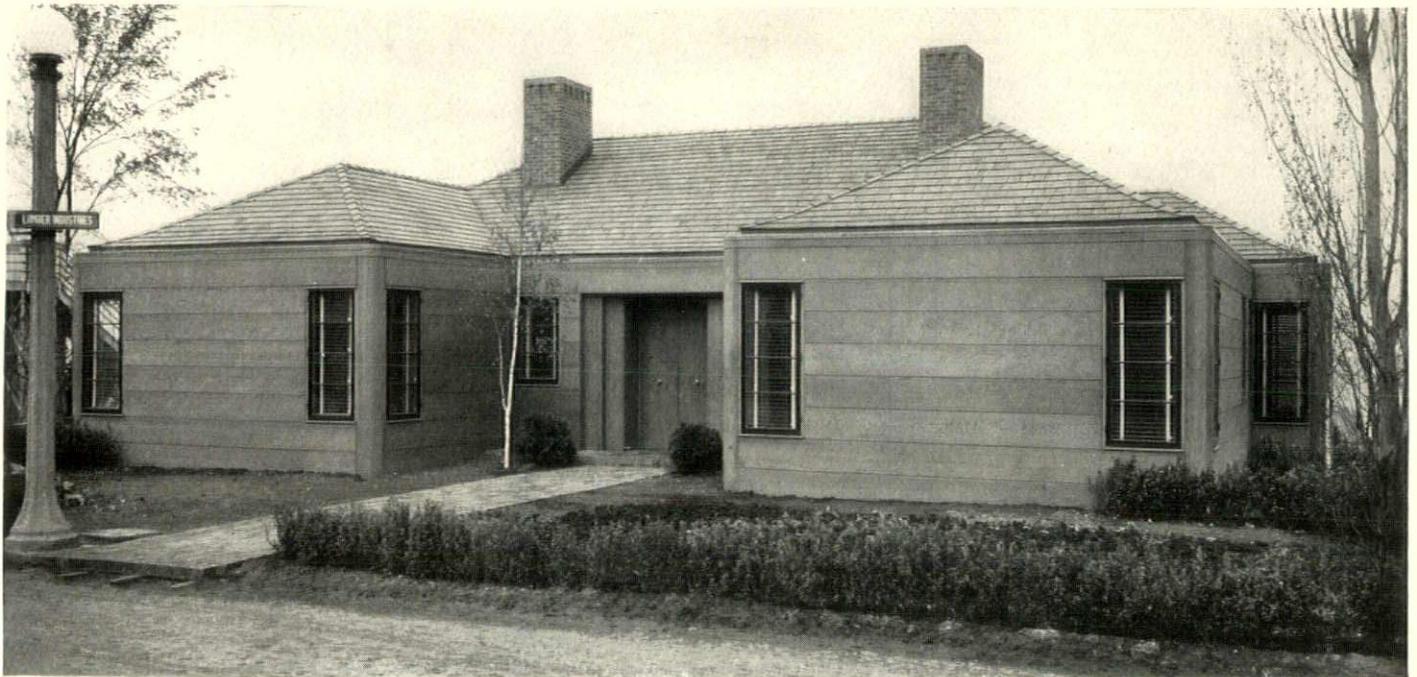
Typical reinforced brick beam

Reinforced brick construction, using only brick, mortar and reinforcing steel, is employed throughout this house. Interior walls, stairs, book shelves and other built-in features are brick, structurally integral with the outside walls or partitions. Floor surfaces are ground and polished with wax terrazzo finish. Interior surfaces are variously oil stained or painted in keeping with color schemes of rooms

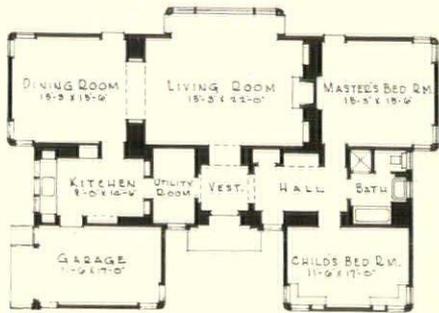


Living room wall, showing decorative treatment of brick structural walls

HOUSE FOR BRICK MANUFACTURERS ASSOCIATION OF AMERICA. ANDREW N. REBORI, ARCHITECT

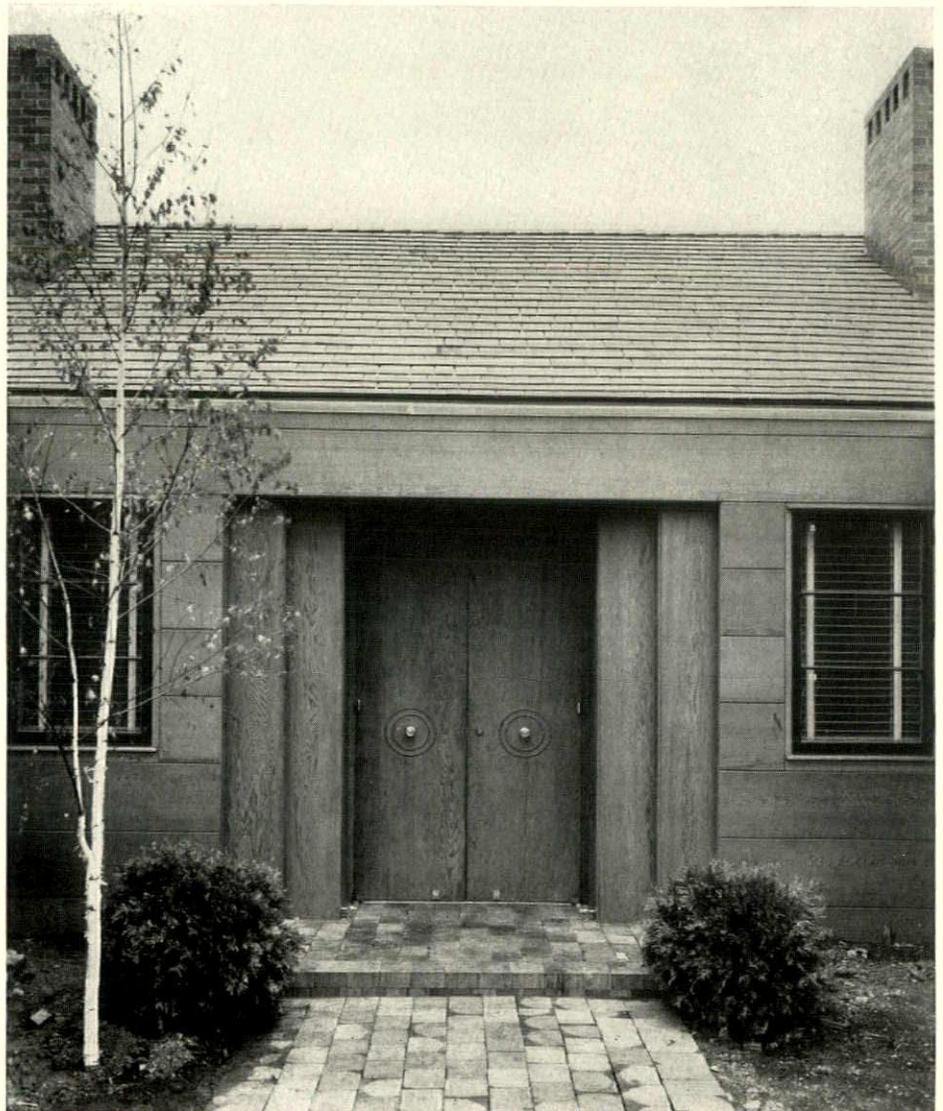


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LUMBER INDUSTRIES HOUSE  
A CENTURY OF PROGRESS, CHICAGO  
Ernest A. Grunsfeld, Jr., Architect

FRAMING: Wood stud construction.  
WALLS, EXTERIOR: California Redwood, white-leaded, in the form of ship-lap siding with the exposed edges of the boards rounded. WALLS, INTERIOR: Representative American woods used throughout the interior, including living room, dining room and master's bedroom paneled in oak and birch; boy's bedroom-study, wide knotty pine boards placed horizontally; kitchen, white maple walls and floor. CEILING: Douglas fir, cypress and birch plywood, with joints butted and the edges rounded. FLOORS: Oak, maple and southern pine. FRAMES AND SASH: Ponderosa pine. FINISHES: All interior woodwork has been finished in clear lacquer to retain the natural color of wood



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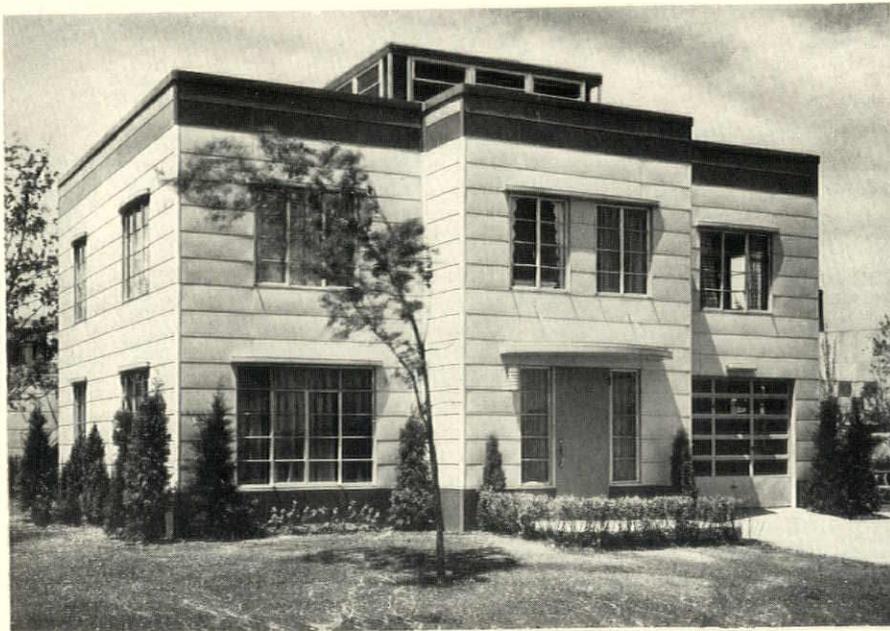


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## MASONITE HOUSE

Frazier & Raftery, Architects

Wood stud construction with exterior and interior walls, floors, and ceilings finished primarily in Masonite, Presdwood and related products of the sponsoring manufacturer. Varied decorative treatments are obtained by painting, lacquering and staining and by the use of other materials in combination, including chromium and aluminum

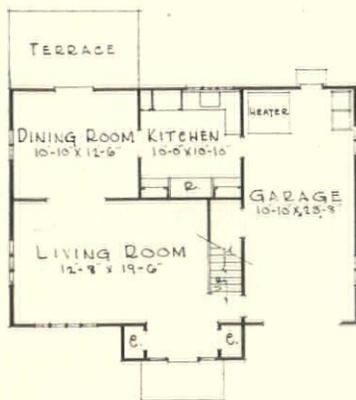


HEDRICH-BLESSING

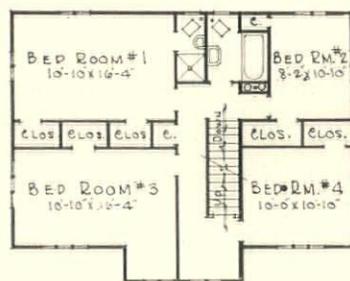
## ARMCO, FERRO-ENAMEL FRAMELESS STEEL HOUSE

Robert Smith, Jr., Architect

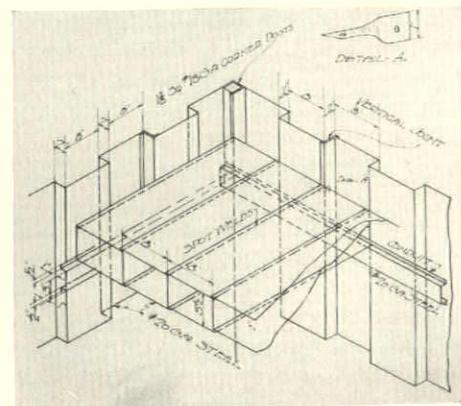
Sheet metal panels with box-like corrugations form the walls, to which all insulating and finishing materials are nailed with spiral shanked nails. Floors are of sheet metal in Z-shaped pieces, spot welded to form continuous box beams, as shown below. Exterior surfaced with porcelain enameled sheets in two shades of coral, dull gloss finish



First floor plan



Second floor plan



Assembly of walls and floors

# What is an Architect?

By H. VAN BUREN MAGONIGLE, D. Arch., F.A.I.A.

Is architecture a profession or a business? Mr. Magonigle says, "We must decide soon, whether we are professional men or business men. The profession cannot exist in the hybrid condition it is drifting into and survive." His conclusions, reached after fifty years' experience, are provocative and worthy of careful consideration

**A**LITTLE over fifty years ago my mother asked me "How would you like to be an architect?" "What is an architect?" I asked, the Celt in me instinctively answering one question by another—another which is becoming more difficult to answer every day. The gentle jog-trot of practice of 1881 gradually accelerated into the feverish gallop of 1924 to 1929. Architectural design from most modest beginnings has developed into the sometimes splendid, sometimes monstrous, thing it is today. Four years ago, in 1929, the country, after an orgy of speculation, over-production, and other excesses, went broke. Building stopped with a jolt that dislocated an industry with intricate and far-reaching ramifications affecting millions of lives.

The architectural profession was not immune from the general madness. Led astray, whether by illusions of grandeur or by a few examples of success in collateral lines, its members inclined to be amateurs of economics, of real estate promotion, of parlor social science, and of finance high, middle, and low, and relegated to a secondary or even lower plane the Art of Architecture.

In some kinds of buildings, notably commercial, the country is over-built, a factor to be reckoned with before the building industry can make a real start. The empty and bankrupt office buildings and apartment houses must be placed on a sound basis and filled up before new ones may be built—unless investors and speculators have another brainstorm.

For the first time since the World War men have had time to see what post-war conditions really are, really mean. Up to 1929 they had been like blind puppies in a basket, milling around to seize the first teat that promised rich return; their eyes were roughly and painfully opened. With an almost complete cessation of all business they are driven to examine past mistakes and misconceptions of world conditions, make plans to avoid them when business picks up again, adjust aims and ideas and ideals to changed conditions, or find new goals to be reached by new routes or methods. For the architect this is no calamity; he must learn *his* lesson; he, too, must ponder and resolve; he, too, must go through a moral stock-taking, look ahead to where his profession is tending or drifting, and set perhaps a new course under other stars. That this means lowering his professional standards let no one think for a moment! On the contrary, rather! This is the time for him to clean house, in the office and in his professional societies, clarify his status and reaffirm it in the strongest possible

terms as a professional, not a business, status before the world. Too many of our confrères have been dabbling in various forms of business and that is bad for us as professional men.

The general dislocation has affected the very art of design. Men have been throwing overboard all they had learned and are stammering and yammering in alien tongues; they have been going to very silly extremes and have floated in a cloud of foolish and foreign theory; it is to be hoped the times may sober them, bring them back to earth and specifically to the United States of America where they belong—or do not belong.

**T**HE practice of plagiarism has not ceased. Some continue to glean, insipidly enough, in the fields of Greece and Rome and Renaissance Italy; some have merely shifted the scene of their operations and instead of cribbing old things have appropriated to their own uses the work of living men in Germany, Austria, Sweden, and Holland, and have picked out to ape and cynically claim as original, the most radical work of the most radical foreign designers, the products of a post-war psychology that does not exist here, thank God.

The architect must decide, and soon, whether he prefers to be a plagiarist or not—and what is best for his country. He must also decide whether he will do his own thinking or indolently or foolishly borrow foreign thinking for his guide in life and work in America—and which will be best for America.

The architects of the United States are now grown up. We have passed the period of tutelage. And by this time we should have learned, and taught the rising generation in the offices and the schools, to solve architectural problems in terms of the very elements of architectural speech, constructing our own phraseology and developing our own idiom, instead of stupidly copying the idiom of alien civilizations, past or contemporary. It surely is possible to design an architecture firmly rooted in the nourishing and sustaining soil of tradition and national spirit, appropriate to its own uses and therefore as infinitely various as use is varied; as free from freakishness as it is from the dull fear of offending respectable "authority." Such work as one may dream of is a fabric woven of so many threads of influence and tradition, tinged with the memory of so much beauty, so subtly and cunningly wrought that it becomes under the hand of the artist a new work of art—not "modern," not ancient, but eternal as beauty is eternal.

Another of our responsibilities is to increase our efforts to see that the youth in school and office are wisely instructed and inspired, not merely in the technique of the arts, but in the ethics of the profession, in the relations that will exist between them and their fellow practitioners, between them and their clients, between them and the building trades, be given a lofty view of their privileges as artists, as citizens, as men in a world of men. We must see that they are inspired with the professional point of view, which is: to place service above personal and pecuniary gain; and taught that the architect is a professional man, not a merchant.

FOR the profession stands today at the crossroads. We must decide and soon, whether we are professional men or business men. The profession cannot exist in the hybrid condition it is drifting into and survive. It is only a step from where we have drifted, or have been badly led by irresponsible vociferation, to taking commissions wherever we can get them and from anybody: client, builder, or material man; and from many other practices that would be merely bright and sharp in the business world, but which, in a professional man, are outside the pale of decency.

I deliberately omit discussion of the business relations of architect and contractor, building and zoning codes, fireproofing, and all those aspects of building, important and useful as they are in their place. There are plenty of spokesmen for all these things, so many and so vocal there is grave danger that architecture as an art may be forgotten.

The drift of certain elements in the profession toward "business," the growing prominence of the office manager-specification writer—"practical" man—type in professional councils, and their emphasis upon entirely subsidiary aspects of mere practice, place the architect in danger of losing his own sense of values as to the pre-eminence of design which is all that has made architecture what it has been through the ages. And, of course, I include in design the construction and execution of a design.

An element of this drift is the undue emphasis placed, up to the crash, upon commercial architecture, particularly the skyscraper. The public and profession alike began to think that the most important sphere of the architect's activities was in these extraordinary structures that are sometimes so beautiful and more often so hideous. It will be wholesome and salutary to check up and see what our field really is. The list which follows will help answer our question: "What is an architect?"

Besides the office and apartment buildings built as revenue producers, we have: Dwellings, city and country and suburban—Farm Buildings of many types from scientifically planned chicken-coops to racing-stables—Churches and parish houses and other related Ecclesiastical Buildings—Club Houses, city, country and suburban—Educational Buildings, including primary, grammar, and high schools; College and University Buildings, such as dormitories, classroom buildings, laboratories, assembly and lecture halls, gymnasias, stadia, and the

like—Private Schools of many types and for both sexes in city and country—Police Stations—Fire Houses—City Halls and sundry Municipal Buildings—Libraries, public and private, each having a character and function dictated by population problems and other factors—Museums, public and private, each of a special character—Public Baths, for adults, for children, for both sexes—Auditoriums—Assembly Halls—Armories—Railroad Stations, city, suburban and country—Terminals, Freight-houses, Warehouses—Bus Terminals—Airports, with hangars and other related buildings—Post Offices—State Capitols—Courthouses, federal, city, and county—Jails, Prisons, Reformatories, and other places of detention, for adults and minors of both sexes—Theaters and similar places of amusement, for the spoken drama and the screen—Opera Houses—Concert Halls—Schools and Conservatories of Music—Monuments—Mausoleums—Banks, of many types doing different kinds of business—Hotels, city and country, at the shore and in the mountains—Hospitals, of several types and for different kinds of disease, in city and country—Asylums of several sorts, for the poor, the orphaned, the insane, the disabled. Besides these, and the list is not complete, are Factories and Department Stores which, while commercial structures, are not usually of the skyscraper type or built for revenue through rentals.

WHAT, then, is an architect? He is a man who studies the requirements of these buildings, designs them to give functional and esthetic satisfaction of such requirements, and sees that they are well and durably built according to his plans, details and specifications. He must be well and fully equipped to cover this immense field, even though he should select only a part of it to work in—as it is becoming increasingly evident he must in an increasingly complex civilization. The demands of what is called "business" are such, including the demands of the speculator in building, that perhaps revenue producing structures may be set off in a class by themselves; this would be a happy solution of the grave professional problems involved in the present situation inside and outside the profession; the business man who has strayed into architecture will be spared the struggle between professional ethics and "business," and his activities, advertising, and so on, will be unrestrained by professional trammels. And the architect, who still believes that the architect is a professional man and primarily an artist, not a "space merchant," and feels all the responsibility of his function, will have all the rest of the field for his own. As time goes on there will probably be specialization similar to that in medicine and the law, where the fields have grown too wide for the general practitioner to cover them adequately. And perhaps the architectural firms of the future will be composed, like the great law firms, of groups of specialists, and the individual practitioner become as extinct as the dodo. The danger here is that exemplified by those strange associations of several dozen architects who hunt down jobs in packs, and, as a kind of syndicate, produce

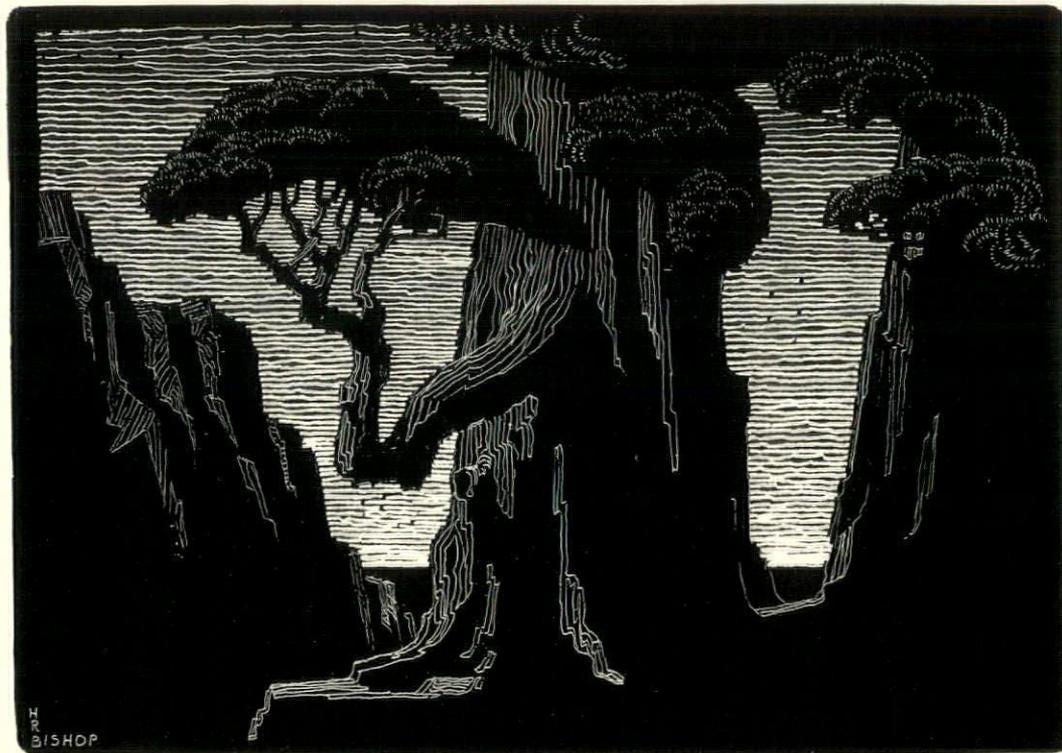
syndicated architecture with all the personality of a cigar or a can of tomatoes. To anyone who believes that architecture is as personal an art as painting or sculpture, this tendency is vicious and pernicious and subversive of every right conception of the art we practice.

What is an architect? What sort of creature is this person who has so much to do with the health and safety and comfort and convenience and sightliness of our communities, of whom his community knows so little as a rule, and of whose work, wrought in the veritable travail of his soul, it is so little conscious? What is his true function in the society in which he lives and works? We may, by stating some of the things he is, and especially some of the things he is not and should not be, deduce from them his general place and function.

Among other things, the architect is not what John Carrère summed up in the word "plumber," indicating one whose rapture is in the plumbing and kindred work in structures. He is not a real estate man in the sense of buying and selling although he deals constantly within the range of his profession with situations where real estate matters are involved. He is not a promoter, although he frequently has to assist and advise, in his own province, in the forwarding of projects in which he is professionally interested. He is not a financier, although he has to advise in the financial aspects of enterprises with which he, as architect, is connected. He should not be a politician. He is sometimes, but should not be, the employer of publicity agents to keep himself in the public eye and ear. Gentlemen, in our profession, do not advertise.

What he *is*, among other things, is a man of constructive imagination, an inspired constructor who makes a thing of use into a thing of beauty. He controls the circulation of people in buildings and, when he plans our cities, controls the circulation of all our traffic. He is an apostle of order. He is the foe of congestion, disorder, dirt and disease. He is a student of the ways of men that he may serve them—often against their will or wish—for their own good. Above all he is a man who has heard the hushed voice of beauty and has turned aside from the clangor of commerce to listen to and obey that voice, to tend the flame before her shrine, to be her high priest and her minister for all men. And this is at the core of his function and of his place in society. The assumption of that ministry does not mean that he must hold aloof from his fellows or from the life of his time. On the contrary he must be a good citizen and take his part in civic affairs—but he must keep his sense of direction, of balance, of proportion, and not be diverted from his own proper path by collateral activities and forget that his real part in the work of his community is to design and construct its buildings well and worthily. He is the recorder of contemporary civilization, the interpreter in terms of beauty of its ideals and aspirations, the sincere and scrupulous custodian of artistic probity and integrity, a professional man serving his client honestly in the client's interest, and who, although he has taken no Hippocratic oath, is bound to service in that same high and solemn spirit of dedication.

This, in part, is what fifty years of active professional life have made me believe an architect is.



Drawing on Scratch Board by Raymond Bishop

# Dollars out of Depreciation

Inspection of buildings to control deterioration and minimize maintenance costs offers an opportunity for architects to expand their services

BY FRED DOLKE, JR.

Architect, Chicago

**P**HYSICAL deterioration from wear and tear, from weather, and from other destructive causes, is inevitable in every building. It is a process wrought by Time that can only be deterred by constant effort—that is, if the building's owner wishes to maintain the value of his investment. The certainty of depreciation creates an opportunity for architects to extend their field of usefulness, to add to their incomes, to maintain valuable contacts, and to improve their own technical and artistic abilities.

Anyone with experience in the building industry will agree that maintenance of the majority of buildings is not an *organized, systematic routine* operation, properly supervised, and thoroughly performed. Roofs are remembered when they begin to leak. No one notices the ravages of the weather and frost in a parapet wall until it is ready to fall—unless it has already fallen. A set of expensive stained glass windows in a large church were found loose and in dangerous condition, yet no one about the church knew it. Examples of such neglect could be given almost without end.

The usual approach to these problems is wrong. The condition of a building gets so bad that someone notices it, or serious damage occurs, or an accident happens. Immediately there is a rush on the part of the owner to get something done, the first plausible scheme is adopted, there are curses about the cost. But—"What can we do? We must have action."

There are several serious objections to this common procedure. First, when deterioration has gone too far, costly major repairs are necessary. Second, too frequently action is taken without competent advice or proper study to determine the right procedure. Third, maintenance and repair costs are likely to be abnormally high; expenditures are often largely wasted because correct results are not obtained. Fourth, the owner has no definite method for determining the exact condition of his building or watching the trends of deterioration. And fifth, he has no definite basis for a maintenance budget or a maintenance program.

As a contrast to this hit-or-miss procedure, an architect can offer an owner a definite maintenance program based upon a periodic and thorough inspection of the building and its equipment, and reports placing on record periodically each item of actual or threatened depreciation. These reports would discuss methods of repair or prevention, give estimated costs, establish a definite program for repairs, call attention to items which must be

watched, and in general put prevention and cure of depreciation on a systematized and controlled basis.

It seems to me that architects have been prone to place too much emphasis on "design" and to overlook "service." Is there any particular reason why an architect should lose intimate contact with a project as soon as the last certificate is written? In the commercial world the wise sales manager knows that selling the buyer is only the first step; he must be kept sold. Cannot the architect adopt the same idea to advantage?

Many building contracts prepared by architects require at least a year's guarantee of the work by the contractor. In the great majority of cases these guarantees mean little. Most owners never know or remember that a guarantee exists, or the guarantee has expired before a fault is detected. I have found it profitable to visit a completed building at least twice during the guarantee period. It is surprising how many little things occur in the first year to annoy an owner who always expects perfection. This annoyance reflects on the architect as well as on the builder. By taking pains to ascertain the causes of trouble and to remove them, the architect makes his client a friend for life.

This "free" service during the guarantee period opens the door for presentation to the client of the advantage to him of a periodic inspection to combat depreciation. An experienced owner will need little argument. Many clients, however, need a great deal.

**S**OME owners of large buildings—particularly school boards—will argue that their own men can do the job. I am going to stress this point because the selling of this service by architects is not always easy. Particularly in these times, the psychology of the situation engenders a state of mind which is hard to overcome.

Obviously, if a job is going to be done correctly, it must be carried out by a man who knows what to do and how to do it. Many buildings have "maintenance men"; but how many of these men make a *thorough, systematic, periodic* inspection of the buildings or prepare reports with cost estimates to guide intelligent action?

Most maintenance men—and I say this advisedly, because these men are usually competent, conscientious, and practical in the handling of their daily problems—cannot make a thorough maintenance inspection and report because they are by training, experience, and natural inclination the practical performing type rather than the technical analyzing type which is so much better

adapted to undertake an exacting, detailed inspection routine, to study the problems presented, and to prepare a constructive report.

**A**N architect looks at things from a different viewpoint, inquisitive and critical, intent upon ferreting out everything he can find. His reputation and continued employment depend upon his thoroughness, his ingenuity, and his ability to reduce maintenance costs.

To illustrate the value of such architectural service to the owner the following remarks by the director of a school may be quoted:

"We know now that our former methods were haphazard, that many mistakes were made, and that we did not always spend money to the best advantage. The method we are now pursuing has improved our maintenance as our building is now in the best condition we have experienced in years. Moreover, our expenditures for maintenance are less and we are conserving our funds. . . . A further advantage is our ability to reduce to routine procedure, to be carried out by our own staff, those many small things which are so often neglected and which, when neglected, result in large repair bills. . . . We are satisfied that once this method has been employed by school authorities, they will never return voluntarily to haphazard methods."

Assuming that any architect who undertakes this work knows construction details, the idiosyncrasies of materials, structural necessities, trends of depreciation, and the fundamentals of heating, wiring, and plumbing, there is required for success in this work nothing more than an alert, inquisitive frame of mind, an all-seeing eye, and a capacity to attend to detail. It will not be sufficient to stand on a roof and just glance at the flashings—every foot of flashing must be individually examined and tested. It is my experience that one inspection per year is sufficient, preferably in the spring.

At the building the routine of inspection should be as systematized as possible. I generally go over the exterior first, from the ground, using ladders when necessary; then I take the roof; and finally the interior, room by room. By leaning or climbing out windows as I pass through the rooms, I get a close view of sills, lintels, cornices, etc. Floors, ceilings, walls and special features are carefully examined; doors and windows operated, equipment inspected closely. Likewise, the mechanical systems are carefully checked. The janitor, if properly approached, will be a source of much valuable information. I urge him to talk about his troubles.

By means of sketch plans and a numbering system, particular items can be definitely located for the owner. If the architect is foresighted, he will take along overalls, a flashlight, rule, small hammer, and a screw driver. A notebook is essential; a set of plans, desirable.

Reports naturally divide themselves into four main subjects: 1. Work requiring immediate attention. 2. Work to be prosecuted at convenience. 3. Work postponed for future attention. 4. General comments and suggestions. Each of these divisions is presented in two phases: A. Work requiring outside assistance. B. Work to be done by owner's staff as special or routine maintenance.

Insofar as possible, methods of handling work are specified in detail so that the staff can perform it. Also, all similar items are grouped together. I have made it a practice to cover each item as concisely as possible, elucidate the cause, if it can be traced, and discuss the remedy.

If several remedies are possible, they are compared and a conclusion reached, accompanied by a cost estimate. I am especially careful on estimates as usual building cost data do not apply. In the summary a program for action is established.

If field notes have been taken systematically, the preparation of the report requires but a few hours unless the character of the repairs necessitates unusual study and estimating. For serious difficulties, which require considerable study, I do no more than state the general character of the problem, the probable solutions, and recommend further study.

**I**N establishing charges for this service, the principal consideration is the time involved. The first inspection requires more time than subsequent inspections. I spent practically an entire day going over a 19-room vocational school of fire-resisting construction for the first report and a half-day for each subsequent report. On the other hand, a concrete factory building of 30,000 square feet was covered the first time in a half-day. Familiarity with the building will affect the time required, as will its distance from the architect's office.

The owner will not be interested unless the service yields him a good return on the investment. Also the architect must realize that he can utilize the performance of this service to maintain closer contact with clients and to fill in gaps between other items of work. If the work lies outside his home town it creates a center of influence from which to work up other prospects. It affords opportunities which lead to special consultations and eventually to new commissions. Further, the architect will profit personally from the knowledge gained of good and bad building details and thus save future clients many of the troubles otherwise often experienced. In addition this service allows an architect to "live" with a building, to find out wherein it is not just right and how it could have better served its purpose. Frequently he is able to suggest means for overcoming some point of dissatisfaction or to make the building conform better to changed conditions of occupancy.

For these reasons, the architect can and should be willing to accept a most reasonable fee. As an example of my idea of a *reasonable* fee, I proposed to a school board to inspect two grammar schools and a high school for \$225 the first year and \$150 each subsequent year, plus traveling and living expenses while on the work. It must be observed, however, that I maintain a "one-man" office with low overhead. In any event, a fixed fee should be established and definite provision made for consulting services on an hourly or per diem basis.

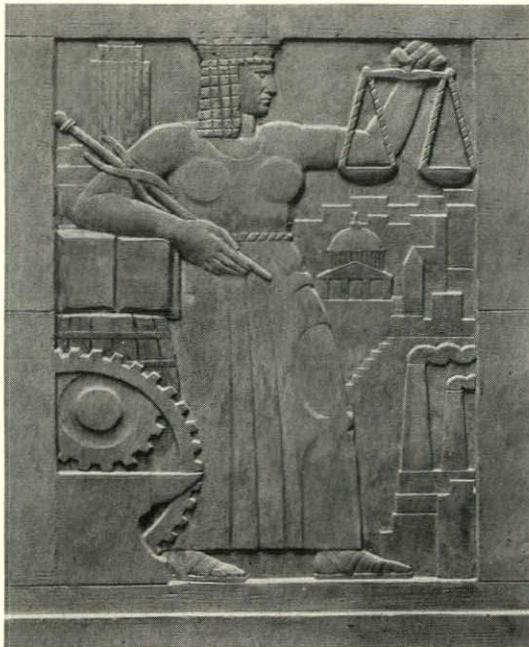
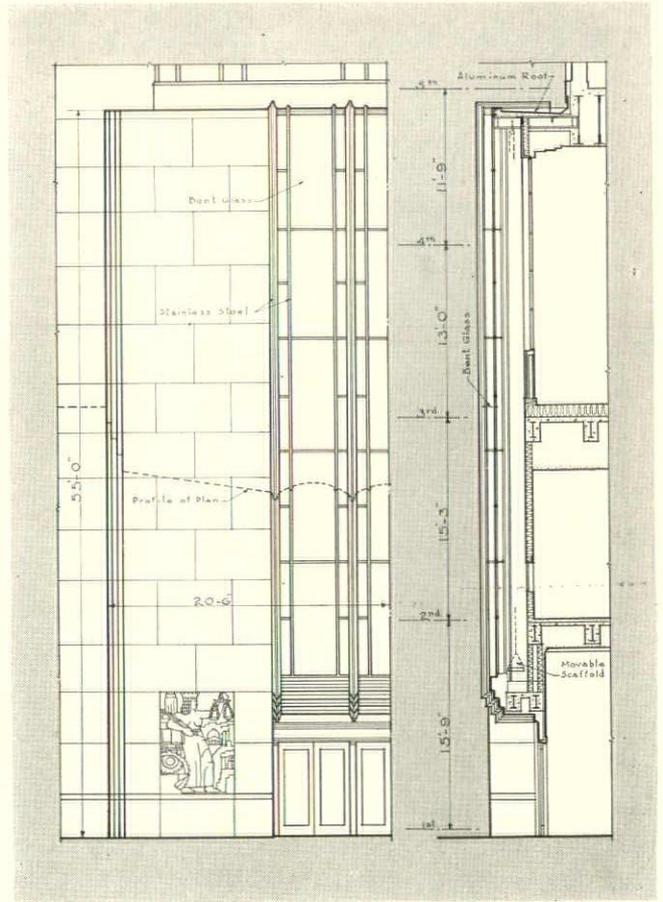
Each report I have made has resulted in some special consulting service. Moreover, I have added several projects to my list for future work and I have amassed much valuable data about construction.



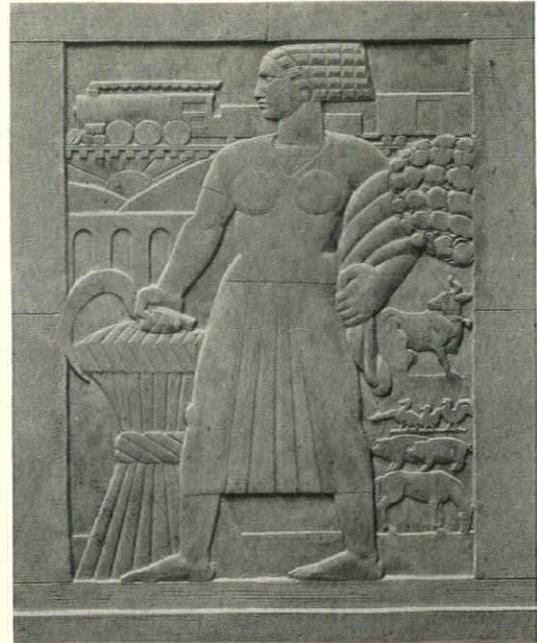
SAINT PAUL CITY HALL AND RAMSEY COUNTY COURTHOUSE  
SAINT PAUL, MINNESOTA

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Photographs by Hedrich-Blessing



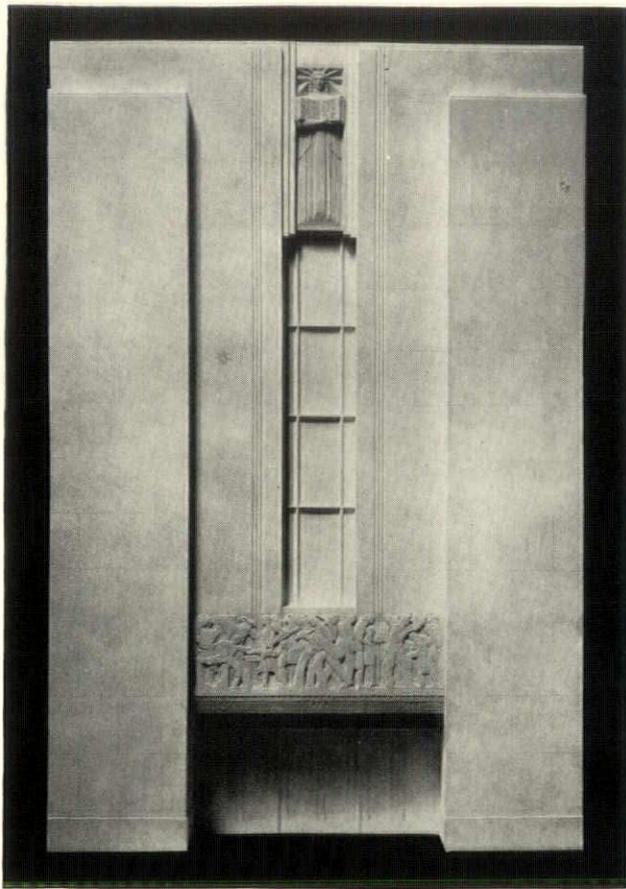
PAUL BEDIAN



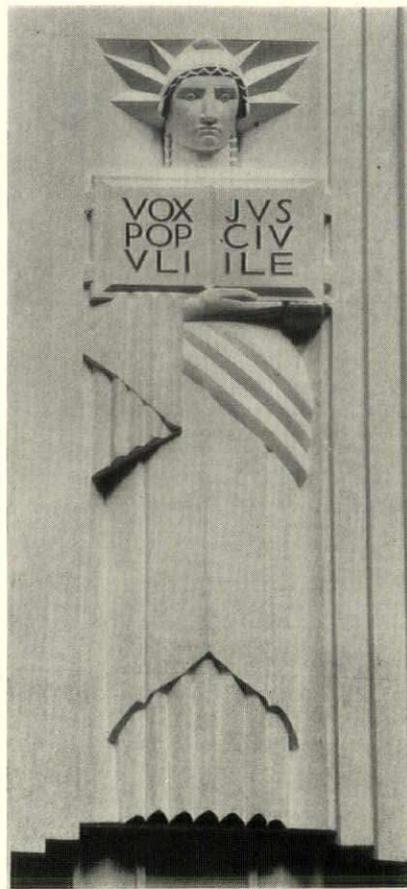
PAUL BEDIAN

Details of the Third Street entrance and models of carved panels designed by Lee Lawrie, executed by John Garatti

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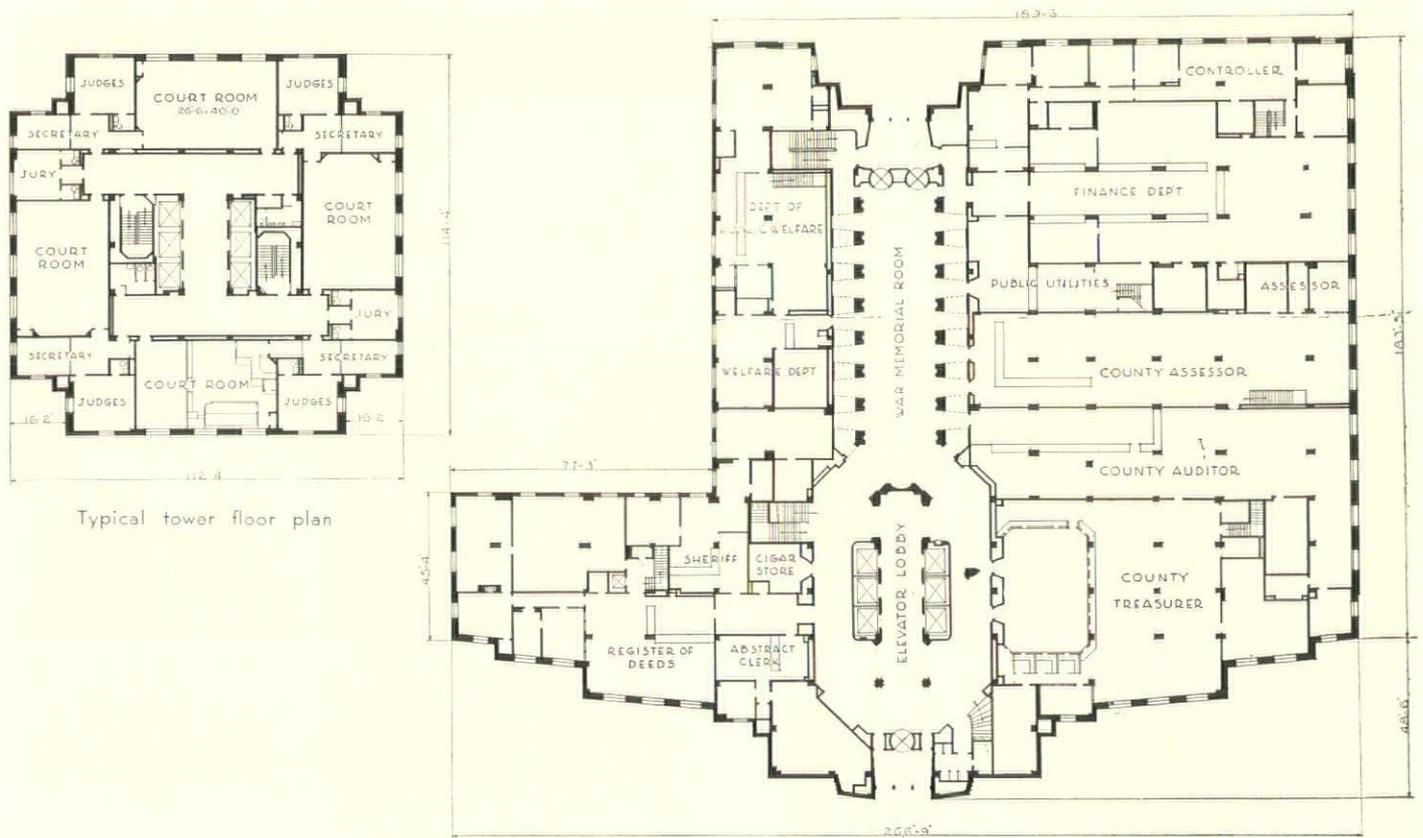
PAUL BEDIAN



DETAILS OF  
FOURTH STREET  
ENTRANCE

Models by  
Lee Lawrie





Typical tower floor plan

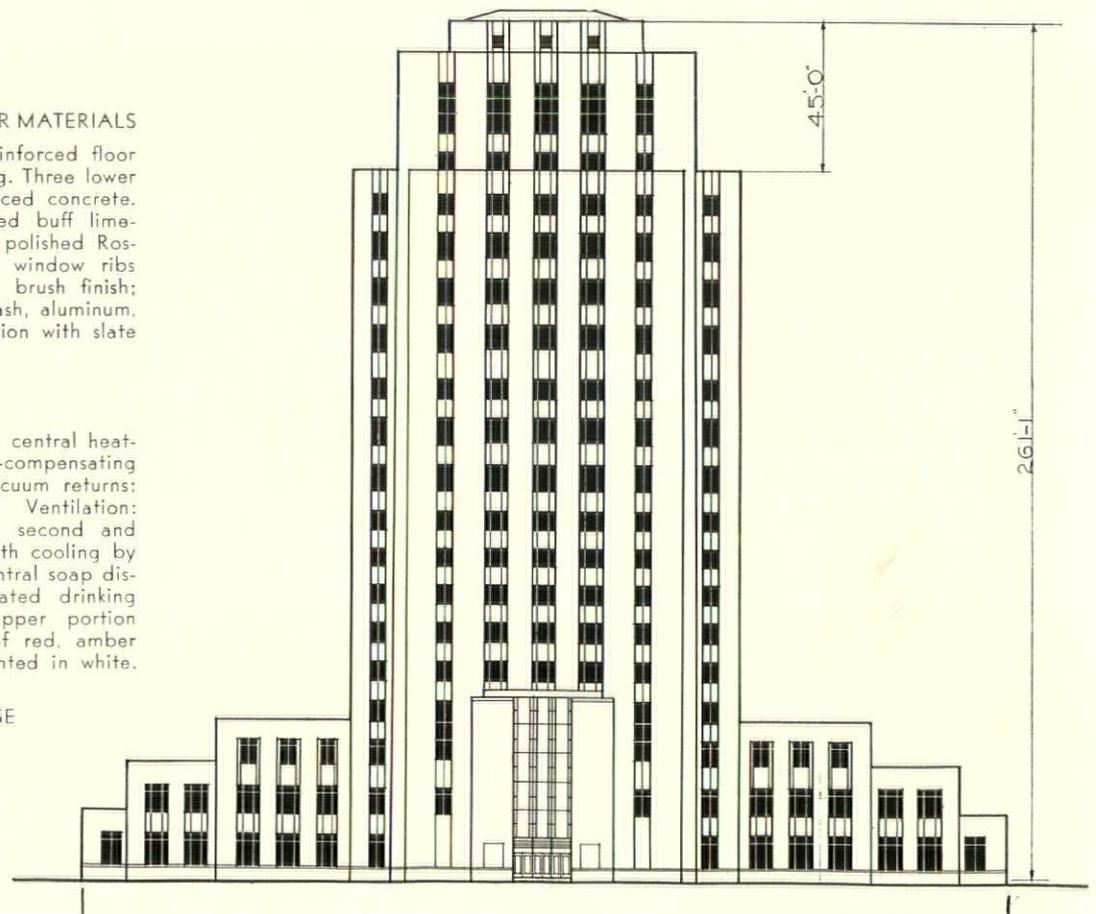
#### CONSTRUCTION AND EXTERIOR MATERIALS

Tower: structural steel frame; reinforced floor slabs, clay tile column fireproofing. Three lower stories surrounding tower, reinforced concrete. Exterior walls faced with selected buff limestone, dry sand rub finish; base, polished Rossette black granite. Metalwork: window ribs and mullions, stainless steel, fine brush finish; spandrels, aluminum, deplated; sash, aluminum, fine brush finish. Roof, composition with slate coated cap sheet.

#### MECHANICAL EQUIPMENT

Heating: steam supplied by local central heating plant; system, zoned weather-compensating type, automatically balanced, vacuum returns; radiation, copper throughout. Ventilation: basement, air conditioned; first, second and third floors, forced ventilation with cooling by well water. Plumbing includes central soap dispensing system, central refrigerated drinking water system. Floodlighting: upper portion lighted in automatic blending of red, amber and blue; tower corners floodlighted in white.

#### CITY HALL AND COURTHOUSE ST. PAUL, MINNESOTA





## MATERIALS AND EQUIPMENT, CITY HALL AND COURTHOUSE, ST. PAUL, MINN.

**MAIN CONCOURSE—MEMORIAL HALL, page 41.** . . Walls and piers, Blue Belge marble; floors, buff Hauteville and Champville marble laid checker-board with 1/4" bronze dividing strips; ceiling, gold mirrored plate glass, acid etched surface, bronze supporting frame; metalwork, bronze, gold color; glass in doors, polished amber plate; lighting fixtures, amber glass, spotlight in bottom throws light to floor.

**FIRST FLOOR ELEVATOR LOBBY, page 42.** . . Walls, floor and metalwork, same as main concourse; ceiling, gold leaf. The six elevator doors, each different in design, depict the history of Ramsey County.

**THIRD FLOOR ELEVATOR LOBBY, page 42.** . . Walls, Loreda Chairo marble; base, Blue Belge; floor, Italian Travertine; ceiling, gold leaf; metalwork, bronze; elevator door panels, nickel silver.

**THIRD FLOOR CORRIDOR, page 42.** . . Walls, brown Oriental wood veneer; base, Breche black and gold marble; floor, Travertine; ceiling, acoustical tile, gray brown; lighting fixtures and hardware, bronze.

**COUNTY COMMISSIONERS' ROOM, page 44.** . . Walls, natural English pollard oak, full length veneers; floor, rubber tile, tan brown border; base, Breche black and gold marble; ceiling, acoustical tile, buff; metalwork, bronze; lighting fixtures, bronze and glass; furniture, natural American oak; upholstery, tan leather.

**MAYOR'S PRIVATE OFFICE, page 44.** . . Walls, Peroba, tan and brown; ceiling, plaster, ivory color; lighting fixture, smoky glass crystals; furniture, Finnish birch, rosewood, Italian olive and other wood inlays; upholstery, buff color leather, trimmed with bronze buttons; rug, toast color field with rosewood color border; draperies, gold silk rep.

**COURT ROOM, page 44.** . . Walls, natural Prima Vera; base, Breche black and gold marble; ceiling, acoustical tile; metalwork bronze; furni-

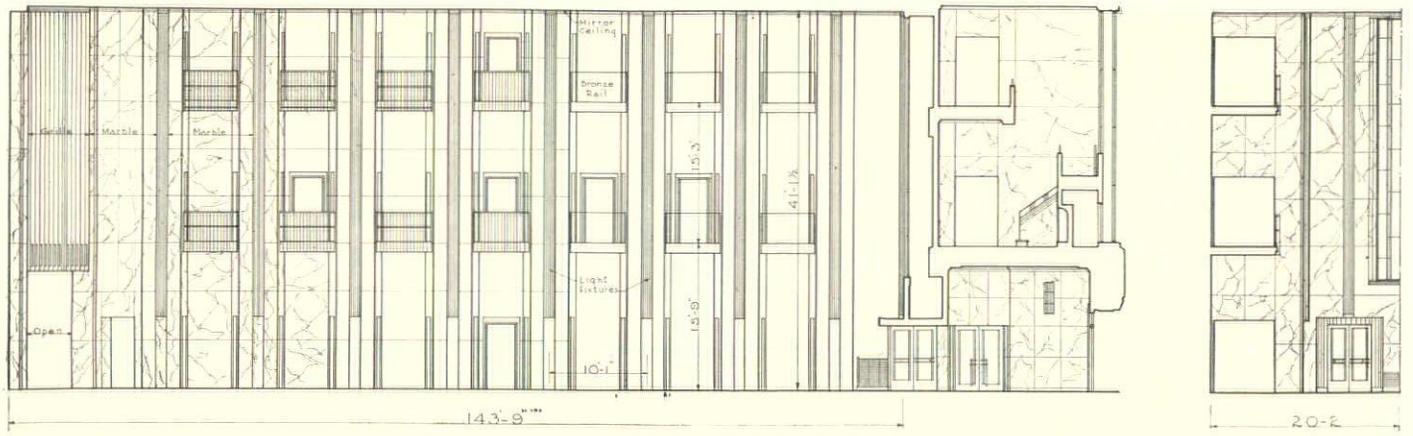
ture, Indian laurel, upholstered in natural pigskin leather.

**COURT ROOMS:** There are twelve court rooms which are similar in plan. The following combinations of wood are used for walls and furniture in the order given: amipera and teak; Indian laurel and Honduras mahogany; teak, alternating bands plain and figured, and teak; avodire and walnut; Indian rosewood and ebonized rosewood; walnut and walnut; Mexican mahogany and rosewood; avodire and laurel; quartered red birch and Mexican mahogany; Honduras mahogany and Indian rosewood; prima vera and Indian laurel. A finish of clear lacquer without stain or filler protects the natural woods employed in all these rooms.

**CRIMINAL COURT ROOM, page 45.** . . Walls, natural Honduras mahogany, full length veneers; floor, rubber tile, alternating black and gray-violet stripes; base, red Levanto marble; ceiling, acoustical tile, ivory, plaster border, brown and gold leaf; lighting fixtures, bronze, etched and clear glass; furniture, Indo-Chinese rosewood, upholstery gray-violet leather.

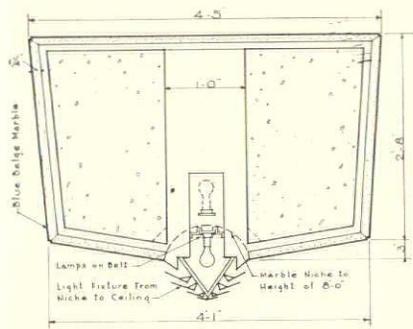
**COUNCIL CHAMBER, page 46.** . . Walls, natural English Pollard oak, 20' full length veneers; base, floor, rubber tile, brown grain; Breche black and gold marble; ceiling, acoustical tile, plaster border, brown and gold leaf; columns encased with extruded bronze; light fixtures, (long) indirect recessed, (round) four concentric bronze cylinders for direct lighting; metalwork, bronze and nickel silver; furniture, benches of natural English Pollard oak, council table of Madagascar ebony and golden padouk inlaid with peanut grained Hungarian ash, chairs upholstered with yellow gold leather; draperies, gold color heavy silk rep.

**MURALS** by John Norton depict the history of Saint Paul and include the Frontiersman; the Steamboat Captain; the Railroad Surveyor, and the Switchman. They are executed in gray, gold, blues, reds and browns toned to harmonize with the oak of the walls.

