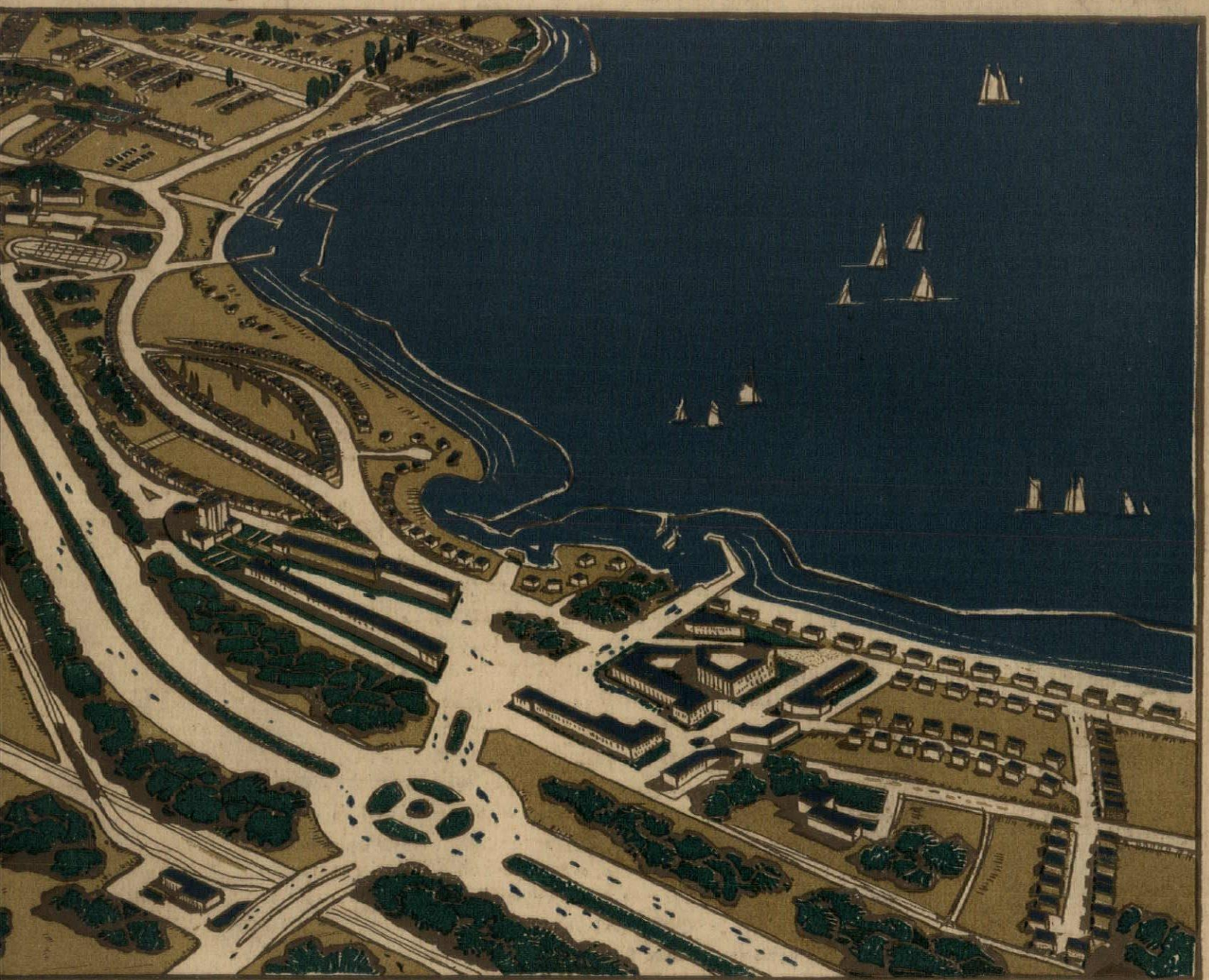


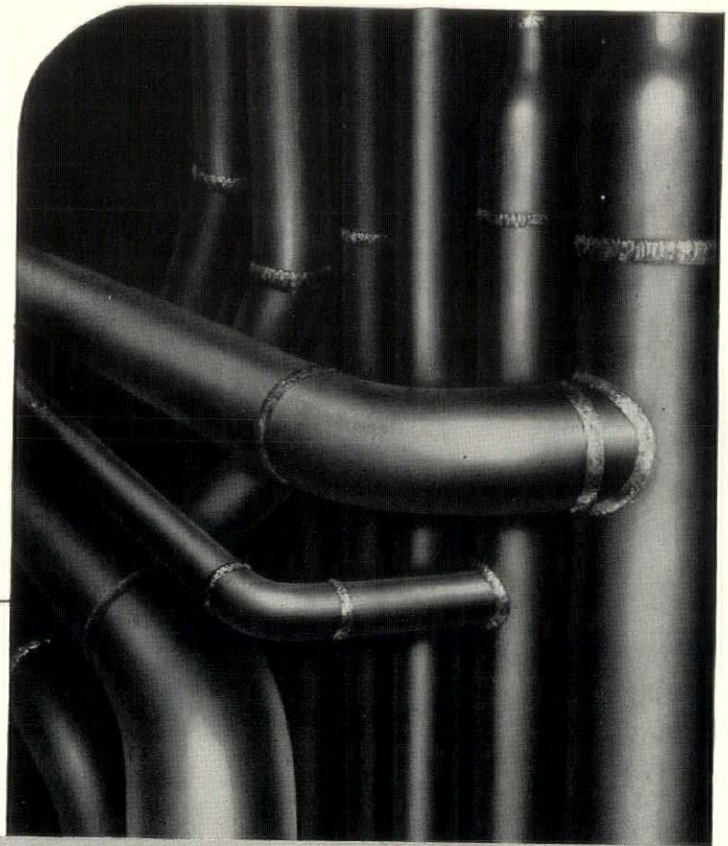
OCTOBER 1935 • CITY PLANNING • BASEMENT USES • TIME-SAVER STANDARDS

AMERICAN ARCHITECT

HIGHLIGHTS OF THE EDITORIAL MONTH

In a few short decades we have seen a growing congestion, a subsequent extension of city's boundaries, the founding of satellite communities, the rapid development of traffic means and the almost unbelievable extension of industrial techniques. All these have contributed in making a hodge-podge of American cities . . . To Eliel Saarinen, ORGANIZATION is the seed, root, branch and flower of the city-planning tree. The organization of cities rests largely upon the leadership of the architectural profession—and in THE ART OF CITY BUILDING he explains the necessary technique . . . Expressed crisply in black and white, sunlight and shadow, atmosphere and distance, ideas take on real meaning in BREATHING SPACES FOR NEW YORK, an eight page plate section, the value of the perspective sketch, always so heart-warming to the architect, is vividly portrayed . . . The once lowly basement, the degenerate in every house planning scheme, comes to light in this issue as one of the most important, attractive and comfortable units in the house—BASEMENT PLANNING, twenty-two pages of text and illustrations, covers the general planning and equipment features, while TIME-SAVER STANDARD CHARTS deal in a comprehensive manner with the basic elements of basement design, giving the essential data in the most usable form.

STREAMLINED.. inside and out



· OXWELDED PIPING ·

STREAMLINED . . . *smooth inside and out* . . . this installation typifies part of a large piping system made "jointless" and *leakproof forever* by oxwelding. This method of erection reduces friction and power losses—makes insulation easier to apply and less costly.

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Specifications for Welded Piping

Linde engineers have prepared clear and concise technical data especially for the architect interested in designing and specifying jointless piping systems that will remain leakproof forever. Ask the Linde Office in your city for complete details or write to the company at 30 East 42nd Street, New York, N. Y. The Linde Air Products Company, Unit of Union Carbide and Carbon Corporation.