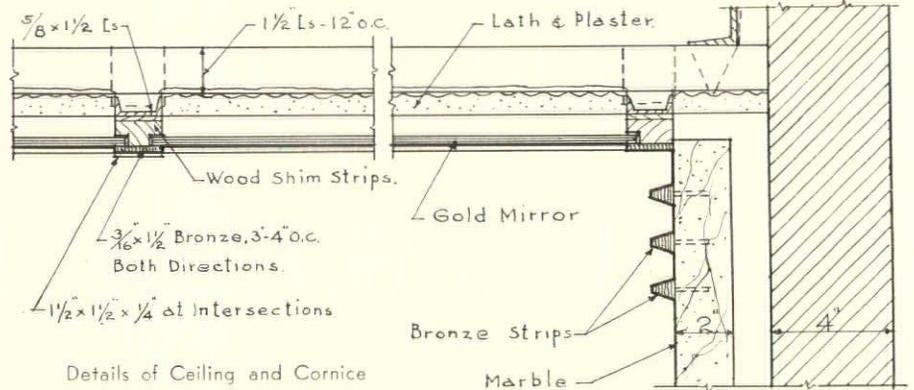


Side Elevation

Half End Elevation



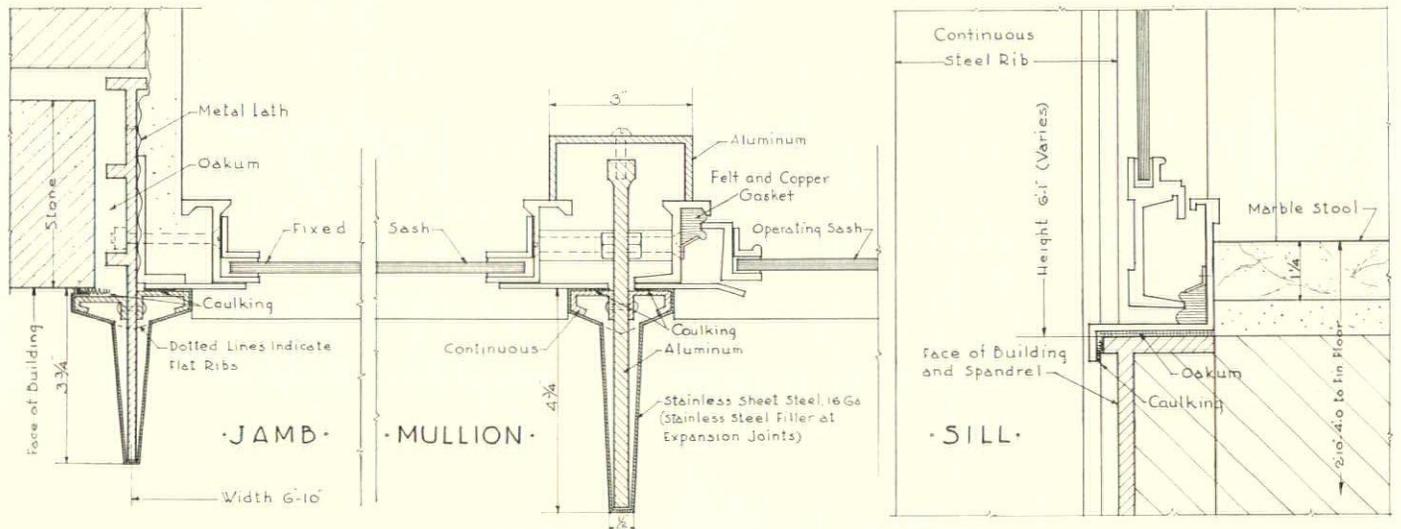
Detail of Pier



Details of Ceiling and Cornice

DETAILS OF MAIN CONCOURSE—MEMORIAL HALL

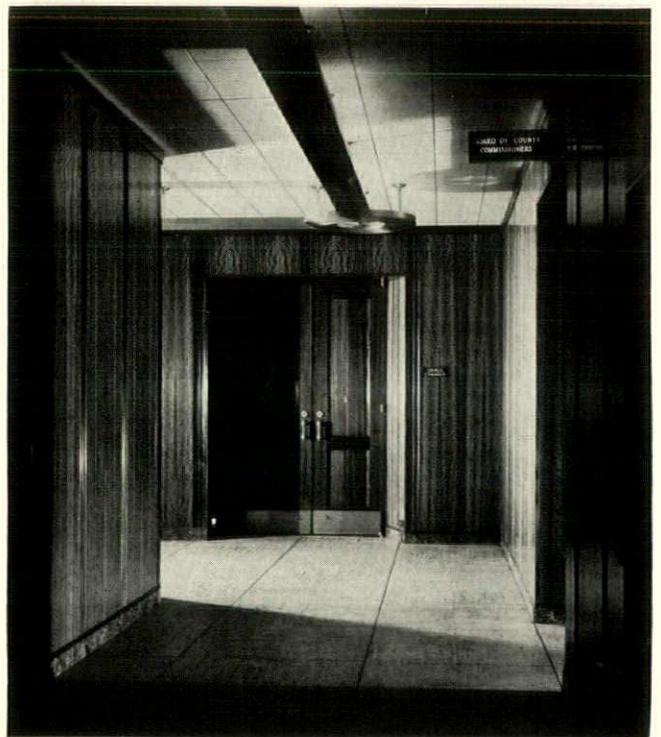
Photograph on facing page



Typical Exterior Window Detail

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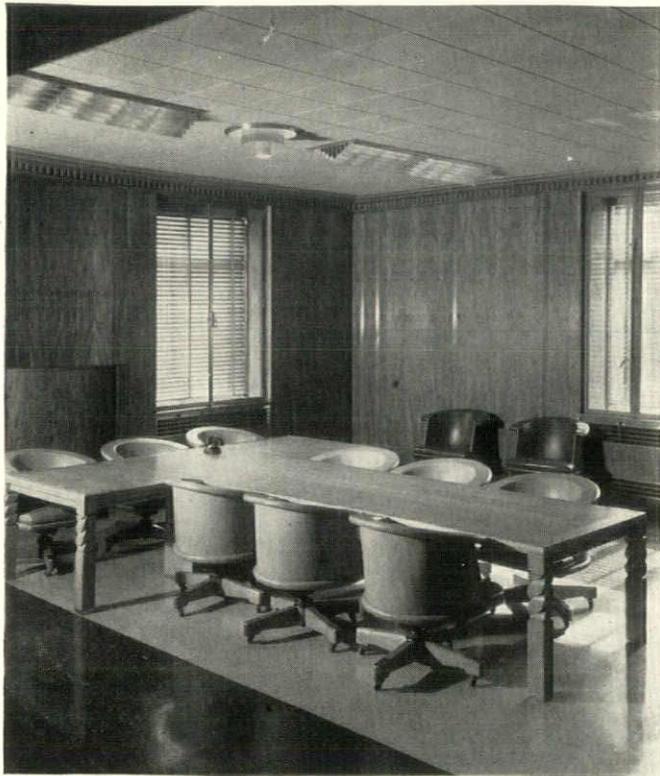




Top: Third floor Elevator Lobby. Left: First floor Elevator Lobby. Right: Third floor Corridor. On facing page: One of six first-floor elevator doors, designed by Albert Stewart

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Top, Left: County Commissioners' Room. Top, Right: Mayor's Private Office. Above: Court Room. On facing page: Criminal Court Room

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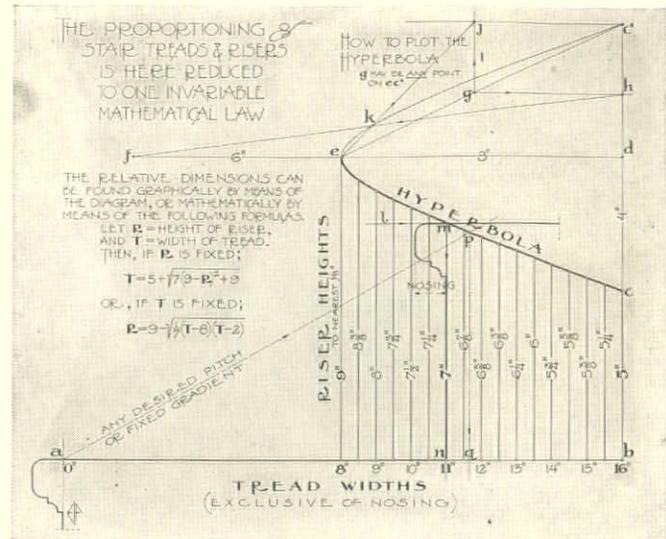




Council Chamber, showing two of the four murals in this room by John W. Norton

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# Correct Proportioning of Stair Treads and Risers



BY ERNEST IRVING FREESE

WHEN Apollonius, the Greek geometer, sliced a cone in several different directions and called one of the slices a "hyperbola," it probably never occurred to him that an analytical architect, twenty-one centuries later, would discover that the rectangular coordinates of this particular conic are subject to the identical law that controls the rectangular treads and risers of a correctly-proportioned stairway. The long-sought "equation of the stairway" is the "equation of the hyperbola."

The theoretical analysis that eventually led to the discovery of the "hyperbolic variation of tread and riser" is of no consequence. The diagram here given records the practical and far-reaching result. By means of this simple and easily-constructible graph, or, if you prefer, by means of the general formulas there given in lieu thereof, every flight of steps hereafter designed can be properly, safely, and comfortably proportioned. In fifteen minutes this graph may be redrawn *full size*, making a valuable and time-saving document that solves the stair problem for all time.

The diagram is fully dimensioned and, by following the alphabetical order of reference letters, one comes to the line *ef*, whence it becomes necessary to plot the hyperbolic arc *ec* to complete the graph. The method of drawing this curve is shown on the upper half of the hyperbola, which upper half is really not needed at all. Imagine the raking chord *ec'*, on the upper explanatory half, to be the imaginary chord *ec* of the lower required half. Fix any random point, say *g*, on *ec'*, and project *g* to the points *h* and *j* as shown. The crossing of *hf* and *je* fixes *k*, a point on the required curve. Hence, since *g* might be *any point* on *ec'*, it is clear that any number of points can thus be located on the hyperbola, through which the required curve may then easily be drawn.

Now let us assume that conditions fix the height of a

stair riser at 7". What is the right width of tread? Draw a line *l*, 7" above *ab*, paralleling *ab*, and cutting the hyperbola at *m*. From *m* project a line vertically downward to cut *ab* at *n*. Then *na* is the correctly proportioned tread for a 7" riser; practically, it is 11". As a matter of fact this 7" by 11" step might well be the standard by which all other combinations are judged: it is the "happy medium," safe, sane, comfortable to ascend and easy to descend without fear of a fall. Moreover, it is not so steep as to be unbeautiful, nor is it so slight of pitch as to be extravagant of floor space. Yet it scraps the two famous "stair rules" heretofore commonly thought inviolable, namely, that the sum of tread and riser shall not exceed 17½", and that their product shall not exceed 75". Let us take another case: every architect knows, or can easily discover, that a brick step whose tread is equal to two stretchers, and whose riser is equal to two courses, is eminently satisfactory. But it violates every stair rule in existence . . . except this one: 5" by 16", there it is, the limit!

Obviously, if the tread is a fixed dimension, say 12½", lay off this distance starting from point *a*, and the required corresponding riser cuts the hyperbola 6¾" above *ab*. The process is typical.

Finally, let it be required to determine both the correct rise and tread so that the resultant stairway shall have a given pitch or gradient. We may assume, say, a 30-degree embankment up which a stairway must go. From point *a*, draw a line at the given angle, thus intersecting the hyperbola at point *p*. Then the rectangular coordinates of this point, which coordinates are *pq* and *qa*, are the required *riser and tread* to which the eventual stairway should be adjusted.

In all cases, note that the "width of tread" is exclusive of the so-called "nosing," since the latter member merely has the effect of moving the stairs forward a distance equal to the nosing projection.



# Architectural Philately

By ERIC FLEMING, Architect, New Brunswick, N. J.

Few people go through life without being "bitten" by the "bug" known as stamp collecting. The term "stamp collection" usually brings to mind a more or less miscellaneous group of stamps representing the countries of the world. The hobby, however, may be directed toward specific objectives, among others stamps showing architecture as their decorative motif

WHILE few collectors find it necessary to justify to themselves the pursuit of their hobby, they are often put on the defensive by skeptical friends—and particularly their wives—and by those who claim other hobbies as more worthy of their time. Philatelists have a number of arguments in favor of their pursuit, but perhaps architectural philatelists have the best of all; they can claim professional interest in stamp collecting!

The portrayal of architectural subjects in postage stamps has several interesting aspects, particularly to architects. There is the chance to make comparative studies of architecture geographically and historically. There is the opportunity to speculate on the possibility that a more general use of architectural subjects in stamps—especially in the United States—might stimulate a wider appreciation of the work of architects and become a means of honoring noteworthy achievements. And occasionally one finds a choice bit of composition, or a particularly good piece of engraving.

Foreign countries lead in the use of buildings or major engineering structures in the design of postage stamps. Subjects such as the Cathedral of Rheims, the Pyramids of Ghiza, the Aqueduct of Claudius, the Acropolis and Parthenon, the Arc de Triomphe, the Pont du Gard, and Heidelberg Castle, are honored structures.

The United States in addition to historic personalities has used for reproduction on stamps the Arlington Amphitheatre, the Lincoln Memorial, the U. S. Capitol, the Statue of Liberty, Anthony Wayne Memorial, Monument at Mayfort, Florida, Washington's headquarters at Newburg, views of locks on the Ohio River, Sault Ste. Marie, Panama Canal, and bridges over Niagara Falls and the Mississippi River. Stamps of Panama, Cuba and Haiti show thirty-three different subjects, including castles, galleries, cathedrals, monasteries, government buildings, and factories.

It might be assumed that Great Britain, whose influence on building design has been marked, would publish on her stamps works of Christopher Wren and other famous English architects. Not a single contribution is offered unless we consider the British Lion on the issue of 1924 as an architectural ornament. British possessions, however, furnish much stimulation to the architect in their stamps, India, Honduras, Jamaica and

Egypt displaying forty-five interesting architectural subjects. Canadian stamps show the Parliament Buildings at Ottawa, Evangeline's Church at Grand Pré, the Bridge at Quebec, and a few other buildings.

In the recording of architecture on postage stamps, Belgium leads the stamp issuing countries, with twenty-eight different views of architectural interest, including the Hotel de Ville at Termonde, Cathedral of Touraine, Louvain Library, Menin Gate at Ypres, Antwerp Cathedral, the Bishop's Palace at Liege and the town hall and post office at Brussels.

Following Belgium, Turkey is second, with Syria and Guatemala tied for third place in the number of architectural views. Guatemala is especially rich in a variety of types, with twenty-five structures shown including a national museum, the Columbus theatre, a radio station, artillery barracks, maternity hospital, vocational school, post office, municipal park, national palace, viaduct, observatory, and a railroad bridge to a penitentiary. This is the only reference to a penal institution on stamps with the exception of the Rocca, the state prison of San Marino, and the possible exception of various feudal castles on stamps of other countries.

The twenty-three architectural stamps of Spain are picturesque; upon them and upon those of Spanish Morocco appear Moorish detail and much that seems "modernistic." Austria, Italy, Bulgaria, Tripolitana and Liechtenstein are grouped after Spain in this mode of architectural appreciation. Italy offers eighteen views including St. Peter's, St. Paul's, and the Campanile of Venice. Czechoslovakia and Germany show fifteen views each, including many feudal castles.

Architectural detail alone is pictured on some stamps, as witness a Roman Arch and Attic Column as subjects on the stamps of Fiume; Classic columns on recent air mail stamps of Greece; colonnades on those of Tripolitana and Spain; a detail of vaulting on the Cyprus issue of 1928; and Brazil shows an architrave and two stamps of architectural phantasy. The laying of a cornerstone and repairing of stained glass are illustrated on stamps of Italy, 1929, and Holland, 1931, respectively.

Infinite variety and interest of subject are shown by such countries as Iceland, Newfoundland, Italy, North Borneo, Norway, Turkey, Persia, Russia, Irish Free State, Esthonia, Australia, Eritrea, and Latvia. The



Dominican Republic shows the sarcophagus of Columbus and the first church in America. Saar, rich with fifteen views among cathedrals and monumental buildings reflects the machine age in views of a steel works, colliery buildings and a blast furnace.

For "before and after" effect, Nicaragua on one stamp shows views of a post office both before and after an earthquake; and the Argentine offered in 1926 views of the General Post Office in 1826 and in 1926. Other European stamps illustrate a cathedral after being struck by a bomb, a bridge partially destroyed by a flood, and three views of the same cathedral, one in sunshine, one without the sun, and the third with entourage omitted.

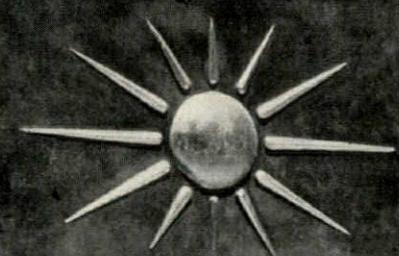
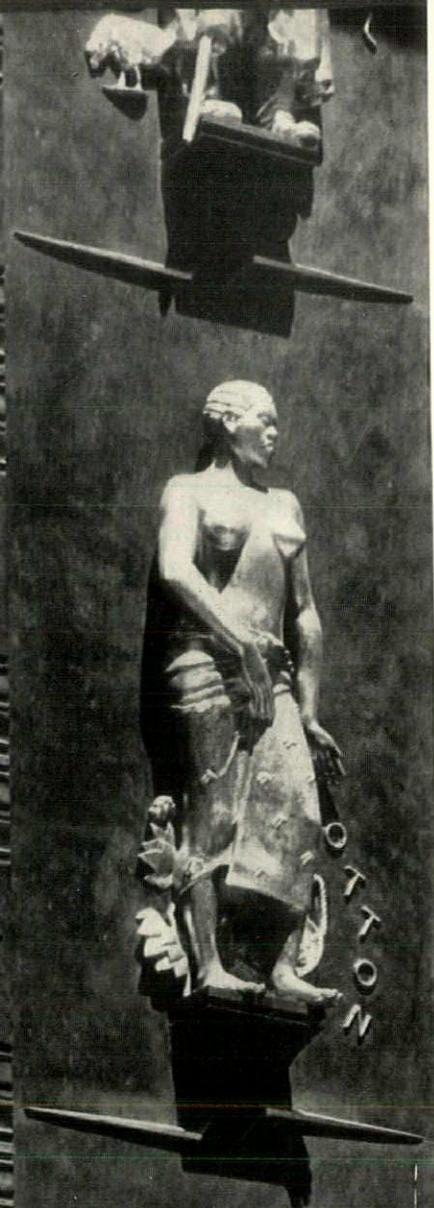
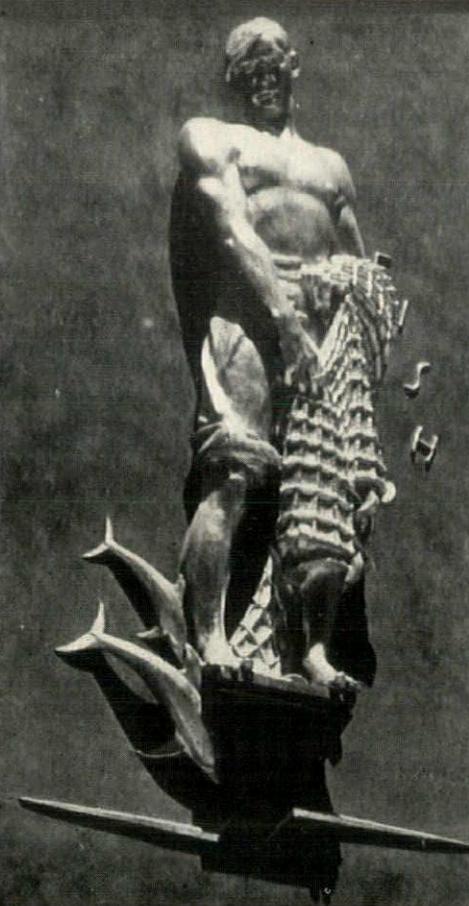
Chad, a small French Colony, shows many picturesque native huts, indicating no small constructive ingenuity, and much "functionalism"; in like manner the huts of the Cook Islands, the Kraals and country store of the Congo along with a hospital on the issue of 1930, are depicted on stamps of these remote districts.

It may be significant of a growing appreciation of architecture, that although countries with a Latin strain seem to have been foremost in thus indirectly honoring architects, it now appears that other countries are following this trend, as practically all of these architectural stamps have been issued in the last ten years, and with increasing volume in the last five years.

Liberia, constituted as an independent republic on the west coast of Africa, in 1847, has eleven architectural

stamps although some merely display native huts. Lebanon, a republic in Asia Minor with a total area of only 3,500 square miles, declared an independent republic under French influence in 1920, has no less than eighteen striking architectural views. The United States, 3,613,189 square miles, has revolutionized building construction and changed the trend of design, and on her postage stamps has only three examples of the art of building beautifully. Subjects such as the Nebraska State Capitol, for instance, might be given consideration together with magnificent skyscrapers (an American invention and her contribution to the building history of the world), famous universities, buildings of historical interest, famous bridges and symbolic monuments, sculpture and other works of art. Of eight hundred and six different subjects of architectural interest shown on the stamps of the countries of the world, the United States contributes less than one-half of one per cent.

When it is realized that the collecting of postage stamps has proved successful in arousing the interest of thousands of bright youngsters in history and geography, the commemoration of the works of American architects on United States postage stamps would unquestionably bear fruit. It is not too visionary to assume that some day the postage stamps of the United States may at least equal those of some of the most primitive colonies in the world by publicly recognizing the work of architects who devote their lives to the art of building.





MAIN ENTRANCE, BRITISH EMPIRE BUILDING  
ROCKEFELLER CENTER, NEW YORK

REINHARD & HOFMEISTER; CORBETT, HARRISON & MACMURRAY;  
HOOD & FOUILHOX, ARCHITECTS. C. PAUL JENNEWAIN, SCULPTOR

Photos by Samuel H. Gottscho

The nine figures, representing the major industries of England, are of cast bronze, covered with gold leaf; their background is also of bronze, and has a dark blue patina

Architectural activity promised by the legalization of 3.2 beer and wine, has been held back by the possibility of ratification of the Prohibition repeal amendment. Planning for future liquor service has become a factor in most present work

The trend in modern bar design, as interpreted by Peter Copeland, is in marked contrast to the architectural style of the bar and tap room of Longfellow's Wayside Inn at South Sudbury, Mass., but its relationship to the room it serves is the same



## Planning for Beer

BY ROGER WADE SHERMAN

TO architects who vision the legalization of 3.2 beer and wine as the golden gate to immediate business opportunities, this article may present some sober second thoughts. In no way should this imply that architects and the building industry will remain untouched by the new legislation. As a direct result of the new drinking freedom the stagnant river of business already shows a current perceptibly quickened by individual springs of cautiously expended capital. Though necessarily meager in many quarters, the expenditures will mean that the tide has turned for many architects. But by no means is it all clear sailing yet, for the business of today is disappointingly small in contrast with the great volume that will undoubtedly flow in the wake of nation-wide confirmation of the repeal amendment.

Since April 7th when the new Federal measure became law, there have been numerous reports of the fabulous sums which will be spent as a result of the first liquid step for "the return to normalcy." Estimates have ranged from fifty-five to over five hundred millions of dollars—each with a foundation, at least, in stimulating fact. But statistics may mean much or little according to the light in which they are viewed, and these particular figures must be taken with a large grain of salt by members of the architectural profession who are intent on probing into the potentialities of a new activity.

It is certain that a considerable sum will be spent for building projects as a direct result of the beer and wine bill. It is equally certain, however, that this sum represents a very small part of any of the variously estimated totals. As to the amount, anyone's guess is good, for over the entire expenditure in the building field hangs the shadow of an unbelievable confusion in the organization of a re-born brewing industry and the important potentiality of prohibition repeal.

These two factors are dominant in a situation already disordered by hasty action and muddled by the error of mistaking hopeful wishes for facts. Their importance springs from the fact that legalization of beer and wine and the subsequent repeal of the Eighteenth Amendment are intimately linked to problems of State and Federal budgets. In some quarters the fear of excessive taxes on wine and beer has impaired the immediate benefits of the new legislation; in others, it is felt that hastily arrived at methods of dispensing and licensing may hinder the quick ratification of the repeal amendment. Among brewers, vintners, restaurant and hotel men it is well recognized that the legalization of wine and beer is only a wedge; that ratification of the repeal amendment is the sledge to split the block of depression; and that the combined strength of thirty-six states is necessary to swing it effectively.

No one can be sure when the Twenty-first Amendment will be ratified. Mrs. Charles M. Sabin, Chairman



## Means Planning for Repeal

of the Women's Organization for National Prohibition Reform, thinks it will be accomplished by September, 1934. In a recent survey in *Cosmopolitan* magazine, based on the progress shown thus far by state legislatures, delay beyond 1933 is shown to be inevitable. It is impossible to predict either the outcome of the repeal battle or the time when a victory for either side will be assured. Unofficially, the brewing industry, wine and liquor importers and many hotel and restaurant owners expect ratification within two years.

The much publicized estimates of expenditures imply that the new legislation will prove a veritable bonanza in which the building industry will have no small share. But most of the capital is going into manufacturing equipment, into plant renovation, into trucks, bottles, refrigerating machinery and into the hundred and one other things necessary to bring a long dormant industry to its former state of smooth efficiency. If the attitude of representative hotel managers and executives of large restaurant chains is any criterion, there is little support as yet for rumors of extensive preparation of new tap rooms, barrooms and cafes for beer- and wine-thirsty thousands.

SO far as may be judged, present expenditures for retail dispensing are—with a few notable exceptions incident to the Chicago Fair—relatively small. It is true that many building operations are being seriously dis-

cussed, but plans for extensive remodeling or new projects in the majority of cases are contingent upon the situation in the near future. Their execution hinges upon two things: first, ratification with the subsequent state regulations to fix taxes, licenses and dispensing methods; second, the reaction of the public to a drinking freedom that it has not known since 1919.

The machinery for the first of these two contingencies is now ponderously clanking towards its goal. The second can be formulated only in part by the legal restrictions of state liquor commissions. The most important part—and one that will constitute the real index of architectural possibilities—can be determined only by individual surveys of present trends in the light of sub rosa experiences of the past.

It is generally conceded that in the thirteen years since national prohibition became a law drinking habits of the American people have undergone a radical change. During that time a new generation, knowing nothing of the much exploited evils of the corner saloon, has popularized home drinking and has set the seal of its approval on the well-appointed speakeasy, or "club," as a smart rendezvous. Thirteen years ago beer was the poor man's drink; the saloon was regarded by a large proportion of people as a den of iniquity; and drinking in public was regarded as one of those things that no lady could do. Today women are broader-minded—or less bashful—and beer seems to have flooded the

country as a new national drink. But there appears little evidence that speakeasies are out of business. With popular repudiation of national prohibition their hospitality has become more open than before; and a contention that they indicate the new type of legal drinking establishment seems to have a sound basis in fact.

In view of legal, social and commercial ramifications, what will emerge as a practical solution to the architectural problem of retail dispensing of alcoholic beverages? And from what quarters may an architect reasonably expect to receive new business of this type?

The first of these questions has been neatly answered by Mrs. John S. Sheppard, a division chairman of the Women's Organization for National Prohibition Reform and a member of the New York State Liquor Study Commission. In a recent article in *The New York Times* Mrs. Sheppard said, "People do not want anything which resembles the old saloon in its worst features. They want public drinking places which are open and respectable and to which both men and women can go and drink alcoholic beverages with or without food." Translated into architecture, this probably means that the American bar in a somewhat abbreviated form can be safely installed in a cafe or restaurant of the Continental type. It points to the possibilities of beer and wine gardens, of special drinking courts in conjunction with well-established restaurants and to the development of more or less elaborately designed taprooms, rathskellars and cafes where one may stand and sip or, comfortably seated, be served with a meal complete in every detail from the Martini to the cognac. Her description could fit many existing establishments and would allow the average speakeasy to bask in a legal glow of solid and respectable activity. It would cover also an unknown number of cabarets and dancing clubs, and many places where a serpentine counter is designed to serve as a bar and table at the same time.

THE answer to the second question depends upon:

1. State legislation covering taxes, licenses and places where beer and wine may be sold.
2. Public acceptance of the legalized beverages.
3. The ability of the individual architect to design for contingencies and to sell ideas to clients.

If taxes and local restrictions impose too great a burden, it is doubtful if restaurants and hotels will do much more than spend the minimum amount necessary to install the relatively inexpensive equipment needed for the sale of draught or bottled beer. If, on the other hand, growing public demand and low duties promise good profit, and if restricted licenses insure fair competition, there will be many opportunities for architects even before repeal becomes an accomplished fact.

Immediate business will be meager in comparison with the possibilities implied by ratification; and in many instances the difference may be lessened by anticipating future needs in present operations. This means, of course, that now, when costs are low, is the time to remodel for repeal. Many hotel and restaurant owners will see the wisdom of providing for future service of all alcoholic beverages by making improvements which will

serve as an immediate stimulation of their business. Architecturally speaking, such projects fall into three classifications. The first is the existing establishment fitted with a bar as an adjunct to table dining space. The second includes small dining areas to which will be added space for the storage of wines and liquors, for beer equipment, for servicing and the creation of whatever surroundings are deemed desirable. The third class implies those new projects which are planned specifically to meet the requirements of a new legal status.

In each project the ultimate function must be provided for in such a way that it interferes in no way with efficient and profitable operation at the present time. In effect, this means the planning of a dual purpose establishment. Much depends upon the kind of patronage to which the owner may be catering—much also upon the scope of his service. And little can be set forth in detail regarding types of plans or equipment. But in every instance where a complete food-and-drink service is contemplated, certain definite requirements must be included:

**1. Bar.** This does not necessarily mean a large public bar. Often a public and service bar can be combined to save space and expense. Fittings include beer dispensing equipment, refrigerated cabinets for bottled goods; sink and ice containers.

**2. Back bar.** An essential for the storage of glassware, mixing syrups, liquors, wines that are consumed at room temperatures, liqueurs, cordials, etc. If the bar and back bar are located apart from the dining space, some additional service area is essential in a location where it may be easily reached from, but not interfere with, the food service.

**3. General storage space.** Some additional storage will be necessary for ice buckets, various types of glasses, (such as hock tumblers, steins and brandy bowls) and ordinary wines. Also, depending upon the size of the establishment, additional refrigerated storage may be necessary.

**4. Barreled beer storage.** Must be well ventilated, cool (under 50 degrees F.), absolutely clean, and as near as possible to the bar. Size of the room varies with beer consumption. It may be used also as a rack room for wines served cold. (White wines as champagne, sauterne, etc., should be kept cool and are served usually as cold as possible. Red wines are generally served at room temperatures.)

**5. Service facilities.** Additional space will usually be necessary for circulation in dining areas, for washing glasses in the kitchen, for patrons' toilets. In a large project mechanical ventilation or complete air conditioning may be an essential. Floors should be of non-slip material, easy to keep clean; and in large rooms some sound deadening material should be installed on the ceiling or walls.

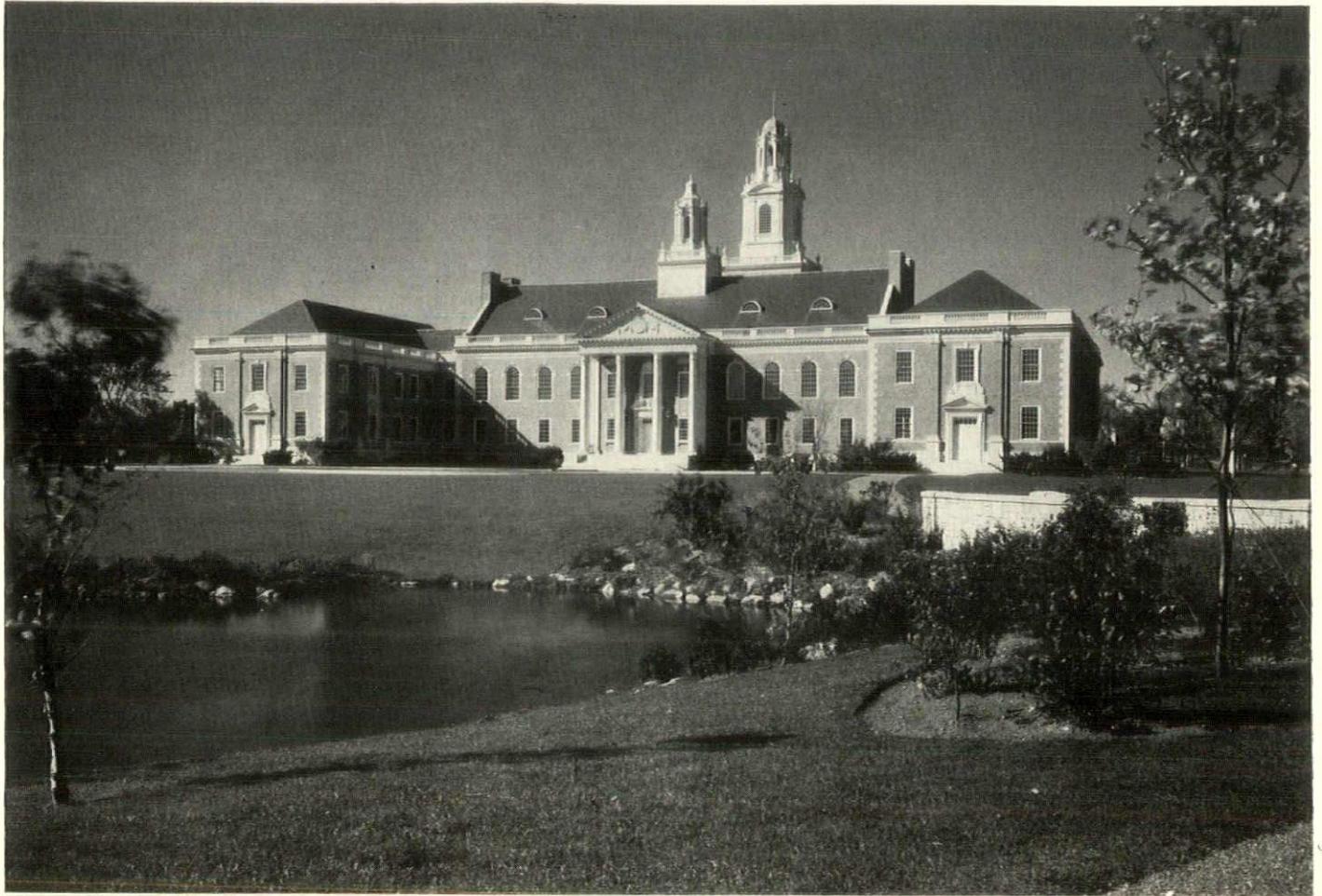
In all these projects the architect may play an important part, but his value is dependent upon recognition of the basic limitations that are involved. Technical ability, imagination and common sense are the keys to his successful activity in a widening circle of great potential worth.



CITY HALL AND WAR MEMORIAL BUILDING  
NEWTON, MASSACHUSETTS

ALLEN AND COLLENS, ARCHITECTS

Photographs by Paul J. Weber

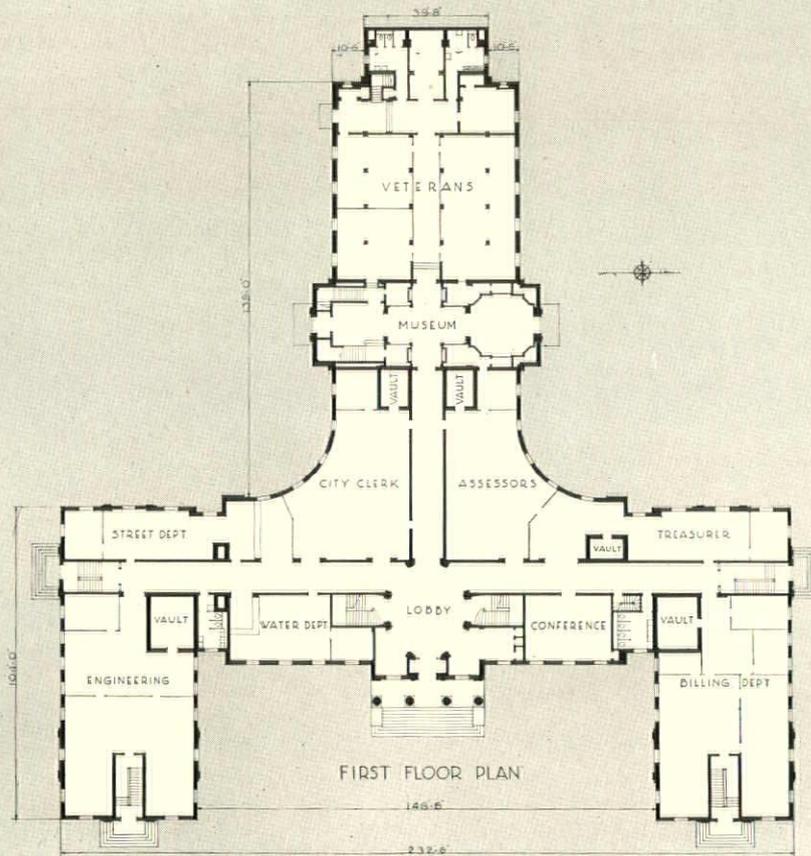


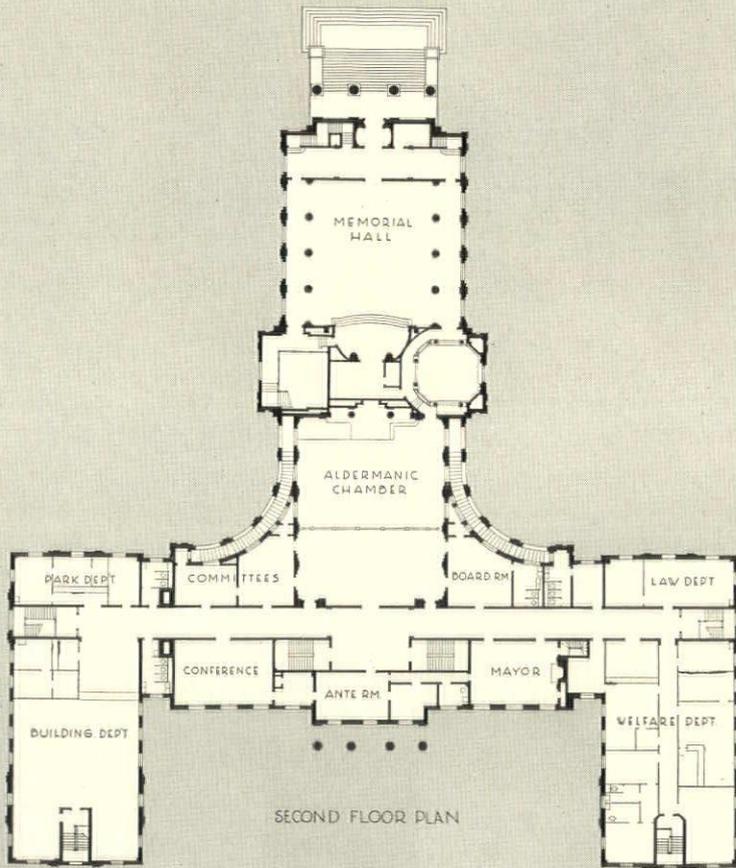
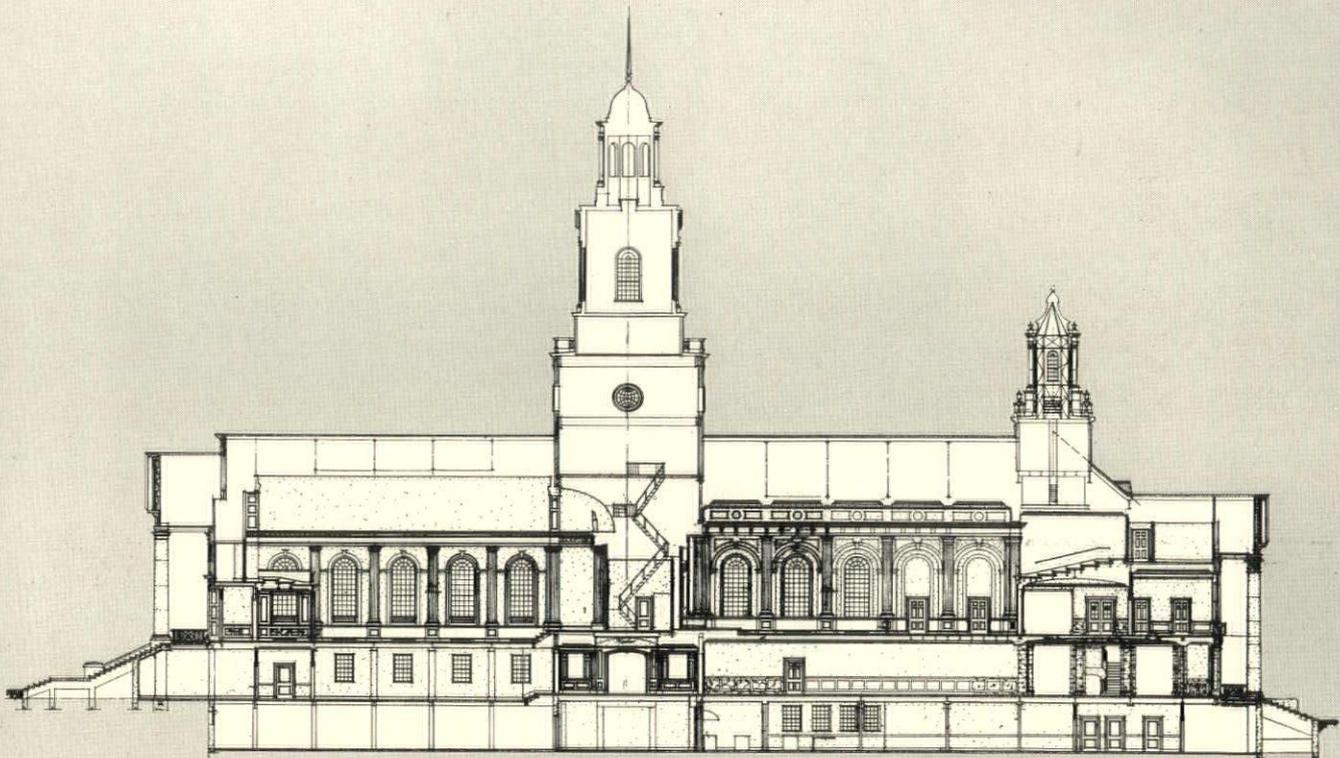
CONSTRUCTION DATA: Exterior walls are faced with water-struck brick, laid Flemish bond, and rubbed finish limestone. Exterior railings and balustrades at entrances are of wrought iron; lighting fixtures are of bronze. Roofs are covered with black slate. Exterior steps are of granite, five-cut finish. The finish of the principal rooms is: Aldermanic Chamber—trim, wood; walls, painted hard plaster; ceiling, sound-absorbent plaster panels with hard-plaster beams and cornices; furniture, American walnut; lighting fixtures, Flemish bronze and crystal. War Memorial Hall—floor, gray marble, ashlar bond; trim, wood; walls, painted hard plaster; ceilings, colored sound-absorbent plaster; furniture, American walnut; lighting fixtures, polychrome pewter and crystal. Furniture and lighting fixtures designed by the architects.

PLAN: The eastern entrance, shown above and on the facing page, leads to the City Hall lobby and offices in the main body of the building. The western entrance, shown on the preceding page, leads to the War Memorial Hall on the second floor, below which is the Veterans' Museum, reached by the Memorial Stair Hall. While the two parts of the building are connected by passageways, there is effective segregation of the functions of each part.

CITY HALL AND WAR MEMORIAL, NEWTON, MASS. ALLEN AND COLLENS, ARCHITECTS





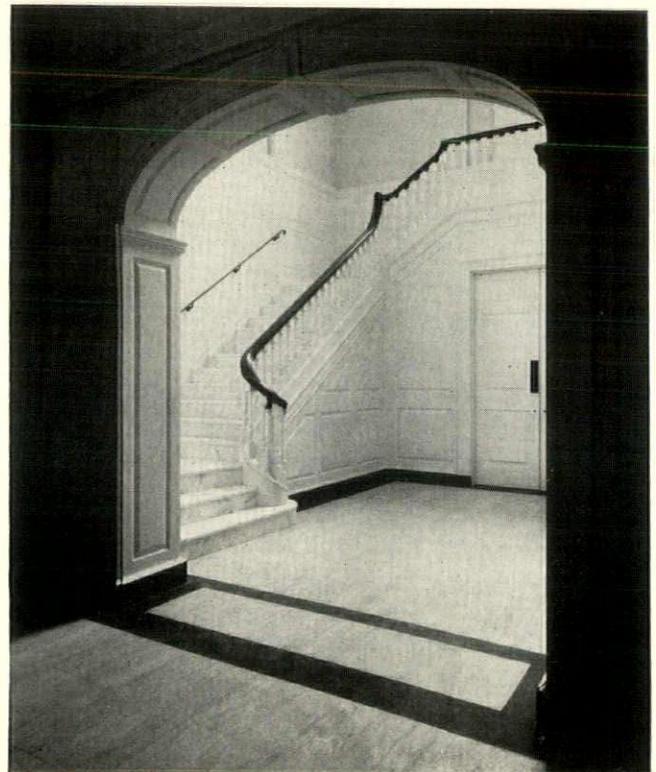




ALDERMANIC CHAMBER, CITY HALL AND WAR MEMORIAL, NEWTON, MASS.

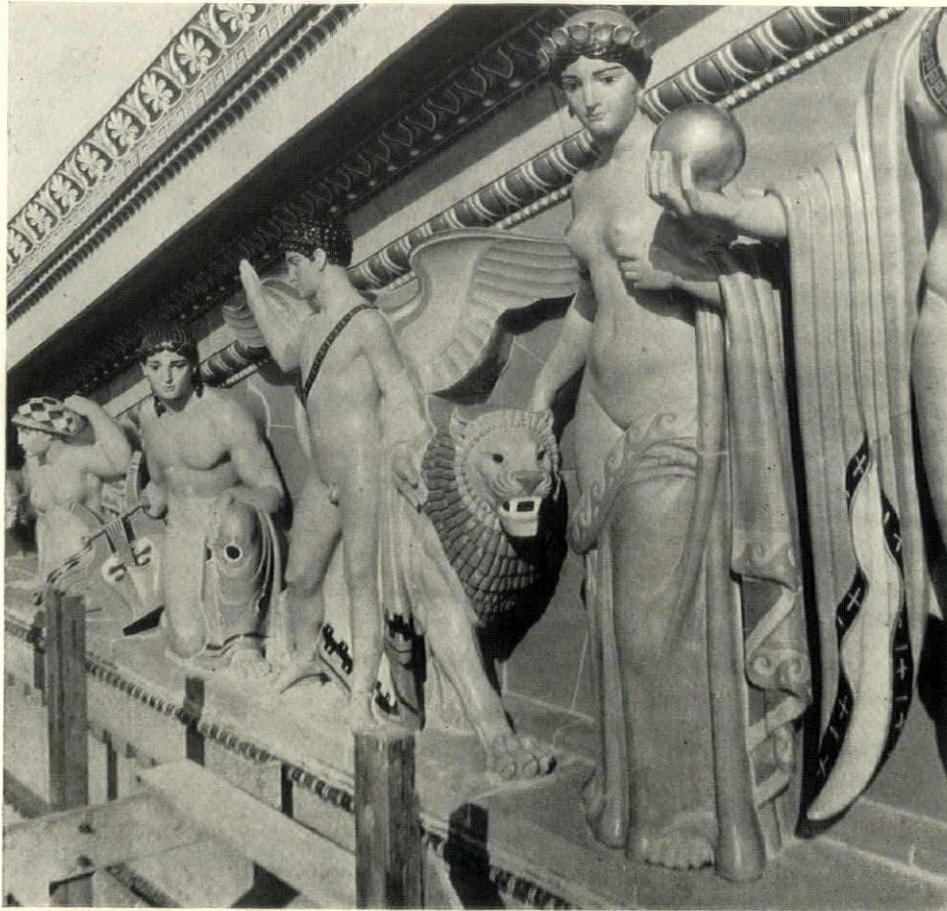


WAR MEMORIAL HALL, CITY HALL AND WAR MEMORIAL, NEWTON, MASS.



At top: Mayor's Office. At left: City Hall Lobby. At right: Memorial Stair Hall

CITY HALL AND WAR MEMORIAL, NEWTON, MASS. ALLEN AND COLLENS, ARCHITECTS



## Creating Colossi in Terra Cotta

How polychrome terra cotta statuary of unprecedented size was made for the Pennsylvania Museum of Art

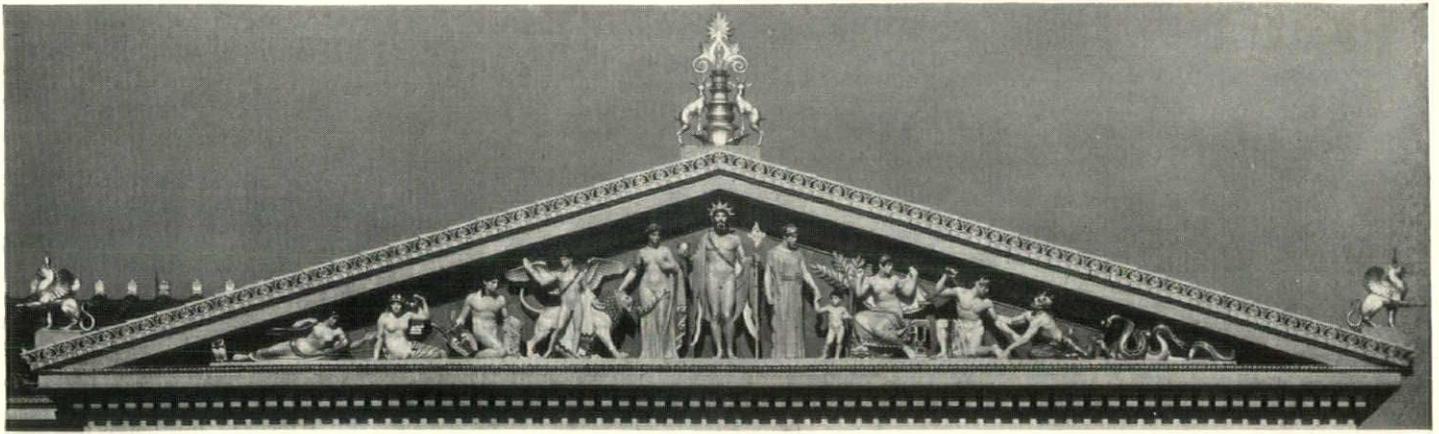
THE largest statuary ever executed in polychrome terra cotta is included in the tympanum panel designed by C. Paul Jennewein and recently set in place in one of the pediments of the Pennsylvania Museum of Art in Fairmount Park, Philadelphia. Brilliant in coloring and consistent with the traditions of Greek decoration, this group of thirteen figures represents a notable achievement in terra cotta craftsmanship.

Mr. Jennewein prepared his models at one-third scale. These were colored by Leon V. Solon and then set in a model of the pediment which was raised to the proportionate height to permit proper study. After changes found desirable by both sculptor and colorist were made the models were enlarged one-twelfth more than full size by Ertle Studios and Jean Delasser, both of New York. The oversize enlargements were made because terra cotta shrinks one inch to the foot in the drying and burning processes. After Mr. Jennewein had refined the enlargements, plaster casts were made which

were further refined by the sculptor and then colored in the latter's studio by Mr. Solon.

These colored casts were then delivered to the plant of the Atlantic Terra Cotta Company at Perth Amboy, New Jersey. Here the jointing was studied and the models cut apart by skilled workmen. The architects, C. L. Borie, Jr., C. C. Zantzinger and Horace Trumbauer, required that the figures should not be blemished by noticeable joints, a condition difficult to fulfill as the undraped figures gave little opportunity for the concealment of joints. In one or two instances the sculptor introduced armllets to assist in the separation of a free standing arm; but still it was necessary to make larger pieces of terra cotta than had ever before been made. The figures vary in size from an owl, 2 feet 1½ inches high, to the central figure of Jupiter or Zeus which is 12 feet tall. Some of the individual pieces of terra cotta were over seven feet tall.

After cutting the casts into sizes which could be fab-



PEDIMENT, Pennsylvania Museum of Art, Philadelphia, Pa.; C. L. Borie, Jr., C. C. Zantinger and Horace Trumbauer, architects; C. Paul Jennewein, sculptor; Leon V. Solon, colorist.

1. The sculptor's one-third scale models were enlarged to one-twelfth more than full size in plaster. These large models were then cut into pieces that could advantageously be manufactured in terra cotta.

2. From the plaster models, moulds were made into which the terra cotta clay was pressed. After removal the pieces were carefully retouched and fitted to insure perfect jointing.

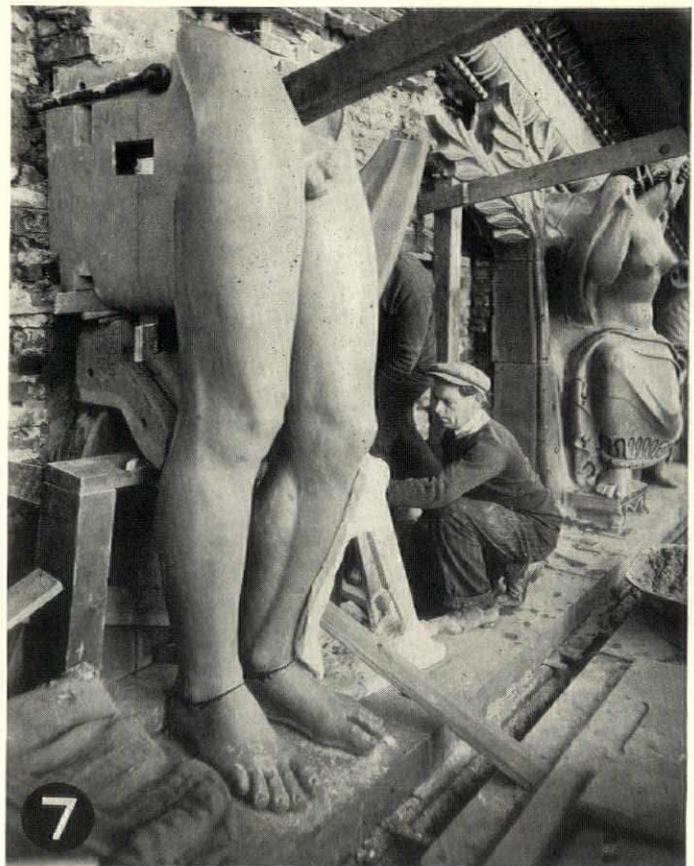
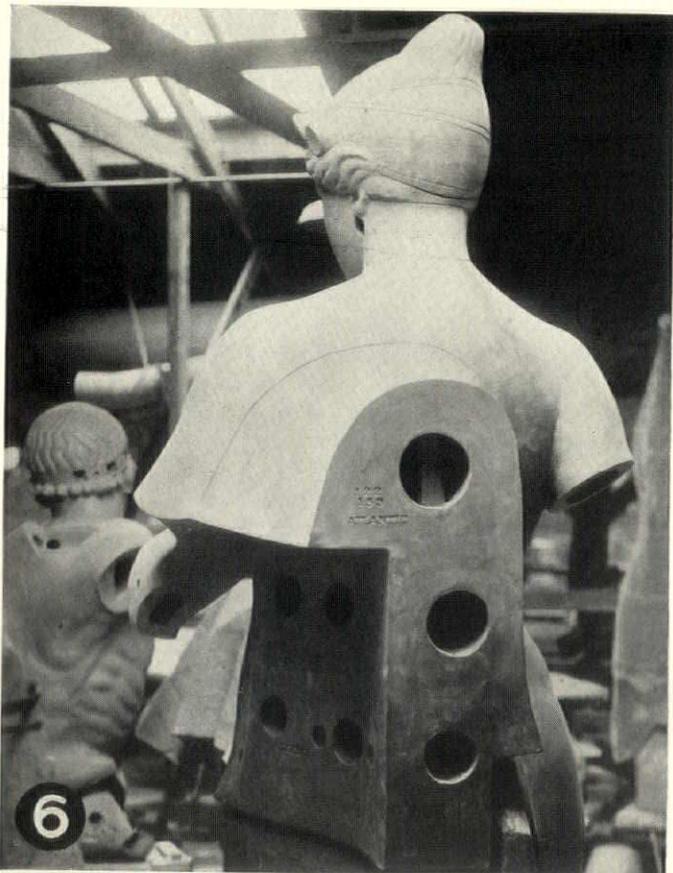
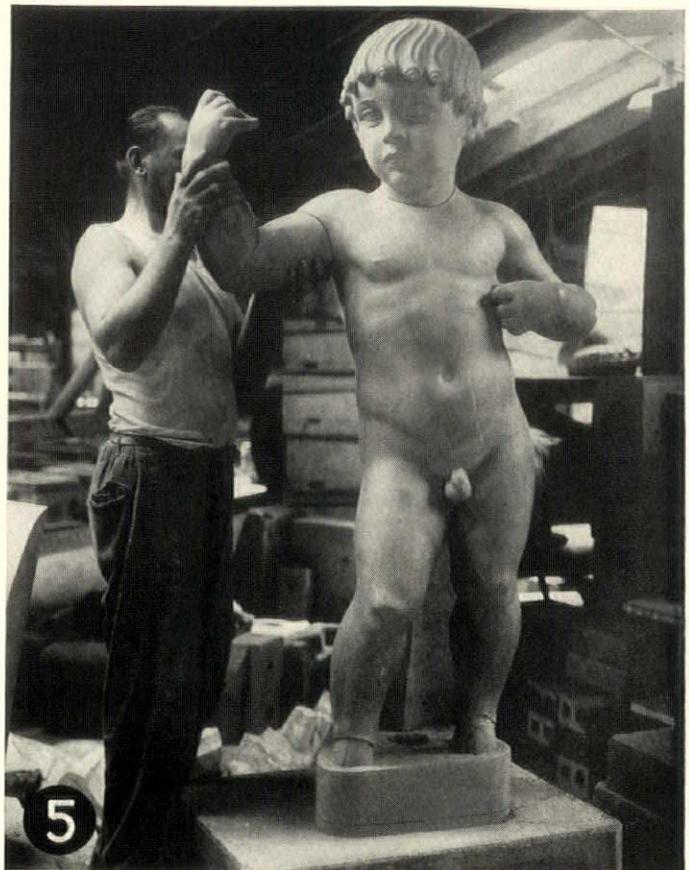
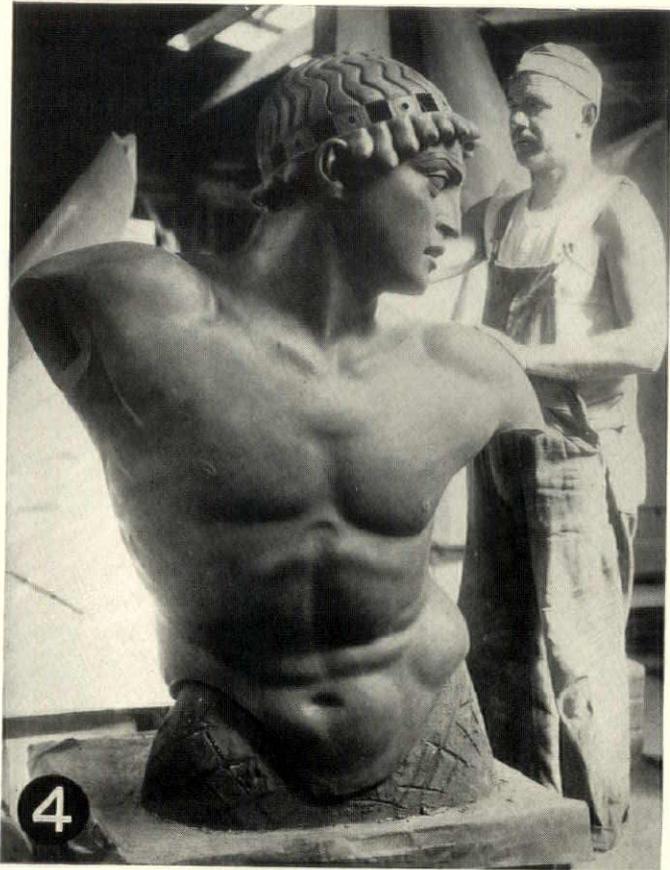
3. The moulds were gradually removed as the clay slowly dried. Shown is Ariadne during this procedure. The head was propped to prevent it from slipping out of position while the clay was still in a semi-plastic state.

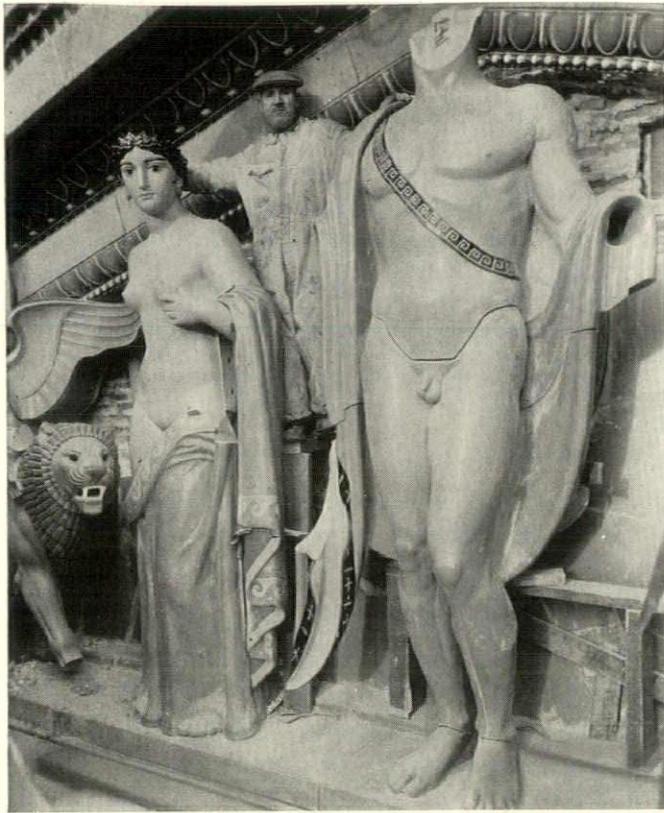
4. While the terra cotta pieces were in the "leather hard" clay stage they were refined in detail; allowed to dry thoroughly and the glazes then applied. Firing of the clay followed, with a second firing for gold and scarlet vermilion.

5. Fitting the arm to the body of Triptolemus. Each connecting piece was fitted with such precision that mortar joints did not exceed one-eighth inch in thickness.

6. During the preparation of the clay models, each piece was built up to fit against the tympanum background or adjacent units. Ventilation holes were provided for proper drying and firing.

7. Bronze reinforcements and anchors were provided for the adequate support of the statues. Many of the pieces were larger than had ever before been made of terra cotta.





Jointing was successfully arranged to avoid marring the figures. At the left the twelve-foot figure of Zeus has been partly assembled. At the right the joints have been pointed with mortar colored to match the glaze

ricated in terra cotta, the backs and ends of the pieces were formed so that each piece became a separate model properly fitted to the next and to the ashlar background which joined it to the others. Provisions were also made for bronze reinforcements and anchoring devices required for security in installation.

Chemists and ceramists experimented to determine the most satisfactory proportions of the ingredients in the clay body and to perfect the colored glazes. A large piece of the final mixture was pressed and dried as a warping test before proceeding with the other units.

Each model or part of a cast was moulded by special methods; the terra cotta clays were "pressed" in the moulds with extreme care; and after several days the moulds were gradually removed until in a week or ten days the pieces stood clear. Ventilation holes, partly arranged in the moulds, were completed to permit even evaporation of the moisture from all parts of the pieces. The controlled drying of the larger pieces required from six to ten weeks. Each piece was again fitted to its neighbors while the clay was in the "leather hard" stage; insuring perfect joints  $\frac{1}{8}$ " or less in thickness.

The glazes were applied with air brushes of various sizes. Large equipment was used for spraying the body colors and very delicate air brushes for small areas of color. It was necessary to apply the large areas of glaze uniformly because an uneven thickness would have caused variations in the shade of the final color.

Placing the huge pieces in the kiln introduced other new problems, for the unburned glazes could not be

touched without leaving finger marks. Special handling devices were constructed for moving the pieces, and studies were made to locate each large unit in the kiln where the heat would be most uniform. The heat was applied gradually until a final white heat of 2300 degrees F. was attained. The burning and cooling processes required from four to five weeks. The cooling process was very gradual to prevent stresses and cracking. Special colors, including the real ceramic gold, of the type used on Lenox china, and red or scarlet vermilion—probably the brightest color used in architectural polychromy—required a second firing at somewhat lower temperatures in another type of kiln.

The entire group was temporarily erected at the factory for inspection by the architects and by Mr. Jennewein, Mr. Solon and their invited guests. The pieces were then crated, shipped to Philadelphia, hoisted on special scaffolding and moved into place and set; the entire process was so well planned that not a single piece was cracked or chipped. Cecil Fidler, engineer, of the Atlantic Terra Cotta Company, was supervisor of both production and erection of the pediment group.

The tympanum as now completed, framed by cornice and pediment also of polychrome terra cotta, is not only one of the finest examples of architectural statuary in the country, but is also the only existing true representation of Grecian pediment decoration. For his work in designing this group, C. Paul Jennewein received in 1927 the medal of honor in sculpture given by the Architectural League of New York.

# Bidding Systems

A Resumé of the Huddleston, Detroit and Nashville Plans to correct the "bid-peddling" evil

By TYLER STEWART ROGERS

THE precipitous fall in prices and building costs which has occurred since the beginning of the depression has been due only in part to general business conditions. Price-cutting, induced by "bid-peddling" between general contractors, subcontractors and material manufacturers or dealers has undoubtedly been responsible for forcing the building industry into an abyss deeper than any other business has reached. Of the various methods proposed to stabilize the industry and to place it in a position to make a sound recovery, a number of plans designed to prevent "bid-peddling" by modifying former methods of competitive bidding and contract letting have received the greatest amount of attention from architects.

While there are almost as many plans as there are organizations seeking to check the sharp practices engendered by the universal struggle for business existence, there are three that may be considered representative. They are the "Huddleston Plan" proposed by E. T. Huddleston, Supervising Architect, University of New Hampshire; the Detroit Plan, sponsored chiefly by the Michigan Society of Building Crafts; and the Nashville Plan, developed by the Nashville Chapter, Associated General Contractors. A study of the basic principles underlying each of these plans may aid in appraising the value of these and similar proposals which architects are being asked to support or test.

PROFESSOR HUDDLESTON'S plan appears to be the first to achieve general recognition and actual tests on a number of projects. It places upon the architect responsibility for eliminating bid-peddling through the manner in which he invites competitive bids and awards contracts. It calls for the selection of a general contractor on the basis of his price and qualifications for performing the work handled by his own organization, regardless of the sum of the subcontract bids he submits and which he must later superintend. The main features of this plan are:

The architect divides his specifications in the usual way into general contract work and subcontract trades. Separate contract trades, which may include such items as plumbing, heating, electrical work and other specialized contracts, may be treated independently, or incorporated under the general contractor in the same manner as subcontract trades. Pre-qualification of general contractors is recommended but is not essential. The

architect issues a special "Information to Bidders" and a "Proposal Plan" which requires the general contractor to include in his bid all work covered in the specifications but to divide that total into two parts: (a) covering all work performed by the general contractor as such, and (b) covering the work under subcontract classifications, including any subcontract items the general contractor, himself, proposes to compete for. Each subcontractor is required to file a sealed copy of his bid and a "performance record" with the architect *before* his bid is submitted to each of the general contractors with whom he is willing to work. Upon opening the general contract proposals the architect and his client consider only the first part of the bidder's offer, embracing his own work, and for the moment disregard the subcontract figures. A selection is made on this basis only, except for the relative competency of the bidders where there has been no pre-qualification.

The general contractor thus chosen is then brought into conference with the architect and owner and the various subcontract bids filed with the architect are opened and analyzed. If the owner prefers to substitute any subcontractor for the corresponding firm listed in the successful general bid, he may do so if the sub-bidder is acceptable to the general contractor. An adjustment in the total price is made under an agreement that selected sub-bidders will be paid the price stated in their proposals. No sub-bids may be used except those filed with the architect, even if named in the general contractor's proposal.

Subcontractors are protected against working under general contractors of whom they do not approve by being required to endorse the copy of their bids filed with the architect, with a list of general bidders to whom the proposal is being submitted followed by the statement "This proposal may not be used by any other general contractor without the consent of the undersigned."

IN the Detroit plan, the architect invites only selected general contractors to bid, and may limit invitations to selected subcontractors and separate trades. The general contractors submit bids based on their own work only, excluding all subcontracts, but embracing any allowance they wish for supervising the work of all subcontractors eventually chosen and for assuming the usual responsibility for their performance.

All general bids, sub-bids and separate trade bids are

received by the architect at the same designated time. The architect and owner choose a general contractor, the several separate trade contractors, and the necessary subcontractors, submitting the latter list to the successful general contractor who will assist in making the final selection. The sum of the general bid, the total value of all selected sub-bids, and the general contractor's fee for supervision and responsibility, constitutes the total amount of the general contract. No specific provision is made in the Detroit Plan permitting subcontractors to exclude themselves from working with a selected general contractor in whom they have no confidence.

THE Nashville Plan differs basically from these two in that the architect is not a necessary factor and that enforcement of adherence to the requirements is dependent upon the power of the contractors' and subcontractors' own organizations. This plan advocates pre-selection of contractors by owner or architect. Each general contractor who desires to compete for the work invites bids from subcontractors he chooses. Such bids are due the day before the opening of the general proposals by the owner or architect and all bids received on the day of the opening are outlawed.

The contractor is required, at the time he files his tender, to submit a sealed list of the sub-bids incorporated in his proposal to some agent acceptable to him and his subcontractors. This agent, who in Nashville is the Secretary of the Nashville Contractors Association, holds the lists until after the award, and then returns *unopened* the lists of the unsuccessful contractors. All bids are confidential at all times. A subcontractor may thus decline to submit his bid to any general contractor he considers unfair, or he may vary his bid between different contractors according to their reputation, without anyone's being the wiser. General contractors may include themselves in the list of subcontractors for parts of the work they desire to perform, but subsequently no other subcontractor may accept such work without permission of his organization. So far as the owner or architect is concerned, the Nashville Plan makes no fundamental change in customary practice. The correction of bid-peddling difficulties is assumed by the parties chiefly concerned.

"To reach any proper solution of the so-called bid-peddling evil, it should be realized that the seller, as well as the buyer, is responsible," W. F. Creighton, chairman of the Building Contact Committee of the Associated General Contractors, said in a recent article explaining the principle underlying the plan. "To conclude that the general contractor, subcontractor, jobber, or manufacturer, is solely to blame; or that any single element of the building industry—including the architect—may correct this evil, is a mistake. It requires cooperative and determined action. It is a fundamental principle of business that the seller must enforce the terms of sale, but it has been proven in the building industry, that he cannot do so as an individual or in groups, without the buyer's help."

Any appraisal of the worth of these efforts to improve conditions in the building industry must start with an acknowledgment of their sincerity and high pur-

pose. Among their chief aims is to establish a standard basis for fair bidding which may eventually be adopted by government agencies. It is generally appreciated that Federal, State and municipal bidding practices, under the compulsion of laws that require open competition, foster bid peddling to an extreme degree.

Such an appraisal must also reflect the significance of these plans in their effect upon architects and other factors in the building field. Objections have been raised to the Detroit Plan because; (a) no protection is afforded the subcontractor against working under a general contractor he does not trust; (b) an added burden is placed upon the architect to select a "team" of suitable subcontractors to work with a chosen general contractor; and (c) the revelation of the general contractor's charge for supervision, overhead and profit, plus the separate selection of subcontractors would tend to encourage the elimination of general contractors, through the owner's request that the architect handle the project on a subcontract basis at a nominal increase in fee.

These objections are not found in the Huddleston Plan, of which the Detroit Plan is a local variation. The Huddleston Plan eliminates the general contractor's incentive to shop his sub-bids, because his selection is made without reference to the cost of the subcontract work. The procedure assures sub-bidders that their bids will be accepted, if at all, in the amount originally named, making it necessary for them to quote their best price in their proposals. The plan also assures full protection to all parties submitting bids on any construction project, yet it does not change the present relationship between the several parties nor modify the responsibility of any.

A COLLATERAL value of considerable significance is the practical necessity this plan imposes on the architect to prepare his drawings and specifications as a definite and clear expression of the type and quality of materials and workmanship which he will demand for the complete execution of the work. It challenges the architect to eliminate the "or equal" clause and to specify approved products by their proper trade names. Competition among producers of these products may be safeguarded either by naming several products which the architect considers equal, or by substitution of other products than those named by mutual agreement before signing the contracts.

The Huddleston Plan makes no demand for organized agreements and methods of enforcement. The Nashville Plan depends for its effect upon the organization of contractors and subcontractors locally, with enforcement based upon an agreement to boycott and to expel those who do not follow it.

Regardless of their minor differences, all of these plans and their variations have in common the same essential principle; the single tender. If it could be enforced, "there ought to be a law" affecting all business and commerce making the "single tender" a basic principle in all competitive bidding for business. The building industry, more than any other, needs to adopt this principle throughout all its divisions, including the producers and retailers of building materials and equipment.



Summer residence of Dr. John F. Quinn, Candlewood Isle, New Fairfield, Connecticut. Robert C. Kilborn, Architect

## SUMMER COLONY DEVELOPMENTS

Photographs by George Van Anda

# Summer Colony Developments

A growing field of practice with special problems of planning, supervision and selling, which depend largely upon the architect for their successful solution

BY ROBERT C. KILBORN

TRENDS in the development of summer colonies on shore properties during the past few years indicate a growing field for architectural service. This is due in part, at least, to the demand for summer cottages that provide the comforts and conveniences of suburban houses, and to the recognition on the part of developers that to be successful from their point of view a development requires something more than a map upon which has been laid out a maximum number of lots. This "something" is more than cabins and clubhouses of good design. It includes correct road layouts; salable lot subdivisions; sanitary systems; water, gas and electric services; and building restrictions.

Summer colony developments present problems that place such operations in a class by themselves; problems that architects are eminently qualified to solve, and in which their advice can contribute importantly to the ultimate success of the project. In his approach to these problems an architect must recognize and be familiar with certain fundamentals underlying land developments of this nature.

Before a plan of the property is made it is essential to secure a good topographical survey and to spend considerable time on the site to become thoroughly familiar with the terrain. Personal knowledge of the site is important so that roads shall have advantageous locations.

ROAD location forms the keynote of the general layout. Roads should be run in such manner as to permit maximum property valuations with minimum expense. The important matter is to determine a good balance between expense and potential revenue. Road cut, fill and blasting must be minimized but valuable property must not be neglected when its net sales value may exceed the expense necessary to make it available.

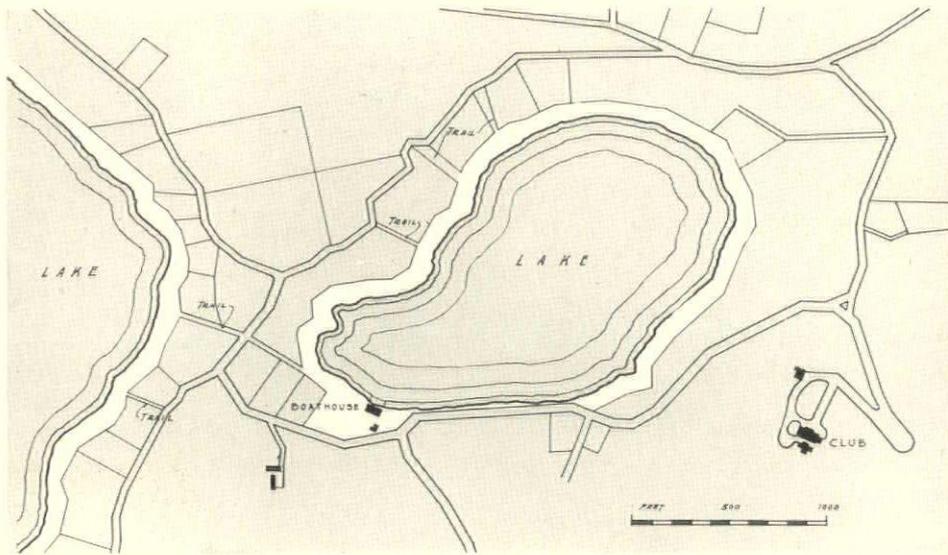
Road location with reference to a shore line is vital. To attain maximum property valuation there should be lots or subdivisions running directly to the shore. This presupposes a road that approximately follows the shore line, with lots extending to the water. If the shore is reasonably uniform in direction this is easily attained, unless there occur abrupt changes in contour, such as gulleys or ravines of tributary brooks. Where the shore line is irregular, and a closely paralleling road impossible, lot widths may be varied, giving equalization through areas. With the shore road determined, additional parallel roads should be located at distances to be set-

led by the desirable lot depths for the particular topography. Certain developments have been laid out with a reserved strip, the common property of the community at large, lying between the shore road and the water line or between the so-called shore lots and the actual water. This prohibits the advantageous sale of true shore frontage, an important source of revenue.

A good road surface is the one element next to natural beauty of surroundings, which makes the greatest impression upon the purchaser who desires assurance that the property will be accessible winter or summer, good weather or bad. Money spent in the construction of good roads is a good investment. Although few developments can afford a well constructed macadam road, hard surfaced gravel roads with oil or tar binders should be possible.

THE subdivision of the tract into salable lots must be considered at the time of laying out the roads. Correct lot width is a moot question that must often be determined by the character of the development. But fifty feet appears to be a favorite and is about the minimum that can be utilized. Twenty-five foot units requiring the purchase of at least two units are sometimes recommended as being more flexible. Where the land is reasonably level lots may be deeper than they are wide. If the site has a gradient greater than one in five the road frontage should be increased and the depth decreased if necessary to avoid undue building heights on the down hill sides. Lot lines should be parallel wherever possible. Divergent or convergent side lines are the bugbear of the architect, the builder and the salesman. Where the major view is at right angles to the road, lots on opposite sides of roads may be advantageously staggered. The sale of lots by lake foot frontage or the attempt to secure a series of lots with equal shore frontage should be discouraged, for with an irregular shore line this may easily result in lots too small to be practical.

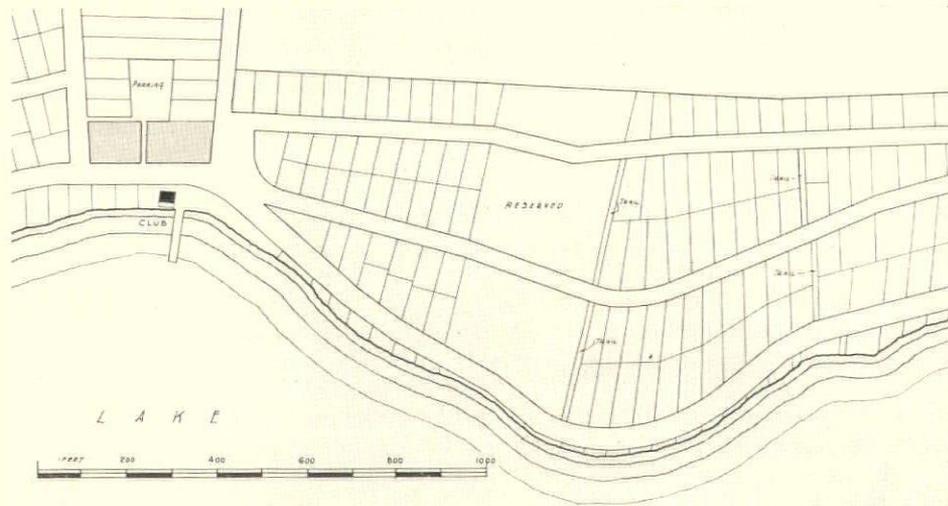
In certain developments it has seemed advisable to sell property on the acreage or square foot basis, without reference to definite lot boundaries. This type of sale allows the purchaser to acquire a definite site without complications of lot splitting, but materially increases survey expenses and is open to a greater percentage of dead or unused property. It is better adapted to developments specializing in large property units rather than those catering to buyers with more modest purses.



TYPICAL SUMMER COLONY SUBDIVISIONS

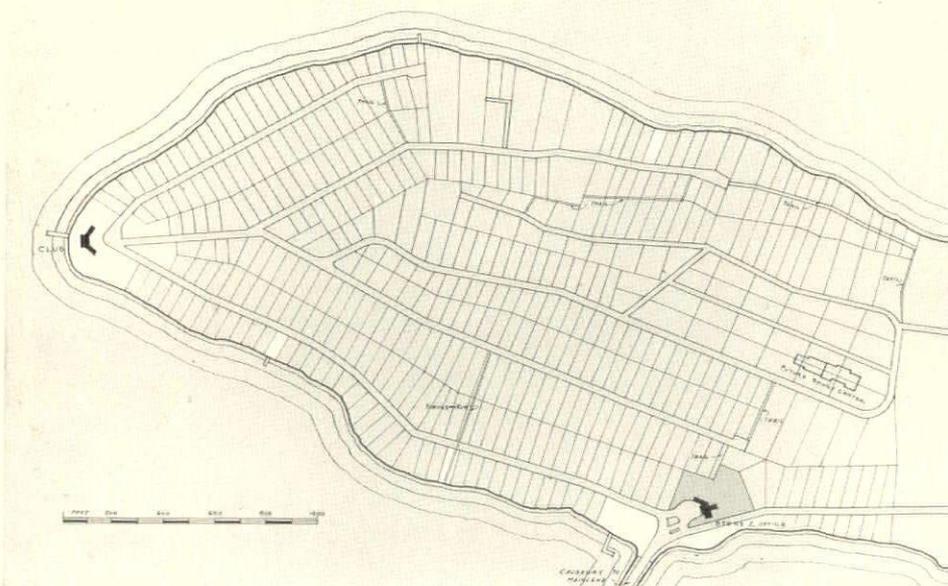
CARMEL COUNTRY CLUB, KENT CLIFFS, NEW YORK

In this development, only a part of which is shown, the shore front is reserved for use by all property owners. The shore is made accessible by trails from the road. No lots are laid out, as the property is sold on a square foot basis



LAKE HAYWARD CLUB PROPERTY, EAST HADDAM, CONNECTICUT

This part plan of the property illustrates the use of shore frontage lots with occasional beach reservations (shown in white). Where shore lots become too shallow for independent sale, they are sold as part of the lot lying across the road. Shaded area is for stores and business



CANDLEWOOD ISLE, CANDLEWOOD LAKE, CONNECTICUT

This plan of a section of the development shows shore frontage lots with occasional reserved lots for community beaches and shore access, and the use of trails to provide access from inland properties to the shore. Small shore lots belong to larger lots across the road. The dark areas are store and business sections; the white are areas for community use

Certain land must be set aside for community needs, such as a clubhouse, bathing beach, community dock and moorings, sports, store and so forth. Generally the clubhouse property should join that of the main beach and dock and also, unless conditions justify a separate sports club, provision should be made at the same location for tennis and other minor sports. More secluded reservation should be made for trap shooting, rifle range and skeet ground with an accompanying small service building, shelter or gun club. Few developments have constructed golf courses, their undoubted sales appeal being far overshadowed by the cost of construction and maintenance. Ample parking space must be designated to accommodate the existing summer population, future development and visiting and guest cars. Provision should be made for turnarounds at the terminations of all dead end roads, without encroachment on private properties. Access paths or rights of way should be planned from road to road, particularly where roads parallel hillside slopes. Shore frontage should be set aside for the use of the owners of "inland" properties at intervals not to exceed one thousand five hundred feet, and these should be made accessible through radiating roads or rights of way. These shore access lots are essential to the sale of the interior lots. Dock and mooring facilities should be governed by local conditions. If many motor or speed boats are likely to be owned in the development, a small marine railway with winter storage yard will prove lucrative as well as convenient.

If the property is rich in sub-surface water, available by dug wells, the water problem is easily solved through the use of individual wells for each property owner. Few developments, however, have been so fortunate; most have had recourse to one of the two alternatives, artesian wells or the use of surface water of lake or stream made safe by adequate filtration. Both of these alternatives demand a community piping system with mains accessible at every lot and either a reservoir at some high point or a water tower. Present day cottages have plumbing equipment equivalent to that of the suburban house and usual per capita water consumption figures may be utilized in the determination of the well, pump and tank requirements for summer developments.

Water mains should be run along rear property lines with tee connections at the centers of all lots. Where mains are run with roads, house connections for at least one side of the road necessitate trenching the road, with its consequent unsatisfactory repair. There is an ever-increasing desire in people's minds to spend the winter week-ends in the country and the demand for "winter water" in the so-called summer colony presents a serious problem. With a terrain easily trenched this becomes a simple matter, by sinking mains below frost line and insulating pump houses and tanks. But with rocky or rough country a frost-proof line becomes economically impossible. In such cases a compromise may often be arranged by providing a winter water supply at certain community buildings. In the writer's mind this is the more ideal solution. With winter water supplied to the individual cottage, the owner must either maintain a constantly heated building or must carefully drain all

his piping and fixtures after each cold weather visit with almost a certainty that neglect at some time will cause serious damage. Unless the community is of such type as to include a number of owners who will maintain heated homes throughout the winter, with the consequent logical demand for constant water supply, it would seem that a community supply system safeguarded against winter damage is unwarranted particularly from the viewpoint of expense, which property prices reflect.

When laying water mains, the installation of a hose cock at the lot tees provides a complete network of hose connections covering the entire property. When a house connection is made at the tee, the hose connection should be transferred to a branch tee on the house main. In addition, "fire tool boxes" of suitable design should be installed at intervals along the roads, containing rattan fire brooms and large-sized extinguishers. As the community grows in size, it should acquire a small chemical outfit mounted on a hand truck or trailer and suitable unobtrusive housing should be provided at an accessible point. The simplest alarm system is the bell or siren operated from one point. Of greater value is the siren operated from a number of boxes located throughout the property. The complete automatic alarm system is of course ideal. Property owners should be given the numbers and location of boxes, and rudimentary brush fire instructions.

Sanitary systems usually resolve themselves into the use of individual septic tanks. A three hundred gallon tank is satisfactory for a house having one bath room and kitchen. The kitchen sink should be connected with a grease trap and should by-pass the septic tank. The disposal bed from the septic tank requires special consideration according to the character of the ground.

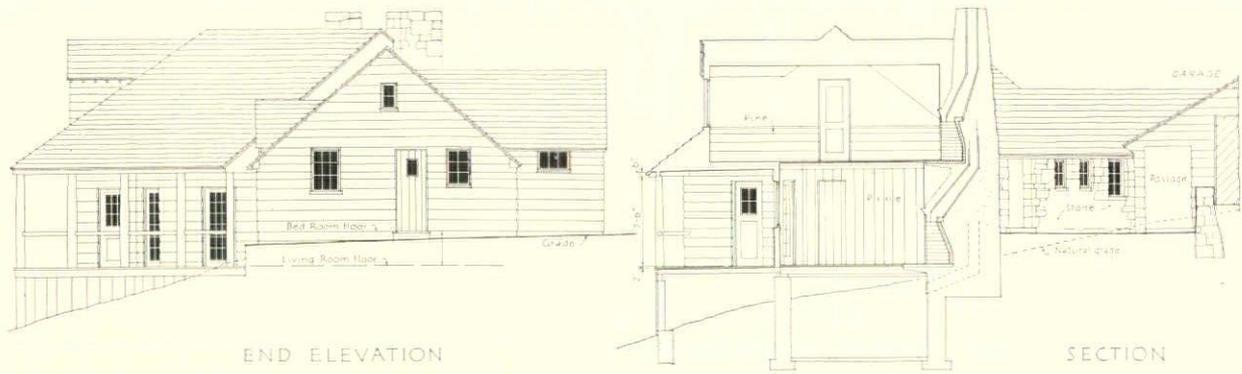
ELECTRICITY normally must be supplied for lighting, refrigeration, radios and many of the conveniences and comforts of every-day life. Its use for cooking and water heating is determined by cost—with power available at two and one-half cents a kilowatt hour these two services are advantageous; where current is more expensive, domestic gas units are advisable. In localities to which public service companies have not extended lines, individual generating plants may be installed by the owners, or small community plants erected by the developing company with individual meterage. In several cases it has been found advantageous to install a small plant, dividing the initial cost among individual owners and establishing an annual fee sufficient to defray operating expenses and depreciation. This type of supply is less costly than individual meterage, but is only adapted to a colony where the houses use approximately the same wattage unless a graduated fee is charged, based upon square footage of lighted space or number of outlets.

Electrical transmission should, esthetically, be through underground conduit or cable. Unfortunately underground transmission is achieved only through an expense so great as to make it prohibitive except in the extremely small community or the extraordinarily wealthy one. Where pole transmission is utilized, the architect should carefully and minutely examine the pole and transformer layout with the power company's engineers,



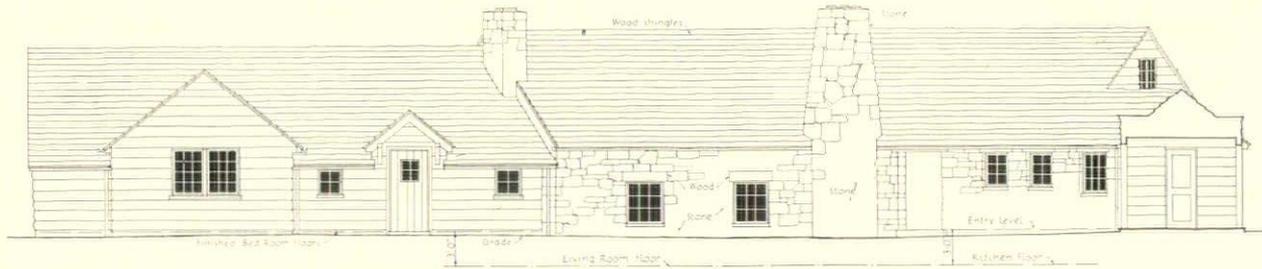
Summer Residence of Dr. Andrew A. Eggston, Candlewood Isle, Connecticut. Robert C. Kilborn, Architect

As shown by the plan on the following page, this large cottage was designed to fit a steeply sloping site and to take advantage of wide views of the lake. The floor grade of the main living area is below the grade of the floors in the bedroom and service wings



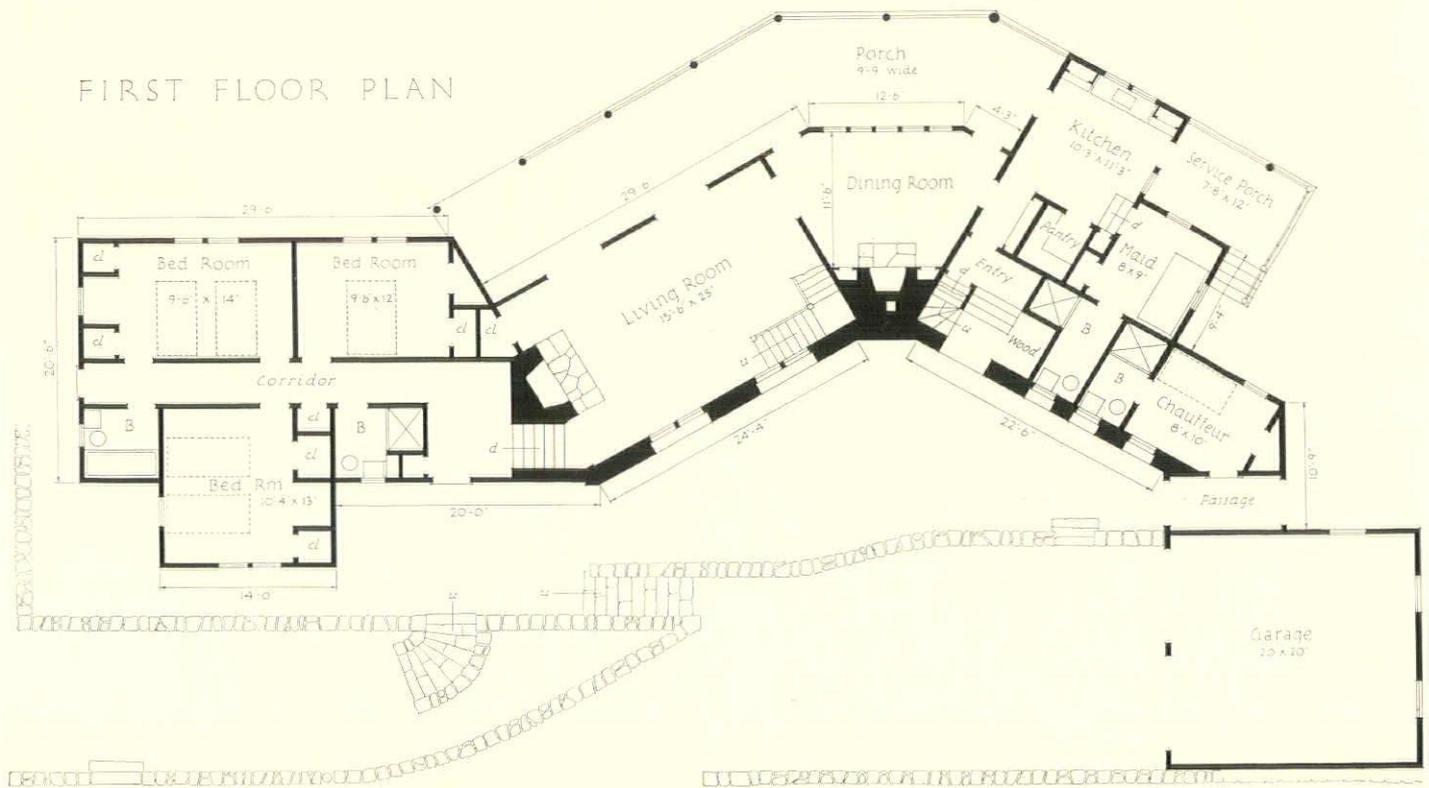
END ELEVATION

SECTION



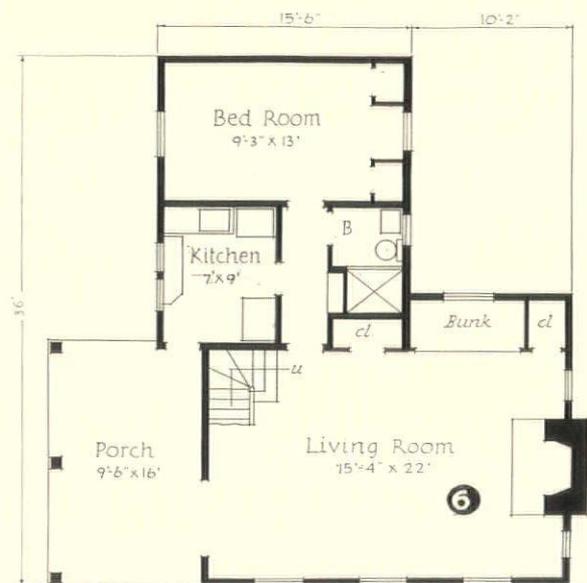
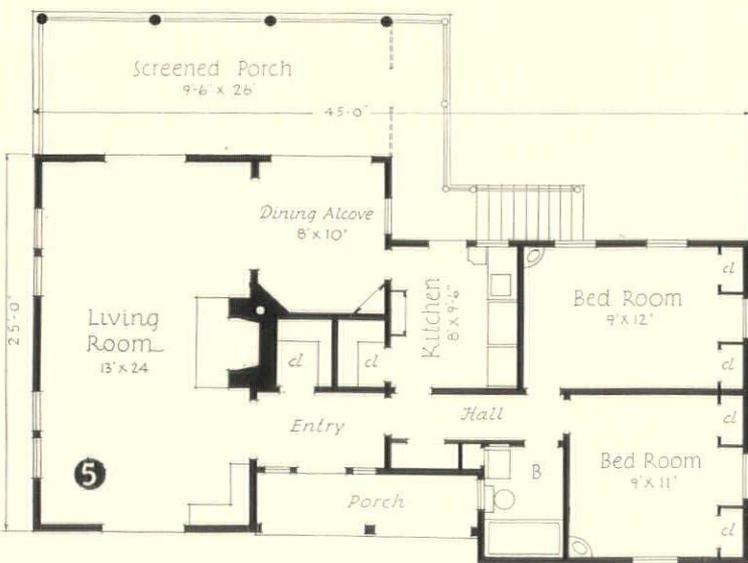
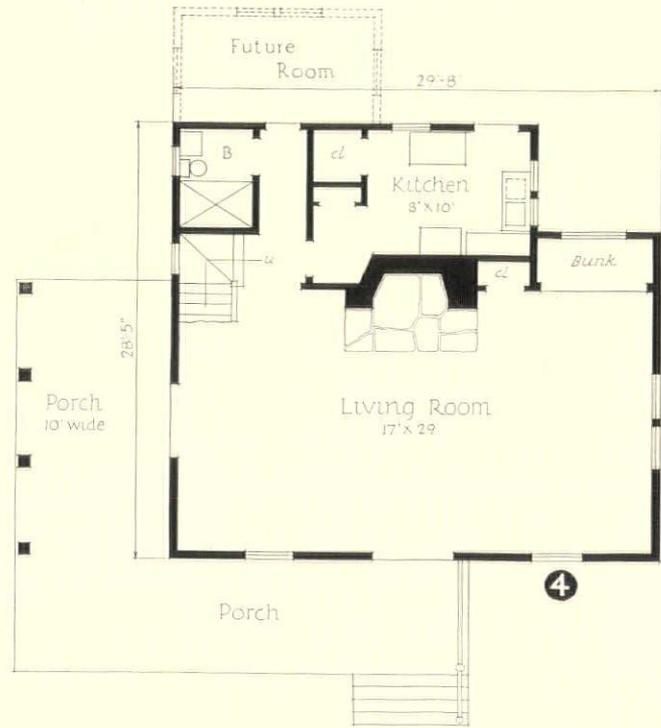
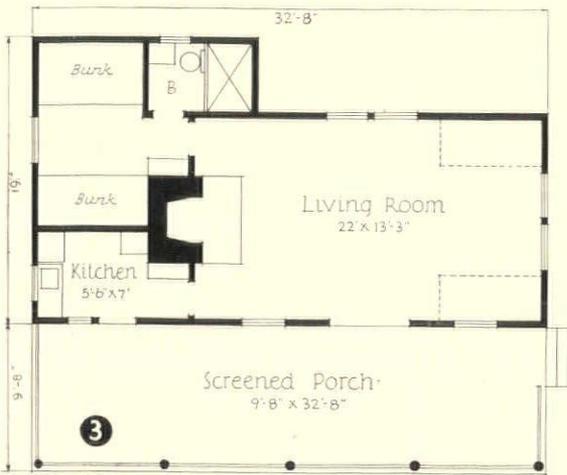
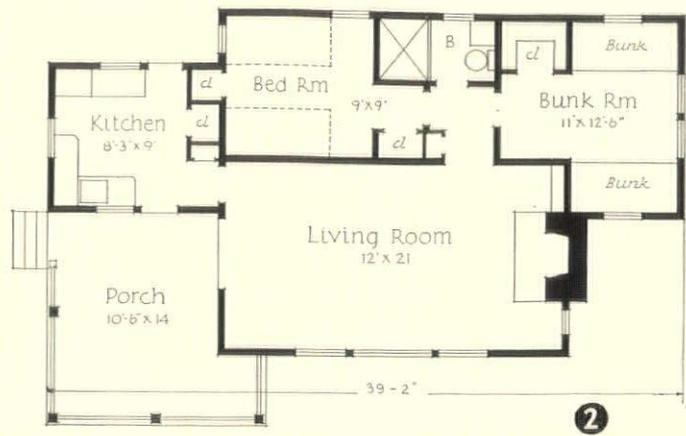
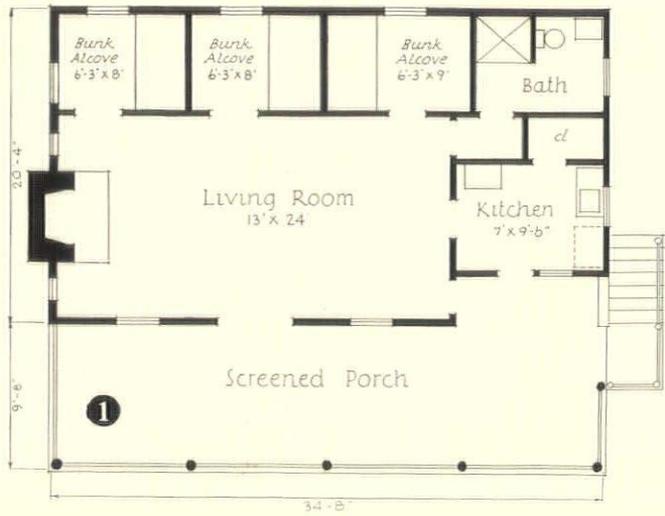
ROAD ELEVATION

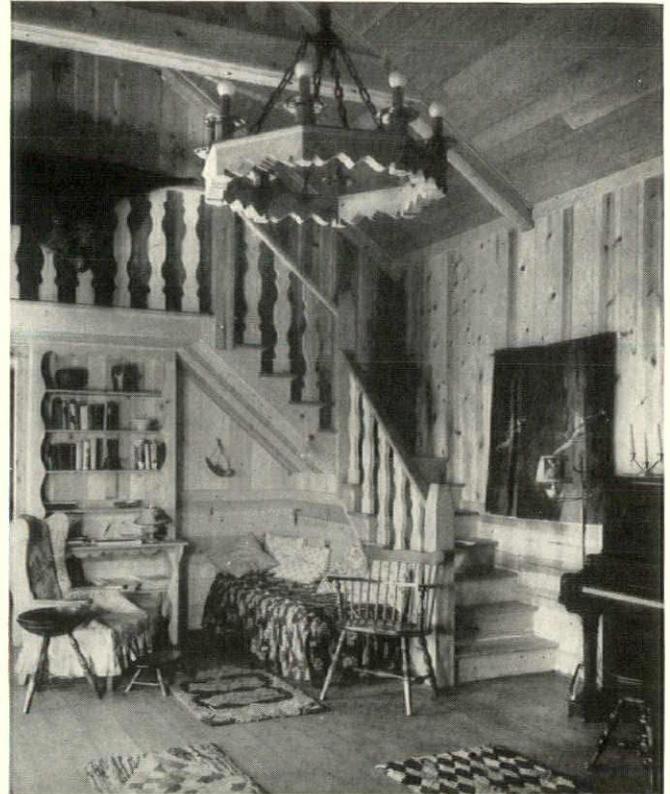
FIRST FLOOR PLAN



The plans above are of the cottage of Dr. Andrew A. Eggston, illustrated on the preceding page. On the facing page are typical plans showing various arrangements of sleeping accommodations. 1. Sleeping alcoves with bunks. 2. One bedroom, one bunk room. 3. One bunk room with day beds in living room. 4. Bunk in living room, with dormitory above; primarily for week-end use. 5. Two bedrooms. 6. One bedroom, bunk in living room, dormitory above

TYPICAL PLANS OF SUMMER COTTAGES AT CANDLEWOOD ISLE. ROBERT C. KILBORN, ARCHITECT





By careful planning, utilitarian and structural elements acquire decorative value.

assuring himself that the poles will be placed in as inconspicuous locations as possible and to give the most advantageous service entrances to the various properties; that stub poles and guy wires do not interfere with property development or possible driveways; and that pole transformers do not occur on the most prominent poles. In many locations telephone wires may be installed on electric service poles. This convenience should be checked at an early date and poles and cross-overs arranged in accordance with the requirements of the respective companies.

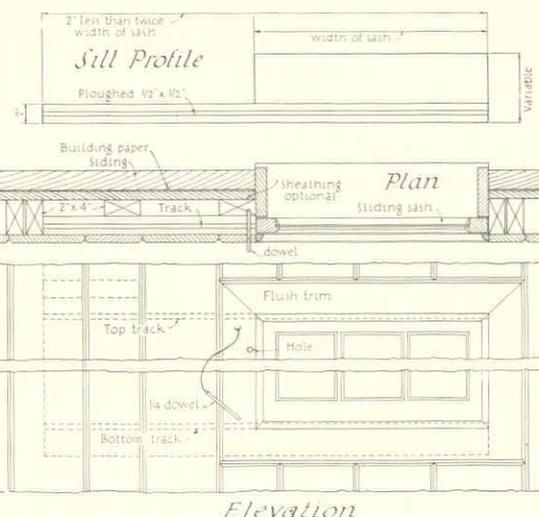
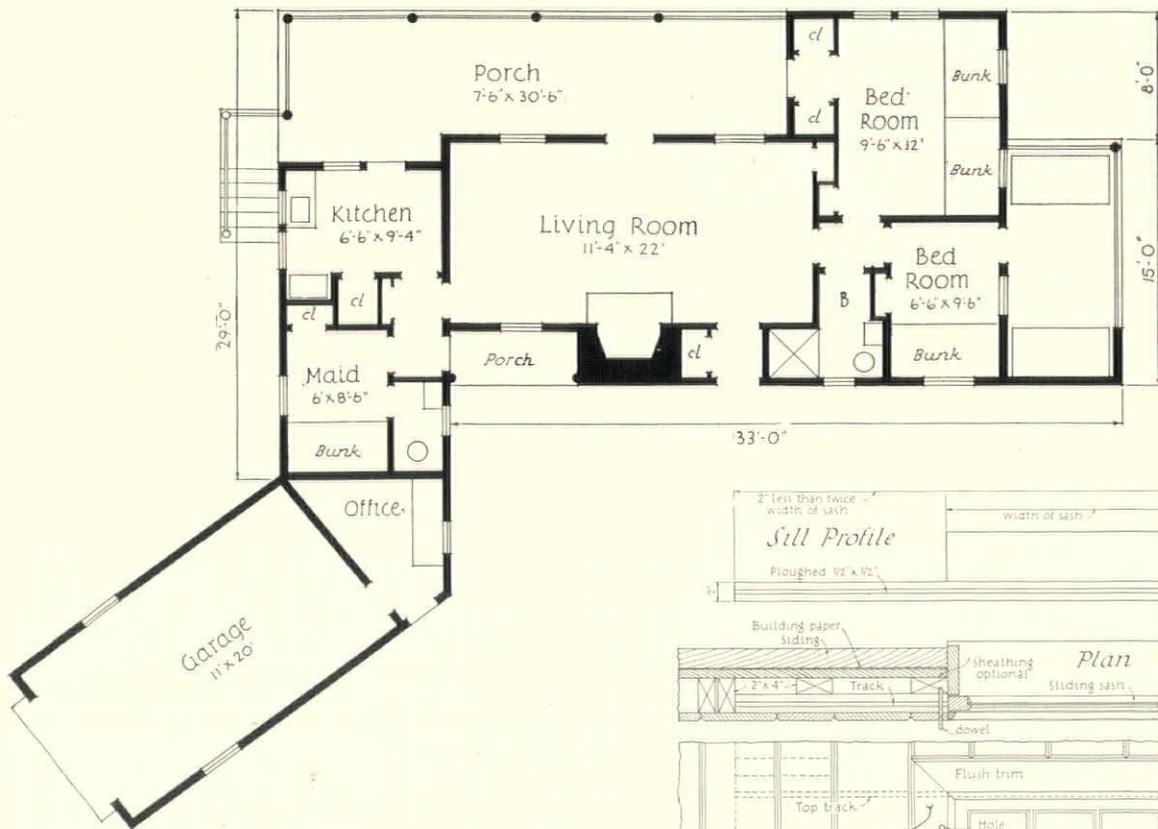
Road lighting is a matter of individual development decision. While introducing a certain amount of convenience, it is liable to introduce too great a degree of suburban atmosphere. If deemed essential, the location of lights and the type of fixture to be used are important. Flood lighting may be used at the main dock and at the property entrance. The dock lighting should be subdued in character and should be in constant operation, serving as a beacon for boats seeking landing. The lighting at the entrance to the colony may be more intense and should be controlled from the watchman's cabin or entrance booth. At the entrance gateway should be located a police or information booth with a large scale map of the property on its exterior wall for the guidance of strangers.

**R**OAD and other signs should be controlled and if used made a distinctive feature. Owner's name signs, for attachment to individual lodges and at property entrances, should be designed in conformity with the road signs and supplied to the owners. There should be definite

prohibition of all other types of signs, thus doing away with the freakishness which is certain to appear if these matters are left in the hands of the individual. It is also well to bar all types of commercial signs. Good design and uniformity in the character of direction signs make a good primary impression on the general public.

**W**HILE the architect may be of considerable value to the developing organization in all of the foregoing matters, either in a directive or advisory capacity, he will render the greatest service in determining the various types of building which will be erected for the organization and for property owners, and it is in this field that he must insist upon authority and control. Inasmuch as the success of a development is dependent upon the successful relation of a group of buildings, consideration must be given to the control of types, materials and interrelations. This may be best assured through a carefully developed building code. The code should lean more on the side of rigidity rather than on leniency. It is far easier to prohibit certain factors which are generally undesirable and grant exceptions in rare cases, than to let the bars down indiscriminately. Such a code prepared by the writer has been in successful operation for a number of years at Candlewood Isle, Connecticut, and has in turn served as a basis for restrictions adopted by a number of other developments.

The code should cover building line setback regulations; limit building heights; state permissible exterior finished materials and colors; include health and safety requirements; and give definite restrictions regarding garages, boat houses, and that infinite variety of de-



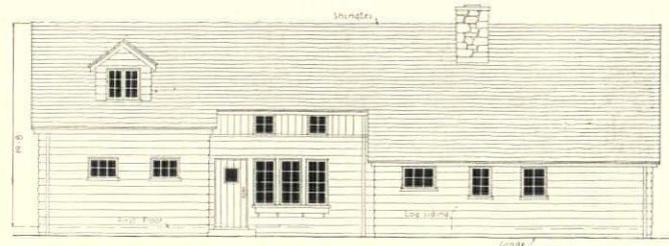
*Details of Sliding Sash*

Cottage of Robert C. Kilborn, architect, Candlewood Isle, Connecticut. The plan shows what is said to be the smallest architectural office. At right are details of sliding sash frequently used by the author in the cottages illustrated, to provide full openings easily screened

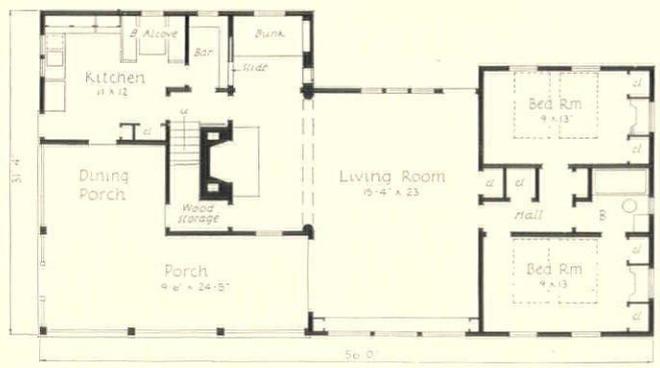


Living room in the author's cottage shown on page 77. The use of native white pine for walls and floors, exposed structural members in ceilings and the restrained use of moulded trim, is appropriately characteristic of these summer cottages

ROBERT C. KILBORN, ARCHITECT



EAST ELEVATION



Summer residence of Rodman Price, Candlewood Isle, Connecticut. Robert C. Kilborn, architect. The bar window in the bunk alcove is equipped with a sliding foot rail which disappears under the bunk when . . . occasion demands.

dependencies and attachments which will occur to the fertile minds of property owners and which may ruin the character and appearance of the community.

At Candlewood Isle, all buildings must be of a rustic character, with exteriors of logs, log slab, log cabin sidings or wavy edge siding; roofs must be of wood shingles, and all exterior coloring must be brown or weathered gray. The fire hazard of the wood shingle has been overcome by the use of a fire resistant material, sprayed on roofs after erection. This also serves as a preservative and stain. Heights have been restricted to one story above the first floor line at all eaves, with an admissible two-story height at gable ends. Garages have been restricted to the attached type with exceptions granted in cases where terrain or other peculiarities have made it advisable or necessary to erect independent garages. Individual consideration and approval is given in cases of minor buildings and dependencies. Complete control of all types of construction and rigid adherence to the established code is maintained through the supervising architect. Drawings and specifications for all buildings must be submitted in duplicate for his approval. If satisfactory, one set of approved drawings is returned to the owner together with a building certificate and building permit card which must be posted during building operations. Regular inspections are made during the course of construction and if any departure from the submitted plans in exterior materials or design is discovered, this permit is revoked and further construction is prohibited until satisfactory amendments have been approved. Property owners readily understand the protection which these measures give them and willingly cooperate.

ALTHOUGH the approval of the supervising architect is mandatory on all operations, actual preparation of plans is left to the discretion of the property purchaser. Several developments have insisted that plans must be prepared by them or by the architect cooperating with them. While this ensures conformity with the design policy of organization and is ideal from the standpoint of the architect himself, it develops definite sales resistance in the minds of the individual prospect. In practice it has proven more desirable to allow the owner a free hand in the preparation of his plans, with the open suggestion that the services of the supervising architect are available to him if he so desires, and that he may be engaged at the customary fee. The quality of existing buildings and the willing cooperation of satisfied owners will generally secure the new client for the architect. In many cases a few minutes' talk with the new property owner, with one or two thumb nail sketches, will suffice.

The architect must have the cooperation of the developing organization with respect to introductions to prospects, but he must use discretion in discussing building operations or costs until the property sale has been consummated. Frequently the prospect's ideas of what he desires or thinks he desires would entail a far greater expense than he has any intention of incurring. Such information may definitely discourage a sale. Newspaper advertising of stock cabins has created a basis of cost at great variance with that entailed in the con-

struction of cottages or lodges of a high class development. After a property sale has been made, the new owner can be convinced of the advisability and justification of the necessary expense or revise his ideas.

ALTHOUGH the exterior must conform with the restrictions of the governing code, the arrangement and details of the interior may be made to suit the mind of the individual. A summer camp presents many variances from the requirements and conveniences of the suburban house and the architect should familiarize himself with room relations and details which are best suited to this type of living. Kitchens preferably should have direct access to both living-rooms and porches. Bedrooms should be of minimum size consistent with comfort. Bunks are possible in small bedrooms, conserving floor space, and recessed bunks in the living room present not only ideal daytime lounging space but extra sleeping accommodations. Open decks are welcome additions to the customary covered porches. A multitude of closets is necessary for the varied accumulations of a summer, with wire screen-lined pantries and storage rooms for protection of foodstuffs and bedding during the winter months. Fireplaces are of course essential, either with or without the patented circulating fire-backs; where masonry fire-backs are used, fire-brick construction is more suitable than the use of field stone because the latter may split or explode. Extra flue linings in chimneys, terminating in thimbles high in the chimney breasts, may be provided for the installation of stove heaters for the winter months. Hot air or pipeless furnaces may be installed for more adequate heating, hot water or steam being impractical except where fires can be maintained constantly throughout freezing weather. Careful consideration of planning in relation to framing will result in the most economical dimensions for the utilization of stock lumber lengths.

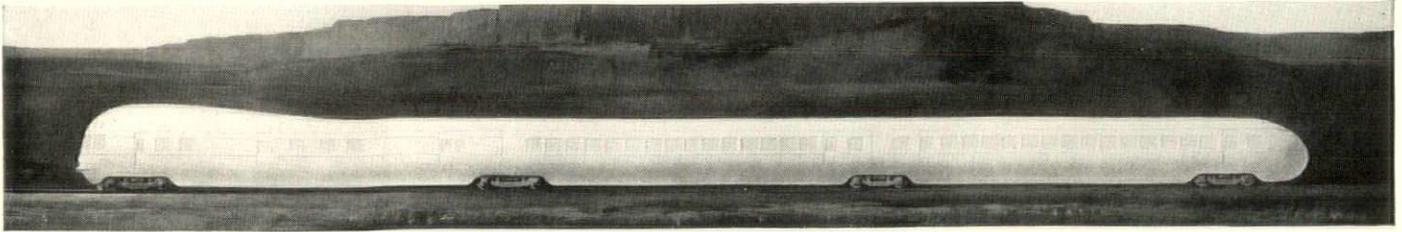
For handling the details of a growing development, the architect should receive his remuneration either as a definite salary paid by the developing organization or on the basis of a fixed fee for any particular work. The design of individual cottages or lodges should be paid for by the individual. The smaller the contract cost, the more difficult it will be to obtain a fee for architectural services proportionate to the work involved. Where contract costs have exceeded twenty-five hundred dollars, there will generally be little difficulty in justifying and obtaining a satisfactory fee, preferably on a percentage basis. The small jobs generally have to be produced for a fixed sum, less, in the aggregate, than a corresponding percentage. Plans falling in that classification can be of a stock nature, and a series of designs covering a moderate price range can be reissued to several clients and minor changes, sufficient to prevent too great a similarity, made through changes in details, by direct reversal of plan or by interchange of materials. Financial success can be achieved even in the design of the more moderate buildings and with the increase in numbers following several successful commissions, together with advisory or consulting services for developments where possible, a profitable practice with a future is not impossible.

# Three sanguines

BY ALFRED C. WILLIAMS



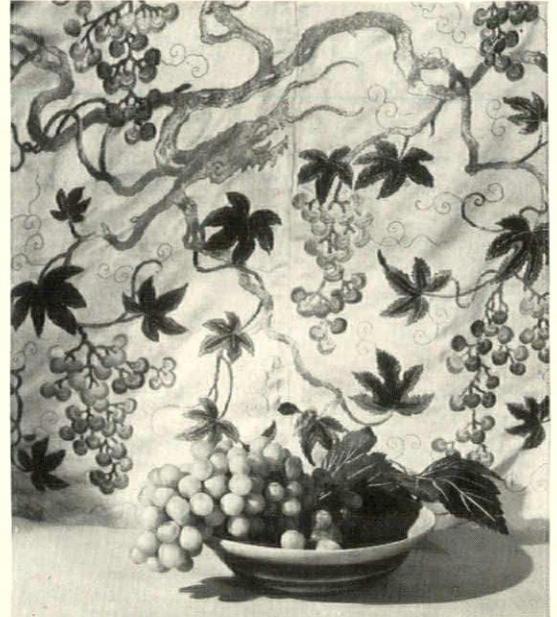
Above: Remains of an Aqueduct, Rome. Left: Ronda, Spain. Right: Villa Borghese, Rome, Italy



Capable of a speed of 110 miles per hour, this light-weight, stream-lined train of aluminum alloys will soon be in experimental operation on the Union Pacific lines. Successful tests of this revolutionary type of transportation may presage a complete revision of our travel ideas. Is it a signpost toward a new architecture for new speed, new efficiency of a radically new design?



Facing the Lincoln Memorial, will stand this marble structure designed by the Office of John Russell Pope. It will be known as the National Institute of Pharmacy, housing the headquarters of the profession in the United States. In it a Museum of History will link old practices with the era of modern science



Grapes were the natural form from which was derived the motif embroidered by Chinese artists on this Imperial Theater costume. From the Exhibition of Plant Forms and Ornament, Metropolitan Museum, New York

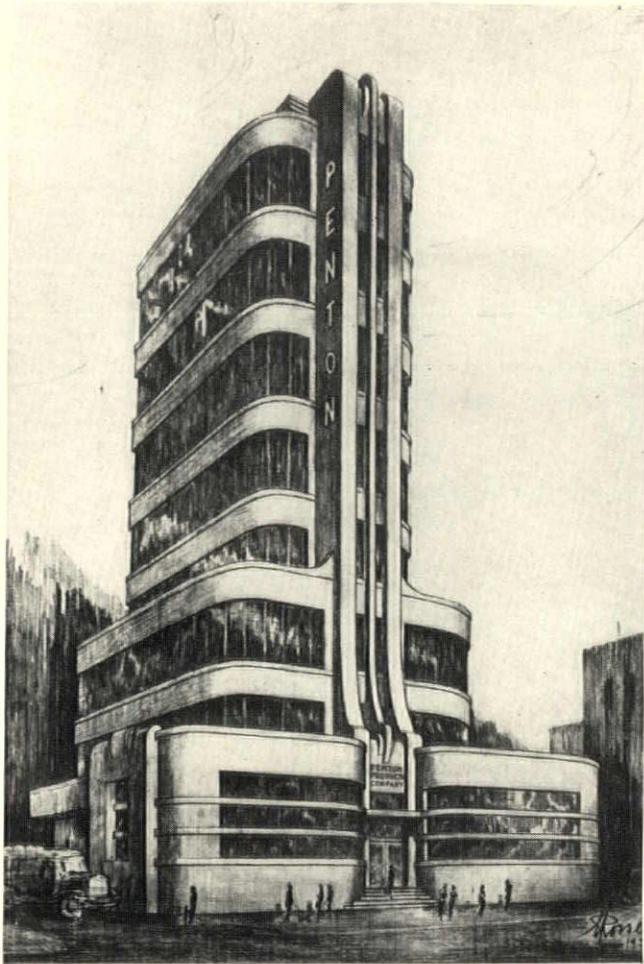
## Trends and Topics

- Employment of thousands of building tradesmen and development of new business amounting to many millions of dollars would result from a nation-wide "renovizing" activity, according to a statement by Dr. Frank Parker, Professor of Finance of the University of Pennsylvania, and President of the Philadelphia Federation of the Construction Industry. As definite proof of the beneficial effect of an organized community improvement campaign in relieving unemployment and stimulating business, Dr. Parker cited the results achieved in the recent Renovize Philadelphia Campaign: "Over a period of a month, \$21,500,000 of pledges by residence and business property owners were gathered. Of this total figure 24,700 pledges aggregating \$8,018,000 came from home owners. Although Philadelphia property owners have until August 1, 1933, to fulfill their pledges a comprehensive check-up shows that approximately 50 per cent of the campaign pledges have already been fulfilled." The March report of the Pennsylvania Department of Labor and Industry prepared the month after the intensive Philadelphia improvement program states: "Employment by building contractors in Philadelphia increased 16.1 per cent in March as compared with February and payrolls increased 22.1 per cent.

This substantial improvement in building employment probably is attributable to the success of the Renovize Philadelphia Campaign."

- Among the cities adopting the renovizing campaign idea inaugurated in Philadelphia is Grand Rapids, Michigan, which is conducting a million dollar "Renovize Grand Rapids" campaign. More than 700 volunteer canvassers have been at work under the direction of the Association of Commerce, Junior Association of Commerce and Kent County Permanent Committee on Unemployment Relief.

- Virtually every part of a three-room apartment in New York City has been constructed of a new synthetic material made from the chemical vinyl resin, as a result of research conducted at the Mellon Institute, Pittsburgh, in collaboration with the Pierce Foundation. Doors, wall panels, floor tile, bathroom and kitchen accessories and even the lighting fixtures and the glazing of the windows were made of vinyl resins. The furniture, fixtures, refrigerators, steel kitchen table products were finished with the new type of resin lacquer that resembles porcelain, while the steel outer door



From the modern Middle West comes a new and quicker method of concocting 3.2 per cent. To house the process Giffels & Vallet, Inc., have designed this eight-floor brewery to be built in Detroit for the Penton Products Company. It will contain no room for kegs or large aging tanks—the quick beer process doesn't require them. A complete bottling plant is included. Here's How!

"The Sower," by Lee Lawrie, sculptor, is part of the exhibition being held in the courts and gardens of the Pennsylvania Museum of Art, Philadelphia. The exhibits will be on view until September 15th. The exhibition has been arranged to help the Committee on the Ellen Philips Samuel Memorial review the field of contemporary sculpture. The sculptured memorial, for which six artists will be selected to develop preliminary studies, will symbolize America's history



## Of the Times

was finished with a bright orange lacquer also derived from the same basic chemical. Vinyl resin is a colorless plastic material which can be moulded in large sheets or panels weighing up to 150 lbs. or which may be extruded for mouldings or to create slabs which can be sawed like lumber. Transparent material is used in lighting fixtures where it developed a transmission efficiency of more than 90 per cent. Translucent sheets, which could have been made transparent if desired, were used for glazing the windows. The product has no tendency to warp, shrink or crack and is highly resistant to the action of light, alkalies, and the common detergents and solvents found about the home.

- Formation of the National Housing Conference Board was an outgrowth of the National Conference on the Renewal of Home Building held in Chicago in May. Representatives of thirty industries at the Conference were given such cheery news as: (1) the country is short 500,000 homes and vacancies are decreasing; (2) taxes on real property have already been reduced in many states and the trend bids fair to continue; (3) direct lending on mortgages by the Federal Government through its twelve Home Loan Banks and other channels is imminent.

- The passage by Congress of the Recovery Act has stimulated leading organizations of the building field to prepare Codes of Ethics which may be submitted to the President for approval. The Construction League of the United States, the American Institute of Architects, the Associated General Contractors, the New York Building Congress have active committees that work on this problem. The Producers' Council discussed the subject at its meeting in Chicago in June. Apparently various elements comprising the building industry have found in the Recovery Act both the stimulation and the opportunity to eliminate some of the unsound practices that have hitherto retarded progress.

The attention given by all of these organizations to methods of eliminating the practice of bid peddling on construction projects will undoubtedly lead to the adoption of a Code which will effectually stop this practice.

- How do architects use the material that is published in architectural magazines? This question is one that is now the chief concern of a new committee of the American Institute of Architects, recently appointed by President Russell. The committee, which consists of W. H. Tusler, chairman, W. W. Tyrie (*Continued on page 137*)

# . . . As It Looks

## Something to Think About

THE subjects of the 1933 Prix de Rome in Architecture and Landscape Architecture were respectively a country clubhouse and a restaurant in an exclusive suburban district. In reporting the awards a New York newspaper stated, "Neither of the winners bothered much about economy . . . the country club . . . would cost a million dollars at least to erect and furnish; and the restaurant . . . would have to cater to 500 persons three times a day and charge between \$40 and \$50 for a meal to clear the overhead." Granted that competitions of this nature are but tests of a student's knowledge of planning and of his imagination, one wonders why they should not at the same time conform to practical conditions. The newspaper statement may be a little overdrawn, but at the same time it indicates the layman's point of view. It is these laymen who some day may entrust these students with the design of a building. If such proves to be the case, the erstwhile student will find that he must face certain cold, hard, economic facts and other practical considerations. Opportunity for public comment of this nature adds to the opinion of too many laymen that architects are extravagant dreamers. A good place to begin to correct this impression is in our schools of architecture.

## Le Coq Gaulois

MANY readers will no doubt recall the story by Samuel Chamberlain, which appeared in the October, 1932, issue of AMERICAN ARCHITECT, of a weathervane topping the Cathedral of Senlis. At the time the story was published, scaffolding surrounded the tower to facilitate needed repairs. The vane had been taken down for the first time in 120 years, carried from house to house in accordance with tradition, and then replaced in its accustomed place. Later it was discovered that the famous old weathervane had disappeared. A person or persons had clandestinely mounted the scaffolding, seized the "Coq Gaulois" and concealed it in the mud under a nearby bridge. Recovered, it once more is back in place serving its purpose. In the meantime, Le Coq Gaulois de Senlis made the front page in the Paris dailies. One can imagine that the excitement was much the same as that caused by the theft of the sacred cod of Boston.

## The Basis of Modernization

DISCUSSIONS of the modernization of buildings stress what can be accomplished with paint, floor and wall coverings, improvements in heating plants, plumbing and other building equipment. These are highly important items in any modernization program, but a point rarely spoken of that is fundamental is the modernization of the *plan*.

There are thousands of buildings in the United States that cannot be said to have been modernized until they have been replanned to meet the demands of today's living and working conditions. As valuable as an architect's advice may be on any kind of building problem, it is in the replanning of these buildings for convenience and improvement of investments that his advice becomes indispensable.

## A Worthy Project

WITH the completion of the Arlington Memorial Bridge connecting the Lincoln Memorial and the City of Washington with the Arlington National Cemetery, the development of a well-conceived plan for the final resting place of the men of our naval and military forces becomes increasingly important. This national shrine over a long period of time has grown in a most haphazard manner in arrangement, location of monuments and landscaping. Without a plan, it will continue to do so. While the situation has been the subject of reports for many years, nothing has been done about it. Today we need to put men to work. Today is a good time to prepare a plan, establish the authority to oversee future performance to the plan, and to begin planting for the future. Is there a living patriotic American who would object to the use of national funds for improving Arlington National Cemetery both as a national shrine and as an important feature of our National Capital?

## A Mural Controversy

DIEGO RIVERA, Frank Brangwyn and Jose Maria Sert were commissioned to paint murals to adorn the walls of the entrance floor elevator banks of the seventy story R. C. A. Building in Rockefeller Center, New York. The Sert murals had been hung and the Rivera mural in fresco was about three-quarters finished when he was paid his contract price and told to discontinue work. The reason given, according to newspaper accounts, was the refusal of Senor Rivera to eliminate a likeness of Lenin which appeared in the mural. Statements attributed to the artist and made before various groups indignant about the matter, indicate the mural to have been Communist propaganda.

Lacking any further explanation from the Rockefellerers, it is interesting to speculate upon the reasons that caused the rejection of the Rivera work. Was it the face of Lenin; the political cartoon aspect of the design; its primitive character and color; or the conclusion reached that the characteristics of a Rivera mural are not appropriate to American commercial architecture? One wonders what inspired the selection of three artists—each thoroughly qualified but all having radically different points of view, technique and mannerisms—to design and paint murals placed so near to each other.

# to the Editors . . .

## Come in to the Kitchen

**N**EARLY two decades ago a prominent manufacturer of plumbing fixtures started the vogue for built-in bath tubs and tiled walls which has ever since influenced the design of bath rooms. About ten years ago a manufacturer of small heating boilers encased its unit in colorful jackets and then realized the merchandising value of converting waste space in the cellar to recreational uses. Thus began the still active vogue for basement playrooms; a movement, incidentally, that greatly aided in popularizing oil burners and gas-fired boilers and furnaces. Recently several important manufacturers, independently, but almost simultaneously, have started to popularize the "planned kitchen" for houses and apartments, whether old or new. The idea has twofold merit: It is being backed by thorough research into the correct design and equipment of kitchens and pantries; and it strikes at the last remaining center of real drudgery in the typical dwelling. Because the movement is logical and constructive it has become of immediate importance to architects. The scope and significance of the subject is made evident in this month's reference article on "Household Kitchen Planning," prepared in collaboration with Good Housekeeping Institute.

## An Office 100 Years Old

**O**NE hundred years ago Richard Upjohn began the practice of architecture in New Bedford, Mass. Two years later he moved his office to Boston and in due course became the leading designer of churches of his time. In 1857, he was instrumental in founding the American Institute of Architects, and served as its president for nineteen years. Richard M. Upjohn, also a founder of the Institute, became a partner with his father and carried on the firm when Richard Upjohn retired. While the designer of buildings other than churches, Richard M. carried on the church practice established by his father. He was succeeded by his son, Hobart Upjohn, whose work in the church field today adequately speaks for itself. So far as it is known this is the only architectural office in the United States to have been carried on by three generations of the same family—and probably is one of the few cases in all history where this has occurred.

## Harvard School Modifies Courses

**D**EAN George H. Edgell of the School of Architecture, Harvard University, has announced sweeping changes in the courses on design and construction and the addition of four entirely new courses, to take effect in the academic year 1933-34. The underlying purpose is "to prepare architects to meet the 'many invaders' who are encroaching on their field, and to increase the opportunities for professional

employment." The new courses include: Functions of Buildings, dealing with the practical requirements which assure the success of buildings; City Planning, an introductory course featuring the trends in city development; Professional Practice, covering administrative problems, office methods, and the mechanical plants of buildings; and Composition, as related to architecture and the allied arts. The changes in curriculum are intended to bring about a better correlation of the factors governing the success of buildings. As Dean Edgell puts it, "The new approach, uniting the fine art of design with the construction and function of buildings, will lead to a new American architecture." Evidently Harvard intends to keep pace with the times.

## A New Job Idea

**A**MERICAN DRUGGIST for May, 1933, published an article which contains an idea that an architect might use to create a new job or two. The suggestion is passed along for what it is worth. Most drug stores have basements, a part of which may be used for a heating plant and a part for storage of stock. Most of these basements contain considerable waste space. The article referred to described how one druggist had converted this space into a small book store. A small type of job, to be sure, but one that may lead to larger and more remunerative work later on. There are probably many local druggists who would be glad to have an architect tell them how to make waste space pay dividends.

## Writes Own Epitaph

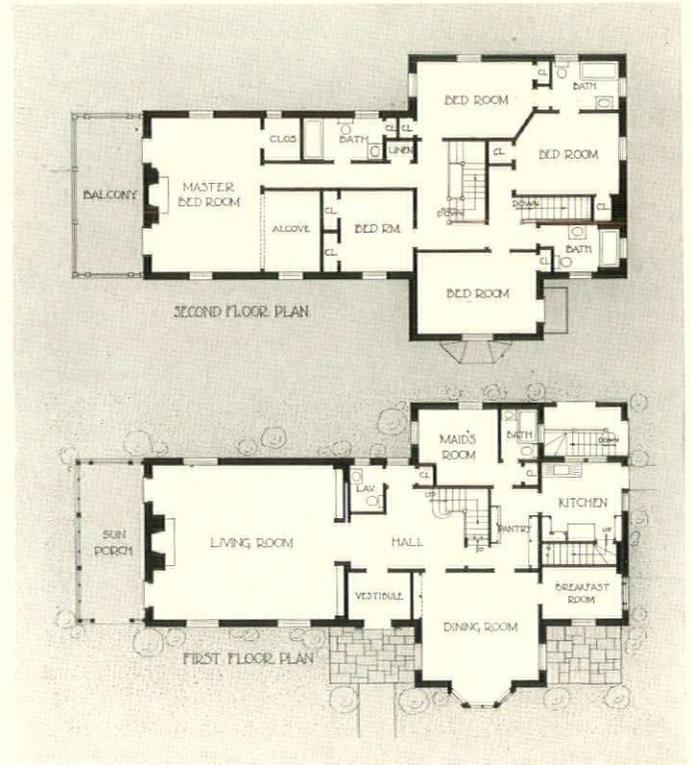
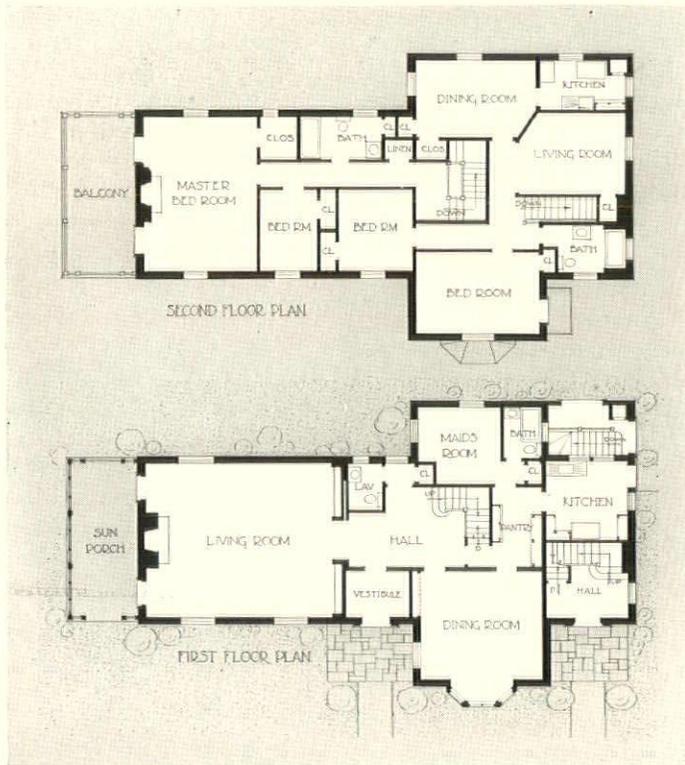
**M**ORAN and Proctor are well-known foundation engineers in New York City. Mr. Moran once said that all of his monuments are under ground where no one ever sees them and that he has prepared an epitaph to be placed on his tombstone when he dies. It reads, "Here lies Dan Moran, under ground where he belongs." May it be a long time before it becomes an epitaph in reality!

## Keeping Down the Overhead

**H**OW to maintain an easily accessible office at low cost is one of the problems of the average architect today. In Detroit a company displaying building materials and equipment found that it had more space than it needed. This space, rented to ten architects at a nominal price which includes telephone and stenographic service, solved the problems faced by the company and the architects. Among other activities these architects conduct a question and answer column on home owners' building problems in the Sunday edition of one of the local newspapers. The column states that questions submitted will be answered by registered architects. The idea has good publicity value.



ROBERT MACLEAN GLASGOW



HOUSE OF DR. MILTON BARKANN, JERSEY CITY, N. J.

GREVILLE RICKARD, ARCHITECT

Designed as a convertible two-family house which permits the owner to rent a five-room-and-bath apartment on the second floor until he is ready to occupy the entire house. The plans at the left show the house as arranged for two-family use. The plans at the right show the few changes required to make the conversion. Cubic contents, 44,200 cubic feet. Construction, brick with cork insulation. Roof, slate. Vapor heating, using oil



Above: The garden front after alterations were completed. At left: the original building showing alterations started

Few changes were made in the exterior when remodeling this old tavern built in the middle of the eighteenth century, although much restoration and some changes in the fenestration were necessary. Restorations were executed with faithful reproductions of the original design and where new work was required it was done with careful regard for background. The photograph at left shows the wide boards used for vertical sheathing under the clapboarding. Many of these fine old boards have been used in the paneling of the interior. The huge central chimney typical of the period, with its double and triple fireplaces, is a feature of the plan. A difference in grade between the front and rear of the house has allowed the placing of the dining room and kitchen in the half-basement

G. HARMON GURNEY  
ARCHITECT

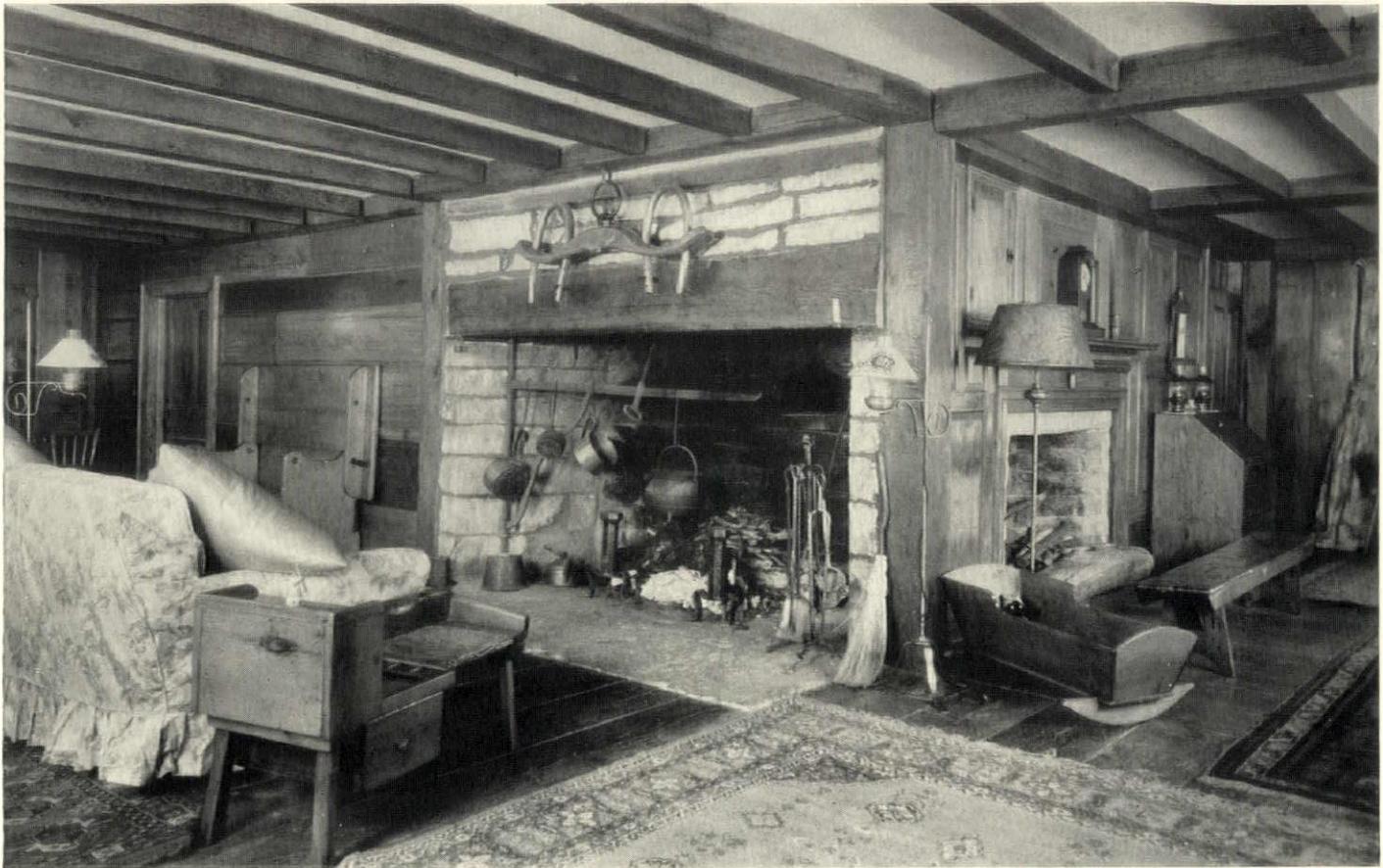
Photographed by Chas. E. Knell

REMODELED HOUSE FOR DR. JEROME WAGNER, OLD LYME, CONN.

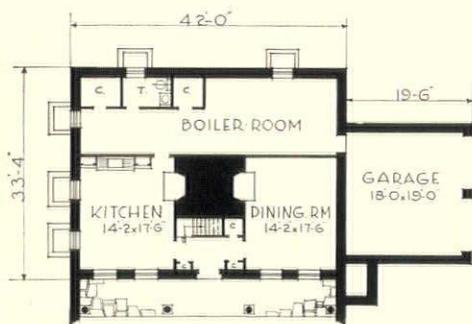


View from Road Showing Balcony and Basement Entrance

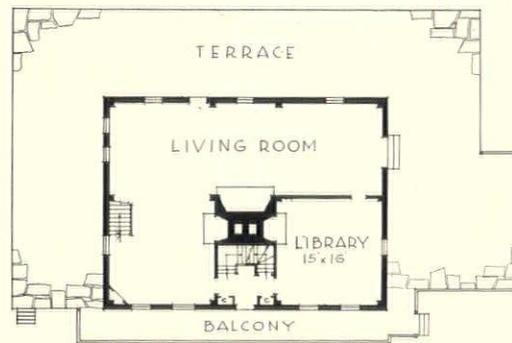
REMODELED HOUSE FOR DR. JEROME WAGNER, OLD LYME, CONN. G. HARMON GURNEY, ARCHITECT



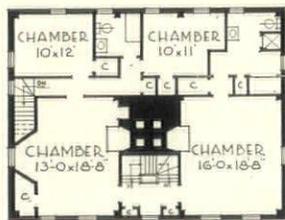
This house was originally an old tavern. One of the two fireplaces, now in the living room, was originally in the tap room



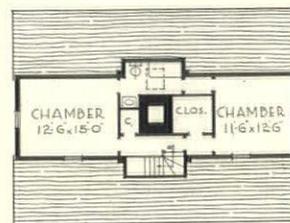
Basement Plan



First Floor Plan



Second Floor Plan



Third Floor Plan

REMODELED HOUSE FOR DR. JEROME WAGNER, OLD LYME, CONN. G. HARMON GURNEY, ARCHITECT



Original Corner Cupboard in the Living Room

REMODELED HOUSE FOR DR. JEROME WAGNER, OLD LYME, CONN. G. HARMON GURNEY, ARCHITECT

# HOUSEHOLD KITCHEN PLANNING

Prepared in Collaboration with Good Housekeeping Institute

Drawings by Charles G. Ramsey and Harold R. Sleeper

**R**ECENT developments in kitchen equipment and in the science of planning efficient household and apartment kitchens and pantries have progressed so far beyond standards formerly accepted that a new and important planning problem faces the architect today. In this article the principles and practices followed by leading authorities on kitchen planning are presented in a manner that simplifies their application to all types of residences and apartments.

## PRINCIPLES UNDERLYING THE PLANNING OF KITCHENS

**T**HE kitchen is a work center devoted to the storage and preparation of food and to washing dishes and utensils. To accomplish these basic objectives several principles of design should be observed:

(1) *Traffic not required for food storage, preparation or service should be segregated from the kitchen work areas.* This can be accomplished by arranging the service entrance so that traffic to other parts of the house need not pass through the kitchen. See Figure 1.

(2) *Non-working areas should be segregated from working areas in the kitchen proper.* This principle applies to breakfast nooks, to closets devoted to the storage of cleaning implements and other materials not used in the kitchen, to rest areas for servant or home maker and to planning desks or other non-essential facilities that can be placed elsewhere. See Figure 2.

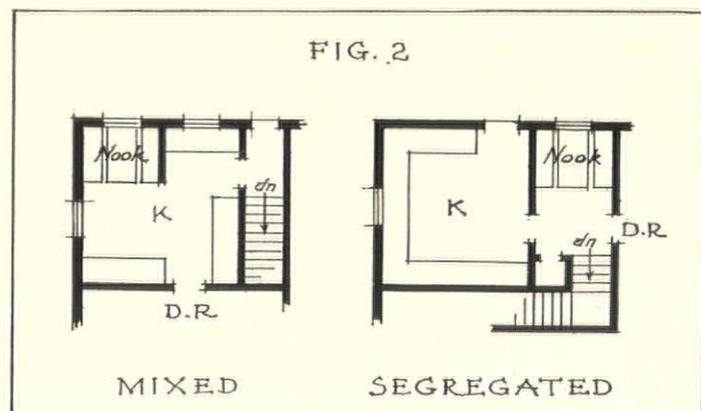
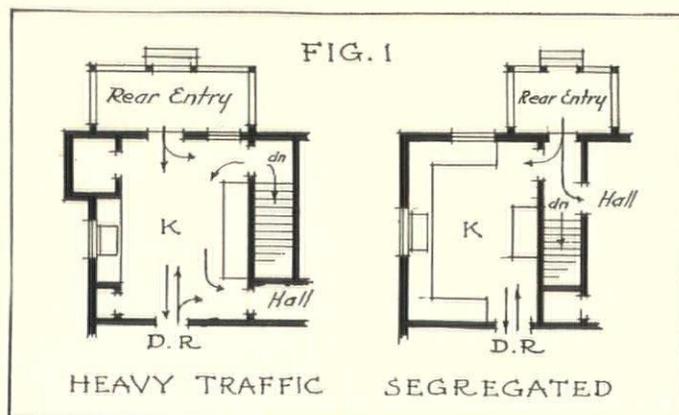
## ORGANIZATION OF EQUIPMENT

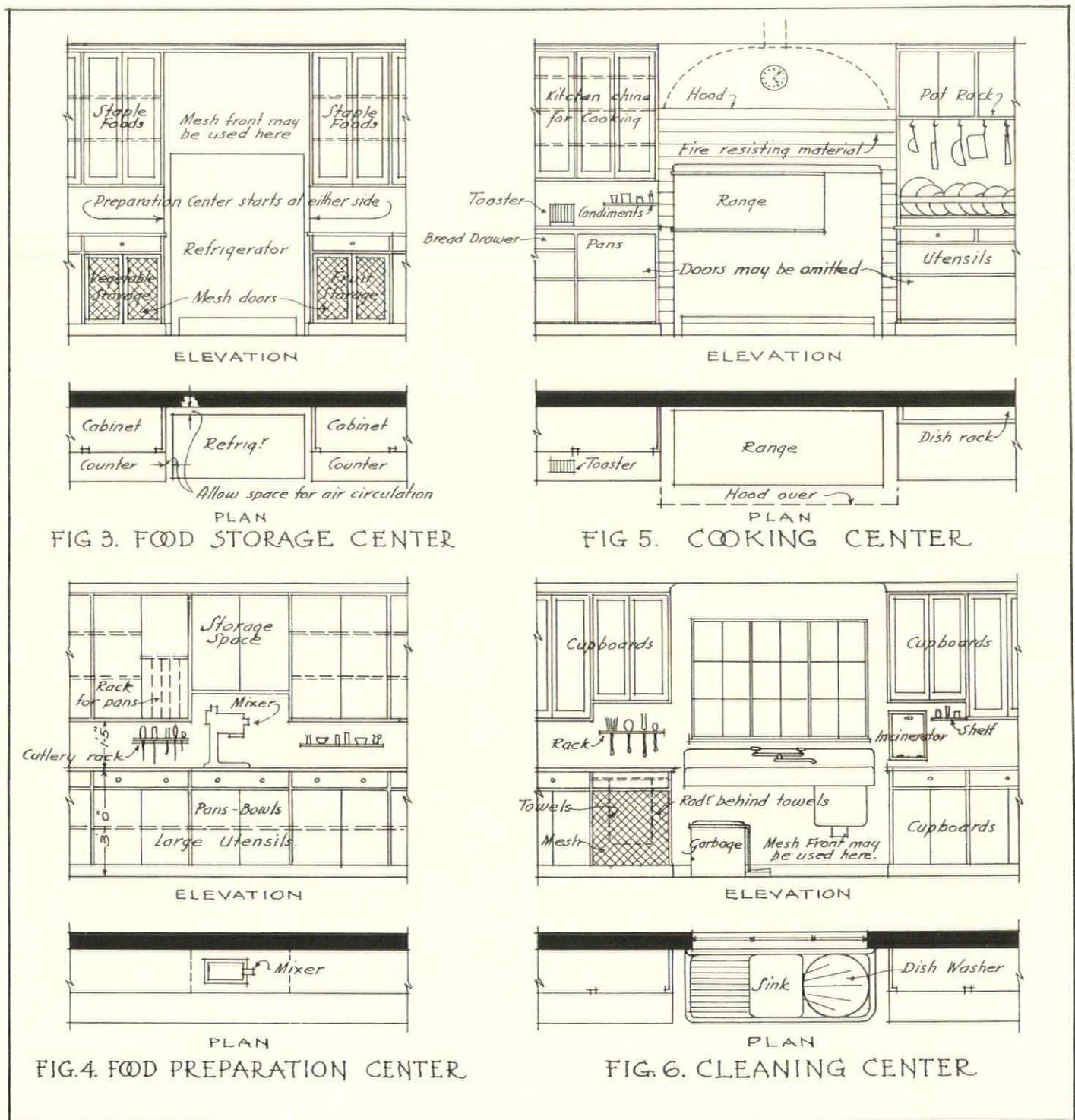
Kitchen operations arranged in normal sequence are: (a) receiving supplies; (b) storing supplies in cabinets or refrigerators; (c) preparing and mixing foods; (d)

cooking; (e) serving; (f) cleaning-up; and (g) restoring dishes and foods.

(3) *Kitchen equipment should be organized into work centers, each equipped to perform its functions efficiently.* These work centers are: (1) food storage center (Figure 3), including the refrigerator and storage space for non-perishable foods, utensils and appliances for preparing foods; (2) food preparation center (Figure 4), closely associated with or part of storage center; (3) cooking center (Figure 5), comprising the range and space for storing condiments and such utensils as are first used at the range; (4) serving center (not illustrated) consisting of a space where dishes ready for table service are assembled; and (5) cleaning center (Figure 6), including the sink, dishwasher, garbage disposal means (incinerator, hopper or garbage receptacle), towel racks or dryer, cleaning utensils and materials and cooking utensils, such as vegetable pans, first used at the sink.

(4) *All utensils and supplies should be conveniently stored at the point of first use or duplicated where used frequently at more than one point.* This principle can best be elucidated by a few examples: A frying pan is first used at the range, for it is usually heated before food is placed in it for cooking. It should, therefore, be stored at or very near the range. But a saucepan used for cooking vegetables, such as potatoes, is filled with the vegetable at the sink, hence it should be stored near there. Table china such as dinner plates, usually warmed before serving, should be stored near the warming oven or plate warmer while silver and glassware may be located as near to the dining room as possible as they are first used at that point. Serving dishes belong near the range or serving center. Similar considerations apply to all other utensils, dishes and supplies.





Duplication of certain equipment is desirable. For example, a few condiments and flavoring materials are needed both at the preparation center and at the cooking center; these should be placed at both points. Stirring spoons needed at the preparation center may have their counterparts at the range where food may be further mixed during cooking.

#### ORGANIZATION OF WORK CENTERS

(5) Theoretically the ideal arrangement of work centers is in the following sequence: Food storage center with its refrigerator should be near the service entrance. A work top at this point on which deliveries can be tem-

porarily placed before being distributed to their proper storage points is desirable. The storage center should be part of or adjacent to the food preparation center. Since water is needed both for food preparation and cooking, the sink may well be placed next to the preparing center, and the range beyond the sink. Work space between sink and range is advantageous for secondary cooking with appliances such as electric toasters, waffle irons or percolators and to provide clear space on which to place hot dishes removed from the range. The serving center should be adjacent to the door to the dining room.

Several typical arrangements of work centers in kitchens are shown in Figure 7. It will be observed

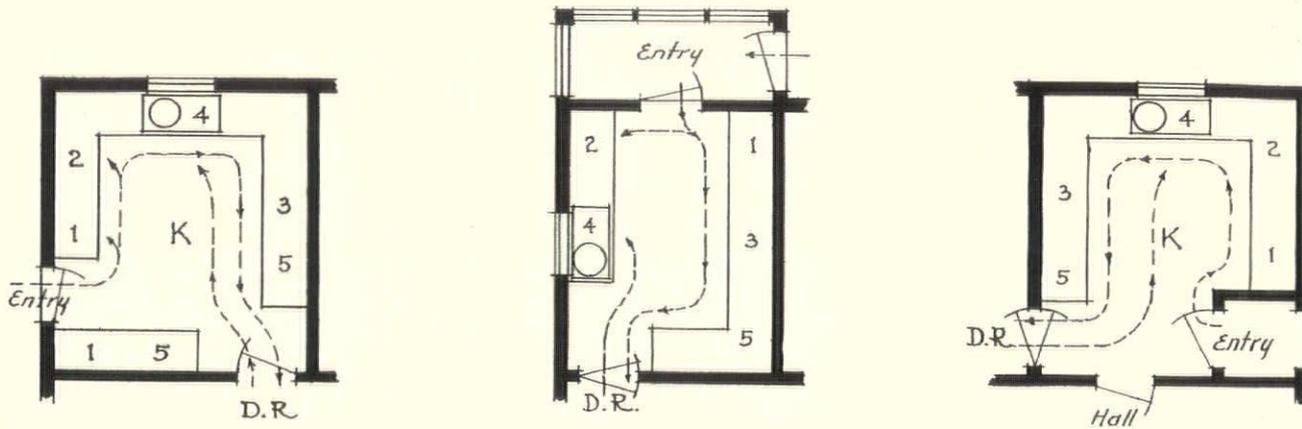


FIG. 7. TYPICAL KITCHENS WITHOUT PANTRIES

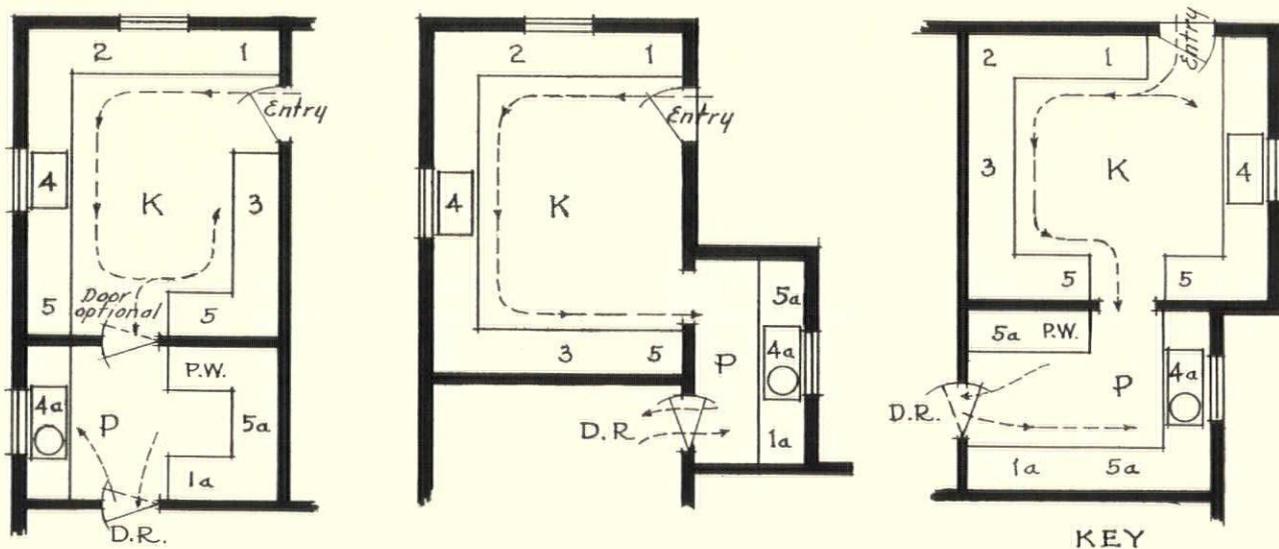


FIG. 8. TYPICAL KITCHENS WITH PANTRIES

- KEY
- 1 & 1a Food Storage Center
  - 2 Preparation Center
  - 3 Cooking Center
  - 4 & 4a Cleaning Center
  - 5 & 5a Serving Center
  - K Kitchen
  - P Pantry
  - P.W. Plate Warmer
  - D.R. Dining Room

that an exact sequence is not essential; the objective is to minimize waste motion and unnecessary steps.

### KITCHENS WITH PANTRIES

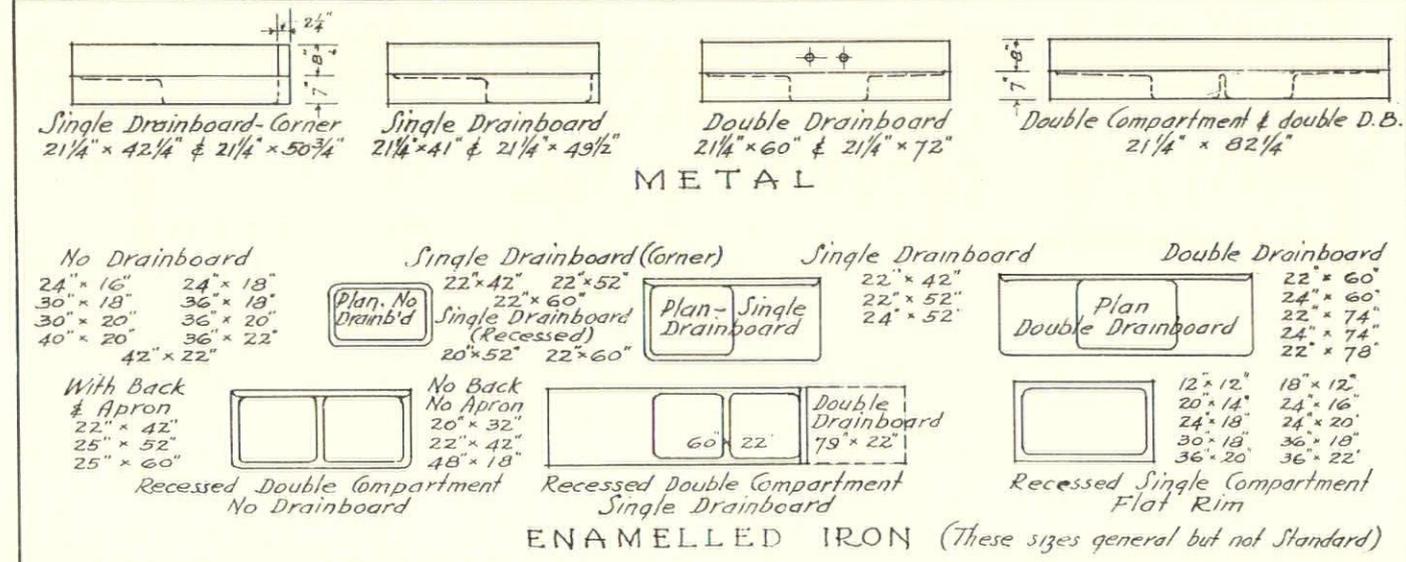
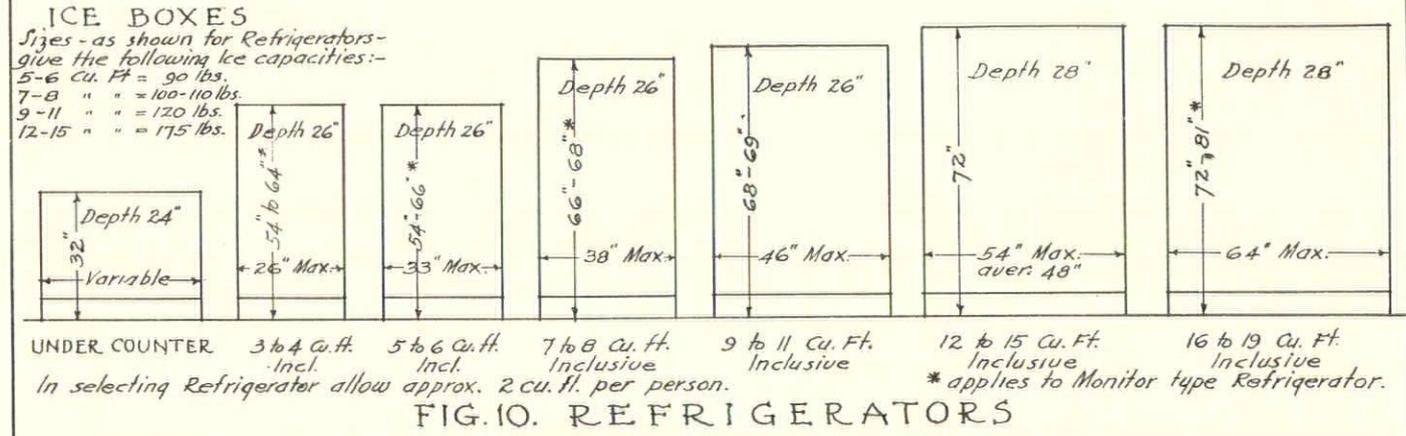
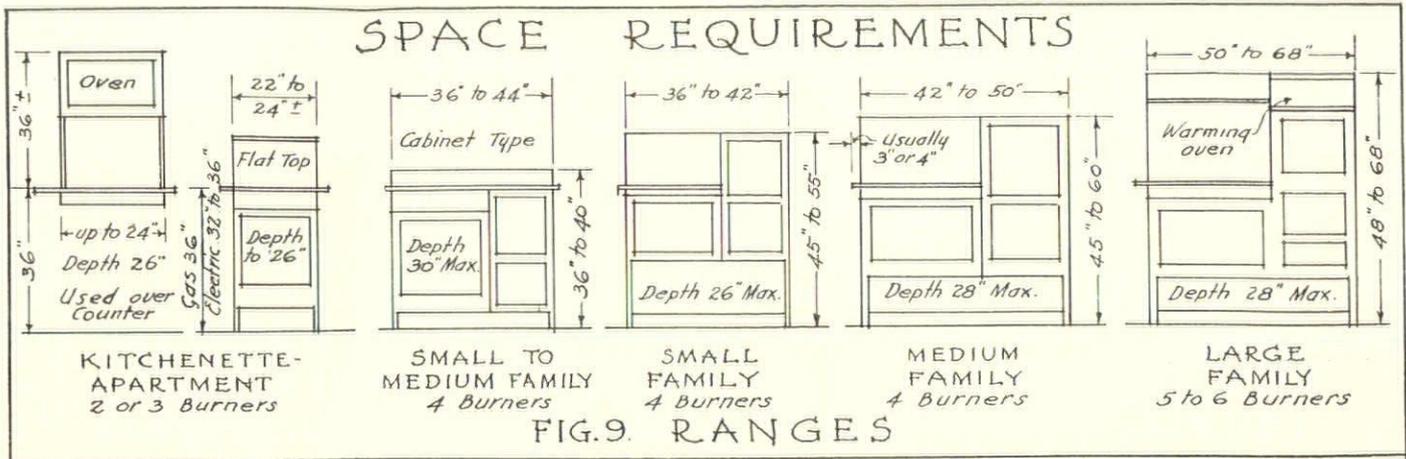
A pantry is a desirable adjunct to any kitchen, and particularly where one or more servants are employed.

(6) The pantry is primarily a serving and storage center in which dishwashing facilities may also be incorporated. To facilitate the preparation and service of such foods as may be prepared in the pantry a secondary refrigeration center (marked 1a on the plans in Figure 8) is desirable. This refrigerator is for salad materials,

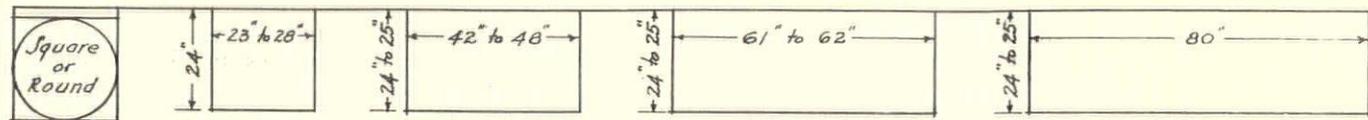
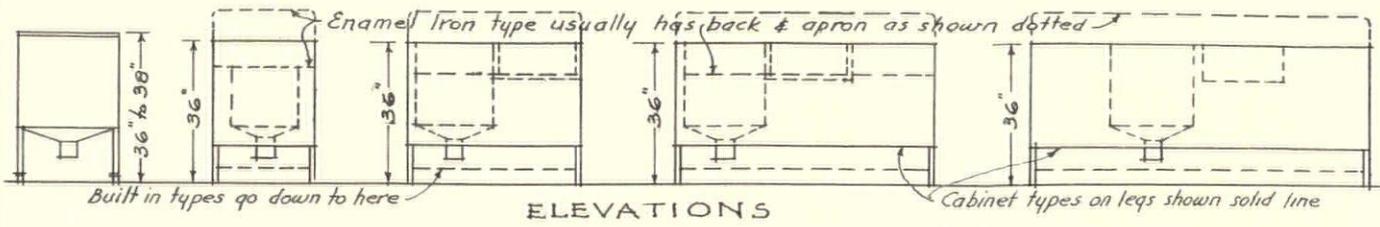
fruits, prepared table butter, chilled water, milk, bottled drinks, ice cubes and frozen or chilled deserts.

The pantry is also the proper storage place for glassware, table silver and such tableware as may not need warming before use. If an auxiliary plate warmer is located here all tableware except serving dishes may be stored in the pantry.

Frequently the pantry is used as a cleaning center for tableware, in which event the dishwasher sink may be located here (marked 4a on the diagrams in Figure 8). The cleaning center in the kitchen may then be a pot and vegetable sink. But since the pantry also serves as a "buffer" between kitchen and dining room to keep



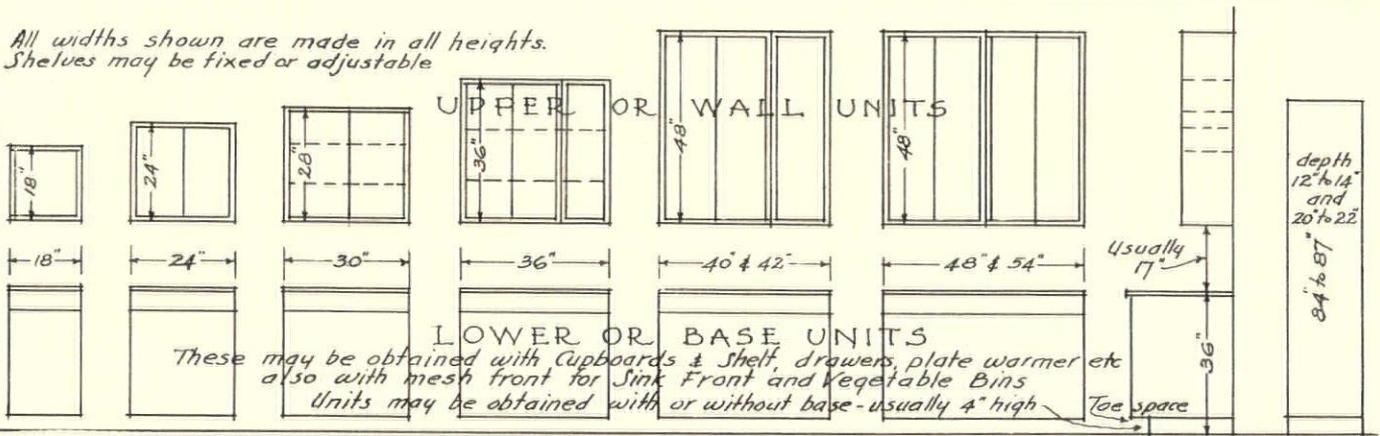
# SPACE REQUIREMENTS



PORTABLE WASHER. WASHER & SINK or WASHER & DRAINBD. WASHER, SINK & DRAINBOARD. WASHER, SINK & 2 DRAINBOARDS

FIG. 12. ELECTRIC DISHWASHERS

All widths shown are made in all heights. Shelves may be fixed or adjustable



ELEVATIONS

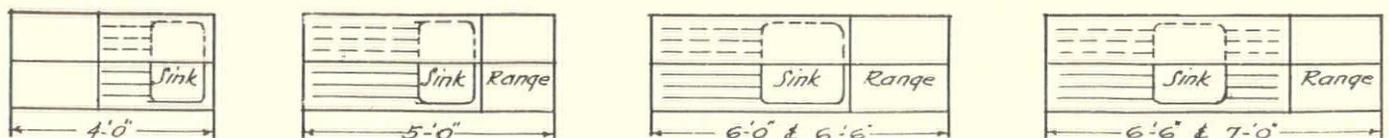
Section Elevat<sup>n</sup> SIDE UNITS Brooms etc

Units are often assembled with base and wall unit connected with splash back. Many other sizes are available but the above are very generally made

FIG. 13 CABINETS & CUPBOARDS - STEEL & WOOD STOCK



ELEVATIONS



Many manufacturers make units similar to above - varying arrangements to fit such spaces, with or without filler pieces to scribe to walls at ends.

FIG. 14 ASSEMBLED KITCHENETTE & COOKING UNITS - METAL or WOOD

sounds of kitchen work from reaching the dining room, some planning authorities object to using the pantry as a dishwashing center. In other cases, where most of the table china is kept in the kitchen for warming before service, and only glassware, silver and incidental tableware is stored in the pantry, a special glass and silver cleaning sink is provided in the pantry and all other cleaning is done in the kitchen.

## DOORS, WINDOWS AND PLANNING DETAILS

(7) *Doors to the kitchen should be limited in number to two; if more, they should preferably be at one end of the room.*

(8) *Three walls should be left clear for equipment arranged in a U-shaped plan.*

These two principles are interrelated, and if followed lead to a simple and efficient organization of the work centers. Where possible, doors to the kitchen should be limited to one leading to the service entrance hall and one to the pantry or dining room. When more than two doors must be provided, they should be located at one end of the room (not necessarily in one wall) to leave three walls clear for equipment.

The U-shaped plan thus formed provides space for wall and floor cabinets, the latter having tops forming a continuous work space around the three walls. One window should be placed over the sink. If two or more are used the others should be located to interfere as little as possible with the placement of wall cabinets. Sills of windows placed over sinks should be 44" to 48" from the floor, depending on the height of the sink and its splashback, and the detailing of the stool and trim.

(9) *Doors should swing against unused wall spaces to avoid hazards at working centers.* The mental hazard of having a door opened suddenly against a person working at a point behind the swing of the door usually leads to avoidance of the use of work space in such locations. By placing doors at the corners of the room, they can be made to swing against walls with a minimum sacrifice of space. It is desirable also to have the door from the pantry or kitchen in a corner of the dining room to leave wall space for the customary furniture.

## SIZE AND CAPACITY

No standard sizes of kitchens in relation to their food service capacity can be established, for capacity depends as much upon the way equipment is managed as upon the volume of food handled at one time.

In planning household kitchens, the architect should take into consideration the following factors:

(1) Available space in the plan.

(2) Number of persons normally living (and eating daily) in the house or apartment. Where the number is not known, as in rented apartments or houses, the number of bed rooms will serve as a guide.

(3) Frequency and extent of entertaining at meals. A factor in average entertaining capacity is the amount of tableware possessed by the owner; another is the size of the dining space.

(4) The food service capacity and corresponding space requirements of the several kinds of kitchen equipment needed. See Figures 9 to 14 inclusive, and the text relating to each type of equipment which follows.

(5) Unless the various work centers are assembled as

a continuous unit around the room, a space of 4 to 6 inches must be allowed between units to permit cleaning.

In practice these factors can be reduced to the following approximate dimensions. Small kitchen 8' x 10' to 10' x 10'; medium sized 10' x 10' to 10' x 12'; large, over 10' x 12' as required to accommodate equipment. Kitchenettes may be much smaller as indicated in Figure 14.

The width of the U-shaped work area should be, if possible, approximately 10 feet. Cabinets with work tops are approximately 2 feet wide, taking up 4 feet of the gross width and leaving a 6-foot clear floor area. This gives space enough for two persons to work in the kitchen at once, without interference. Narrow kitchens of 7'6" to 8' gross width are permissible but may be inconvenient when under heavy entertaining load.

## COOKING EQUIPMENT

The capacity of a range is determined by (1) area of cooking top and number of burners or heating elements, which controls the size and number of utensils in use at one time; (2) number and size of ovens, fixing the size of the largest roast or the size and number of pies or cakes that can be cooked simultaneously; and (3) multiple ovens, or separation of broiler and oven, which permit two or more types of cooking at once. For approximate sizes see Figure 9. Architects should consult their clients on range size and should generally advocate liberal capacity for maximum convenience.

A hood with adequate natural or forced ventilation should be placed over any range, whether gas, electric, oil or coal burning. The hood should be 6'6" from the floor and should project from the wall to a point above the outside face of the range. Unless adjacent cabinets or work tops are of steel or other fireproof material finished to withstand heat, the range should be separated 4 to 6 inches from equipment on either side. Where possible this space on the cooking surface side of the range should be bridged with a removable metal shelf as it is highly desirable to have a clear work surface close to the range upon which hot utensils taken from the range can be placed without lost motion.

## REFRIGERATORS

The main food storage refrigerator should be placed *in the kitchen* as part of the food storage center. Capacity should be based on a minimum of 2 cubic feet per person normally served; consideration being given to extent of entertaining, marketing customs and the client's special requirements.

Mechanical refrigerators with built-in units usually require natural or forced air circulation for cooling the condensers. Some are designed with flues to take air from the floor, others rely upon air spaces around the sides or top of the cabinet for circulation. Unless the exact ventilation requirements of the unit to be employed are known, a space of at least 4 inches at both sides, 2 inches at the back and 12 inches above the top, should be left between the refrigerator and any built-in surfaces.

## SINKS AND DISHWASHERS

The size of a kitchen sink should be large enough to wash conveniently the largest cooking utensil used

in the range and the largest serving platter or dish. Wherever space permits sinks should be equipped with double drainboards, one for soiled dishes and the other for cleaned dishes.

Experts differ on the proper height of the sink from the floor. One authority gives 36" to the rim as minimum; 39" as maximum. Another believes that if toe-space is provided under the sink, the rim can be as low as 35" from the floor. If the sink is set flush with the continuous work tops on either side the normal work top height for both sink and table may be 36".

Dishwasher capacities are gauged by the amount of tableware they can handle in one washing. They may be located in the kitchen or the pantry, or in large residences, in both. A sink is an essential adjunct for washing utensils, as well as for preparing vegetables. Combination units are commonly employed. For approximate dimensions see Figure 12.

### FOOD PREPARATION EQUIPMENT

The food preparing, combining and mixing center consists of a work top, a mechanical food mixer with its various accessories (desirable but not essential to the center), and storage space for bowls, mixing utensils, cutting boards, flour bin, condiments, and such pans and cooking utensils as are first used at this point. Cab-

inet space below and above this work top, fitted with appropriate drawers, shelves and racks are the principal units. For approximate dimensions of units suitable for this purpose see Figure 13.

The size of this work center is variable and practically indeterminate. It should be generous as to work space; a work top length of at least 48" being desirable.

### INCINERATORS

The hopper leading to a built-in garbage incinerator in the basement is ideally located at the sink. Since such incinerators require a special flue this location may not be possible, and only slight inconvenience is caused by placing the hopper elsewhere. If the range is connected to the chimney containing the incinerator flue, it may be possible to place the hopper on the sink side of the stack and the range beyond.

Where the basement incinerator is not equipped with hopper and chute from the kitchen, or where no incinerator is provided, a garbage receptacle should be part of the cleaning center equipment.

### CABINETS AND RACKS

No fixed rules apply to the amount of cabinet space required in kitchens and pantries. It is advisable to

TABLEWARE STORAGE — In Kitchen and Pantry Cupboards and Cabinets

| TABLEWARE  | Lineal Feet of Shelf Space             |  | TABLEWARE   | Lineal Feet of Shelf Space             |   |
|--|--|--|---|--|---|
|  | In Wall Cabinets with Shelves 12" Wide | In Floor Cabinets with Shelves 20" Wide              |   | In Wall Cabinets with Shelves 12" Wide | In Floor Cabinets with Shelves 20" Wide |
| <b>CHINA</b>   |  |  | <b>GLASSWARE</b>                                  |  |   |
| 12 Service Plates.....   | 1' 0"                                  |  | 12 Tumblers 2¾ to 3" diameter                     | 10" to 12"                             |   |
| Dinner Service for 12—4 sizes of plates. Demi-tasse service and related china..... | 5' 6"                                  | 1' 6" for platters                                   | 12 Grapefruit Bowls 5" diameter                   | 1' 6"                                  |   |
| Luncheon Set for 12—Plates, cream soup plates and related china.....               | 1' 4"                                  | 1' 6" if platters are not same as for dinner service | 12 Sherbet or Champagne Glasses 3½" diameter..... | 1' 4"                                  |   |
| Breakfast Set for 12—Coffee, eggs, cereal, cream and sugar, etc.....               | 2' 6"                                  | See note below for trays                             | 12 Cocktail or Wine Glasses 2¼"                   | 8"                                     |   |
| Tea Set for 12.....  | 3' 0"                                  | See note below for trays                             | 12 Cordial Glasses 1¾".....                       | 4"                                     |   |
| Salad Service, Glass or China for 12.....  | 8"                                     | 1' 0" for bowl                                       | 12 Finger Bowls—stacked....                       | 6"                                     |   |
|  |  |  | 12 Celery-Olive Comports.....                     | 8" or more                             |   |
|  |  |  | 1 Punch Bowl 3¾ gal.....                          |  | 1' 6" each                              |
|  |  |  | 1 Pitcher, Decanter, etc.....                     | 6" each                                |   |
|  |  |  | Vases, Candlesticks, etc.....                     |  | Variable                                |

Note: Cups in above sets are assumed to be stored in stacks of 4 saucers and 1 cups nested on top.

#### STORAGE FOR TRAYS

Small Trays: Provide in upper cabinet or between counter and upper units a series of thin vertical partitions 1" apart to receive small trays.

Large Trays: Provide in lower cabinet a series of thin vertical partitions 1½", 2" and 3" on centers to receive large trays. Wire racks may be used to form partitions.

*Rule for Estimating Space Required.* For complete table service for 12 people, including china, glass, linen and silver, without duplications or reserve space, allow 6 feet of wall space fitted with (a) upper cabinet with 3 shelves 12" wide . . . totaling 18 lineal feet; and (b) lower cabinet with 2 shelves 20" wide . . . totaling 6 lineal feet. Add allowances where possible for duplications and miscellaneous articles.

#### DRAWER HEIGHTS

For Flat Silver: 2" to 3" high, fitted with silver racks or with division strips front to rear 2" and 3" o.c.

For Doilies: 2" to 3"; for Mats, Runners, etc., 3" to 3½"; for Napkins, Table Cloths, etc., 6" to 8½"; for Table Pads, 8" to 10".

provide as much storage space as the walls of the room will permit, assuming the kitchen is not over-size in plan. Food storage requirements vary with local or individual marketing habits. Dish storage requirements are indicated in the table on page 97.

All space below working surfaces, including where possible the space below sinks and ranges, should be filled with storage cabinets fitted with shelves, drawers, bins or suitable racks for storing the materials and utensils used at the several work centers. All such cabinets should be set on recessed bases to provide a toe-space 4" deep and 3" to 3½" high. The floor covering should be carried into these spaces and preferably turned up to form a sanitary cove. Stock cabinets not equipped in this manner can usually be mounted on recessed bases. Advanced practice recommends the mounting of ranges and refrigerators in the same manner so that there is no inaccessible floor surface to keep clean.

Wall cabinets may be placed 16" or 17" above the work tops and may extend to 7'3" above the floor. Shelves in cabinets higher than this are inaccessible and cannot be efficiently used. Wall cabinets, like floor cabinets, should be fitted with shelves or racks appropriate to the things to be stored.

#### WARMING CABINETS—TOWEL DRYERS, ETC.

Special cabinet fittings may include: (1) a warming cabinet for dishes; (2) a towel dryer; (3) tray and platter cabinet (with vertical racks for storage on edge); (4) flour bin, above or below the work top, in a metal drawer or tip-out bin; (5) special racks for holding utensils and dishes for maximum convenience.

The warming cabinet and the towel dryer may be electrically heated or equipped with steam or hot water coils. A towel dryer may consist of sliding racks placed in a ventilated cabinet section with the radiator supplying heat to the kitchen at the back.

#### WORK TOPS

The space economy and sanitary advantages of continuous built-in work tops recommend them over separate units. Materials approved by leading authorities include monel metal, stainless steel, battleship linoleum, acid resisting porcelain (usually for separate units), phenolic compounds, ceramic tiles and well oiled hard wood. Work top height may be 35" from the floor if toe-space is provided; or 36" without. Depth is usually 24" to 25". A splash back extending from the work top to the soffit of the wall cabinets may be made of the same material as the work top with a coved or sealed joint to aid in cleaning.

#### VENTILATING FANS AND HOODS

Mechanical ventilation of kitchens has become a requisite. Fan should be of adequate size and power to effect a complete change of the air in 3 to 5 minutes. The fan should not be placed over a window as it will recirculate incoming air when the window is open; a better practice is to locate it as far as possible from the window for cross ventilation. The fan may be placed within the range hood or connected by a duct with the hood to assure maximum air movement at that point. Discharge to the outer air should be located so that odors will not reenter other windows. A coved ceiling spring-

ing from the cabinet tops may be used to form a continuous duct that permits placing the fan at any convenient point.

#### ELECTRIC CLOCK

Provision should be made for an electric clock for timing food preparation and cooking operations. A wall outlet for it with a hanger attachment should be located at a point where the clock will be easily visible from the range and preparation center.

#### ELECTRIC LIGHTING

High intensity illumination at the work surfaces with complete freedom from both glare and deep shadows is a requisite. A central fixture alone will seldom suffice as it casts the shadow of the operator upon the work before her. A coved ceiling at the cabinet line (see diagram at left side in Figure 15) will reflect light down on the work tops effectively. In the typical kitchen 10' x 10' or 10' x 12' a central ceiling unit of 150 watts capacity will give proper intensity if supplemented by a 40 to 60 watt light over the sink and dishwasher and 40 to 60 watts over the range.

Soffit or panel lighting is advocated, recessed in the ceiling at the cabinet line between wall cabinets over sink and range, or occasionally beneath wall cabinets. When mounted at the usual ceiling height, at least 60-watt lamps are recommended. These should be mounted in suitable recessed boxes behind a removable frame glazed with flashed opal glass. No exposed fixtures should be placed within normal range of vision unless the lamp is effectively shielded against glare. Where small bracket fixtures are used, as shown in Figure 15 (right hand drawings) and in the small elevations in Figure 16, 40-watt lamps are recommended.

#### RANGE WIRING

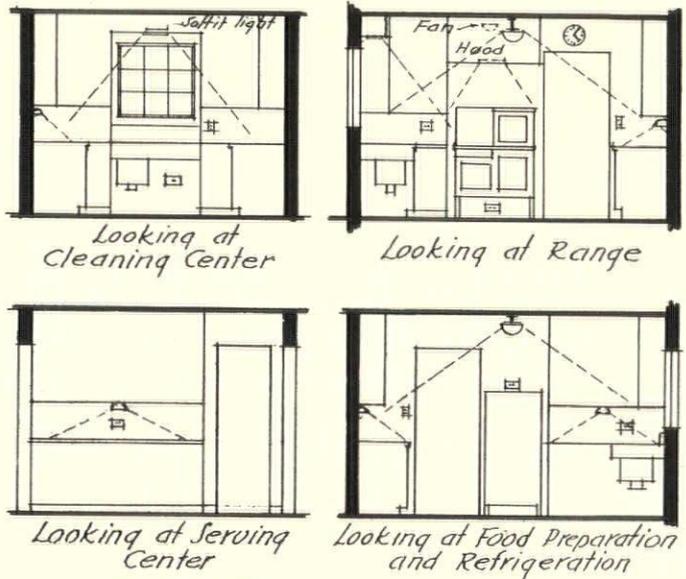
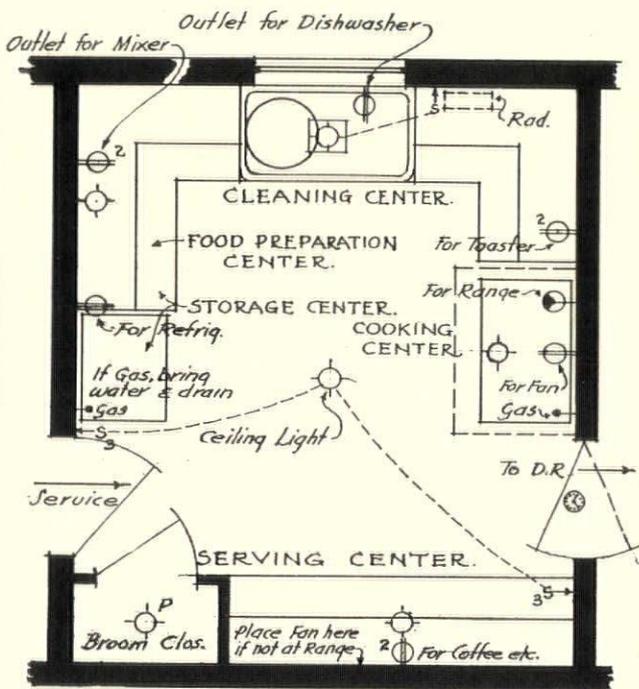
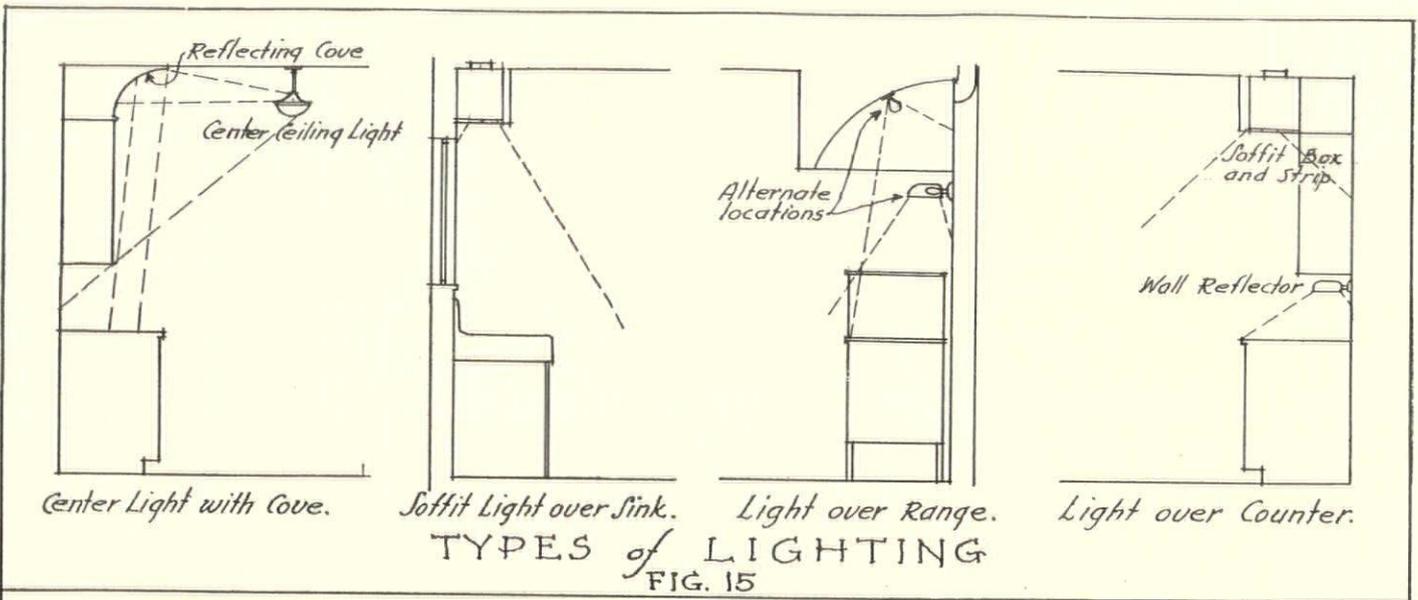
Electric ranges require a special power circuit from the meter, provision for which should be made in the wiring layout. Range loads vary but may run to 8 kilowatts; wire sizes should be computed for a loss of potential from the panel board not exceeding 1½ volts. Special flexible connectors with polarized three-wire plugs are made to permit removal of range for cleaning or other purposes.

#### GENERAL WIRING LAYOUT

All-electric kitchens may have a connected load of 12 to 15 kilowatts, including 8 to 10 kw. for the range. Since the National Electrical Code limits ordinary circuits to 1500 watts and the newer "Standards of Adequacy" recommend 1000 watts maximum, it is obviously desirable to provide several circuits in addition to the range power circuit, for lighting, portable appliances and for refrigerator, dishwasher, ventilating fan, clock and other devices. These circuits should be planned so that none can be overloaded by the simultaneous operation of more units than they are designed to serve.

A check-list of outlets and their approximate capacities follows:

Food Storage Center: Electric Refrigerator outlet. Operating load 100 to 250 watts, starting load may reach 1500 watts for brief period.

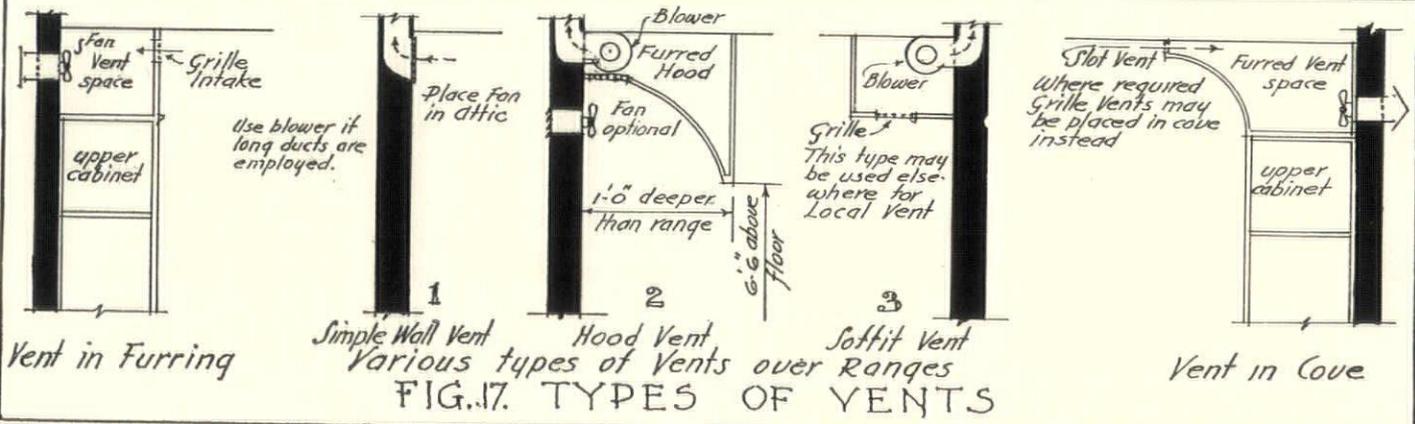


ELEVATIONS of KITCHEN

- SYMBOLS
- Ceiling Light
  - ⊙ Wall outlet
  - ⊙ Switch
  - ⊙ Power Outlet
  - ⊙ clock
  - P Pull chain
  - ⊙ Soffit Reflector

PLAN of KITCHEN    Fig. 16

DISPOSITION of SERVICE CONNECTIONS in RELATION TO THE FOUR MAJOR WORKING CENTERS



Food Preparation Center: Duplex convenience outlet above work top for mixing machine 100-350 watts, and for toaster or other portable appliance 500-1,000 watts. Optional outlet for soffit light 60 watts, with switch.

Cleaning Center: Soffit or wall lighting 60 watts, with switch. Outlet below sink for dishwasher, 300 to 400 watts operating load with 1,200 to 1,500 watts starting load.

Cooking Center: Duplex convenience outlet for toasters, percolators, waffle irons, etc., each requiring 500 to 1,000 watts. Should have separate circuit to prevent overloading. Range wiring outlet, special type on separate power circuit of 8 to 10 kw. Light over range 40 to 60 watts, with switch. Ventilating fan outlet 100 to 200 watts, with switch. Electric clock outlet.

Serving Center: Duplex convenience outlet for miscellaneous appliances. Optional: light over counter.

Pantry: Dessert and salad refrigerator outlet. Duplex convenience outlet for portable cooking appliances. Optional: outlet for dishwasher; outlet for light over sink; outlet for warming oven or other special equipment. All pantry outlets should have the same capacities as the corresponding outlets in the kitchen.

General Lighting: Ceiling fixtures for 150 watts in kitchen with 3-way switches at service entrance and dining room or pantry door. Ceiling fixture for 100 watts in pantry with 3-way switches at kitchen and dining room doors.

Wire sizes should be computed for the loads to be carried on each circuit. No wire smaller than No. 12 gauge should be used on any kitchen or pantry circuit.

#### TELEPHONE, BELL CALLS, RADIO

A telephone in the kitchen is a time-saving convenience, enabling either the owner or servant to answer calls while supervising cooking operations. For such purposes a French type telephone near the range or at the preparation center is advantageous.

Bell calls for front and rear doors and a servants' annunciator or dining room buzzer should be placed in the kitchen or pantry.

A secondary radio reproducer or a small radio receiver has a proper place in the kitchen, whether servant or owner operated. The ability to hear favorite programs while at work lightens routine labor and makes for contentment.

#### GAS CONNECTIONS

Gas connections as prescribed by the local utility company should be brought to the range and refrigerator locations. If bottled gas is employed, provide pipe sizes as recommended by manufacturers.

#### PLUMBING CONNECTIONS

Hot and cold water connections and drains should be brought to the cleaning center to serve both sink and dishwasher, and to the corresponding unit in the pantry. Hot water heating equipment should provide a water temperature of at least 160° F. for dishwashers. Cold water supply may be carried to refrigerator location for units that require water cooling, with a drain to an open trap in the basement. Some gas refrigerators are air-

cooled. It is worth noting that the proper location of the sink and dishwasher in the kitchen and pantry is more important than the slight economies that might be made by combining the drainage line and vent with lines serving bathrooms or other units.

#### HEATING

The radiator should not be located beneath the sink unless a duct is provided to carry the warmed air away from the operator working at the sink. A suggested location is at the back of a towel dryer located in a vented cabinet at either side of the sink.

#### SURFACE MATERIALS AND FINISHES

The objectives in selecting surface materials for floors, walls, ceiling, trim and built-in equipment are: (1) Ease of cleaning; (2) resistance to soiling or staining by food acids and greases; (3) durability under frequent cleaning and high relative humidities; and (4) decorative value.

#### FLOORS AND BASES

These qualities are found in several floor materials. Linoleum is approved by all leading kitchen planning authorities, some of whom recommend avoidance of embossed patterns and use of variegated colors as aids in maintaining appearance. Rubber tile is also approved in household kitchens where spillage is promptly cleaned away. If greases are ground into rubber tile the flooring eventually softens. Ceramic tile and hardwood floors are standard types. Cork tile, asphalt tile, magnesite, terrazzo and other established materials are less commonly employed, though possessing the requisite qualities in varying degree.

Sanitary cove bases should be employed wherever possible to simplify maintenance. They should be carried into the spaces beneath cabinets and all other built-in equipment.

#### WALLS AND WAINSCOTS

All washable wall finishing materials are acceptable in the kitchen. The list includes: paints, enamels and lacquers in formulas recommended by their manufacturers; ceramic tiles, vitrified stones and glass; enamelled metal tiles; sheet asbestos-cement wainscoting; phenolic compounds in panel form; linoleum wall coverings; and washable wall fabrics, etc. Cabinet surfaces, covering a large proportion of the wall, should be finished with porcelain or suitable enamels or lacquers.

#### CEILING

For proper light diffusion, ceilings should be white or very light in tint. To withstand high relative humidities and occasional cleaning they should be painted with flat or gloss paints or enamels.

#### WOODWORK, DOORS AND TRIM

To simplify maintenance all doors and trim should be of simple pattern with mouldings easy to clean. Flush panel doors are recommended; elimination of all unnecessary trim is advisable.



## THE GENERAL ELECTRIC KITCHEN

Since the kitchen has become the new "guest" room of the home to be shown with pride, it must reflect quality and beauty; since it is the work center of the home it must be planned and equipped to end drudgery.

**I**N modern homes and apartments, the trend to all-electric kitchens is becoming more and more pronounced. For the modern homemaker, an electric kitchen means new hours of freedom every day—relief from the monotony of disagreeable kitchen tasks — release from the drudgery that has too long been a necessary part of daily kitchen duties.

A General Electric Kitchen banishes needless work and waste, introduces new efficiency, saves steps . . . is cool, clean and comfortable. Electricity preserves the food, cooks the meals without constant supervision — and even washes and dries the dishes. A snap of a switch and electric servants swiftly, silently accomplish tasks that require hours of time

in the conventional kitchen. The "workshop" of the home, where the average woman now spends nearly one-half of her waking hours, becomes one of the most attractive, efficient, and enjoyable rooms in the home—the new "guest" room of the house.

To enjoy the advantages of a General Electric Kitchen costs surprisingly little. Savings effected on food economies alone will help pay for it. It is a thrifty investment for any family. Architects, builders and building managers alike are more and more realizing the value of including General Electric Kitchens in their plans. They help sell homes and help lease apartments. General Electric Co., Specialty Appliance Sales Dept., Section AA-7, Nela Park, Cleveland, Ohio.



GENERAL  ELECTRIC  
KITCHEN INSTITUTE

# Planning Service

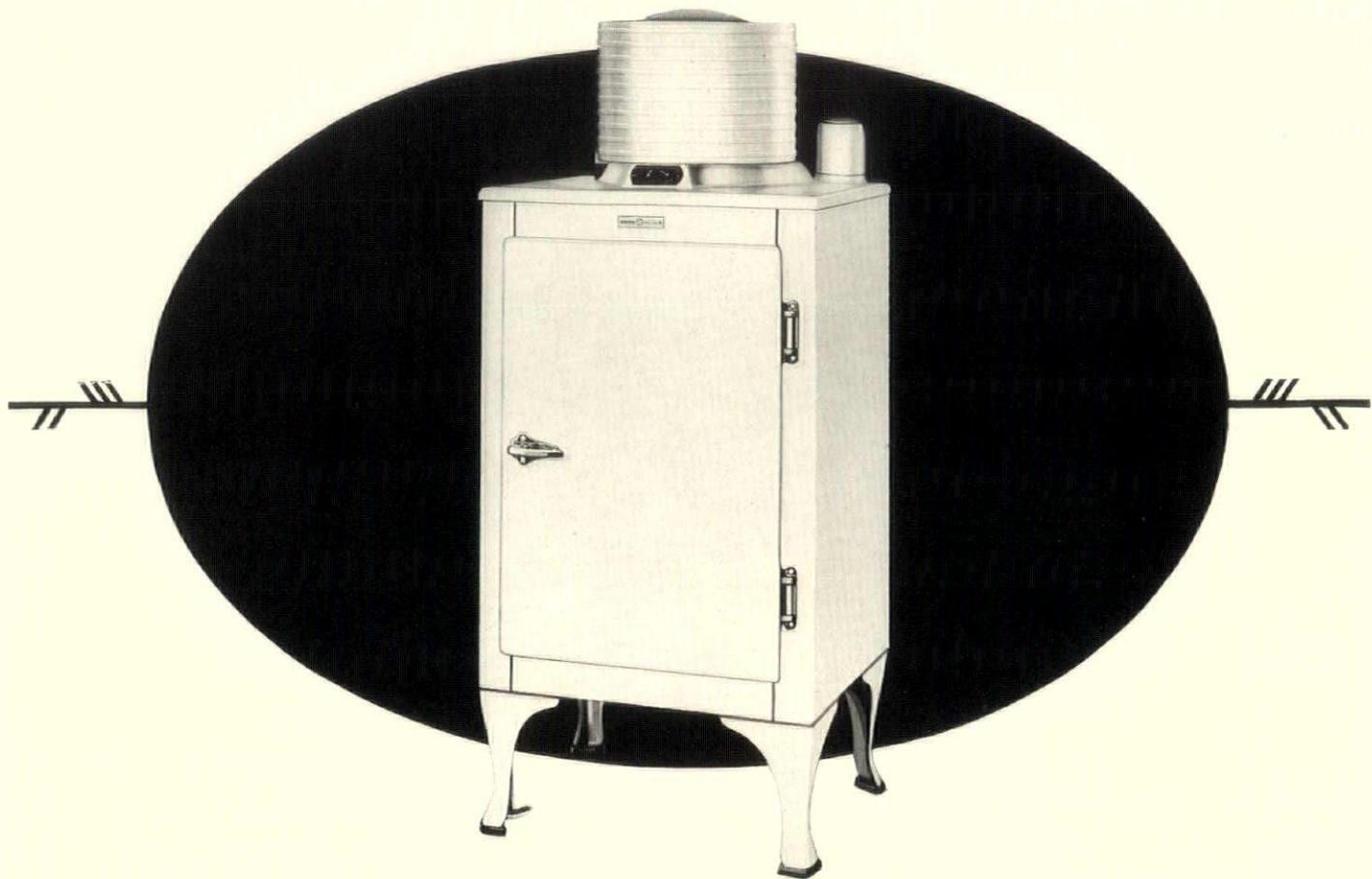
*for Architects and Builders*

AVAILABLE without charge to architects, builders and apartment owners, the G-E Kitchen Institute Planning Service will gladly cooperate on any planning, remodeling or modernizing project. G-E Institute architects, designers and home economic experts are ready to assist you with model plans and arrangements, specifications and installation details for any type and size of General Electric Kitchen for any type and size of dwelling. General Electric invites you to make free use of this cooperative service. General Electric Co., Specialty Appliance Sales Dept., Section AA-7, Nela Park, Cleveland, Ohio.



No kitchen is too small or too large for General Electric Kitchen planning.



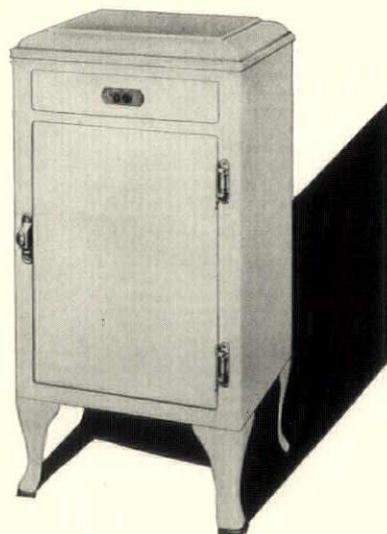


# GENERAL ELECTRIC

## REFRIGERATORS

**B**ORN of research, correct in design, proved in service—the General Electric Monitor Top Refrigerator is universally recognized as the standard of refrigeration excellence—and is lowest in ultimate cost. Today, one out of every three homes with modern refrigeration has a G-E Monitor Top.

No other refrigerator has matched the Monitor Top mechanism for dependable, trouble-free service. Within walls of ageless steel, every moving part is sealed against air, dirt and moisture; safe from neglect or abuse; requiring no attention—not even oiling. Carries the unparalleled *4-Year Service Plan* of General Electric—world's largest electrical manufacturer.

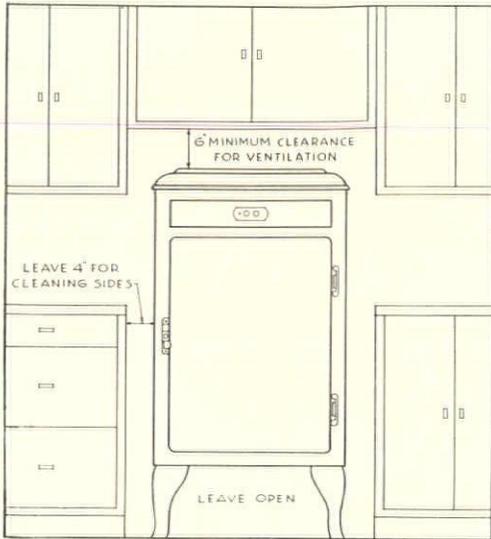


The new G-E flat top models offer features never before available in refrigerators selling in the lower-priced conventional class.

General Electric's new line of Monitor Top refrigerators again sets new standards of beauty, styling, convenience and value. The new 10-STAR G-E freezes more ice faster, uses less current, and is Guaranteed 4-Years against failure of the sealed-in-steel internal mechanism. New all-steel cabinets are gleaming white porcelain inside and out, beautifully modern in appearance — styled along lines the years will not obsolete. In the complete G-E refrigerator line is a model, size and price for every type of home and apartment. And today's prices are lowest in all G-E history. General Electric Co., Electric Refrigeration Dept., Section AA-7, Nela Park, Cleveland, Ohio.

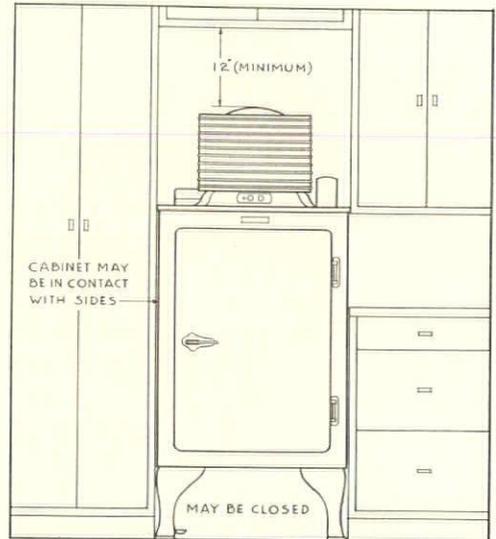
# GENERAL ELECTRIC

## REFRIGERATORS

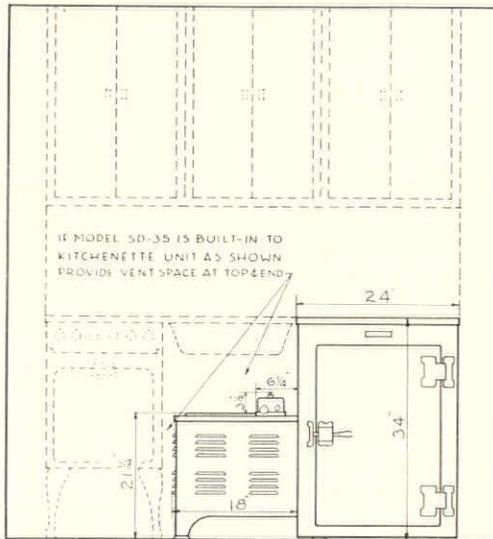


### CLEARANCES

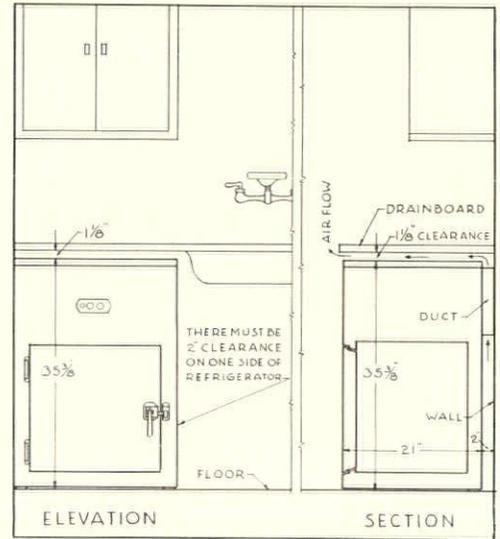
At left: Flat-top Refrigerators should be "free standing" for proper circulation of air around the condenser.



At right: Monitor-top Refrigerators may be built in to cabinets and recesses if 12" clearance is left above monitor. Legs may be removed for mounting on closed base, if the foot pedal door opener is not retained.

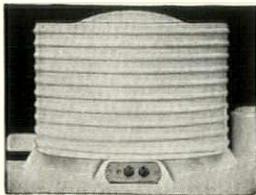


At left: Model SD-35 may be used beneath work-tops. Unit is furnished on either side of cabinet.

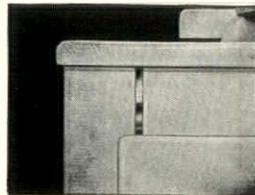


At right: When Model HE-3 is used below a work top, ventilation space must be left as shown. Side clearance may be on either side.

### GENERAL ELECTRIC REFRIGERATOR FEATURES



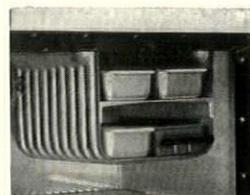
New Monitor Top



All-Steel Cabinet



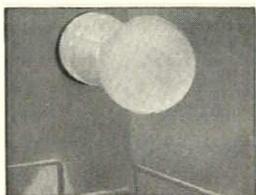
Sliding Shelves



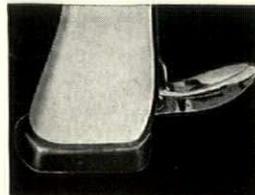
Stainless Steel Freezing Chamber



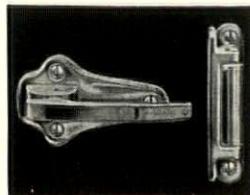
Semi-Automatic Temperature Control



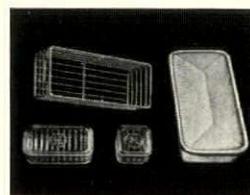
Automatic Interior Lighting



Foot Pedal Door Opener



Semi-Concealed Hardware



Food Containers

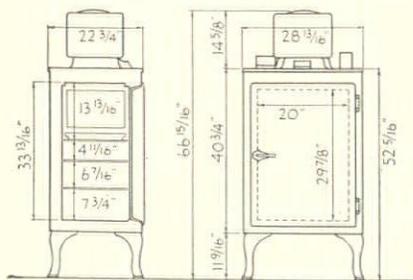


Guarantee

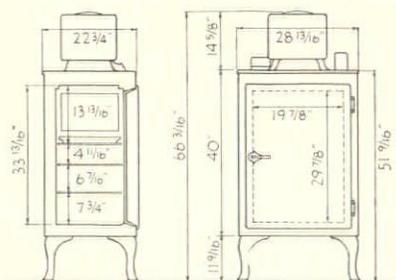
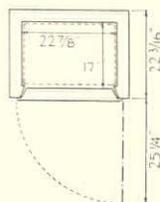
# GENERAL ELECTRIC

## REFRIGERATORS

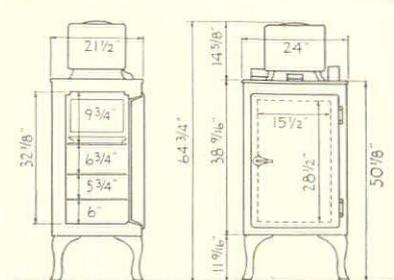
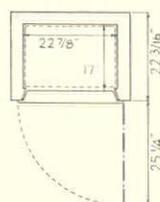
ALLOW 1/4-INCH TOLERANCE ON ALL EXTERIOR DIMENSIONS. LARGER MODELS SHOWN ON THIRD PAGE OVER



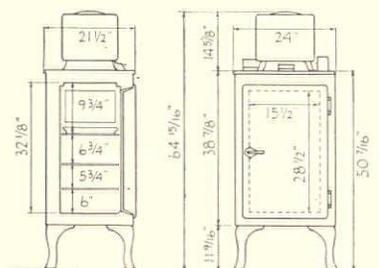
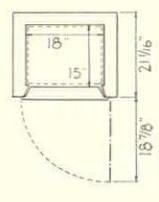
HT-70



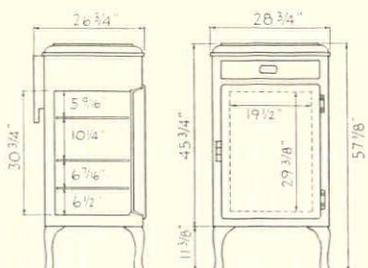
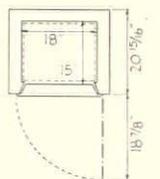
HX-70



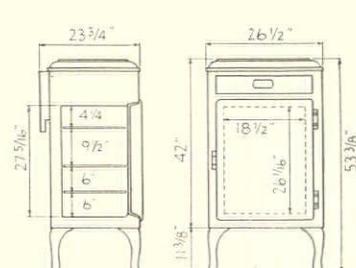
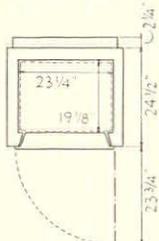
HT-47



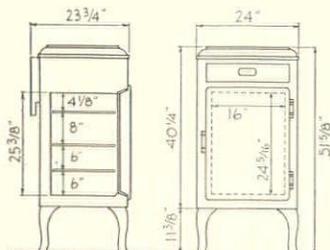
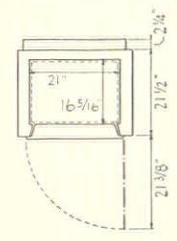
HX-47



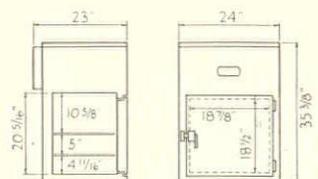
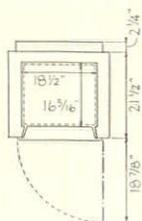
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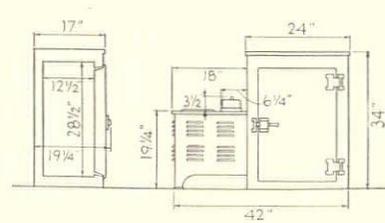
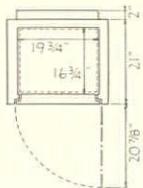
HE-5



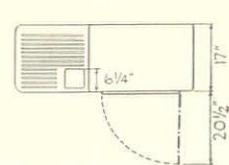
HE-4



HE-3



SD-35



TIME SAVER TABLE

GENERAL  ELECTRIC

REFRIGERATORS

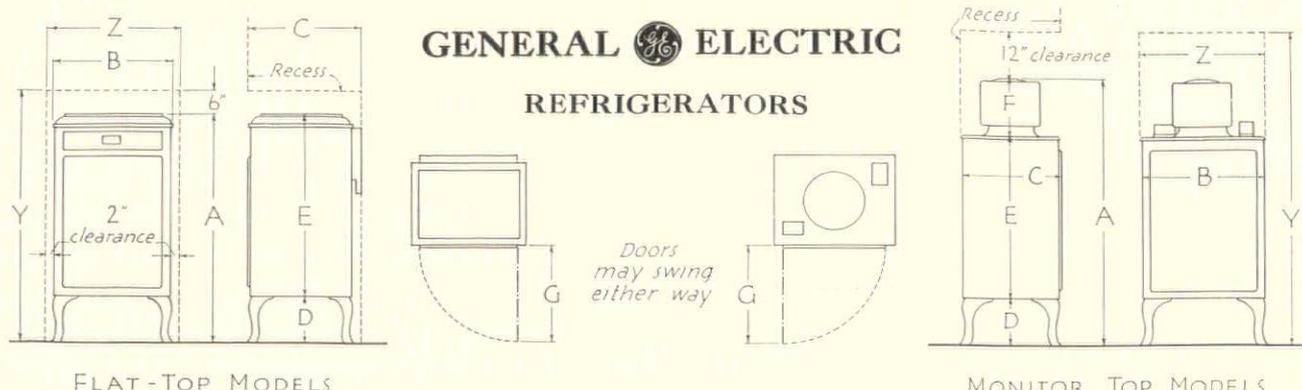
NOTES:

- (1) Cubic feet—N. E. M. A. rating.
- (2) Ice trays, Chiller Tray, Bar Wire shelves.
- (3) Monitor top hermetically sealed, internal mechanism guaranteed 4 years. Flat top models guaranteed one year.
- (4) Allow 1/4-inch tolerance on all exterior dimensions. Figures in this table are to the nearest 1/8-inch. See diagrams on preceding and following pages for detailed dimensions.
- (5) Methyl Formate.

Models SD-35, HT-47, HX-47, HT-70 and HX-70 are not available for D. C.

| MODEL  | TYPE<br>(3) | Exterior<br>Finish | CAPACITY                 |                         |                     |                     | STANDARD EQUIPMENT<br>Extras as shown (2)                           |
|--|-------------|--------------------|--------------------------|-------------------------|---------------------|---------------------|---|
|  |             |                    | Net (1)<br>cubic<br>feet | Shelf<br>area<br>Sq. Ft | No.<br>Ice<br>Cubes | Pounds<br>of<br>Ice |   |
| KITCHENETTE AND SERVING PANTRY REFRIGERATORS |             |                    |                          |                         |                     |                     |   |
| HE-3   | Flat Top    | Sanak              | 3.0                      | 6.8                     | 40                  | 4 1/2               | (2)   |
| SD-35  | Special     | Lacquer & Aluminum | 3.5                      | 7.3                     | 32                  | 3 1/2               | (2)   |
| SMALL REFRIGERATORS 4 TO 7 CUBIC FEET        |             |                    |                          |                         |                     |                     |   |
| HE-4   | Flat Top    | Glyptal            | 4.0                      | 7.9                     | 40                  | 4 1/2               | (2)   |
| HT-47  | Monitor     | Porcelain          | 4.7                      | 8.3                     | 40                  | 4 1/2               | Vegetable Pan (2)   |
| HX-47  | Monitor     | Glyptal            | 4.7                      | 8.3                     | 40                  | 4 1/2               | Vegetable Pan (2)   |
| HE-5   | Flat Top    | Glyptal            | 5.0                      | 9.5                     | 60                  | 6 3/4               | (2)   |
| MEDIUM SIZE REFRIGERATORS 7 TO 12 CUBIC FEET |             |                    |                          |                         |                     |                     |   |
| HE-7   | Flat Top    | Glyptal            | 7.0                      | 12.0                    | 60                  | 7 1/2               | (2)   |
| HT-70  | Monitor     | Porcelain          | 7.0                      | 12.3                    | 84                  | 9                   | Two sliding shelves, Fruit basket, Vegetable pan, Glass dishes. (2) |
| HX-70  | Monitor     | Glyptal            | 7.0                      | 12.3                    | 84                  | 9                   | Two sliding shelves, Vegetable pan. (2)                             |
| P-85   | Monitor     | Porcelain          | 8.5                      | 16.0                    | 104                 | 12                  | Two sliding shelves (2)   |
| S-85   | Monitor     | Sanak              | 8.5                      | 16.0                    | 104                 | 12                  | Two sliding shelves (2)   |
| S-107  | Monitor     | Sanak              | 10.7                     | 20.0                    | 104                 | 12                  | Two sliding shelves (2)   |
| P-110  | Monitor     | Porcelain          | 11.0                     | 20.4                    | 104                 | 12                  | (2)   |
| LARGE REFRIGERATORS OVER 12 CUBIC FEET       |             |                    |                          |                         |                     |                     |   |
| P-134  | Monitor     | Porcelain          | 13.4                     | 22.1                    | 104                 | 12                  | (2)   |
| S-146  | Monitor     | Sanak              | 14.6                     | 25.2                    | 104                 | 12                  | Two sliding shelves (2)   |
| P-170  | Monitor     | Porcelain          | 17.0                     | 26.7                    | 104                 | 12                  | (2)   |
| P4-180                                       | Monitor     | Porcelain          | 18.0                     | 26.6                    | 104                 | 12                  | (2)   |
| S-182  | Monitor     | Sanak              | 18.2                     | 30.4                    | 104                 | 12                  | Two sliding shelves (2)   |

# GENERAL ELECTRIC REFRIGERATORS

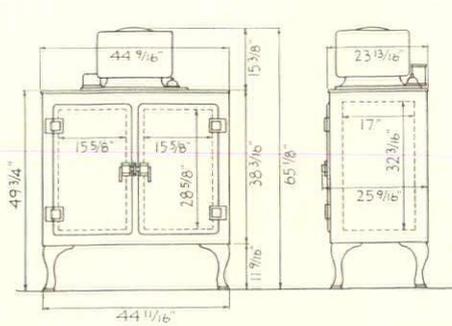


| OVERALL DIMENSIONS (4)  |                                     |                                     |                                  |                                     |                                    | CLEARANCES                          |                                     |                                     | Refrigerant Type and Quantity                     | Power Input Normal Load | MODEL  |
|---|-------------------------------------|-------------------------------------|----------------------------------|-------------------------------------|------------------------------------|-------------------------------------|-------------------------------------|-------------------------------------|---|-------------------------|--------|
| Height  | Width                               | Depth                               | Legs                             | Body                                | Top                                | Swing of doors                      | Recess height                       | Recess width                        |   |                         |        |
| A   | B                                   | C                                   | D                                | E                                   | F                                  | G                                   | Y                                   | Z                                   |   |                         |        |
| FOR UNDER CABINET OR WORK TOP MOUNTING  |                                     |                                     |                                  |                                     |                                    |                                     |                                     |                                     |   |                         |        |
| 2'-11 <sup>3</sup> / <sub>8</sub> "   | 2'-0"                               | 1'-11"                              | none                             | 2'-11 <sup>3</sup> / <sub>8</sub> " | none                               | 1'-8 <sup>7</sup> / <sub>8</sub> "  | Special                             |                                     | 2lbs SO <sub>2</sub>                              | 170 watts               | HE-3   |
| 2'-10"  | 3'-6"                               | 1'-5 <sup>3</sup> / <sub>4</sub> "  | none                             | 2'-10"                              | none                               | 1'-8 <sup>7</sup> / <sub>8</sub> "  | Special                             |                                     | 3 <sup>1</sup> / <sub>2</sub> lbs SO <sub>2</sub> | 145 watts               | SD-35  |
| FOR SMALL FAMILIES or as SECONDARY REFRIGERATORS IN PANTRIES                                  |                                     |                                     |                                  |                                     |                                    |                                     |                                     |                                     |   |                         |        |
| 4'-3 <sup>5</sup> / <sub>8</sub> "  | 2'-0"                               | 1'-11 <sup>3</sup> / <sub>4</sub> " | 11 <sup>3</sup> / <sub>8</sub> " | 3'-4 <sup>1</sup> / <sub>4</sub> "  | none                               | 1'-6 <sup>7</sup> / <sub>8</sub> "  | 4'-9 <sup>5</sup> / <sub>8</sub> "  | 2'-4"                               | 2lbs SO <sub>2</sub>                              | 170 watts               | HE-4   |
| 5'-4 <sup>3</sup> / <sub>4</sub> "  | 2'-0"                               | 1'-9 <sup>1</sup> / <sub>2</sub> "  | 11 <sup>1</sup> / <sub>2</sub> " | 3'-2 <sup>5</sup> / <sub>8</sub> "  | 1'-2 <sup>5</sup> / <sub>8</sub> " | 1'-6 <sup>7</sup> / <sub>8</sub> "  | 6'-4 <sup>3</sup> / <sub>4</sub> "  | 2'-0"                               | 2 <sup>1</sup> / <sub>4</sub> lbs (5)             | 140 watts               | HT-47  |
| 5'-5"   | 2'-0"                               | 1'-9 <sup>1</sup> / <sub>2</sub> "  | 11 <sup>1</sup> / <sub>2</sub> " | 3'-2 <sup>7</sup> / <sub>8</sub> "  | 1'-2 <sup>5</sup> / <sub>8</sub> " | 1'-6 <sup>7</sup> / <sub>8</sub> "  | 6'-5"                               | 2'-0"                               | 2 <sup>1</sup> / <sub>4</sub> lbs (5)             | 140 watts               | HX-47  |
| 4'-5 <sup>3</sup> / <sub>8</sub> "  | 2'-2 <sup>1</sup> / <sub>2</sub> "  | 1'-11 <sup>3</sup> / <sub>4</sub> " | 11 <sup>3</sup> / <sub>8</sub> " | 3'-6"                               | none                               | 1'-9 <sup>3</sup> / <sub>8</sub> "  | 4'-11 <sup>3</sup> / <sub>8</sub> " | 2'-6 <sup>1</sup> / <sub>2</sub> "  | 2 <sup>1</sup> / <sub>2</sub> lbs SO <sub>2</sub> | 210 watts               | HE-5   |
| FOR AVERAGE FOOD SERVICE REQUIREMENTS   |                                     |                                     |                                  |                                     |                                    |                                     |                                     |                                     |   |                         |        |
| 4'-9 <sup>1</sup> / <sub>8</sub> "  | 2'-4 <sup>3</sup> / <sub>4</sub> "  | 2'-2 <sup>3</sup> / <sub>4</sub> "  | 11 <sup>3</sup> / <sub>8</sub> " | 3'-9 <sup>3</sup> / <sub>4</sub> "  | none                               | 1'-11 <sup>3</sup> / <sub>4</sub> " | 5'-3 <sup>1</sup> / <sub>8</sub> "  | 2'-8 <sup>3</sup> / <sub>4</sub> "  | 2 <sup>3</sup> / <sub>4</sub> lbs SO <sub>2</sub> | 245 watts               | HE-7   |
| 5'-7"   | 2'-4 <sup>7</sup> / <sub>8</sub> "  | 1'-10 <sup>3</sup> / <sub>4</sub> " | 11 <sup>1</sup> / <sub>2</sub> " | 3'-4 <sup>3</sup> / <sub>4</sub> "  | 1'-2 <sup>5</sup> / <sub>8</sub> " | 2'-1 <sup>1</sup> / <sub>4</sub> "  | 6'-7"                               | 2'-4 <sup>7</sup> / <sub>8</sub> "  | 2 <sup>3</sup> / <sub>4</sub> lbs (5)             | 150 watts               | HT-70  |
| 5'-6 <sup>1</sup> / <sub>4</sub> "  | 2'-4 <sup>7</sup> / <sub>8</sub> "  | 1'-10 <sup>3</sup> / <sub>4</sub> " | 11 <sup>1</sup> / <sub>2</sub> " | 3'-4"                               | 1'-2 <sup>5</sup> / <sub>8</sub> " | 2'-1 <sup>1</sup> / <sub>4</sub> "  | 6'-6 <sup>1</sup> / <sub>4</sub> "  | 2'-4 <sup>7</sup> / <sub>8</sub> "  | 2 <sup>3</sup> / <sub>4</sub> lbs (5)             | 150 watts               | HX-70  |
| 5'-8 <sup>1</sup> / <sub>8</sub> "  | 2'-10 <sup>1</sup> / <sub>4</sub> " | 2'-2 <sup>1</sup> / <sub>4</sub> "  | 11 <sup>1</sup> / <sub>2</sub> " | 3'-5 <sup>1</sup> / <sub>4</sub> "  | 1'-3 <sup>3</sup> / <sub>8</sub> " | 2'-6 <sup>1</sup> / <sub>2</sub> "  | 6'-8 <sup>1</sup> / <sub>4</sub> "  | 2'-10 <sup>1</sup> / <sub>4</sub> " | 4 <sup>1</sup> / <sub>2</sub> lbs SO <sub>2</sub> | 200 watts               | P-85   |
| 5'-7 <sup>7</sup> / <sub>8</sub> "  | 2'-9 <sup>3</sup> / <sub>4</sub> "  | 2'-2"                               | 11 <sup>1</sup> / <sub>2</sub> " | 3'-4 <sup>7</sup> / <sub>8</sub> "  | 1'-3 <sup>3</sup> / <sub>8</sub> " | 2'-5 <sup>5</sup> / <sub>8</sub> "  | 6'-7 <sup>7</sup> / <sub>8</sub> "  | 2'-9 <sup>3</sup> / <sub>4</sub> "  | 4 <sup>1</sup> / <sub>2</sub> lbs SO <sub>2</sub> | 200 watts               | S-85   |
| 5'-5 <sup>1</sup> / <sub>8</sub> "  | 3'-8 <sup>5</sup> / <sub>8</sub> "  | 1'-11 <sup>7</sup> / <sub>8</sub> " | 11 <sup>1</sup> / <sub>2</sub> " | 3'-2 <sup>1</sup> / <sub>4</sub> "  | 1'-3 <sup>3</sup> / <sub>8</sub> " | 1'-8 <sup>5</sup> / <sub>8</sub> "  | 6'-5 <sup>1</sup> / <sub>8</sub> "  | 3'-8 <sup>5</sup> / <sub>8</sub> "  | 5lbs SO <sub>2</sub>                              | 210 watts               | S-107  |
| 5'-8 <sup>3</sup> / <sub>4</sub> "  | 3'-5 <sup>7</sup> / <sub>8</sub> "  | 2'-1"                               | 11 <sup>1</sup> / <sub>2</sub> " | 3'-6"                               | 1'-3 <sup>3</sup> / <sub>8</sub> " | 1'-7 <sup>1</sup> / <sub>4</sub> "  | 6'-8 <sup>3</sup> / <sub>4</sub> "  | 3'-5 <sup>7</sup> / <sub>8</sub> "  | 5lbs SO <sub>2</sub>                              | 210 watts               | P-110  |
| FOR LARGE RESIDENCES For still larger General Electric Refrigerators ask for Commercial Units |                                     |                                     |                                  |                                     |                                    |                                     |                                     |                                     |   |                         |        |
| 5'-11 <sup>3</sup> / <sub>8</sub> "   | 3'-11 <sup>7</sup> / <sub>8</sub> " | 2'-0 <sup>1</sup> / <sub>2</sub> "  | 11 <sup>1</sup> / <sub>2</sub> " | 3'-8 <sup>1</sup> / <sub>2</sub> "  | 1'-3 <sup>3</sup> / <sub>8</sub> " | 1'-9 <sup>7</sup> / <sub>8</sub> "  | 6'-11 <sup>3</sup> / <sub>8</sub> " | 3'-11 <sup>7</sup> / <sub>8</sub> " | 5lbs SO <sub>2</sub>                              | 210 watts               | P-134  |
| 5'-6 <sup>3</sup> / <sub>4</sub> "  | 4'-6 <sup>1</sup> / <sub>4</sub> "  | 2'-0 <sup>1</sup> / <sub>4</sub> "  | 11 <sup>1</sup> / <sub>2</sub> " | 3'-3 <sup>3</sup> / <sub>4</sub> "  | 1'-3 <sup>3</sup> / <sub>8</sub> " | 2'-1 <sup>1</sup> / <sub>8</sub> "  | 6'-6 <sup>3</sup> / <sub>4</sub> "  | 4'-6 <sup>1</sup> / <sub>4</sub> "  | 5lbs SO <sub>2</sub>                              | 210 watts               | S-146  |
| 6'-2 <sup>1</sup> / <sub>2</sub> "  | 5'-1 <sup>3</sup> / <sub>8</sub> "  | 2'-0 <sup>3</sup> / <sub>4</sub> "  | 11 <sup>1</sup> / <sub>2</sub> " | 3'-8 <sup>1</sup> / <sub>2</sub> "  | 1'-6 <sup>1</sup> / <sub>2</sub> " | 1'-10 <sup>1</sup> / <sub>2</sub> " | 7'-2 <sup>1</sup> / <sub>2</sub> "  | 5'-1 <sup>3</sup> / <sub>8</sub> "  | 8lbs SO <sub>2</sub>                              | 340 watts               | P-170  |
| 6'-9 <sup>1</sup> / <sub>8</sub> "  | 3'-8"                               | 2'-3 <sup>3</sup> / <sub>4</sub> "  | 5 <sup>3</sup> / <sub>4</sub> "  | 4'-8 <sup>3</sup> / <sub>4</sub> "  | 1'-6 <sup>1</sup> / <sub>2</sub> " | 1'-7 <sup>3</sup> / <sub>8</sub> "  | 7'-9 <sup>1</sup> / <sub>8</sub> "  | 3'-8"                               | 8lbs SO <sub>2</sub>                              | 340 watts               | P4-180 |
| 5'-11 <sup>1</sup> / <sub>2</sub> "   | 5'-4 <sup>7</sup> / <sub>8</sub> "  | 2'-2 <sup>3</sup> / <sub>4</sub> "  | 11 <sup>1</sup> / <sub>2</sub> " | 3'-5 <sup>3</sup> / <sub>8</sub> "  | 1'-6 <sup>1</sup> / <sub>2</sub> " | 2'-4 <sup>1</sup> / <sub>4</sub> "  | 6'-11 <sup>1</sup> / <sub>2</sub> " | 5'-4 <sup>7</sup> / <sub>8</sub> "  | 8lbs SO <sub>2</sub>                              | 340 watts               | S-182  |

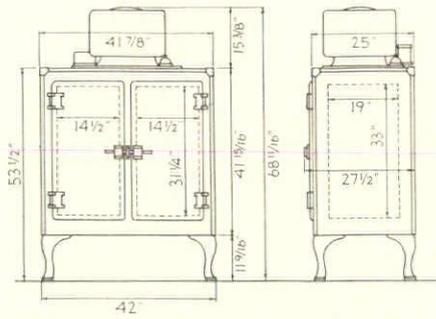
# GENERAL ELECTRIC

## REFRIGERATORS

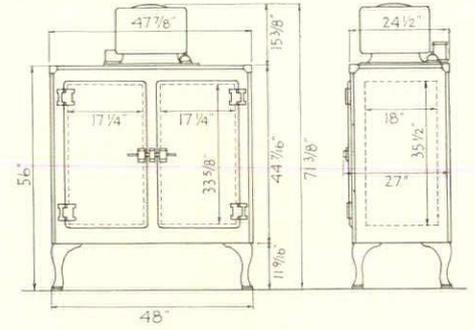
ALLOW 1/4-INCH TOLERANCE ON ALL EXTERIOR DIMENSIONS. SMALLER MODELS SHOWN ON THIRD PAGE PRECEDING



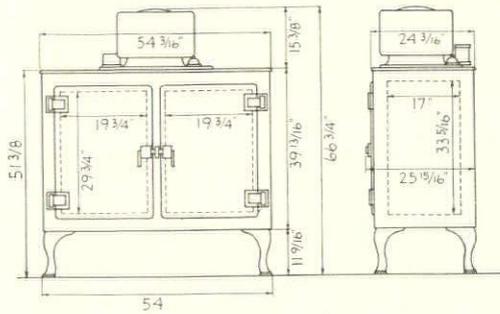
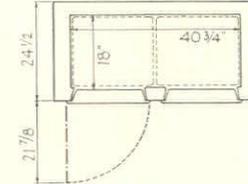
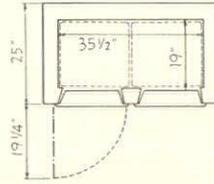
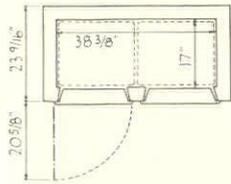
S-107



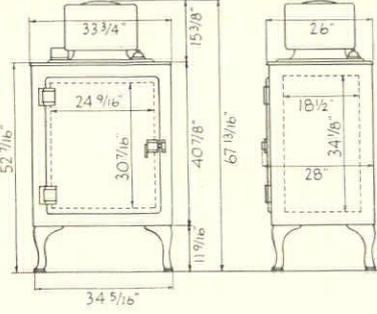
P-110



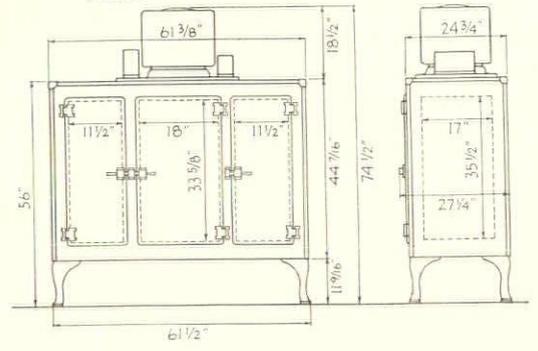
P-134



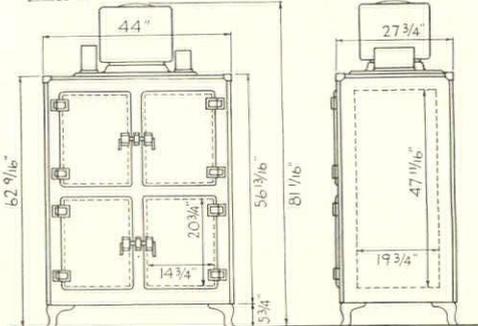
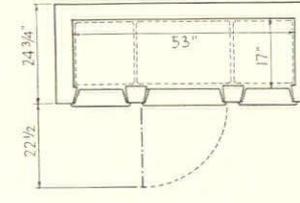
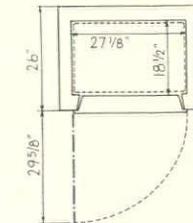
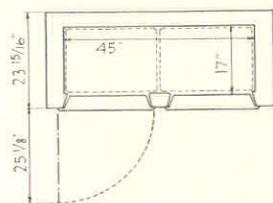
S-146



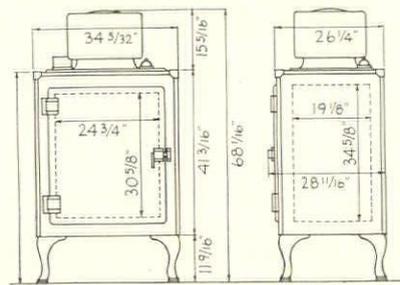
S-85



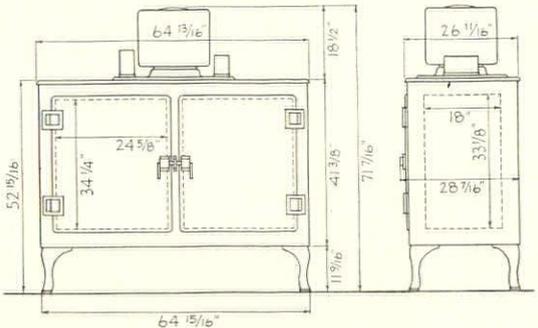
P-170



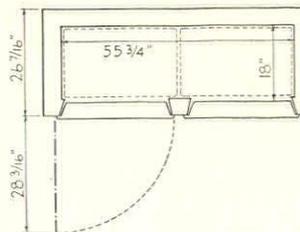
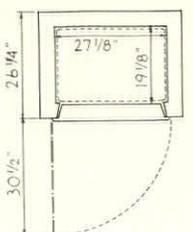
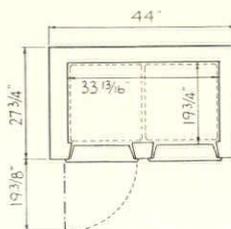
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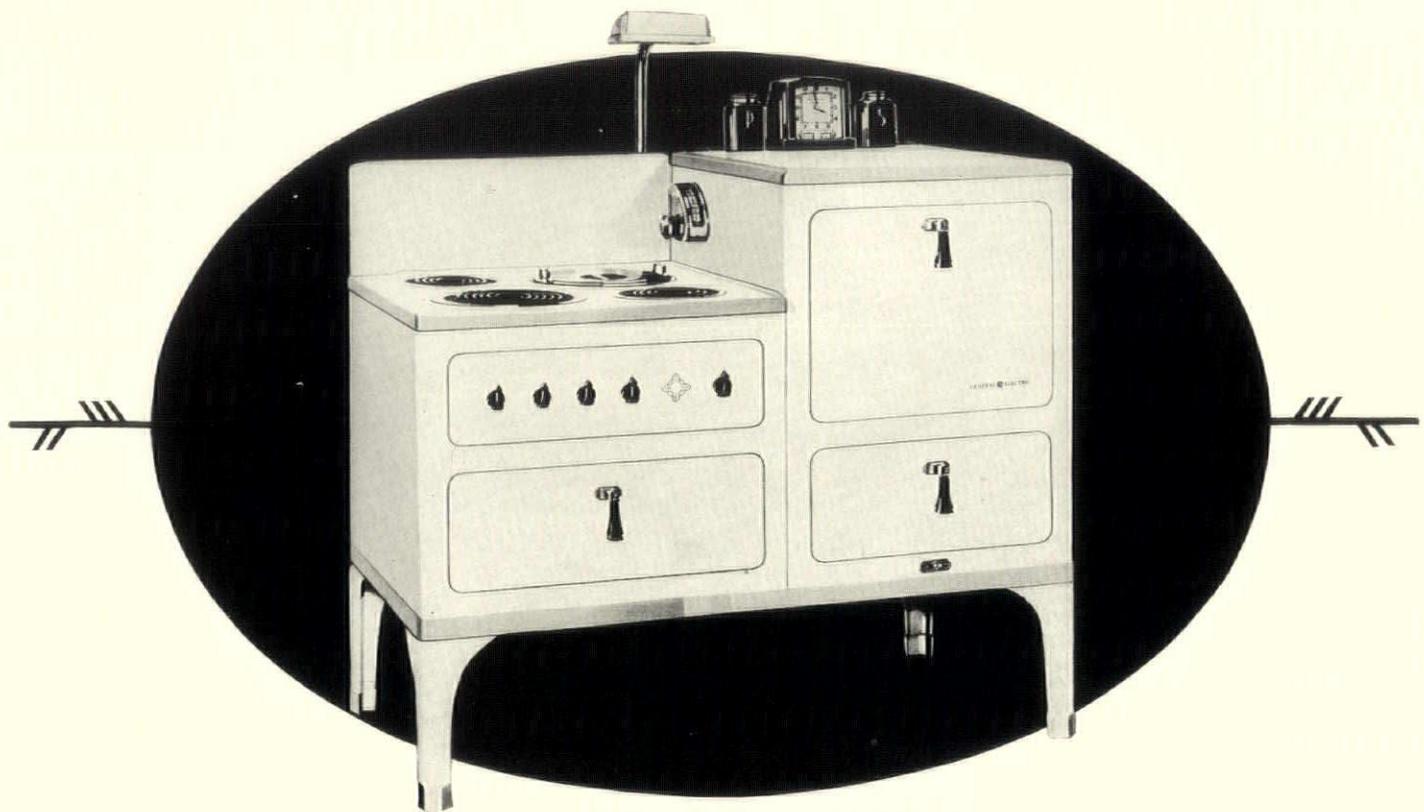


P-85



S-182

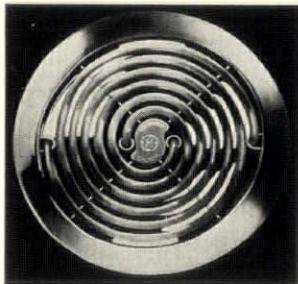




## GENERAL ELECTRIC RANGES

TO over a million homes, electric cookery has brought new speed, cleanliness, economy and finer food flavor. Modern electric cookery with a General Electric Calrod-equipped Range provides even faster cooking speeds. Food waste through shrinkage and loss of healthful, natural juices is eliminated. Cooking failures are the exception. Hot, humid kitchens . . . sooty pots and pans . . . grimy walls and curtains are unknown. The electric range is the only cooking device approved by the National Board of Fire Underwriters. The General Electric is the only range with all electrical parts completely enclosed.

A General Electric range introduces important economies. For example, as much as a full



CALROD—a development of the famous G-E Research Laboratories—and proved to be the world's fastest, most durable heating element.

month's meat bill can be saved every year through elimination of waste and shrinkage and by utilizing the G-E Thrift Cooker that cooks an entire meal at one time without transfer of food odors or flavors. In a nation-wide survey of homes equipped with electric ranges, the average current cost was found to be less than 1 penny per meal per person. General Electric Ranges are beautifully modern in appearance . . . finished in glistening porcelain with silver-wing gray trim, or ivory with cascade-green trim. All working surfaces are stain proof. There's a G-E range model for every type of kitchen, with surprisingly low prices. General Electric Co., Specialty Appliance Sales Dept., Section AA-7, Nela Park, Cleveland, Ohio.

# GENERAL ELECTRIC

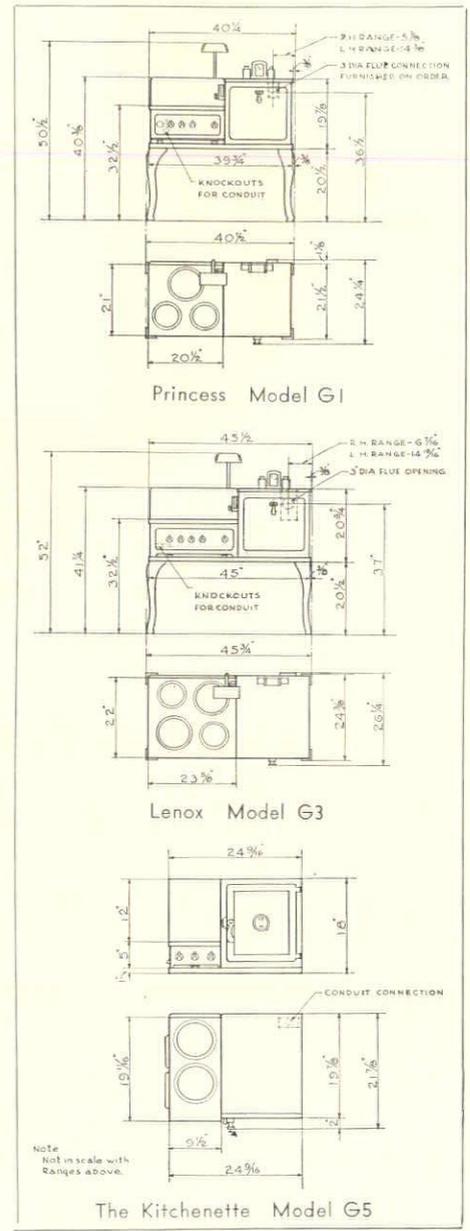
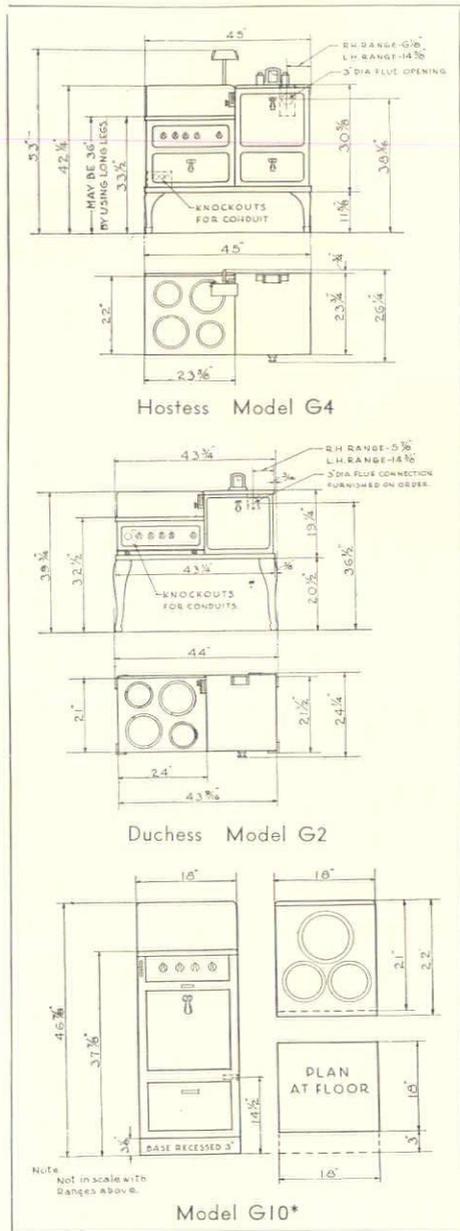
## RANGES

for Automatic Electric Cookery

All General Electric Ranges are equipped with the famous Calrod oven units. In broiling, particularly, Calrod excels because of its intense source of radiant heat. Broiling in all General Electric Ranges is simple, smokeless and efficient. Sliding oven shelves give complete accessibility and eliminate risk of burned arms.

### INSTALLATION

A separate power circuit to serve the Electric range is required under the National Electrical Code, and this circuit must be provided with a suitable "disconnect" device. For this purpose a G. E. Range Connection Set is recommended, consisting of a special cable with copper lugs at one end and a moulded polarity plug at the other. A special receptacle is part of the set: the plug and receptacle providing the required disconnect device and also facilitating the temporary removal of the range for painting walls or other purposes.

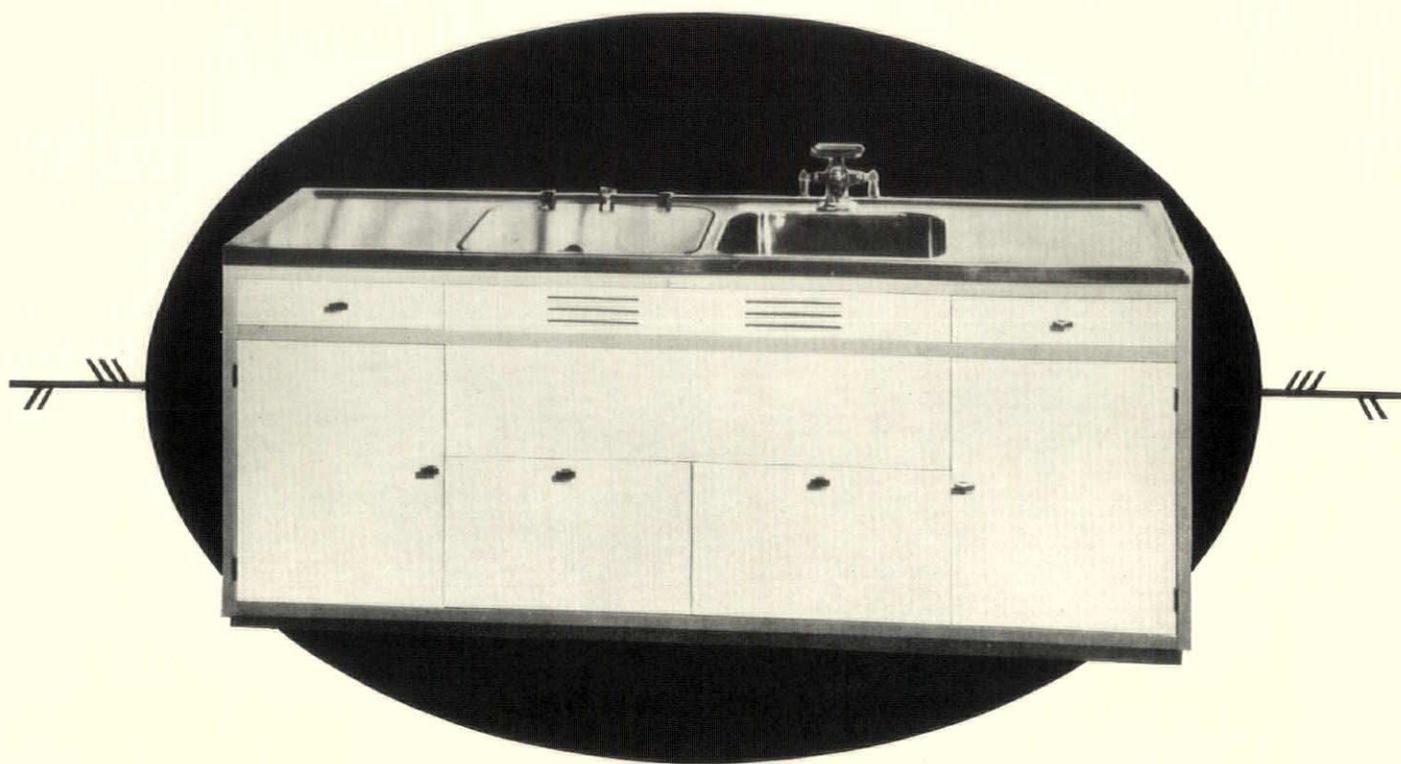


This illustration of a 60" G-E Kitchenette\* utility unit shows an interesting combination grouping of a G-E Range and a G-E Refrigerator and sink with cabinets and enclosure by Art Metal Construction Co. demonstrating modern beauty, utility and compactness for apartment house kitchens.

### ELECTRICAL EQUIPMENT

| NAME                        | MODEL | TOTAL CONNECTED LOAD | COOKING TOP              |  |  | NOTES                                  |
|-----------------------------|-------|----------------------|--------------------------|--|--|--|
|                             |       |                      | Number of openings       | Recommended Equipment  | Optional Equipment   |  |
| HOSTESS                     | G4    | 9.7 KW               | 4 Two large<br>Two small | 1-8 1/2" dia Calrod<br>2-6 1/2" dia Calrods<br>1-Thrift Cooker | 2-8 1/2" dia Calrods<br>2-6 1/2" dia Calrods<br>or<br>1-8 1/2" dia Calrods<br>3-6 1/2" dia Calrods | 6 1/2" dia Calrods<br>..... 1200 watts |
| LENOX                       | G3    | 9.6 KW               | 4 Two large<br>Two small |  |  |  |
| DUCHESS                     | G2    | 8.8 KW               | 4 Two large<br>Two small |  |  |  |
| PRINCESS                    | G1    | 8.0 KW               | 3 One large<br>Two small | 1-Thrift Cooker<br>2-6 1/2" dia Calrods                        | 2-6 1/2" + 1-8 1/2" dia Calrods<br>or<br>3-6 1/2" dia Calrods                                      | 8 1/2" dia Calrods<br>..... 2100 watts |
| THE KITCHENETTE             | G5    | 3.7 KW               | 2 Both small             | 2-6 1/2" dia. Calrods  | No options   | Thrift Cooker<br>..... 660 watts       |
| * Special for Apartment use | G10*  | 6.0 KW               | 3 All small              | 3-6 1/2" dia. Calrods  | No options   |  |

\* Not yet available for delivery. For further information, write General Electric Company Specialty Appliance Sales Department, Section AA-7, Nela Park, Cleveland, Ohio.



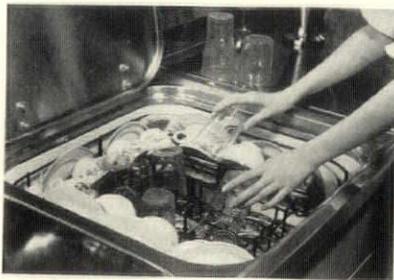
# GENERAL ELECTRIC

## DISHWASHERS

OF all kitchen tasks, perhaps the most annoying and disagreeable is washing dishes. Dirty pots and pans, dishes and silverware represent a 3-time-a-day unpleasant job for life with the old-fashioned dish-pan and dish-rag method. In terms of time, on a 1-hour-a-day basis for 365 days each year it is the equivalent of 45 eight-hour days spent annually by the housewife in performing this menial task. At least 40 of these days are *wasted* unnecessarily, and can be saved each year by a General Electric Dishwasher. And all at a cost of only 1 cent a day. Besides *washing* and *drying* all the dishes electrically, a General Electric Dishwasher does even more. It preserves the grace and charm of feminine hands. It eliminates costly breakage and chippage. And *it protects family health*. Scientific microscopic tests have proved that dishes washed in the General Electric Dishwasher are *hygienically clean*, . . . that hand-washed dishes contain 87

times as many bacteria as machine-washed dishes. A mere snap of a switch and the entire day's accumulation of soiled dishes (up to a capacity of 80 pieces of dinnerware and glassware plus the silverware) can be washed in 3 to 5 minutes, in the General Electric Dishwasher. Egg-stained and overnight dishes, *pots* and *pans* are cleaned with equal efficiency and ease. Dishes, glassware and silverware dry by themselves. So simple and safe is the General Electric Dishwasher that

there is nothing to do but add a small amount of washing powder, close the lid and turn the "Magic Control" which releases a deluge of swirling water. The trays and dishes remain stationary while the hygienic cleaning action is accomplished definitely, and efficiently. There is a General Electric Dishwasher model and size to suit every kitchen. General Electric Co., Specialty Appliance Sales Dept., Section AA-7, Nela Park, Cleveland, Ohio.



Rubber-plated trays in the G-E Dishwasher prevent breakage and chippage while loading.

# GENERAL ELECTRIC

## DISHWASHERS

### CABINET INFORMATION

Unless the General Electric Dishwasher Sink is to be installed in a custom built cabinet or work top of wood, metal or tile, the use of one of the standard General Electric cabinets is recommended. They are strongly built of steel and are lacquered in standard white, green or ivory. Special colors to match any decorative scheme may be had on order at extra charge.

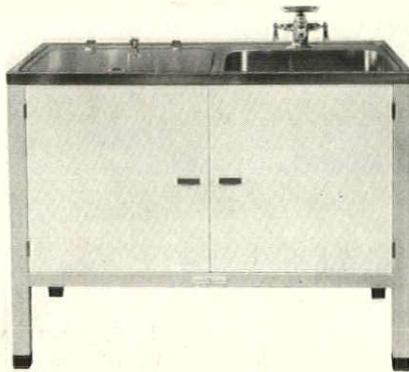
Cabinets for Model C have two doors; Model D, two doors, one drawer; Model E, two doors, two drawers.



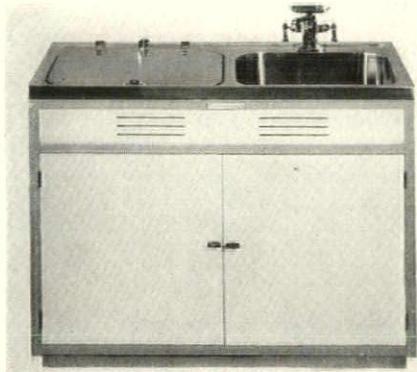
Model A for building in.



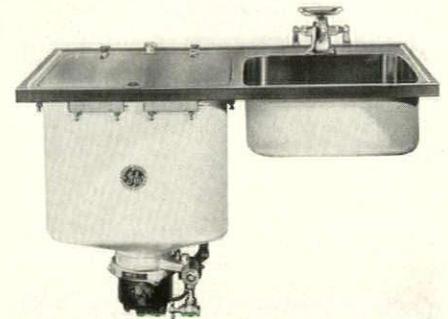
Model A in leg-type cabinet.



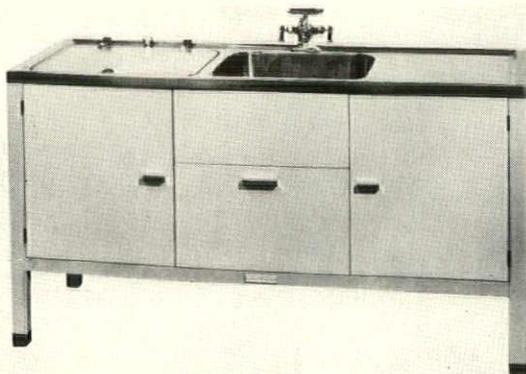
Model C in leg-type cabinet.



Model C in floor cabinet.



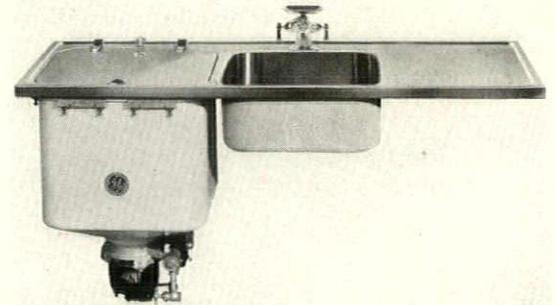
Model C for building in.



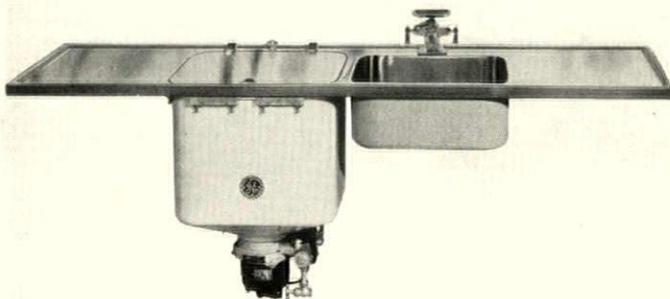
Model D in leg-type cabinet.

Model D is also made in floor type cabinet.

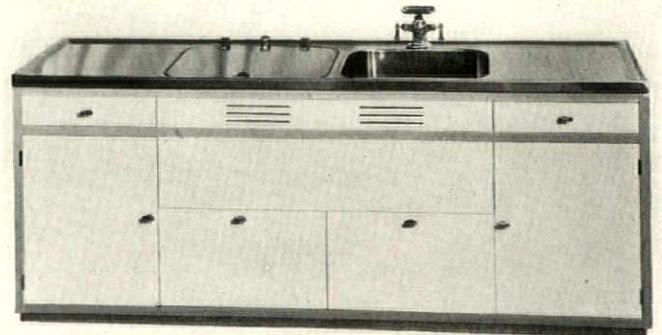
Model E (below) is also made in leg-type cabinet.



Model D for building in.



Model E for building in.



Model E in floor cabinet.

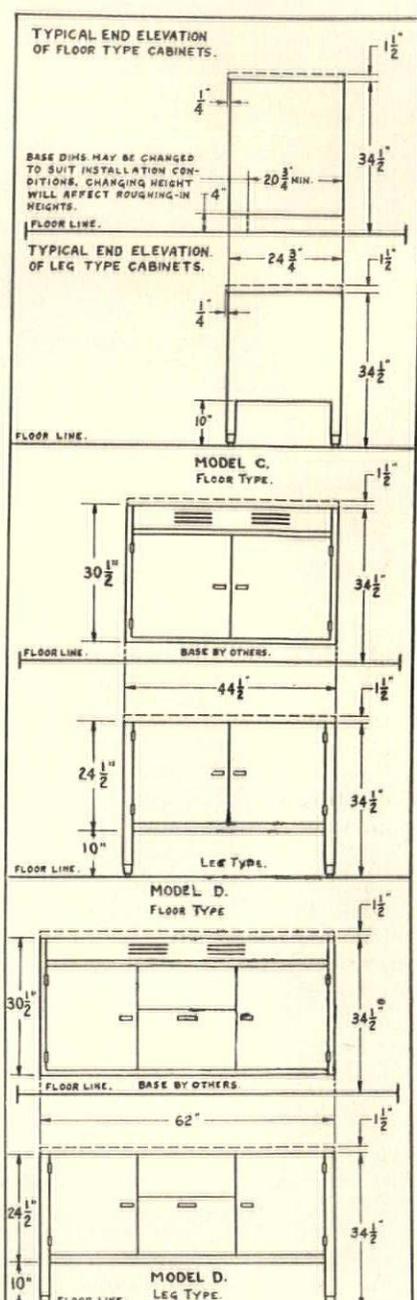
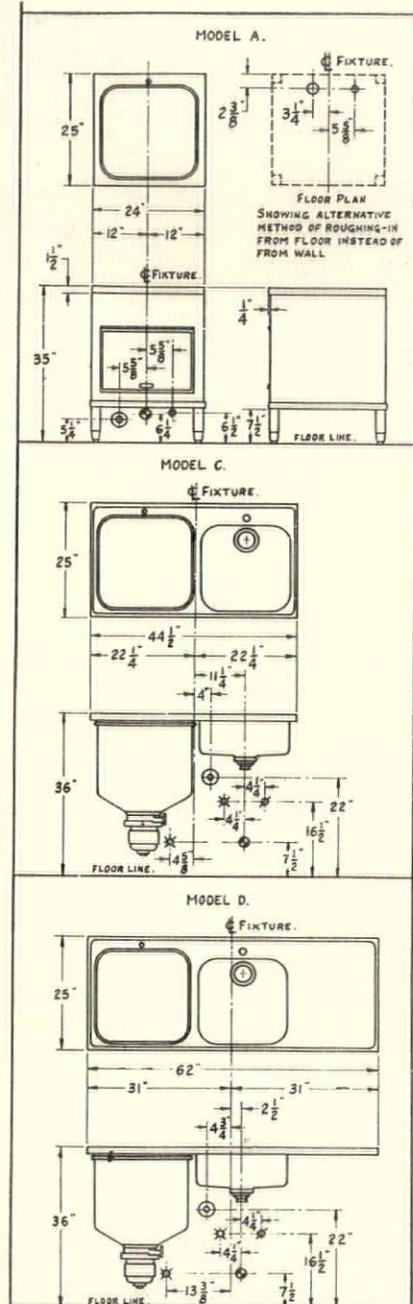
# GENERAL ELECTRIC

## DISHWASHERS

### MODELS AND FINISHES

Dishwashers are on the left of sinks (facing them) in all combination models. Prices of combination models include chromium plated faucet and waste fittings (less trap).

Model A Dishwashers are made only with vitreous enamel tops. Models C, D, and E are offered with either stainless steel or Monel Metal tops, stamped from heavy sheet metal to match adjacent counter tops. These stainless white metals are effective with any cabinet color or decorative scheme. See next page for installation details.

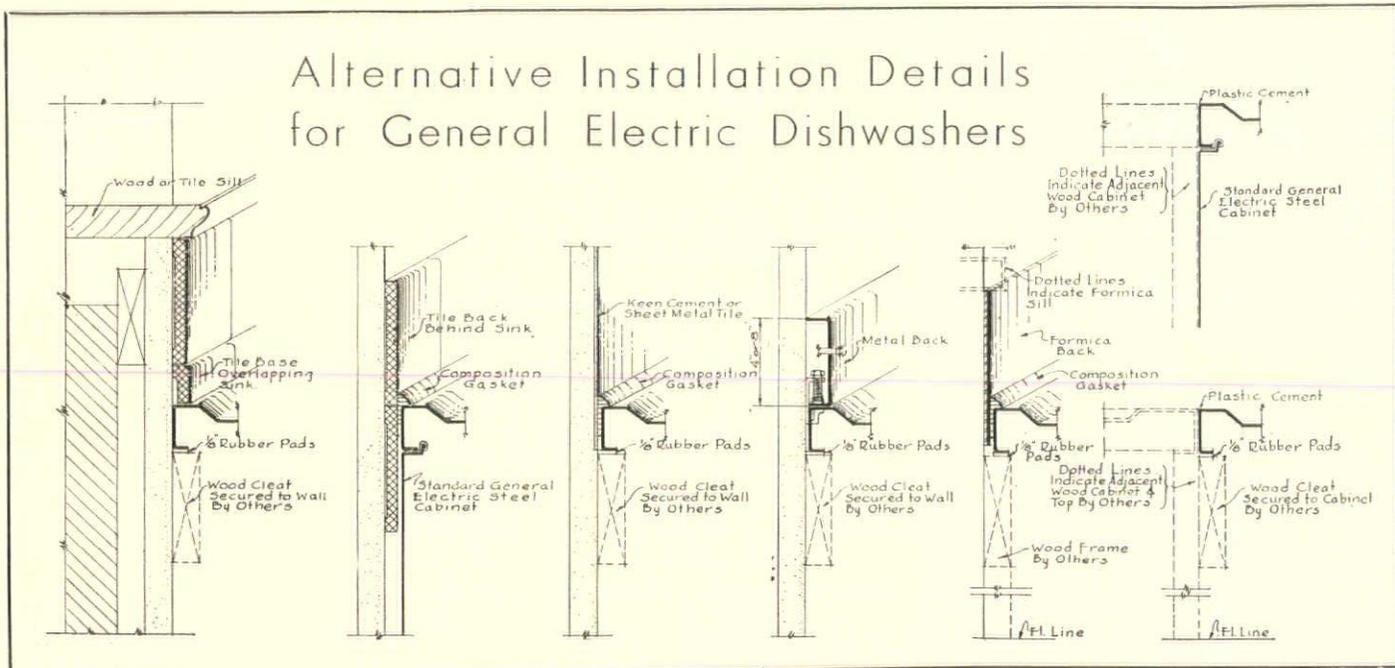


| Model | Cabinet | Top Material    |
|-------|---------|-----------------|
| AEO   | None    | Vitreous Enamel |
| AEL   | Leg     | Vitreous Enamel |
| CSO   | None    | Stainless Steel |
| CMO   | None    | Monel Metal     |
| CSL   | Leg     | Stainless Steel |
| CML   | Leg     | Monel Metal     |
| CSF   | Floor   | Stainless Steel |
| CMF   | Floor   | Monel Metal     |
| DSO   | None    | Stainless Steel |
| DMO   | None    | Monel Metal     |
| DSL   | Leg     | Stainless Steel |
| DML   | Leg     | Monel Metal     |
| DSF   | Floor   | Stainless Steel |
| DMF   | Floor   | Monel Metal     |
| ESO   | None    | Stainless Steel |
| EMO   | None    | Monel Metal     |
| ESL   | Leg     | Stainless Steel |
| EML   | Leg     | Monel Metal     |
| ESF   | Floor   | Stainless Steel |
| EMF   | Floor   | Monel Metal     |

### SYMBOLS

-  = 3/4" ELECTRICAL OUTLET-BOX  
GE. CAT. N° SP24151.
-  = OUTLET FOR 1 1/2" OR 2" DRAIN. (AS REQUIRED)
-  = 1/2" HOT WATER LINE.
-  = 1/2" COLD WATER LINE.

## Alternative Installation Details for General Electric Dishwashers



### GENERAL INSTALLATION

**G**ENERAL Electric Dishwasher sinks in leg-type cabinets require no special provision for their installation other than the usual plumbing and electrical connections. They are adapted for use in localities where local inspection codes prohibit the use of totally enclosed sink units. They are also useful in existing kitchens where other equipment is mounted on legs.

Floor cabinet models are recommended wherever built-in construction is possible, whether in old or new work. Their use permits the construction of a "toe-space" as recommended by kitchen planning authorities, and eliminates the problem of cleaning the floor space beneath the unit. Their installation requires the provision of a base by others. This base may be constructed of wood in the form of a frame not less than 20 $\frac{3}{4}$ " deep from front to back and the full length of the cabinet. The recommended height of the base is 4", which brings the top 36" above the floor; this height however, may be varied to suit the required sink height. The 4" base allows room to drop the motor for servicing.

When models are furnished without cabinets it is assumed the architect or builder will design the layout of equipment in such a way that the dishwasher-sink can be mounted on cleats attached to adjacent cabinets and the wall, with appropriate mill

work built across the front opening to the toe-space line or the floor.

The back of the sink may be treated by mounting specially made backs directly on the sink tops or by using tile, Formica or other materials. The joint between the sink top and the wall should be filled with a composition gasket. The adaptability of the design of these units gives great freedom for treating the entire installation in accordance with the best architectural practise. Optional installation details covering all ordinary conditions are illustrated above.

### PLUMBING INSTALLATION

**A**LL dimensions for electrical outlets and plumbing connections are given from the center line of the complete fixture.

Model A is furnished with drain fittings less trap. Models C, D, and E are furnished with faucets (for mounting on the horizontal surface of the sink top) and drain fittings less trap. If for any reason a wall type faucet is desired, it may be installed on the center line of the sink above the fixture in the usual way on 8" centers, and the opening for the faucet on the sink top covered with a solid escutcheon plate.

The hot and cold water supplies and waste openings should be roughed in as shown on the roughing in diagrams. A detailed roughing in sheet will be furnished on request. The machine can be connected as readily as an ordinary sink

with  $\frac{1}{2}$ " hot and cold water supplies to the sink and  $\frac{1}{2}$ " hot water line to the dishwasher valve. The machine is equipped with all necessary valves for operating, including specially designed sink faucet with extra long lead-in pipes for the convenience of the plumber in making his connections below the bottom of the sink. The dishwasher has a 2" waste outlet to the "T" that receives the trap (trap not furnished by us). The waste "T" is designed to take either 1 $\frac{1}{2}$ " or 2" trap. We strongly recommend using a 2" trap wherever possible. Two traps can be used where required by the local plumbing code for separate drainage of the sink and dishwasher.

### ELECTRICAL INSTALLATION

**T**HE dishwasher is equipped with a  $\frac{1}{4}$  h.p. General Electric motor all wired and provided with a 36" length of No. 14 two-conductor BX cable protruding through the cabinet. This wire is adequate to make permanent connections to the outlet box which should be provided in the wall as shown on the drawings.

All dishwashers are supplied with A.C. 110 volt 60 cycle motors unless otherwise specified. Any standard voltage or frequency can be furnished. Motors for 110 or 32 volt D.C. may be obtained on special order. Always specify voltage and frequency on order. Also be sure to check current on line with motor specifications before installation.

# GENERAL ELECTRIC COMPANY

Specialty Appliance Sales Department

NELA PARK, CLEVELAND, OHIO

3-COLORED INSULATIONS  
IDENTIFY THE GRADE

8-COLORED BRAIDS  
SIMPLIFY CIRCUIT TESTING



*Specify*

## DOUBLE VALUE AT NO EXTRA COST

General Electric Code Wires are made of the finest materials to assure positive satisfaction for many years. And, because of self-identifying features, they're easy and economical to install. Three colored rubber insulations (black, red, green) identify Code, Intermediate and 30% grades. Eight different colored braids facilitate circuit testing and save time on extensions and alteration work.

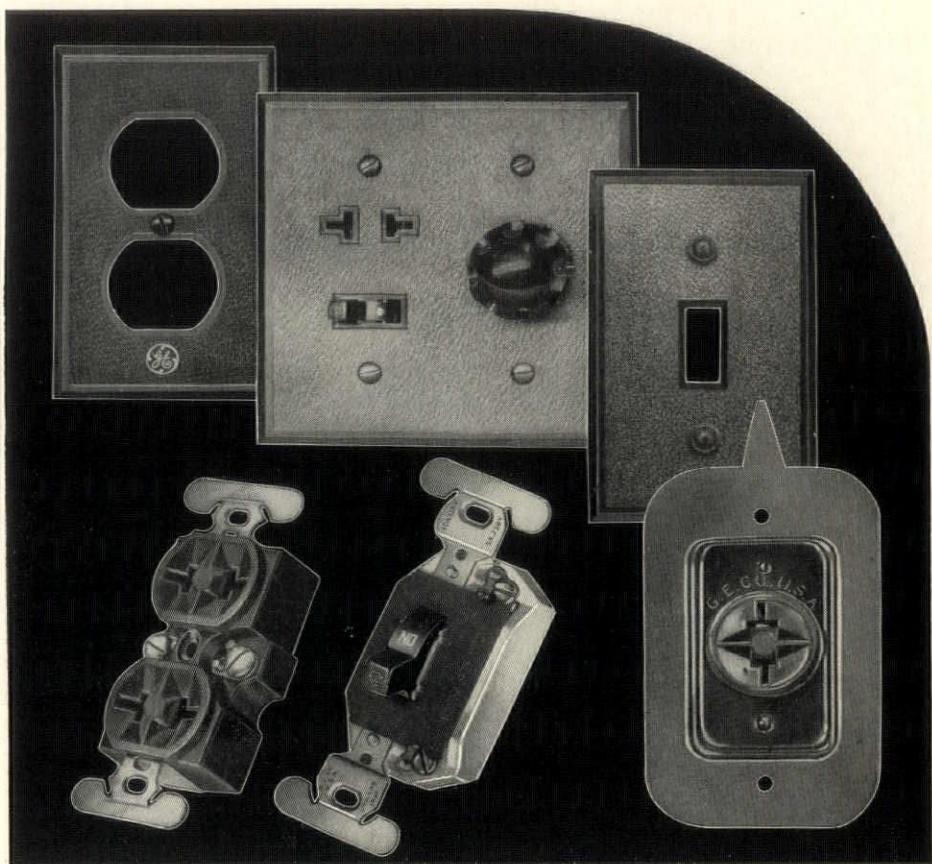
The wire of each grade is uniform in size. Each has the same tough braid with a smooth, moisture-proof finish which assures easy pulling. Overall diameters are the minimum allowed by the code, permitting maximum number of wires per conduit. Every coil exceeds code requirements.

For long service be sure to specify G-E Code Wires. Your nearest G-E Distributor will gladly give you full information. Or, write Section DW-117, Merchandise Department, General Electric Company, Bridgeport, Connecticut.

CODE WIRE

# GENERAL ELECTRIC

MERCHANDISE DEPARTMENT. GENERAL ELECTRIC COMPANY. BRIDGEPORT. CONNECTICUT



## *Specify* G-E WIRING DEVICES for modern All-Electric Kitchens

General Electric Wiring Devices are as modern and complete as the new trend for all-electric kitchens. Attractive, easy to install and economical, they perform an important function worth serious consideration.

The recessed clock outlet is a new device which secretes itself behind the clock, thereby hiding the cord. Convenience outlets, single or double, are sturdily constructed of Textolite with easy-finding slots. Attractively designed Textolite Plates for tumbler switches and convenience outlets give a finishing touch in harmony with modern decoration. Tumbler Switches are available in many types ready for quick installation. Single and double types . . . combination types with pilot light or outlet . . . or, for any other requirements your plans might specify .

When specifying wiring devices, particularly for all-electric kitchens, you will find the General Electric line complete. It provides a wide variety to meet every requirement. Each G-E Device is made of quality materials with precision in manufacture to assure steady dependable performance and speedy, economical installation.

Your nearest G-E Distributor will be glad to furnish you with complete information on all G-E Wiring Devices. See him or write Section DW-117, Merchandise Department, General Electric Company, Bridgeport, Connecticut.



WIRING DEVICES

A remarkable advance in building materials—a new wall-covering that is both economical and permanent. Sealex Wall-Covering is washable, crack-proof, fade-proof, stain-proof—does not show scars when furniture rubs against it. Offered in wide variety of luxurious designs. Easily installed over old walls or in new buildings.

**SEALEX**  
*Wall-Covering*



# A new idea for kitchens

... stain-proof floors and walls

THE kitchen illustrated above has two features that will be of special interest to architects.

First, there is a very pleasing harmony between the floor and the walls, because they are built of two closely related materials—Sealex Linoleum and the new Sealex Wall-Covering. This gives a "unity of texture" to this room that adds greatly to its charm. The colors in the linoleum are green, ivory and black. The wall is a soft golden brown, with delicate veinings of orange and gray.

The second interesting feature in this kitchen is that both walls and floor are stain-proof. In calling Sealex Linoleum and Sealex Wall-Covering stain-proof, we do not mean to imply that there is nothing in the world which will injure these materials. A few corrosive chemicals will discolor them. We do say, however, that the things that are spilled in the average household—hot

grease, acid fruit juices, ink, ammonia, etc.—will not harm or stain Sealex.

A room with floors and walls of Sealex never needs redecorating. The colors cannot wear off, because they are *inlaid* through the material. Scraping and painting are eliminated. Over a period of years, these products actually save more money than it costs to buy them.

When Sealex materials are installed by an authorized contractor of Bonded Floors or Bonded Walls, both materials and workmanship are backed by a Guaranty Bond. CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

**SEALEX**  
REG. U. S. PAT. OFF.  
**FLOORS AND WALLS**



## ART METAL EQUIPMENT FOR THE MODERN, PLANNED KITCHEN

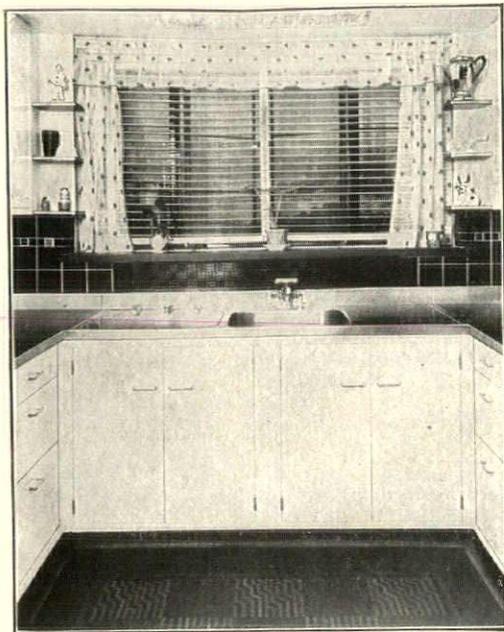
*A complete line of Standard Units  
to fit any plan . . . any size kitchen*

**T**HIS new type of kitchen equipment was developed through collaboration between the General Electric Kitchen Institute, and the engineering and product departments of the Art Metal Construction Company. This insures correctness in design and construction.

The Art Metal Construction Co. is the pioneer and largest manufacturer of metal equipment for offices, public buildings and hospitals. It has that unequalled experience of producing fine metal cabinet work, *for nearly 50 years*. There-

fore, architects can be sure this new line of Art Metal Kitchen Equipment meets the most advanced ideas in kitchen planning.

Some features of this modern equipment are: 15% larger storage capacity; ball bearing progressive cradle type suspensions on large storage drawers; "Z" slide suspensions on small drawers; linoleum insulated drawer bottoms; concealed hinges and "bullet" latches on *all* doors; work surfaces of stainless steel, monel metal or linoleum; glass doors can be had on any cabinet unit; all shelves in cabinets are adjustable on 1" centers; drawers are standardized in height, and may be interchanged for variation of arrangement.



### FOOD STORAGE CENTER

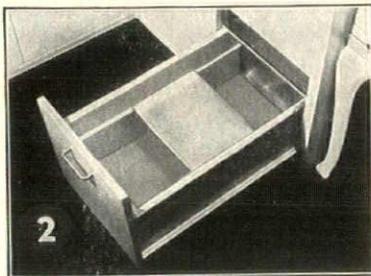
Canned goods, dry foods are conveniently stored in wall cupboards (No. 1) adjacent to the refrigerator. Bread and pastry are kept fresh in self-covering, non-corroding bread drawers (No. 2). Bulk materials like flour, sugar have deep trays in snug-fitting self-covering drawers.

### PREPARATION CENTER

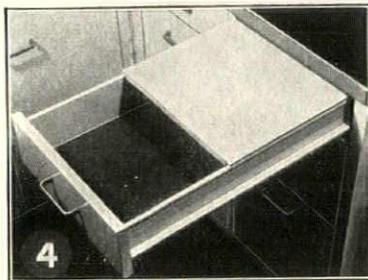
Mixing bowls, cooking utensils used in the preparation of food, are stored in drawers (No. 3). Knives, beaters, mixing spoons, have their own partitioned drawer, with sliding removable partitioned tray.

### RANGE AND SERVING CENTER

Easy-coasting drawer units hold pans, skillets and other utensils needed in cooking. A special top drawer (No. 7) is lined and partitioned for dining room silver. The drawer for carving sets and kitchen slicers has a slicing board (No. 4) that pulls out after the drawer is



opened. This slicing board may be instantly removed and replaced. Vegetable dishes and platters are kept in cupboards above the range. Where a pass-door is desired from Serving Center to Dining Room, an open back cupboard enables you to reach dishes from either side.

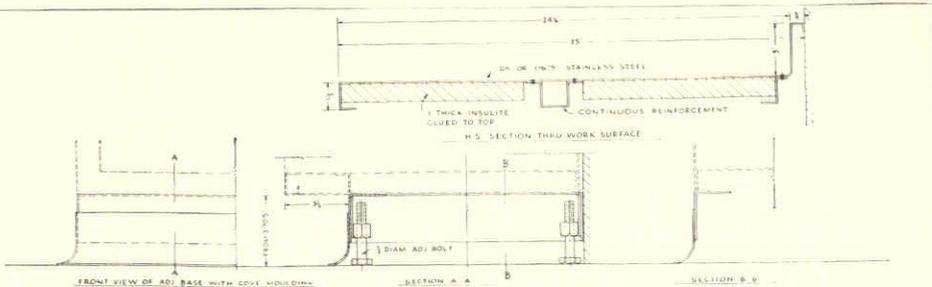
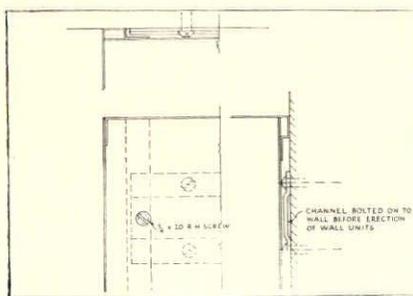
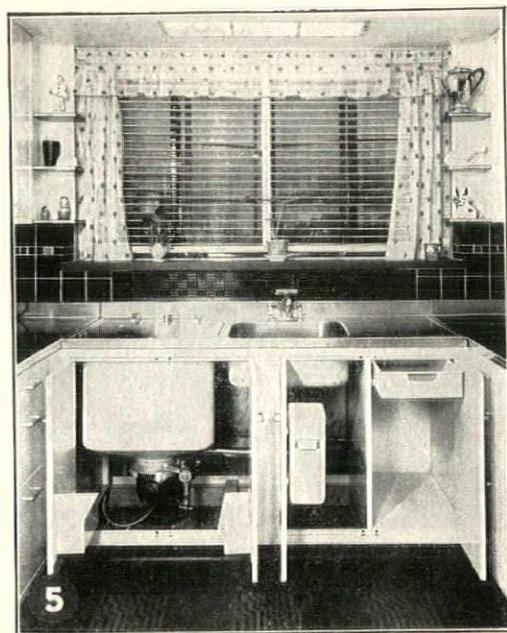


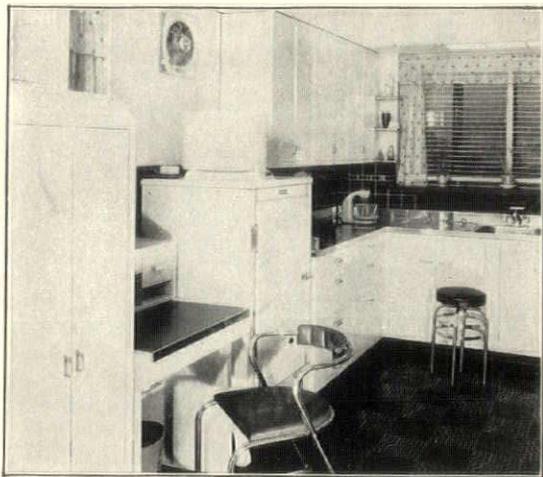
### STORAGE AT THE SINK

The Art Metal enclosure for the sink (No. 5) includes a storage compartment with towel tray. An electric towel dryer may be installed in this compartment, as it is entirely separated from adjoining compartment. The removable refuse container hangs on the door of the other compartment. Removable soap and powder trays are conveniently placed on doors of dishwasher enclosure.

### LINEN AND IMPLEMENT CABINETS

The linen storage cabinets (No. 6) contain three large size trays, two adjustable shelves. A similar cabinet arranged for cleaning implements provides ample space for the vacuum cleaner, dust and polish mops and brooms. It also has adjustable half-width shelves. Wall cabinets, above both linen and implement cabinets provide storage for all other electrical appliances.

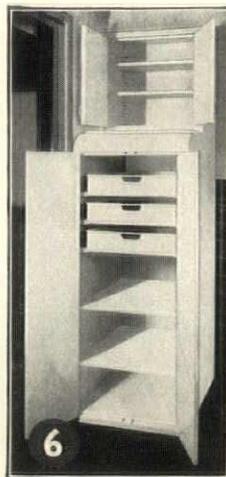




### WORK TOPS AND SANITARY BASES

Work tops may be of stainless metal with a 3" back board of the same metal, or of linoleum with chrome or stainless steel binding. Continuous work tops cover any number of cabinets in a line.

Sanitary adjustable bases (No. 8) allow for any possible unevenness in floors and provide a continuous uniform toe-space 4" high. These angle steel bases have adjustment bolts at each corner. They are enclosed with a metal cove moulding or may have a rubber or plastic cove finishing strip.

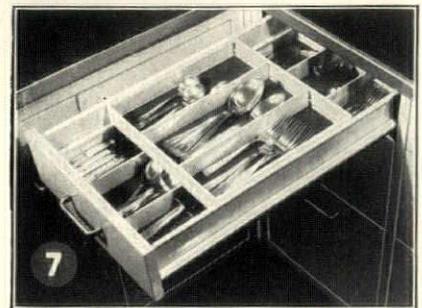
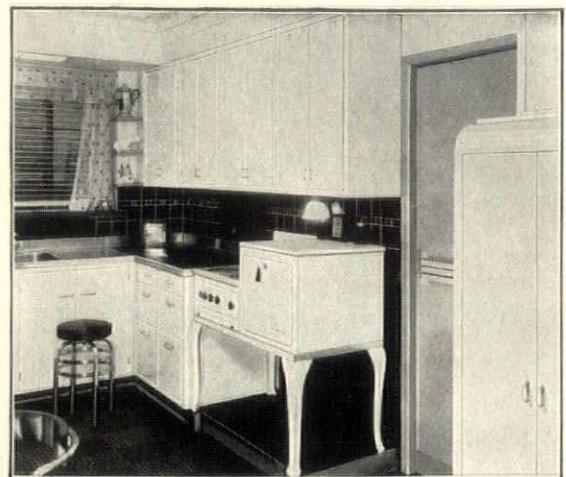


### FITTINGS OF UNITS TO ODD DIMENSIONS

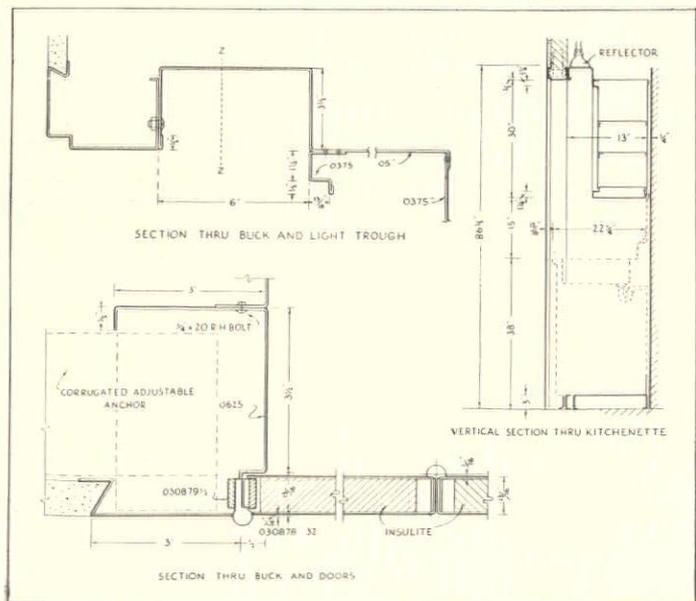
Filler strips in various widths used at the ends of cabinets take up variations in widths up to 4".

### COLORS AND FINISHES

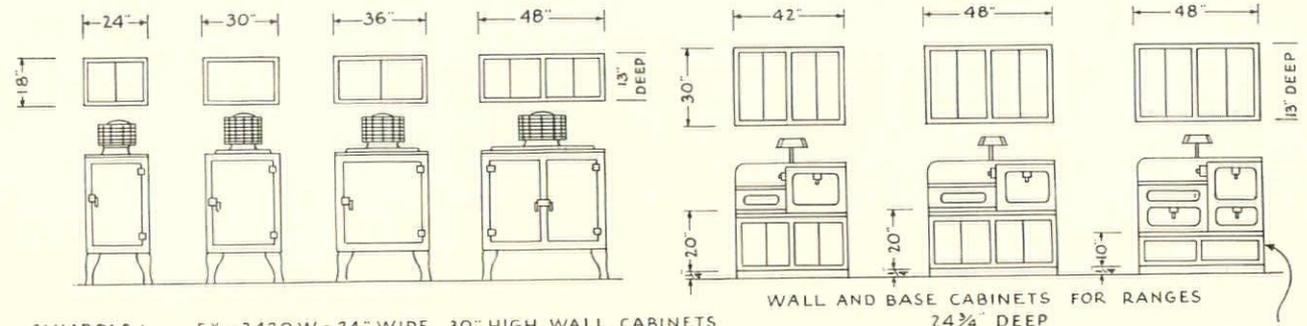
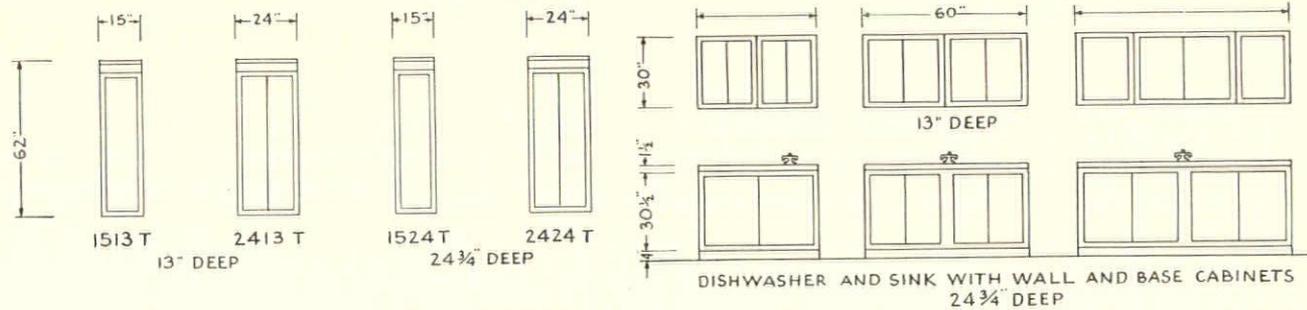
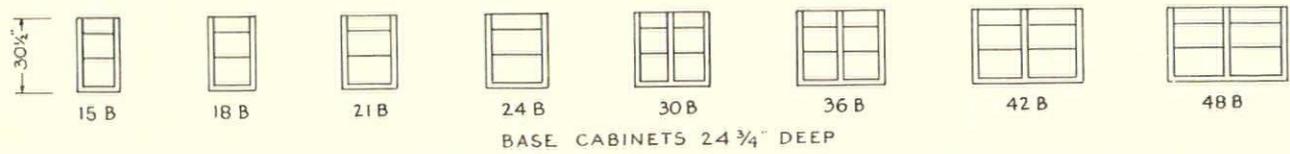
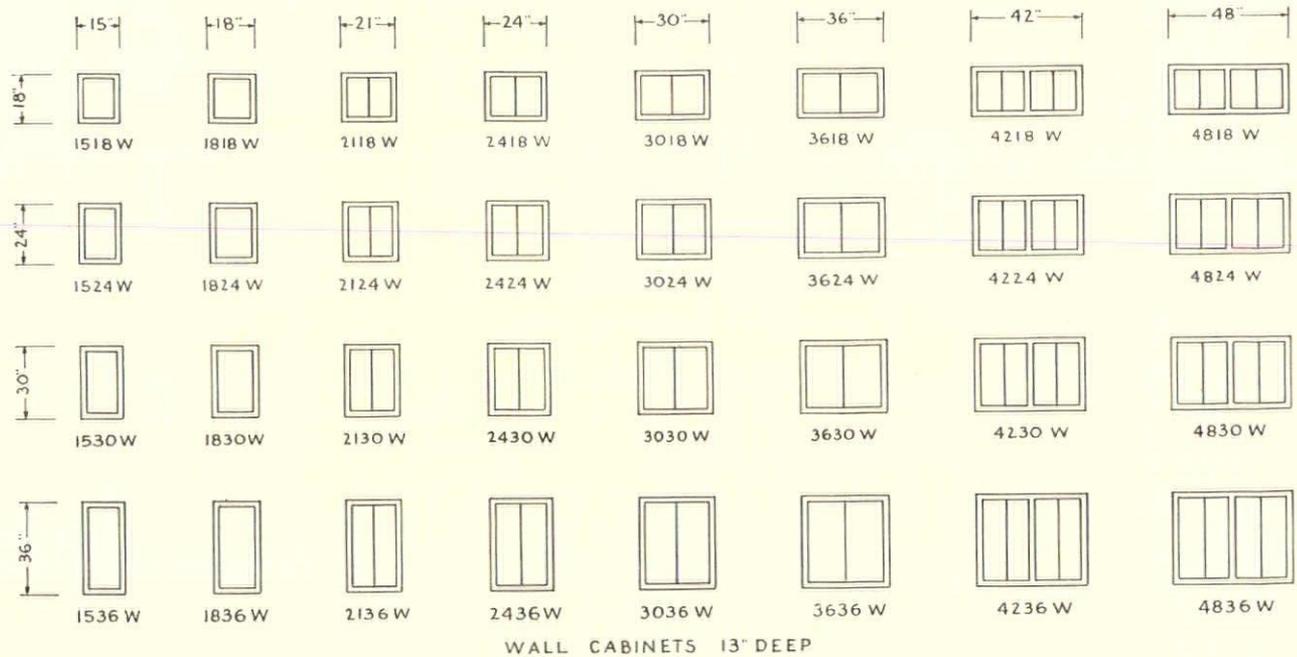
The standard finish is grease-proof and acid-resisting, of ivory baked enamel in high gloss finish with chromium finish hardware in modern design. All drawers are lined on the bottom with battleship grade linoleum. Architects may have complete Specification Data on request to the Art Metal Construction Co. of Jamestown, N. Y.



## ART METAL KITCHENETTE ENCLOSURE *for apartment houses*



# STANDARD SIZES OF ART METAL UNITS



SYMBOLS : EX.- 2430 W = 24" WIDE 30" HIGH WALL CABINETS  
 W = WALL CABINETS  
 B = BASE "  
 T = TALL "  
 WG = WALL " WITH GLAZED DOORS

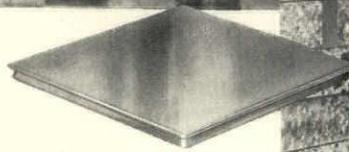
NOTE: ALLOW AT LEAST A 2" SPACE ON OVEN SIDE ONLY BETWEEN ALL RANGES & BASE CABINETS

## ART METAL CONSTRUCTION CO. JAMESTOWN, N. Y.

Branch Offices in: Albany, Baltimore, Boston, Chicago, Cincinnati, Cleveland, Detroit, Hartford, Kansas City, Mo., Los Angeles, Minneapolis, Newark, New York City, Philadelphia, Pittsburgh, Washington, D. C.



**At Last!** . . . A non-crazing tile in new and permanent colors that makes sanitary enduring walls of great beauty . . . . Easily installed at low cost. Renovize with economy and convenience.



## National Glass Tile

**A**LL of the advantages of moulded glass—smooth, enduring surfaces of highest sanitary quality, a wide range of colors, and low cost—are now obtainable in National Glass Tile for bathrooms, kitchens, hospitals, schools, storefronts, gas stations, corridors, ceilings and wherever beauty, permanence and sanitation go hand in hand. For the first time, glass has been made a practical material for wainscoting purposes in tile form. The individual units of National Glass Tile are approximately 5/16" thick and 4 1/4" x 4 1/4"—and have heavy moulded edges. They are pressed and *locked* into metal channels of light gauge galvanized steel. The finished surface of a National Glass Tile wall is smooth, sanitary, attractive and free from sharp edges.

The decorative possibilities of National Glass Tile are endless. Colors not found in any other material—such as delicate mother-of-pearl, marbelized finishes,

mirrored effects, resplendent silver and gold tiles—can be manufactured in addition to the standard colors of black, white, ivory and soft green, already obtainable from stock. Special colors and unusual decorative effects, including sand-blasted tiles and moulded faces, can be made on special order. All colors are solid and uniform throughout the tile. All standard forms of trim commonly obtainable in ceramic tile are made in National Glass Tile and in colors to harmonize with the field tiles.

Erection is extremely simple. The galvanized metal channels are nailed horizontally to any surface such as wood, plaster or to furring over steel or masonry. The tiles are snapped into place and are *self-locking*. After spacing the units as desired, the joints are pointed in the usual manner. Tile may be fitted around obstructions and at corners by cutting with an ordinary glass cutter.

Installation is rapid, clean and easy. Galvanized metal channels are nailed to the wall, the thick glass tiles snapped into place and the joints pointed

The only tools required are a pair of tinner's snips, a glass cutter and a hammer. Replacements are easier than in any other construction. Broken tiles may be removed and new ones snapped into place. Ceilings can now be tiled with the utmost safety. The tiles are *locked* in place.

Low cost, commensurate with high quality, is the feature of National Glass Tile. Installation is rapid and inexpensive in either old or new work. The resulting wall, because of the toughness of the glass, combines enduring quality with enduring beauty. It insures the longest life with the minimum of upkeep.

For complete information address:

### NATIONAL FACADE CORPORATION

101 Park Avenue  
New York, N. Y.

730 Park Building  
Pittsburgh, Pa.



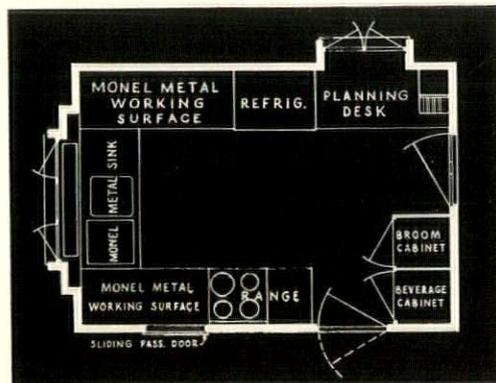
## Better Kitchen Planning with Monel Metal Surfaces

● Probably the most important single consideration in planning the modern kitchen is the matter of specifying working surfaces that not only are adequate to the size and shape of the room, but which harmonize with the character of its equipment in appearance, utility and quality.

Architects are consequently confronted with the question: What material provides the best combination of properties for kitchen working surfaces? Which material is most available in the form of sinks and tops? Prices, of course, must be within the limits of the average building or remodeling budget.

### *Modern Requirements*

Analysis quickly shows that most materials fall far short of



filling modern requirements as measured by the housewife's yardstick of beauty, cleanability, durability and color harmony. Coated surfaces, for example, are soon likely to chip, crack and lose their original glaze. The coating becomes porous and increasingly difficult to keep clean and free of stains. Where working surfaces are all white, there is the added drawback of glare and monotonous appearance. Where colored surfaces are adopted,

the opportunity of changing kitchen color schemes from time to time is largely sacrificed.

Although these disadvantages narrowly restrict the choice of working surface material, they lead naturally to one which fits the architect's requirements admirably. This material is Monel Metal, the solid, silvery Nickel alloy which is now so

● Increased working area in this kitchenette is obtained through the use of a Monel Metal "Straitline" Sink, with its space-saving drainboards and roomy, full-size sink bowls.



widely used for food service equipment of all kinds in hotels, hospitals, schools and similar institutions.

#### Monel Metal — the Ideal Material

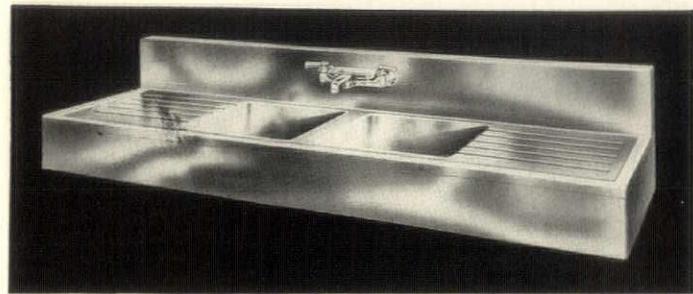
In Monel Metal, the architect finds the ideal characteristics for sinks, cabinet tops, range tops and other much-used kitchen surfaces. This metal combines striking, modern beauty with a rare group of practical properties which are a blessing to the busy housewife. It is rust-proof and highly resistant to corrosion, with a satin-smooth surface that is easy to keep clean and bright. It has no coating to chip, crack or rub off, and it is strong as steel. Being tough and rigid, it is not easily scratched or dented, and as a result, Monel Metal kitchen equipment retains its attractive appearance permanently.

The use of Monel Metal equipment also simplifies the architect's problem of planning modern continuous working surfaces that are uniform in finish as well as in width and height, and thus producing effects that are most pleasing to the eye. With 53 standardized models and sizes of Monel Metal sinks and tops to choose from, he is assured of meeting every requirement in matters of kitchen design and arrangement, as well as equipment costs.

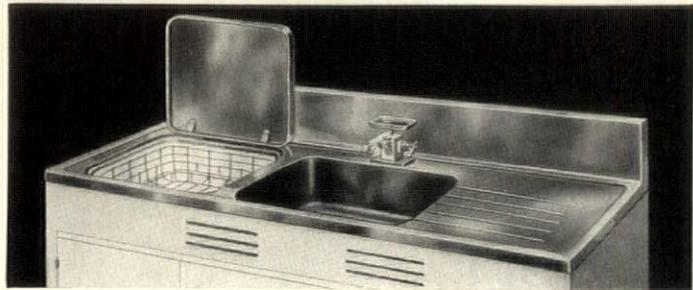
Complete data on Monel Metal standardized sinks and tops are cataloged under A.I.A. File No. 29H6 which may be obtained from The International Nickel Company, Inc.

**THE INTERNATIONAL  
NICKEL COMPANY, INC.**  
67 WALL STREET, NEW YORK, N. Y.

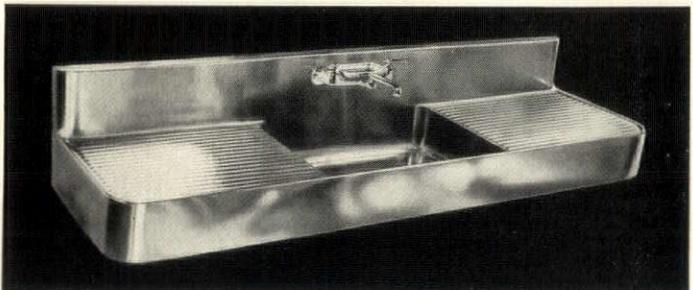
Monel Metal is a registered trade-mark applied to an alloy containing approximately two-thirds Nickel and one-third copper. Monel Metal is mined, smelted, refined, rolled and marketed solely by International Nickel.



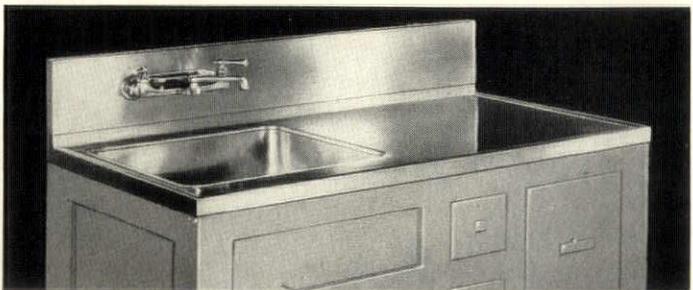
Monel Metal "Straitline" Sink, two compartment, double drainboard model. Made of heavy gauge metal, satin-finished. Available also in single bowl and single drainboard models, with or without back splasher.



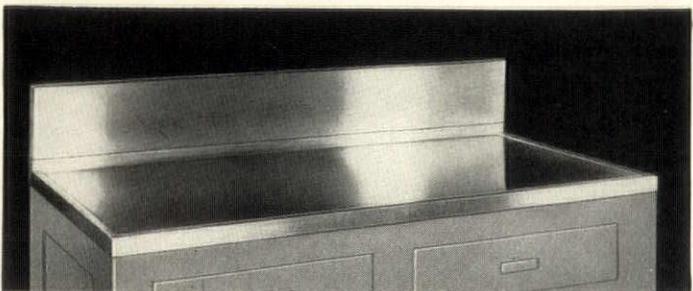
Monel Metal dishwasher sink of a popular type made by a leading manufacturer of electric kitchen equipment. Name on request.



Monel Metal "Streamline" Sink, double drainboard model. Available also in single drainboard and corner sink models. Seamless construction throughout and built to last a lifetime.



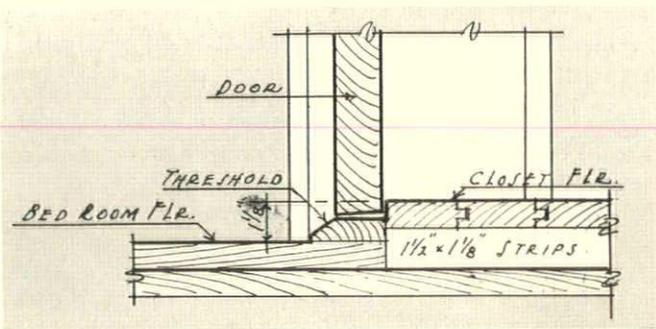
Monel Metal "Straitline" Kitchen Cabinet Sink. Made also in double drainboard models and available with or without back splasher.



Monel Metal "Straitline" Cabinet Top, complete with optional back splasher.

# ... Things You Didn't Learn in School

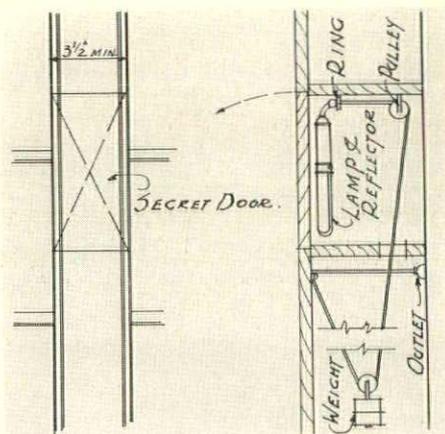
American Architect will pay \$5 for each suggestion published on this page



## • ELIMINATING THE CRACK UNDER CLOSET DOORS

By Fred H. Elswick  
Rush, Kentucky

WHERE doors to closets should be tight against dust and moths, and yet swing clear over rugs, the closet floor may be raised to form a bottom stop as shown above.



## • HANDY LIBRARY LIGHT

By Luis Van Rooten  
Cleveland, Ohio

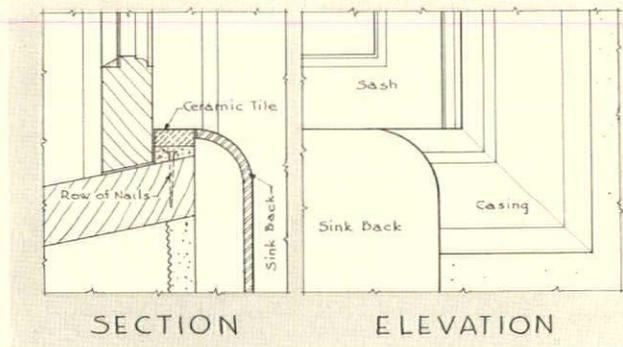
A SMALL lamp that can be used to locate books in the library and yet be concealed when not in use is shown in the accompanying detail. The mechanism is simple and easily installed in a stile between shelf units. The cord never gets in one's way. This lamp is concealed by a secret door on the face of the stile when not in use.

## • TO FLOAT A DRAWING

By Lancelot Sukert, A.I.A.  
Detroit, Michigan

A QUICK way to float a tracing paper rendering on a piece of card is, instead of mixing up a quantity of diluted paste, to wet with water the back of the paper and the surface to which it is to be applied. Take a wet sponge, dig out a large piece of Higgin's Drawing Board paste, hold it in the center of the underside of the sponge and rub it thoroughly over the dampened back of the tracing paper until you are sure

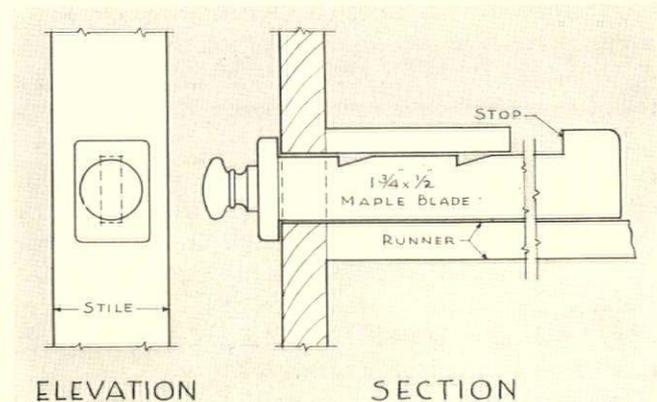
that every spot has been thoroughly covered. Float the drawing onto the card in the usual way.



## • TRIM FOR WINDOW OVER KITCHEN SINK

By Stanley T. Shaw  
Tacoma, Washington

THE accompanying drawing shows an inexpensive and sanitary solution of a window stool condition occurring at a kitchen sink. When the back of the sink is longer than the window is wide, the wood casings terminate on top of the sink back; when the sink is shorter, the casings are mitered and returned to the side of the sink back. Sash sizes and opening locations must be carefully figured and the roughing for the sink checked to assure the correct joining of window and sink.



## • FOR COAT HANGERS IN DRESSING ROOM

By Walter D. Burger  
Chicago, Illinois

A SIMPLE but convenient holder for coat hangers can be built in the frame of a clothes closet opening or in the stile between the doors of a dressing cabinet. The holder can be concealed when not in use. It is useful when laying out clothes before dressing or to hold hangers when putting clothes away.

# NEW CATALOGS . . .

Readers of AMERICAN ARCHITECT may secure without cost any or all of the manufacturers' catalogs described on this and the following page by mailing the prepaid post card printed below after writing the numbers of the catalogs wanted. Distribution of catalogs to draftsmen and students is optional with the manufacturers

## SOLKA—A BASE FOR ASPHALT ROOFINGS

269 . . . Brown Co., Portland, Maine, has prepared a folder illustrating and describing a new and improved cellulose fibre base which is used by manufacturers of asphalt shingles and roofing felts to produce high grade finished roofing.

## EMERSON KITCHEN VENTILATING FANS

270 . . . An improved line of electric ventilating fans, some of them reversible for cooling as well as ventilating domestic kitchens, is described with complete design data in a 6-page folder issued by The Emerson Electric Mfg. Co., St. Louis, Missouri. Adjustable boxes for permanent wall installation and mounting panels for window or transom installation are included. A. I. A. File 30-D-1.

## DRIVE PIPE AND CASINGS FOR WATER WELLS

271 . . . Republic Steel Corporation, Youngstown, Ohio has issued a 6-page folder describing Republic Electric Weld pipe as "The Ideal Pipe for Water Wells." Data on Toncan Iron pipe and well strainers are included.

## WESTINGHOUSE ULTRA-VIOLET LUMINAIRES

272 . . . All types of lighting fixtures and lamps for ultra-violet radiation in combination with general lighting are described and fully illustrated in a 16-page catalog issued by Westinghouse Electric and Manufacturing Company, Cleveland, Ohio. New household units including bridge lamps, floor lamps and torches; fixtures for office, industrial, and agricultural uses are shown. Catalog 219-E.

## DATA ON VITA GLASS

273 . . . A 16-page booklet issued by Vitaglass Corporation gives a general description of Vita Glass, a partial list of users and information regarding the variety of types in which the glass is produced. A. I. A. File No. 26-A-92.

## MINNEAPOLIS-HONEYWELL MOTORS

274 . . . A 4-page, loose-leaf folder gives detailed specifications for new

types of industrial motors manufactured by Minneapolis-Honeywell Company.

## CEILING OF STAMPED METAL

275 . . . A small pamphlet issued by the Edwards Manufacturing Co. of Cincinnati, Ohio describes the company's new line of patterned metal ceilings.

## CORK INSULATION METHODS

276 . . . Cork Insulation Co., Inc., of New York has issued an illustrated catalog of 40 pages describing complete methods for insulating industrial plants. Included are data on the installation of sheet corkboard and the covering of piping and fittings.

## MODERNIZATION CASE STUDIES

277 . . . "Modernization Tried" is a 32-page booklet which contains illustrations and authenticated reports of various modernization projects. The reports include complete data regarding financing and should be valuable as case studies of this type of work. The booklet is issued by American Radiator Company of New York.

## "HOT-KOLD" AIR CONDITIONING SYSTEM

278 . . . The Edwards Manufacturing Co., Cincinnati, Ohio, has issued a 22-page loose-leaf booklet descriptive of their "Hot-Kold" Air Conditioning system. Included are many illustrations and a section of technical data. A. I. A. File No. 30-B-12.

## TIME-CONTROLLED THERMOSTAT

279 . . . In a 12-page pamphlet is described the Thermochron, a time-controlled thermostat which is one of the new products of the Minneapolis-Honeywell Regulator Company. Technical descriptions and operating charts are included.

## MODERN METAL FURNITURE

280 . . . An illustrated broadside issued by the Howell Co., Geneva, Ill., gives descriptions, sizes and prices of a line of modern furniture particularly adapted for use in beer gardens and cafes.

## CALDWELL SASH BALANCES

281 . . . A 20-page illustrated booklet presented by the Caldwell Manufacturing Co., Rochester, N. Y., gives complete technical and installation data on the metal sash balances manufactured by the company. Included with the booklet is a 4-page leaflet giving weights and prices for the sash balances and other Caldwell hardware specialties. A. I. A. File No. 27-A-1.

## LINOLEUM IN RESIDENCES

282 . . . The Armstrong Cork Co., Lancaster, Pa., has issued a colorful, 32-page brochure entitled "Floor Beauty for Homes New and Old" which illustrates residential uses for linoleum, gives installation hints and lists several examples in full color of linoleum patterns and their use in various rooms.

NO POSTAGE REQUIRED ON THIS CARD

AMERICAN ARCHITECT  
New York City

July 1933

Please have the following catalogs reviewed in this issue sent to me.

Numbers .....

• I also desire further information about the new products described in this month's "New Materials and Equipment." (See pages immediately following this insert)

Numbers .....

• I would like to have catalogs and information concerning the following products advertised in this issue. (See advertisers' list on following page).....

Name .....

Firm name .....

Address .....

City .....

Occupation .....

FOR JULY 1933

# These NEW Catalogs may be obtained through AMERICAN ARCHITECT

## JAMISON COLD STORAGE AND REFRIGERATOR DOORS

283 . . . The Jamison Cold Storage Door Co., Hagerstown, Md., offers a comprehensive 16-page booklet covering the company's line of cold storage and refrigerator door products. Included is information on door hardware and types of special doors and several details of typical installations. A. I. A. File No. 32-C-1.

## FLEXIBLE GLASS SUBSTITUTE

284 . . . An 8-page pamphlet suggests a variety of uses for Vimlite Flexible Health Glass and includes technical data and construction details for the product. The bulletin is issued by Taylor, Rogers & Bliss, Inc., for the Vitalite Company, New York. A. I. A. File No. 26-A-92.

## GOULD CENTRIFUGAL PUMPS

285 . . . This 12-page catalog of Gould-Flexi-Unit Centrifugal Pumps gives complete data including carefully prepared pump selection charts on their new line of centrifugal pumps adding capacities to 4500 G. P. M. and heads up to 350 feet.

## QUIET MOTORS BY GENERAL ELECTRIC

286 . . . General Electric Company, Schenectady, N. Y. has recently issued a 4-page loose-leaf folder descriptive of the G. E. line of quiet induction motors. The contents cover information on testing, installation and control. Similarly presented is a 2-page leaflet concerning G. E. sound-isolating motor bases. A. I. A. File No. 31-G-2.

## NORTON NON-SLIP FLOORS

287 . . . Two new 4-page pamphlets issued by the Norton Co., Worcester, Mass., set forth specifications for various types of non-slip floors containing aluminum aggregate. Vol. 9, No. 1 is concerned with terrazzo floors for public

buildings; Vol. 9, No. 2 treats of non-slip ceramic tile floors for swimming pools, showers, etc. A. I. A. File No. 3-D-5.

## SPECIFICATIONS FOR RCA SOUND SYSTEMS

288 . . . RCA Victor Company, Inc., Camden, N. J., has issued two specification pamphlets. One, bound in a heavy cover, comprises eight pages of outline specifications covering centralized sound systems. The other is a 4-page folder and is concerned with the specification for sound reproducing and motion picture equipment.

## FRIGIDAIRE AIR CONDITIONING EQUIPMENT

289 . . . A comprehensive presentation of air conditioning equipment made by the Air Conditioning Division, Frigidaire Corporation, Dayton, Ohio, is presented in a 32 page booklet. Diagrams and illustrations indicate logical applications of the new equipment in various types of commercial, industrial and residential structures. Dimensions and capacities of units are included.

## MAINTENANCE OF ARCHITECTURAL ALUMINUM

290 . . . The Skybryte Company, Cleveland, Ohio, has issued an 8 page booklet containing in convenient reference table form complete data on the finishing, protection and subsequent maintenance of architectural aluminum using the various Skybryte waxes, finishing compounds and cleaners.

## BAR-Z HOLLOW PARTITIONS

291 . . . A new steel stud partition consisting of Bar-Z studs stamped out of steel with metal lath and plaster faces is described in a 24 page catalog and construction manual issued by the Consolidated Expanded Metal Companies, Wheeling, West Virginia.

## YORK REFRIGERATING MACHINERY

292 . . . A series of catalogs have been issued by the York Ice Machinery Corporation, York, Pennsylvania, illustrating and describing their air conditioning and refrigerating units as follows: York Refrigerating Units, designed expressly for Freon, A. I. A. File No. 32, indicates the character of construction of units made for this new refrigerant. York Self Contained Refrigerating Units for ammonia, is a 16-page catalog, A. I. A. File No. 32, giving details of construction and assembly. York Air Conditioning Equipment is presented in an 8 page general descriptive booklet and a single page catalog sheet, A. I. A. File No. 30-F-1.

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AMERICAN ARCHITECT

# New Materials and Equipment

BRIEF REVIEWS OF MANUFACTURERS' ANNOUNCEMENTS  
TO KEEP THE ARCHITECT INFORMED OF NEW PRODUCTS

## Westinghouse Unit Air Conditioner

**202M** Engineers of Westinghouse have developed a new unit air conditioner that cools, dehumidifies, heats, humidifies, filters and circulates the air within a particular room. The unit, designed for installation under a window or along a wall, is encased in a compact cabinet available in two kinds of finish. A special size is offered for wall or ceiling mounting. The device requires connection to the heating and water systems of the building. The refrigerating apparatus may be in the basement or in an adjoining room.

## Elevator Floor Carpets

**203M** To improve the appearance of elevator cabs and to reduce the costs of cleaning, the Otis Elevator Company will now furnish two grades of seamless carpeting for elevator floors. The standard grade is  $\frac{3}{8}$  in. thick and the de luxe grade  $\frac{1}{2}$  in. thick. Both grades are available in twenty-two colors, which may be used in combination, and several patterns or special designs. The seamless feature of the covering makes repair a simple matter, and the carpets are said to effect a large saving in cleaning and maintenance costs. The cost of the plain carpet installation is said to be about 20 per cent less than new rubber tile.

## Timed Control of Temperatures

**204M** The Thermochron is a new instrument developed by Minneapolis-Honeywell Regulator Co. that makes possible thermostatic heat control with a time check. In contrast to ordinary thermostats, the Thermochron turns on heat for a period varying as the rate of heat loss, thus maintaining a temperature within a fraction of a degree to which the control is set. This timing feature is said to eliminate objectionable over- and under-heating and air stratification which occurs with a control that depends upon a change in temperature alone.

## Compact New Air Filter

**205M** The Independent Air Filter Co., 215 W. Ohio St., Chicago, have announced a new model air filter which may be installed in many places where air filters have not been considered feasible due to cost. The unit, designated as Model "M" is particularly adapted to small ventilating installations, because of its self-cleaning and constant effect characteristics. For capacities above 4500 cfm. the filter is usually equipped with a motor drive. It contains a manual control for capacities under that figure.

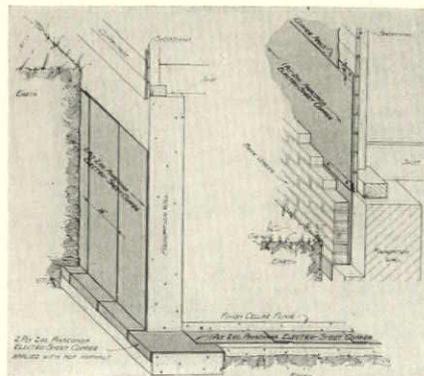


## Celotex Rock Wool Batts

**206M** To complete their line of insulating materials, the Celotex Company of Chicago have announced a non-structural rock wool batt for use between framing members of wood structures or in other types of buildings where strength is not required of the insulating material. The batts are felted of extra-long rock wool fibers and are manufactured to the thickness of a standard wood stud. They are said to give the maximum practical protection in a standard wall section and, according to the manufacturers, will not settle or sag between the studs.

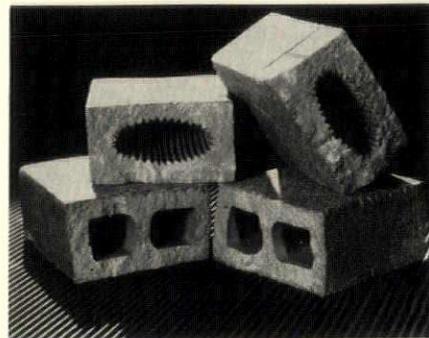
## New Use for Sheet Copper

**207M** Copper, long noted for its easy workability and rust-proof quality, is now available in thin sheets for use as a weather and damp-proofing agent. The American Brass Co. have announced that "Electro-Sheet" copper can be used in widths up to 30 in. and in weights of one and two ounces per square foot in the same manner that building paper is now used. In some cases, the copper is laid in hot asphalt to be covered with finished construction.



## "Comfort Conditioner" Cools and Heats

**208M** Buffalo Forge Co., Buffalo, N. Y., announces a new unit for room cooling and heating that is self-contained, requires only 20 in. of head room and has been sound-insulated throughout. The "Comfort Conditioner" is adaptable to a wide range of small commercial installations and is made in three sizes, 2, 4 and 6 tons cooling capacity giving an average temperature drop of 28 degrees. Heating coils have a B.t.u. range of from 77,500 to 232,000 per hour. Heating and cooling are accomplished through two extended surface copper coils, one for steam or hot water, the other for cold water, brine, methyl chloride or freon. Apparatus is cased in insulating board trimmed with metal.



## New Hollow Brick Unit

**209M** Efforts to reduce the weight of bricks and to decrease the effort necessary to lay them have resulted in the development of a new face brick having a hollow center which reduces the weight of each unit 20 per cent. The new bricks, manufactured by the Fiske Brick and Granule Co., 18 Newbury Street, Boston, Mass., are said to produce a better wall in shorter time at a resulting lower cost.

## Thermolyzed Tung Oil Patent

**210M** Tung Oil, a comparatively new active ingredient of paint, varnish and enamel is assuming increasing importance as an agent in developing waterproof and wear-resisting paints. The O'Brien Varnish Company, South Bend, Indiana, have recently been issued full process and product patents covering their development of Thermolyzed Tung Oil. According to the chemists of the company the product

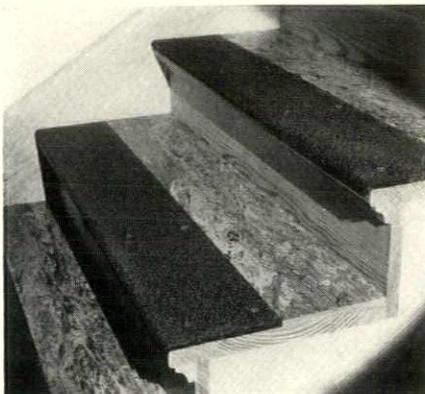
has the ability to increase the smoothness, wearing quality and washability of paint, varnish or enamel, besides possessing unusual drying and waterproofing qualities.

### Humidity Control Device

**211M** To control operation of any equipment that humidifies or dehumidifies Lewis Air Conditioners Inc., Minneapolis, Minn., offer a new type of open contact device called the "Humitrol." The unit can be adjusted to any desired range of humidity at the factory and can be manually adjusted within a 10 per cent differential. It is offered in two types. The open spark unit requires a transformer from a 110 volt circuit; the spark-proof instrument operated without transformer contains a mercury tube and can be used on ordinary circuits with loads up to two amperes. The mechanism of both models is enclosed in a walnut finish case of bakelite.

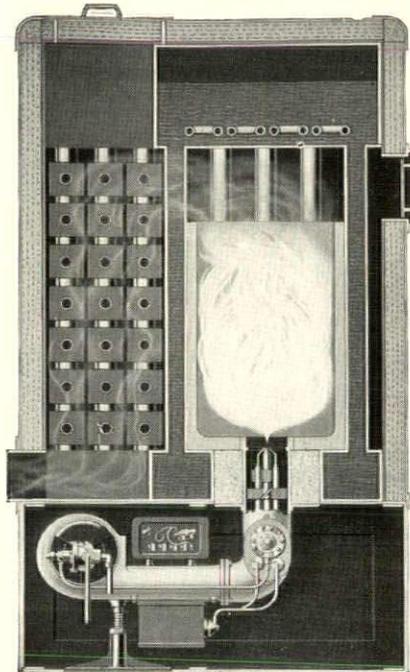
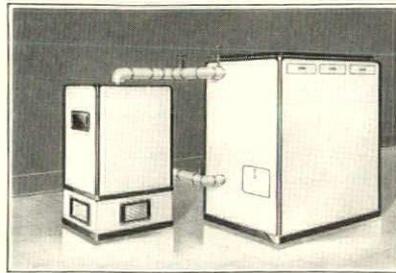
### Rubber Safety Tread

**212M** An Alundum Rubber Bonded Safety stair tread which is said to be an entirely new development in non-slip materials is now being made by the Norton Co. of Worcester, Mass. Aluminum oxide, the aggregate used in the material, is bonded in a base of reinforced hard rubber. The resulting surface is said to be highly resistant to wear and to maintain the non-slip characteristic indefinitely and under all conditions of weather and dampness. Application of the safety tread may be made over any type of stair surface.



### New Electric Air Conditioner

**213M** A compact device for the air conditioning of individual rooms is now made by the De La Vergne Engine Co., of Philadelphia. The unit is self-contained in a hardwood cabinet, operates by electricity, is air cooled and requires no piping for either water or refrigerant. Installation requires only an electrical outlet of 2 k.w. capacity and air ducts arranged under a partially raised window sash. The unit uses freon as a refrigerant and by the turn of a lever may be changed from a cooling and dehumidifying machine into one that heats and humidifies. It has refrigerating capacity of 1½ tons ice meltage per 24 hours or 18,000 B.t.u. per hour.



### Central Air Conditioning Plant

**214M** A complete air conditioning plant which includes a cooling device, a heating unit and a duct system is announced by Scott-Newcomb Co. The cooling unit is a central plant located in the basement and operates in conjunction with a new type of oil-burner and boiler unit which the manufacturers have added to their line of Pioneer Oil Burners. In a new installation, air is cooled or warmed by passing over a special radiator in the air conditioning plant and is supplied to various rooms through ducts. For heating, the radiator is filled with steam or hot water supplied by the boiler. A special non-toxic liquid refrigerant is used in the radiator. Where radiators are already in, the refrigerant is piped from the basement to the rooms to be cooled. The new boiler-burner unit has a capacity of 1000 sq. ft. of radiation, can be used independently of the cooling system and supplies domestic hot water without requiring a special hot water tank. The oil burner itself is of the pressure atomizing type with electric controls. It burns No. 3 oil and projects a vertical, noiseless flame up into a large combustion chamber.

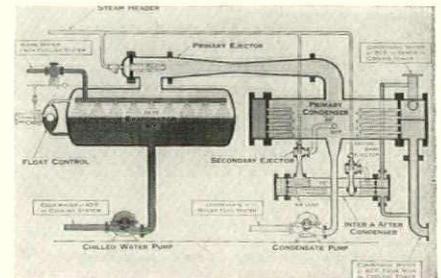
### Spiral Nail for Roll Roofing

**215M** To prevent damage to roll roofing caused by nail popping or drawing, W. H. Maze Company of Peru, Illinois, have developed a large-headed roofing nail with a spirally

twisted shaft. The nails are rust-proof and, according to the manufacturers, tests have shown that the screw action of the spiral holds the nail secure.

### Steam Vacuum Refrigeration

**216M** One of the several new air conditioning devices announced by American Radiator and Standard Sanitary Corp. is called the "Declorator" and is used to produce chilled water for air conditioning systems in place of the more usual type of refrigerant. The unit operates by application of the fact that water under high vacuum will vaporize at low temperature. Warm water is sprayed into a tank where a partial vacuum is maintained by steam traveling at a high velocity through a Venturi tube. Evaporation cools the water in the tank from whence it is pumped to the cooling system at a temperature that is thermostatically controlled down to 35° F. Standard methods are employed to condense the steam. Steam at any pressure may be used and it is not necessary to consider live loads in foundation design for installation of the unit.

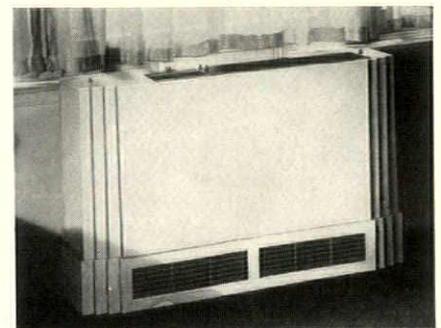


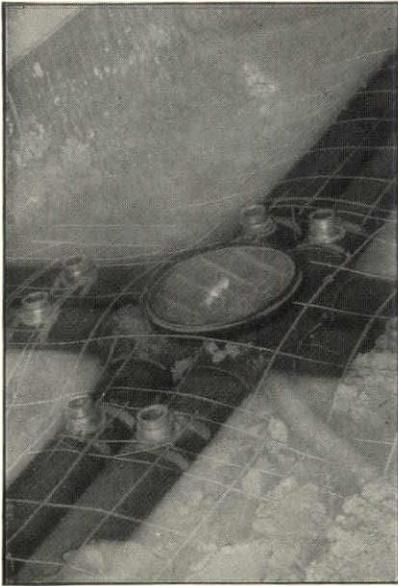
### New One-Piece Kohler Toilet

**217M** The latest product of the Kohler Company is a quiet, syphon-jet toilet that is distinguished by the one-piece construction of vitreous china and the unusually large passage way which measures 2½ inches. The new fixture, the "Integra," has smooth surfaces and rounded corners.

### Self-Contained, Noiseless Air Conditioner

**218M** Campbell Metal Window Corp., subsidiary of American Radiator and Standard Sanitary Corp. offer a new device which performs all functions of a self-contained air conditioning machine. In addition it is fitted with devices to filter and circulate the air and to eliminate noise.





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### G-E FIBERDUCT

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Because of its flexibility, low cost and permanency, G-E Fiberduct is the ideal underfloor wire-way system. It provides adequate outlets for all present needs and permits additional outlets for future requirements.

By specifying G-E Fiberduct you assure wiring flexibility for the life of the building. Thus the owner can make necessary changes to comply with the demands of present or new tenants.

General Electric Fiberduct is safe, economical, and easy to install. It increases the value of any building and prevents premature wiring obsolescence.

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For long-life performance and economy, specify G-E White Electrical Conduit. It is hot-dipped galvanized. This process assures protection against rust and corrosion. The hard, smooth Glyptal coating inside and out resists water, oils, acids and alkalis; and provides a glass-like surface which facilitates wire pulling. Clean, deep threads and easy bending are outstanding characteristics which make for speedy installations.

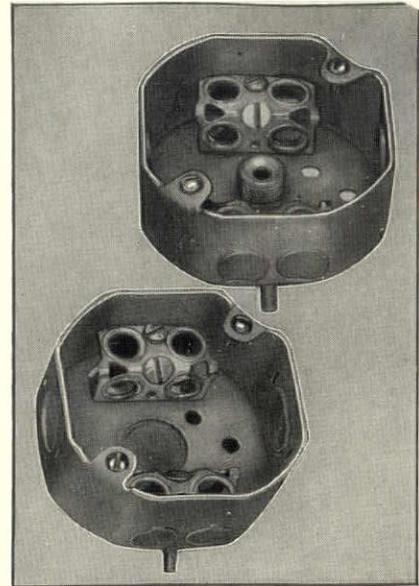
G-E White Electrical Conduit is built to protect for a lifetime the wiring systems of modern buildings.

Consult a General Electric Merchandise Distributor regarding your conduit requirements. Or, write Section CCF-117, Merchandise Department, General Electric Company, Bridgeport, Connecticut.



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These special 3 1/2-in. octagon boxes afford ample working room for satisfactory results. The new type two-way one-piece clamps hold and bush the cable and also seal the knockout openings.

Economical to install, G-E Outlet Boxes will render safe, efficient service for the life of the building. They are recommended for use on old, as well as new installations. (Each box has slots on both sides for insertion of old work mounting straps.)

There are many other types of G-E Boxes in galvanized or black enamel finish for every requirement. Your nearest G-E Merchandise Distributor will gladly give you complete information. See him, or write to Sec. CCF-117, Merchandise Department, General Electric Company, Bridgeport, Connecticut.



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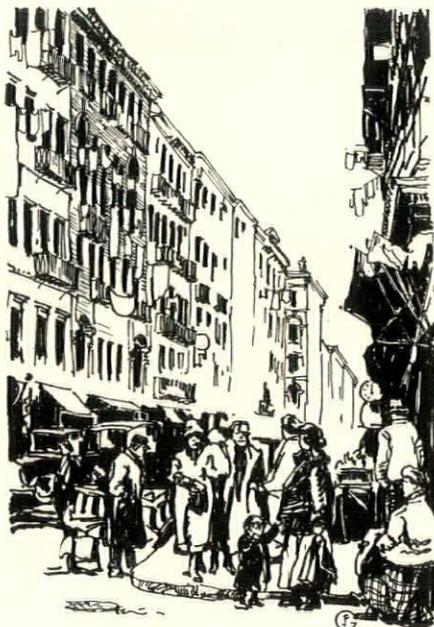
MERCHANDISE DEPARTMENT, GENERAL ELECTRIC COMPANY, BRIDGEPORT, CONNECTICUT

**THE EVOLVING HOUSE**  
A History of the Home

By Albert Farwell Bemis and John Burchard. 2nd. Published by The Technology Press of the Massachusetts Institute of Technology, Cambridge, Massachusetts. Illustrated, indexed; 534 pages; size 6" x 9 1/4"; price \$4.00

UNLIKE most monumental treatises on subjects of wide scope, this study of the history of man's dwellings is thoroughly readable and engrossing. It is the first of a series of three volumes, inspired by Mr. Bemis's long-standing conviction that housing has been the most backward of the essential industries in its response to industrial and economic progress, which in their entirety are planned to offer a foundation upon which future housing progress may be soundly based. This initial volume surveys housing historically. The first part deals with pre-historic and primitive houses and carries them through the transitional period toward higher civilization. The second part follows the evolution of the modern American house, stressing particularly the development of dwellings in England from the Neolithic Period to 1900, as having the most direct influence on American practices. The concluding part broadly covers the modern houses of the world and reveals something of the intermingling of forces that has influenced contemporary dwellings and will further influence the changes that are to come.

The second volume will analyze current housing conditions and trends and the third will offer an engineering ra-



tionalization of house construction and a suggested solution of basic housing problems.

**WALLACE CLEMENT SABINE**  
A Study in Achievement

By William Dana Orcutt. Published by the Plimpton Press, Norwood, Massachusetts. Illustrated; 376 pages; size 6 1/2" x 9 1/2"; price \$5.00

TO architects the name of Wallace Sabine will always be associated with the science of acoustics. To those who did not have the privilege of his personal acquaintance, his biography will be a revelation in character, the romantic story of a rare genius and an inspired teacher. The present volume follows the life of Wallace Sabine from his boyhood, his college days at Harvard, as a Professor of Physics at Harvard, his development of the science of acoustics, family life, and the work he accomplished through the application of his scientific knowledge for the Allies during the World War. The author states in the preface, "This volume is not a biography in the ordinary sense, for no adequate life of Wallace Sabine can ever be written. The full portrayal demands data he instinctively concealed behind his 'protective crust of reserve,' and requires access to the intimate facts which lie buried in the secret archives of the American, British, French and Italian War Records." The volume in fact is a word picture of a remarkable personality and is, as the subtitle states, "A Study in Achievement." Anyone interested in the personalities behind the science of building, whether or not personally acquainted with Wallace Sabine will find his biography stimulating, fascinating and a delightful portrayal of the achievement of a man who was as someone said "the least-known great man America has produced."

**ARCHITECTURAL PLANNING OF THE AMERICAN COLLEGE**

By Jens Frederick Larson and Archie MacInnes Palmer. Published by McGraw-Hill Book Company, Inc., New York. Illustrated; 181 pages; size 7 1/2" x 10 1/4"; price \$2.00

THIS volume is the outgrowth of an architectural advisory service which the Association of American Colleges has for the past several years been maintaining for the benefit of its member colleges. Though primarily designed to be of value to college presidents, trustees, faculties and members of

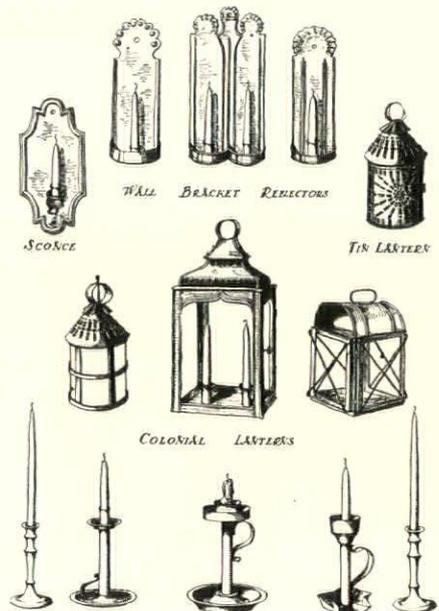
building committees, this book will be of equal significance to architects interested in the design and planning of college or university buildings. Its scope is clearly indicated by its major subdivisions: Character in College Architecture; The Architect and the College; Planning the Campus; and Planning the Buildings. The last section is divided to treat separately of the administrative and educational buildings as one group, and residential, recreational and social buildings as the other. The numerous floor plans of typical or unusual buildings are informative. The many illustrations reveal the high order of architectural design to be found in the majority of buildings in American liberal arts colleges.

**THE COLONIAL AND FEDERAL HOUSE**

How To Build an Authentic Colonial House

By Rexford Newcomb, A.I.A. Published by J. B. Lippincott Company, Philadelphia. Illustrated; 174 pages; size 7" x 10"; price \$3.50

IF justification for a popular interpretation of Colonial architecture were needed, it may be found in Professor Newcomb's own words, which, incidentally, reveal his approach to the subject. "The last twenty years have seen a marvelous revival of all phases of Colonial art with the result that Colonial houses, or attempts at them, are seen in almost every community. . . . But what distance artistically these derivatives of the original Colonials have strayed! Much of the knowledge



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regarding true Colonial principles and tradition borders upon the archaeological and few laymen have the time or patience to ferret out this knowledge for themselves. But many who have no time to make such studies want a true Colonial home. It was for this group of discerning builders that the present volume was prepared." The text and illustrations not only embrace many of the historically or architecturally famous early buildings, including many plans and a number of measured drawings, but also include much recent work in the Colonial or Federal styles by contemporary architects. These modern examples bridge the gap between the authentic originals, which naturally are ill-adapted to present day living standards, and "livable" houses with all modern conveniences. They heighten the practical value of the volume to the lay reader. This book is one that architects may well read and recommend to clients interested in the potentialities of the Colonial and Federal periods.

#### ADVANCE PLANNING OF PUBLIC WORKS BY STATES

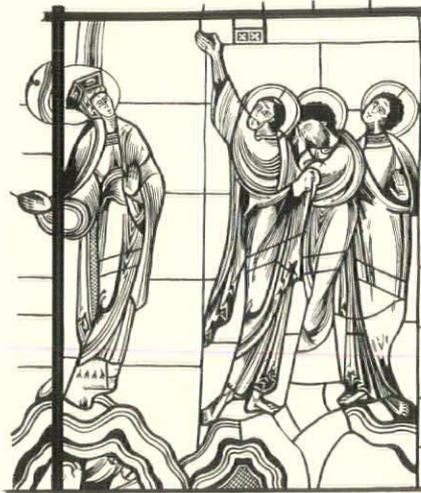
Published by the Federal Employment Stabilization Board, Washington, D. C. Type-written report with printed enclosures; free to those interested.

RECOGNIZING the value of legislation providing for the advance planning of public works, the American Institute of Architects, American Engineering Council, and Associated General Contractors in cooperation with the Federal Employment Stabilization Board, have prepared this portfolio of information which would be helpful in formulating appropriate legislation. Since legislatures are in session in 43 states this winter, with four states planning to consider such bills, the report is timely.

#### ANCIENT STAINED AND PAINTED GLASS

By F. Sydney Eden. Published in Cambridge (England) by The University Press; New York, The Macmillan Company. Illustrated, indexed; 214 pages; size 5 $\frac{1}{4}$ " x 7 $\frac{3}{4}$ "; price \$2.50

THIS is the second edition, revised and enlarged, of a book first published as a Cambridge Manual in 1913. It supplies a foundation for an intelligent appreciation of such remains of stained and painted glass older than 1714 as are still to be found in ancient English buildings. The first chapter describes the subject, and in particular, its fragmentary condition and the historical causes which have produced that condition. The connection between glass painting and the other arts ancillary to architecture is discussed with special reference to their common ob-



jects and use. The styles are then described, and the concluding chapter is devoted to the latter day treatment of old glass and to suggestions for its preservation and a reasonable use of what is left.

#### LIFE INSURANCE HOME OFFICE BUILDINGS.

Published by Life Office Management Association, Fort Wayne, Indiana. Illustrated; 156 pages; size 8 $\frac{1}{2}$ "x11"; price \$5.00. Contains a complete check list of planning and equipment requirements, a tabulation of the construction and equipment features of forty-six existing buildings of this type, and an analysis of the construction costs of three typical buildings.

#### THE INSULATION OF NEW AND OLD HOUSES.

By G. D. Mallory. Publication Number 15 of the Dominion Fuel Board, Ottawa, Canada. Illustrated, 74 pages; size 6 $\frac{1}{2}$ "x9 $\frac{3}{4}$ "; free on application. An informative, non-technical treatise for builders and owners on the selection and use of insulating and soundproofing materials in buildings.

#### INDUSTRIAL PIPING:

A Case Book of Proven Practices and Methods. Published by Engineering Publications, Inc., Chicago. Illustrated; indexed; 286 pages; size 5 $\frac{1}{4}$ "x8 $\frac{1}{2}$ "; price \$3.50. A reference collection of twenty-three technical articles by various authors, reprinted from *Heating, Piping and Air Conditioning*.

#### MEMOIRS OF THE AMERICAN ACADEMY IN ROME. Vol. XI.

Published by the American Academy in Rome; 132 pages and 20 plates; size 10 $\frac{1}{4}$ "x14"; price \$5.00; obtainable from the American Academy in Rome, 101 Park Avenue, New York. Contents: The Political Propaganda of 44-30 B.C.; *Terra Sigillata* in the Princeton Collection; Antiquities of the Janiculum; The Sleep of Death; The Large

Baths at Hadrian's Villa; and The Vestibule Group at Hadrian's Villa.

#### HYDROTHERAPY IN HOSPITALS FOR MENTAL DISEASES.

By Rebekah Wright, M.D. Published by The Tudor Press, Inc., Boston, Mass. Illustrated; 396 pages; size 6"x9"; price \$3.00. A textbook for physicians, hydrotherapists and nurses, containing a section for hospital architects and superintendents on the design and equipment of hydrotherapeutic suites.

#### MODERN CONNECTIONS FOR TIMBER CONSTRUCTION.

Prepared jointly by the National Committee on Wood Utilization, U. S. Dept. of Commerce and Forest Products Laboratory, Forest Service, U. S. Dept. of Agriculture. Illustrated; 148 pages; size 6"x9"; price 15 cents, from Superintendent of Documents, Washington, D. C. An important reference document for architects containing full information about modern practice in timber construction and the economies and advantages derived from the use of metal connectors.

#### GENERAL INDEX TO THE FINAL REPORTS OF THE PRESIDENT'S CONFERENCE ON HOME BUILDING AND HOME OWNERSHIP.

Published by The President's Conference on Home Building and Home Ownership, (new address) 42 Broadway, New York. 114 pages, size 6"x9 $\frac{1}{4}$ "; price \$1.15 alone, \$11.50 with complete set of eleven volumes covered by the index.

#### STANDARDS YEARBOOK, 1933.

Compiled by The Bureau of Standards. Published by Government Printing Office, Washington, D. C. Indexed; 250 pages; size 6"x9"; price \$1.00 from the Superintendent of Documents, Washington, D. C. (Bureau of Standards Miscellaneous Publications No. 139.) Contains a resume of the standardization work of scientific and technical societies and trade associations.

#### ART IN IRON.

Published by The Wrot Iron Designers, 225 West 34th Street, New York. Six loose-leaf portfolios of pen and ink plates; size 8 $\frac{1}{2}$ "x11"; price \$1.25 each, \$6.00 per set. Vol. A, Doors and Gates; B, Interior Railings; C, Exterior Railings; D, Grilles; E, Lamps and Candlesticks; F, Lanterns and Fixtures. Six other portfolios are to follow.

#### CODE FOR PROTECTION AGAINST LIGHTNING.

Handbook, Bureau of Standards, Number 17. Illustrated; 93 pages; size 5"x7 $\frac{1}{2}$ "; price 15 cents; for sale by the Superintendent of Documents, Washington.

## DEATHS

- James Sykes Hunter, architect, died May 1st at the age of 65. Mr. Hunter specialized in bank interiors, and was consulting engineer for the National City Bank for ten years.
- Robert Craik McLean, architectural editor, died on February 9th at Bradford Woods, Pennsylvania. For many years he was editor of the Western Architect, successor to the Inland Architect, founded by him in 1883. He was one of the founders of the Western Society of Architects which merged with the American Institute of Architects. He was 78 years old.
- Chester B. Lee, A. I. A., Toledo, Ohio died May 14th at the age of 57. After finishing his course in architecture at the University of Pennsylvania in 1906, Mr. Lee became associated, first with George S. Mills and later as a partner with Mills, Rhines, Bellman and Nordhoff. He served as president of the Toledo Chapter of the American Institute of Architects from 1928 to 1930.
- Albert Leverett Brockway died at Syracuse, N. Y., on June 26th at the age of 68. Graduated from Brooklyn Polytechnic Institute in 1883, he later studied in Paris. In the early part of his professional life, Mr. Brockway was associated with John P. Benson and Ernest Flagg and was a professor of architecture at



Syracuse University for a number of years. He served as consulting architect for the New York State Agricultural College and the State Capitol at Albany. He was appointed a member of the State Board of Examiners for registration of architects in 1915 and served until his death. Mr. Brockway was a Fellow of The American Institute of Architects and had been an executive vice-president and regional director

of that body. He was chairman of the first City Planning Commission of Syracuse, chairman of the board of directors of the Council of Registered Architects of New York State, president of Syracuse Society of Architects and president of the National Council of Architectural Registration Boards. He was also a member of the Beaux Arts Society of Architects.

- Daniel Campbell died at his home in Flushing, Long Island, May 31st at the age of 54. He was graduated from Cooper Union and had been a director of the New York Society of Architects and a vice-president of the Long Island Society of Architects.
- Warren Richard Briggs died May 31st at his home in Stratford, Conn. He was 83 years old. Mr. Briggs, studied at L'Ecole des Beaux Arts in Paris. He was a Fellow of The American Institute of Architects and had been a former president of the Connecticut Chapter. Mr. Briggs was an authority on public school design and the author of "Modern American School Buildings."

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BUILDINGS**

# The Readers Have a Word to Say

## • STUDENT VALUES ARCHITECTURAL TRAINING

Editor, AMERICAN ARCHITECT:

AN interesting editorial appeared in AMERICAN ARCHITECT for March regarding the attendance at the architectural schools of this country, which said that while all of the graduates are not expected to be architects, yet the educational training which they receive will always be beneficial to them. This claim is borne out by the following statement which was written at the close of one of my examinations this year.—*S. H. Provine, in charge of the Department of Architecture, University of Illinois, Urbana, Ill.*

The statement accompanying Mr. Provine's letter follows:

No course offers the stimulus and the possibilities for a rich human existence as does the course in Architecture. Through cultivating the habit of work with the hands in collaboration with work of the mind, the fundamental human traits are utilized.

Even though I will never design a structure other than my own house, I shall be grateful for the things architecture has taught me—how to study, how to work, and how to play, with which has come a more steady sense of values and a greater appreciation of life and living.—*Russell R. Dunlap.*

## • ADVOCATES A NATIONAL ARCHITECTS EXHIBIT, INC.

Editor, AMERICAN ARCHITECT:

SINCE the story of Architects Exhibit, Inc., appeared in your publication, I have been receiving letters from individual architects and several of the Chapters of the Institute in other states, asking my advice in establishing similar projects in their cities.

Since it is apparently impossible to eliminate the Architects Small House Service Bureau, which is actually competing with the architects at cut rate prices, it appears to me that by developing Architects Exhibit, Inc. into a national organization we might in time force the Architects Small House Service Bureau to revise their present methods and sell the architect rather than stock plans. A project of this nature would, I believe, meet with the general approval of the profession, especially the Architects League of New Jersey and I am convinced from the results of my past two years' work

in Los Angeles that it could be made self-supporting, even during this present depression.

I am convinced that this is a critical period in the history of our profession and that a radical departure from old established methods in our contact with the public is of paramount importance. Our project is bringing more than one thousand persons a month in contact with individual architects. This personal contact is much more effective than publicity which would still require a personal call at an architect's office. If our efforts could be carried on throughout the country the additional benefit would be of enormous value both to the profession and to the public.—*Herbert J. Mann, Architect, Los Angeles, California.*

## • OWNER ATTESTS VALUE OF ARCHITECT'S SERVICES

Referring to the article, "Architecture Can Be Sold to the Small House Buyer," page 20, May, 1933, issue of American Architect, a subscriber requested that the facts be verified in the case of "Mrs. D." "Mrs. D." was communicated with and replied as follows:

Editor, AMERICAN ARCHITECT:

I AM the Mrs. D. referred to in that article and I am most happy to have this opportunity to say that the story as published is entirely true in every essential detail. One slight inaccuracy which was a mere inadvertence and has nothing to do with the point of the story, is that I am in the Supervisory Department of the Los Angeles City Schools instead of the County Schools as was stated.

"I might add pages telling of my enthusiasm over my little house as it was worked out. It has a charm of detail I could never have achieved without the expert guidance of an architect. This guidance I was disposed to think I could not afford. However, through Architects Exhibit, Inc., I came to realize that even for the small house builder the services of an architect are not a luxury but a necessity.

"I feel that Mr. Mann's ability, vision and civic-mindedness equip him to render through Architects Exhibit, Inc., a service of inestimable value.

"Since this service has meant so much to me I covet it for others, hence my enthusiasm and extreme interest in this project."—*Mrs. Grace Dupuy, 2916 Temple Street, Los Angeles, California.*

## • NORTH JERSEY ARCHITECTS LIKE CALIFORNIA PLAN

Editor, AMERICAN ARCHITECT:

CAPTAIN ROBERT DOLLAR of steamship fame has been quoted as stating, "Never fight competition—meet it." These are indeed wise words. Instead of fighting small house plan bureaus that appear to be more firmly entrenched than any code of ethics, why not let us meet this and other competition? This does not mean to meet it with cut rate fees or price competition. By all means, no. We can lick this competition to a frazzle by offering the real thing which will show what a fraud and counterfeit the other is. And how? This is all clearly shown and proved by AMERICAN ARCHITECT on page 20 of the May issue "Architecture Can be Sold to the Small House Buyer." The article tells of the wonderful idea put into practice by Mr. Herbert J. Mann in Los Angeles, California.

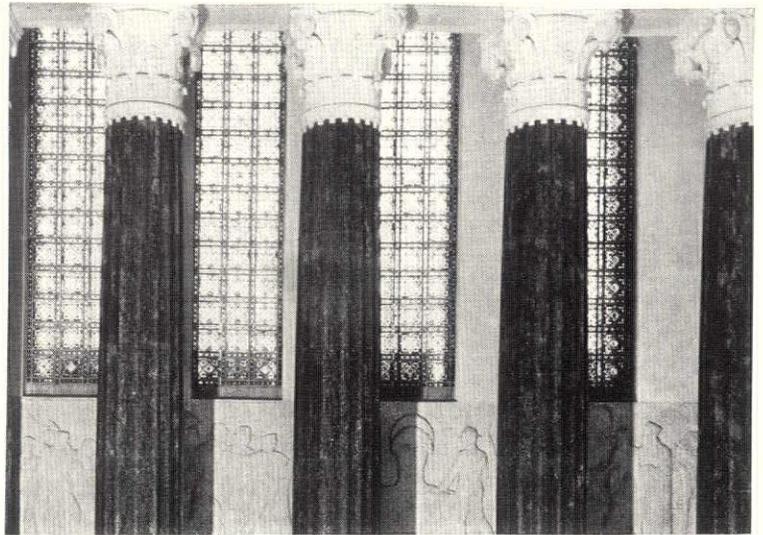
It seems to me the independent architectural organizations still have time to prepare for the business that is on the horizon. Why not set up such exhibits in stores like R. H. Macy in New York City and others in the outlying districts? I am sure they will cooperate. There is still time and unless we do something, competition of the kind we have been used to will be the death of our profession. I repeat, to date we have been reading articles, writing letters and doing nothing. Here is a practical demonstration as to how and what can be done. Unless architects in the metropolitan district assume the lead, grab the front page as it were of building activity, as in the past, they will sit back in the picture.

There have been columns of good publicity in the newspapers in behalf of architects. Let us now lead the public away from jerry builders, developers, realtors, promoters and others who in the past took away fat profits from the industry. The public is not going to come to our doors, let us go to them and offer them superior services. Let us demonstrate and if we feel we should control building, then let us start right now. Tomorrow will be too late. Let us meet competition! Let us take hold of the reins and not grumble that they are not handed to us on a golden platter.—*Harry Lucht, President, Architects League of Northern New Jersey, Cliffside Park, N. J.*

(Continued on page 140)

## St. Albans Red

AN INTERIOR marble of liquid design, and warm color, St. Albans Red has been used with startling effectiveness in the Memorial Hall of the Indiana War Memorial. (Photograph shows upper sections of columns.) Walker and Weeks were the architects. St. Albans Red is quarried at Swanton, Vermont. Architects are cordially invited to write for a copy of *Vermont Marble Color Plates*, showing St. Albans Red and twenty-two other varieties. Address: Vermont Marble Company, Proctor, Vermont.



# V E R M O N T M A R B L E

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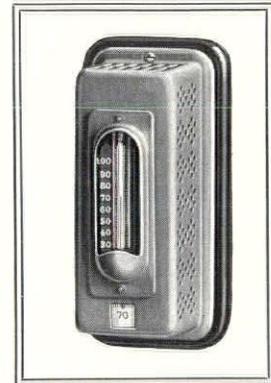
• • • THE ORIGINAL UNIT of the school building pictured above was built in 1919 and heated by a "direct blast" system. Johnson automatic heat regulation was installed to operate mixing dampers at the double plenum chamber, mixing hot and tempered air as required for each room.

In 1926 and 1927, the first and second additions were constructed and are heated by means of a "split" system. Johnson apparatus controls the direct radiators in the rooms and also maintains a uniform temperature in the ducts supplying air for ventilation. The original heating plant was not disturbed.

The third addition, 1929, is heated and controlled in the same manner. When this addition was built, the heating system in the original unit was changed to a split system, and the same Johnson thermostats were arranged to control the new heating apparatus.

In 1932, unit ventilators were installed in the fourth addition. Again the Johnson System was employed, this time to control valves and dampers in the unit ventilators, together with valves on the auxiliary radiators.

**FIVE BUILDING PROJECTS :: THREE METHODS OF HEATING  
ONE SYSTEM OF HEAT CONTROL**



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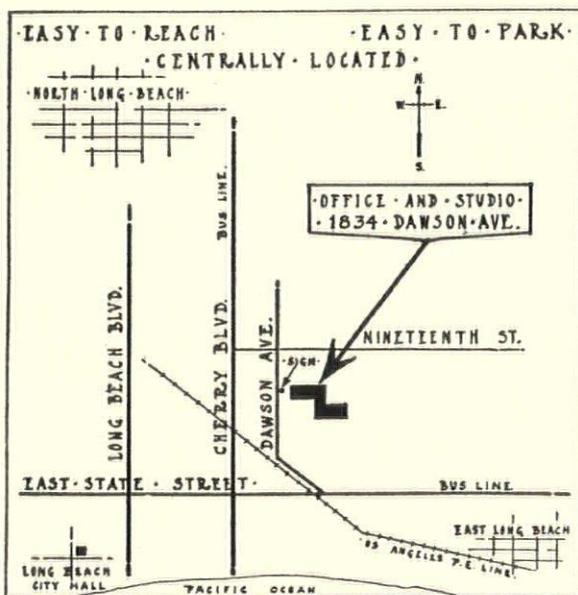
**JOHNSON SERVICE COMPANY**  
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MILWAUKEE, WISCONSIN  
*Branch Offices in All Principal Cities*

**JOHNSON**  
HEAT CONTROL

## Trends and Topics . . . *Continued from page 83*

and Roy Childs Jones, was formed to work out a filing system which could be adopted as standard for the American Institute of Architects and followed by architects who file published plates of architectural material. Many offices make a practice of saving architectural plates and employ various systems for their safekeeping. They can be of help to the committee if they will send suggestions to W. H. Tusler, A.I.A., 104 South Ninth St., Minneapolis, Minn.

- A new membership plan has been inaugurated by the Michigan Society of Architects. At the last convention, all delinquent dues were cancelled. Recently a certificate of membership in the associate class was issued to every architect registered in the state. If the recipients pay annual dues of \$3.00 per year, they become active members and receive a gold seal to be attached to the certificate. No initiation fee is charged. The plan is designed to make the state society one hundred per cent representative of the profession and in turn to give the society an association membership in the American Institute of Architects.



- The business card of Clarence N. Aldrich, architect of Long Beach, California, is a folded card upon the inside of which appears the accompanying diagram.

- A national survey launching a movement for the preservation of historic American monuments is being conducted by the American Institute of Architects, according to Leicester B. Holland, chief of the Fine Arts Division of the Library of Congress and chairman of the Institute's Committee on the Preservation of Historic Buildings. Assisted by architects in every section of the United States, Dr. Holland's committee is compiling a national list of buildings either of architectural importance or of notable historic interest. This is to be subdivided into lists applying directly to the various states and cities. Only buildings at least a century old are considered for inclusion in the Atlantic seaboard tabulation. Likewise, no structure later than 1850 is to be included in the survey for any part of the country.

In the United States, the Government does not foster the perpetuation of historic monuments as other countries do. In France the National Government has established a class of buildings known as historic monuments. Once a building is so designated by the Commission on Historic Monuments, the owners may not change it without consent of the Government. The Government in return makes itself responsible for keeping the building in reasonable repair. American architects hope by a continuing campaign of education to align public opinion against the desecration of historic structures and native heirlooms.

- L. W. Robert, Jr., has been appointed Assistant Secretary of the Treasury of the United States in charge of the Public Works program of the Federal Government and the Bureau of Public Health, and has also been made Chairman of the Federal Purchasing Board. At the time of his appointment Mr. Robert was president of Robert and Company, architects and engineers, Atlanta, Georgia. When he officially severed his connection with this company, Cherry L. Emerson, formerly vice president and chief engineer, was elected president and Jesse M. Shelton, formerly vice president, became vice president and treasurer. Captain L. W. Robert, Sr., Mr. Robert's father, continues to act as secretary.

- Steward Wagner of Alfred Fellheimer and Steward Wagner, architects and engineers of New York City, has pointed out an error in the May issue of AMERICAN ARCHITECT. The error was in the caption of the photograph of the concourse of the Cincinnati Union Terminal Building which this organization designed. The caption states the clear span to be nearly 120 feet. Mr. Wagner states that the actual span is 180 feet.

- A comprehensive course in city planning will open next fall at the School of Architecture of the Massachusetts Institute of Technology according to an announcement by Professor William Emerson, Dean of the School of Architecture. The course represents one of the first major efforts of educators to meet the complex problems arising from haphazard municipal expansion, and recognizes the growing need for long-range professional planning of towns and cities. The Carnegie Corporation has provided funds for a new scholarship in city planning which will entitle a graduate of a new course to a year's research study here and abroad. An additional grant from the Corporation will permit inauguration of a valuable program of research in the Institute's Architectural Department. The city planning course will be offered as a two year option to students who have completed three years of architectural training and will lead to the degree of Bachelor of Architecture in city planning.

- The Public Information Committee of the State Association of California Architects recently suggested that manufacturers of selected building materials incorporate in their advertising the slogan, "Good Buildings Do Not Just Happen. They Come as a Result of Working with Good Materials and with a Knowledge of How

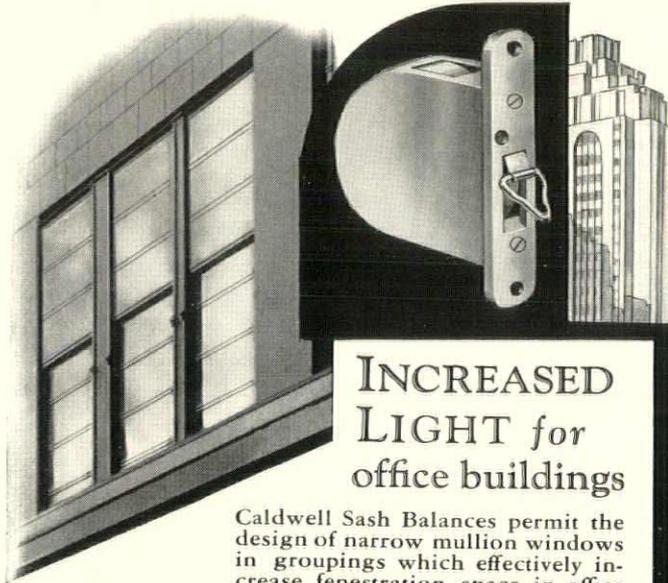
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# CALDWELL

## Sash Balances

to Apply Them—Consult an Architect.” The response to this suggestion from many sources indicates a widespread recognition of its potential value to the profession.

- The trend among newspapers toward devoting a page or more every week to the architectural and construction aspects of real estate and home building has been capitalized by active architectural groups in a number of states. Typical of such publicity opportunities is the page devoted to “Architecture-Building-Decorating-Gardening” in the Indianapolis News. One illustration on a representative page is entitled “Good Architecture of Today” and contains in its caption the statement “This group of shops in the colonial style shows the charm that may be given to such a building, large or small, after careful study by a capable architect. . . . While no more expensive than a building of commonplace design, it has an attractive character that is pleasing to customers and it has proved to be a good investment.” The page also carries a column entitled “An Architect’s Notebook,” a popular discussion of new materials.

- Lawrence B. Anderson has been appointed professor of Architectural Design in the School of Architecture of the Massachusetts Institute of Technology, succeeding Professor Carlu who returns to France to continue his work as director of the Fontainebleau School of Fine Arts. Mr. Anderson is a graduate of the University of Minnesota, 1927, and received the degree of Master of Science in architecture in 1930 during which year he won the Paris Prize at the Beaux Arts Institute of Design. During his two and a half years of study in Europe, he also won several medals at the Ecole des Beaux Arts in Paris.

- The Beaux-Arts Institute of Design, New York, has announced that a course in design, under Professor Eugene G. Steinhof, will be started next fall. This course will be based on the interesting work Professor Steinhof has already accomplished in the short course recently completed with the cooperation of New York University; likewise on similar work he has accomplished during the past year at the University of Oregon where he will direct another course this summer.

Professor Steinhof’s record in the Kunstgewerbe Schule, in Austria, his work with the French Government and with the South American Schools are evidences of his accomplishments in this capacity. Professor Steinhof is a sculptor, a painter and an architect, and his instructions will give students an understanding of the principles of design not correlated to academic form or historic precedent, but one based on the natural understanding of materials, their actual uses and on the artistic individuality of the student.

- The Fine Arts Federation of New York at a recent meeting of the Architectural League adopted the following resolution as a direct outgrowth of the controversy between Diego Rivera and the owners of Rockefeller Center.

“Be it Resolved: That it is the sense of this meeting that the Fine Arts Federation of New York is in hearty sympathy with all efforts toward a more widespread recognition and appreciation of work of American artists.

“That it furthermore urges the realization on the part

of the public of the distinguished accomplishments of American artists in all spheres of art and advises a protest, whenever possible, against unfair competition and exploitation on the part of foreign artists to the disadvantage of equally meritorious American art."

- Nearly one-fifth of the population of Stockholm, Sweden, now lives in houses financed by the government. During the last ten years approximately 100,000 persons erected small houses under the government finance aid plan. The government finances up to 90 per cent of the cost of constructing a small house. For a modern cottage of three rooms with kitchen and full basement the house buyer pays \$260 a year. This amortizes the government loan, pays the interest and meets other charges. The government invests the interest received in road building, installation of gas, water and electric mains . . . *from Quid Nunc, of the Architects League of Northern New Jersey.*

- Awards for the three most beautiful bridges built during the past year have been made by the American Institute of Steel Construction to the High Level Viaduct crossing the Hackensack and Passaic Rivers in New Jersey; the French King Bridge over the Connecticut River near Greenfield, Mass.; and the Bryan Bridge over the Niobrara River at Valentine, Nebraska. These bridges were judged by a committee of nationally known architects and engineers as the most beautiful monumental, most beautiful bridge of medium size, and most beautiful small bridge of steel erected during 1932.

- For designing a group of exposition buildings atop the Palisades of the Hudson River, Hyman Roche of 2798 Webb Avenue, New York City has been awarded the F. Augustus Schermerhorn Fellowship of the Columbia School of Architecture. Under the terms of the fellowship, available only once every three years and worth approximately \$1,875, Mr. Roche will study and travel in Europe for a year. His work will be directed by the Faculty of Architecture, with the American Academy in Rome acting in an advisory capacity.

- Courses designed to prepare candidates for the New York State Board of Examination for architects' licenses have been announced by the Department of Architecture, New York University, for the fall and spring 1933-34. They are designed to give those who have had experience in the varied phases of architectural practice, a review and preparation in a particular specialty in which the candidates may feel themselves deficient.

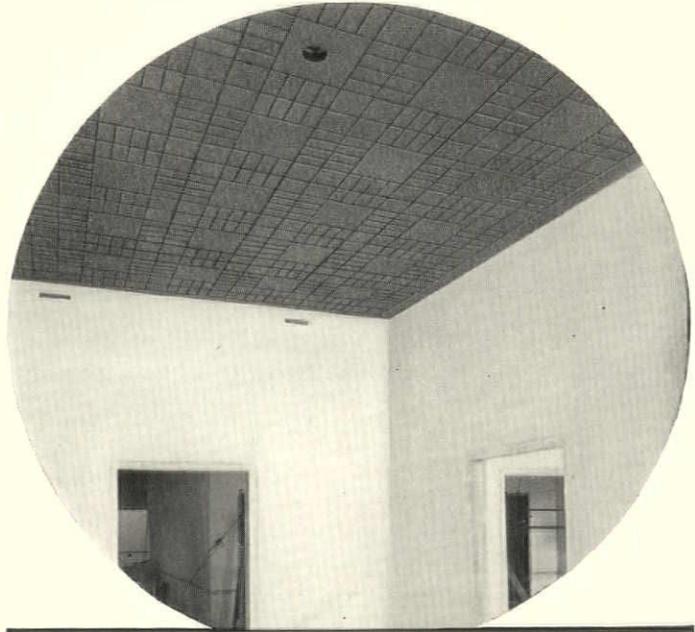
- The Paris Prize in Sculpture of the Beaux-Arts Institute of Design, New York, was awarded to Walter Yoffe, New York City, for "A Monumental Group for an Art and Industrial Fair." The prize provides \$1200 for one year's study in Paris.

- Since the publication of a survey in C. J. Oberwarth's article, "Requirements for State Registration of Non-Resident Architects" in the May issue of AMERICAN ARCHITECT, the State Board of Examiners of Architects of Pennsylvania has announced a revision of the law effective June 1, 1933 which requires the payment of \$4.00 for renewal of certificate to practice in the State. Architects may desire to correct the table given on page 35, third column.

# MODERNIZING?

**Why not go a step farther . . . specify**

# Acoustical correction?



Construction photograph showing the application of Armstrong's Corkoustic to an office ceiling. Easily installed, this efficient sound-absorbing material insures quiet working conditions.

**T**ODAY the architect's job is a difficult one. With limited money, he must show clients how to modernize old buildings so they can compete with newer neighbors.

One practical way to meet this difficulty is to specify Armstrong's Acoustical Products for refinishing interiors. This treatment accomplishes a double purpose: It gives effective sound correction (which of itself helps to modernize old buildings), and it permits a wide variety of decorative effects.

Armstrong's Corkoustic is a cork product, available in three types (A, B, and C) offering a range of efficiencies, and a choice of colors and textures. Armstrong's Ceramacoustic is an inorganic material, absolutely fireproof. Both materials can be painted without injuring their absorption efficiency. Both offer the added advantage of heat insulating qualities.

Do your files contain a copy of the new A. I. A. booklet, "Armstrong's Acoustical Products"? If not, let us send you one now. Write today to the Armstrong Cork & Insulation Company, 936 Concord Street, Lancaster, Pennsylvania.



## Armstrong's

### ACOUSTICAL PRODUCTS

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• **WHAT SHOULD HE DO ABOUT IT?**

*Editor, AMERICAN ARCHITECT:*

WE are subscribers to your magazine and have always found the legal information presented by Mr. George F. Kaiser very interesting and instructive. We wondered if a case has ever appeared similar to the one the writer outlines as follows:

Contract awarded to builder to build two one-story and basement buildings. The exterior walls below the first floor to 6" above grade are 12" solid brick. The exterior walls above the first floor are faced with a hard, rough textured face brick and backed up with interlocking tile making a 12" thick wall over all. A spray dampproofing compound was applied to all masonry surfaces to be plastered. The finish plaster work was applied direct to the back up tile. All mortar for this work was specified to be one part cement, one and one half parts lime putty and five parts sand. Great care was taken to see that all joints were filled. Before the building was complete, it was found

that moisture came through the walls in a number of places after heavy rains, making large damp spots on the plaster work.

The Architect and Owner held the contractor responsible and advised him that he must correct the condition at his own expense. There was no mention in the specifications or contract that the contractor had to guarantee this work 100% watertight.—*A. F. Peaslee, Inc., Builders, Hartford, Conn.*

• **OWNER FINDS INSPIRATION**

*Editor, AMERICAN ARCHITECT:*

YOU might be interested to know that looking over and reading your magazines gave us the nucleus for an idea in a home that seems to be rather different from most homes in this part of the country. You have shown homes with a room or two finished in wood, while we are completing a home in which every room is finished in wood. There is no plaster finish above the basement.

The living room, about 32 x 18 with

balcony at one end, is done in vertical grain fir. It is a cathedral type ceiling room with large studio window with a marine view. Dining room is done in slashed grain spruce, paneled walls and ceiling, plate rail and china cabinet. Breakfast room, native maple with corner cupboards. Kitchen, white knotty pine. Halls, vertical grain firm. Owner's room, knotty pine with fireplace. Upstairs guest room, knotty cedar. Children's room, knotty hemlock with built-in bunks. Downstairs bedroom, fir. Each room has some distinctive feature and the bathrooms are in different linoleums with upper walls and ceiling painted with appropriate scenes and figures.

Our architect first objected to all wood but has been completely won over, as have all the rest of the "conscientious objectors." The house is of old English rustic type, located just outside the city limits overlooking the salt water and mountains. Everyone seems to be thrilled with it and I thought you might be interested in knowing that your magazine is partly responsible for the all-wood feature.—*Mrs. Ole Edward Nilsen (Claire C. Nilsen), Seattle.*



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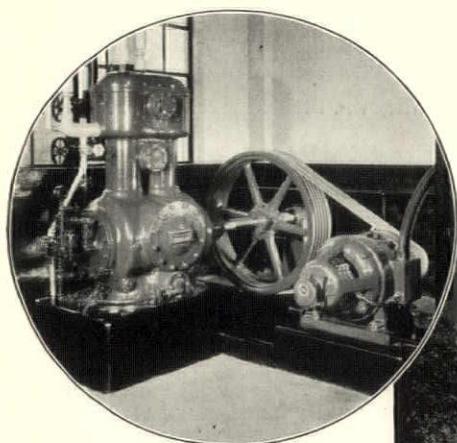
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## PERSONALS

- Philip Scott Tyre, architect and engineer, announces the removal of his offices from 1520 Locust Street to 2200 Architects Building, 17th and Sansom Streets, Philadelphia, Pa.
- Robert S. Everitt, architect, announces the opening of his office at 1014 West 63rd Street, Kansas City, Missouri, for the practice of architecture. Manufacturers' catalogs requested.
- Blake & Voorhees announce the removal of their offices to the thirty-fifth floor of the City Bank Farmers Trust Building, 20 Exchange Place, New York City.
- Edward Shepard Hewitt, architect, announces the removal of his office to the McCutcheon Building, 607 Fifth Avenue, New York City.
- Edward E. Ashley, 10 East 40th Street, New York City announces the opening of an office for the general practice of mechanical, electrical and sanitary engineering including air conditioning, elevators, diesel and power plant equipment and modernization.
- Theodore R. Jacobs, Incorporated, architect, announces the opening of an office at 518 Ocean Center Building, Long Beach, California. Manufacturers' catalogs requested.
- Martin L. Hussey, architect, has reopened offices at 3205 Six Mile Road West, Detroit, Michigan and desires manufacturers' literature.
- A friendly discontinuance of partnership is announced by the members of the firm of Sukert & Cordner, Architects, formerly located at 415 Brainard Street, Detroit, Michigan. Lancelot Sukert is now located at 79 Westminster Avenue, Detroit and G. Frank Cordner's new office is at 5063 Spokane Avenue, Detroit.
- P. A. Bartholomew, architect, has consolidated his Pittsburgh office with his Greensburg office for the present. His new address is the First National Bank Building, Greensburg, Pennsylvania.
- Glenn Brown and Bedford Brown, IV, Washington, D. C., announce the removal of their offices at 831 Glebe Road, Clarendon, Virginia.
- Harry A. Yarish, architect, announces the removal of his office from 20 Graham Avenue to 357 Fulton Street, Brooklyn, New York.
- Victor E. Siebert, architect, and Vern D. Hedden, engineer, have resumed their partnership in architectural and structural engineering under the firm name of Siebert & Hedden, 420 Security Building, Long Beach, California.



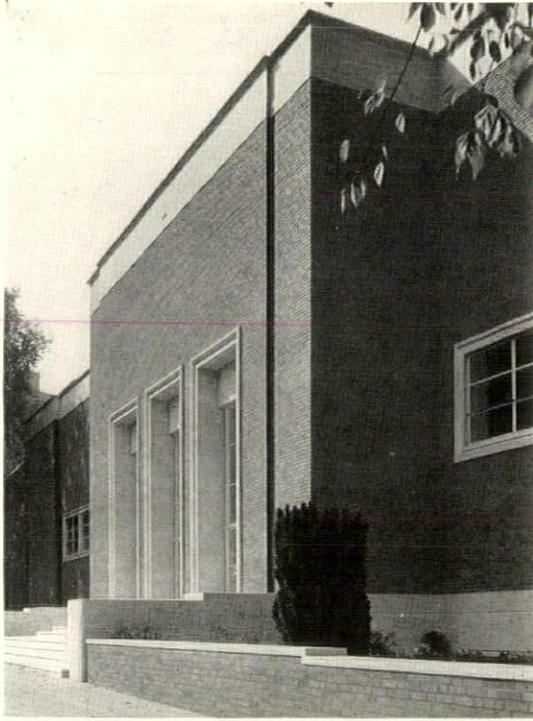
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Portland Art Museum, Portland, Oregon. Architects, A. E. Doyle & Associates. Waterproofed with Cabot's Clear Brick Waterproofing.

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**T**HE walls of the Portland Art Museum were thoroughly waterproofed with Cabot's Clear Brick Waterproofing, applied after the walls were finished. All moisture was thus shut out from the brick and the joints. Cabot's Clear Brick Waterproofing will not succumb to the fatal weaknesses of common waterproofings—oxidation, friability and solubility in water. Thirty to forty years of test in all parts of the world, under all climatic conditions, have proved its worth and permanence.

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## INDEX TO ADVERTISERS

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• Mr. Yuan-Hsi Kuo, architectural advisor for Chinese exhibitors, Chinese Commissioner, the International Exposition, 133 South William Street, Westmont, Illinois, desires samples of building products, new materials and equipment, A. I. A. files, and manufacturers' catalogs.

• A. J. Boase has been appointed manager of the structural and technical bureau in the main office in Chicago of the Portland Cement Association, succeeding W. E. Hart who has been in charge of the bureau for a number of years. Mr. Hart will devote his entire attention to the development of architectural uses of concrete.

### ANNOUNCEMENTS

• Manufacturers of acoustical products have organized the Acoustical Manufacturers Association with Wallace Waterfall of the Celotex Company as secretary. One of the purposes of the organization is to bring about some uniform basis for testing the acoustical value of materials manufactured and sold for such applications. It has been agreed that all materials will be tested by the Riverbank Laboratories, Geneva, Illinois, under the direction of Paul Sabine. The uniform method of testing and rating materials thus made possible is expected to aid architects and owners in selecting materials suited to their specific problems and to eliminate the confusion that has heretofore been caused by advertised claims based upon various standards and tests.

• The American Radiator Company has acquired ownership of the Ross Heater and Manufacturing Co., Inc., which will hereafter operate as a division of the American Radiator Company serving the petroleum industry. Among the products to be handled by the new division are heat exchangers, condensers, coolers, steam jet vacuum pumps, Ross vacuum refrigerating units and other products.

• S. R. Dresser Manufacturing Company has acquired the facilities and business of the Bryant Heater & Manufacturing Company. The Dresser Company has long been dominant as a manufacturer of pipe-line maintenance, gas transmission and distribution equipment. This acquisition of the Bryant Heater & Manufacturing Company reflects its intention further to develop the use of gas in air conditioning and house heating. The S. R. Dresser Manufacturing Company was founded at Bradford, Pennsylvania in 1880.

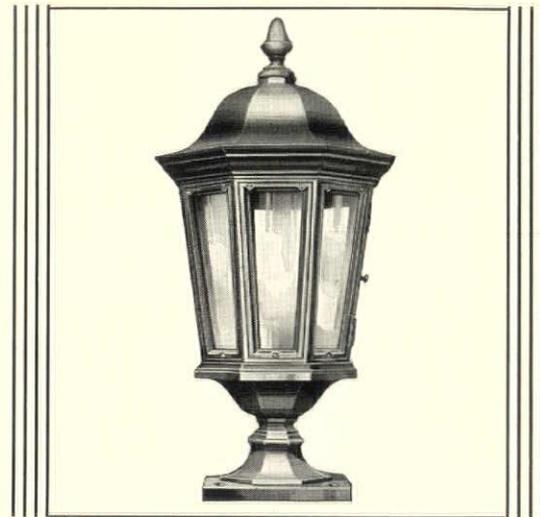
• The entire floor of the R C A Building, Rockefeller Center, New York, has been leased to the Permanent Exhibition of Decorative Arts and Crafts, Inc., headed by Paul R. MacAlister, president of Paul MacAlister, Inc., interior decorators, and James W. Folger, formerly of the architectural firm of Delano & Aldrich. The exhibition space is devoted to permanent displays of all decorative objects, materials and products pertaining to the creation of distinctive interiors, both residential and commercial.

• The Conference on Home Building and Home Ownership has discontinued its offices in Washington, D. C. The new headquarters of the Conference are located at 42 Broadway, New York City.

## A SMYSER-ROYER CATALOGUE

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FIXTURES

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A complete catalogue of designs for exterior lighting fixtures is shown in Volume D of Sweet's Architectural Catalogues, 1933 edition, pages 677 to 681. Each design displays the high standard of metal craftsmanship maintained by Smyser-Royer Company for over 90 years.

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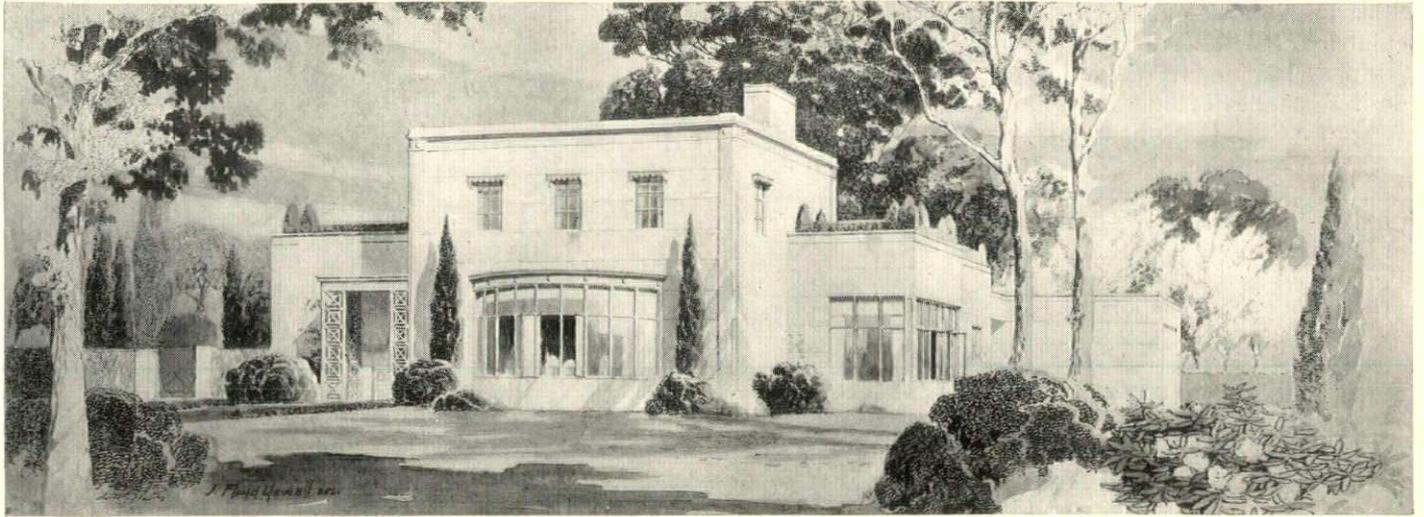
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Good Housekeeping Studio of Architecture and Furnishings supervised the building and decorating of this house. It

was constructed by the Stran-Steel Corporation of Detroit, with the cooperation of leading American manufacturers.

Architects who visit "A Century of Progress" should put the Good Housekeeping—Stran-Steel House on their "must" list. Stay-at-homes can read all the interesting details in July Good Housekeeping and in succeeding issues.

*Associate architects: H. Augustus O'Dell and Wirt C. Rowland*

*Consultant architect: Dwight James Baum*

*Landscape architects: James W. Owen Nurseries*

GOOD HOUSEKEEPING  
Everywoman's Magazine