Everything for Oxy-Acetylene Welding and Cutting

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FROM PRODUCTS OF UNITS OF UCC UNION CARBIDE AND CARBON CORPORATION LINDE UNION CARBIDE

American Architect, published monthly by International Publications, Inc., 572 Madison Avenue, New York, N. Y. $3.00 per year. Canada, $4.00; Foreign, $5.00. Entered as second class matter April 5th, 1926, at the Post Office, at New York, N. Y., under the act of March 3rd, 1879. Issue 2638, dated October, 1935.

Found!

The EXTRA SPACE Everyone's Been Looking For

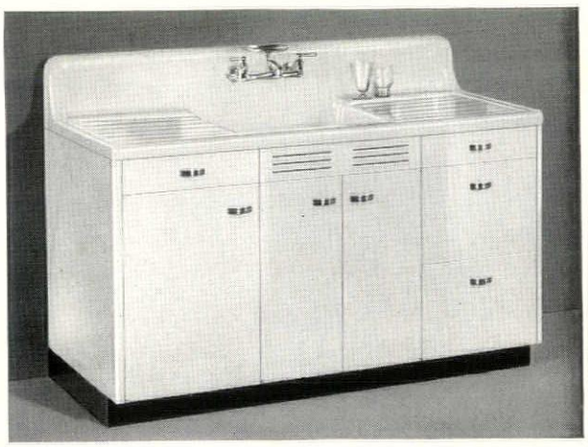
It was right there all the time—just below the sink and lavatory. Crane Co. discovered it by putting a cabinet around it. And that is how the Crane SUNNYSIDE Sink and TUCAWAY Lavatory came into being.

In new buildings these cabinet units reduce or eliminate the necessity for special closets. In old buildings they provide storage space where none existed before. They even eliminate the necessity for towel bars on the walls, or add to already existing capacity.

There's plenty of space for towels, soaps, cleaning powders and the overflow from the medicine cabinet. Towel bars may be had in two styles—heavy cast brass brackets and square chromium plated bars, or steel brackets and round brass rods, chromium plated or painted white. Heavy-gauge steel walls, bottom and shelf. Baked enamel finish. Perforated openings for ventilation in back. Steel sub-base with recessed toe space. Chromium plated hardware.

In apartments, stores, offices, homes—these cabinet lavatories equipped with regular Crane CORWITH bowl and fixtures, will immediately appeal to tenants and owners because of their great utility, their fine appearance. On display in all Crane showrooms.

Crane CORWITH-TUCAWAY Lavatory



Crane SUNNYSIDE Cabinet Sink

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CRANE CO., GENERAL OFFICES: 836 S. MICHIGAN AVE., CHICAGO, ILLINOIS • NEW YORK: 23 W. 44TH ST.

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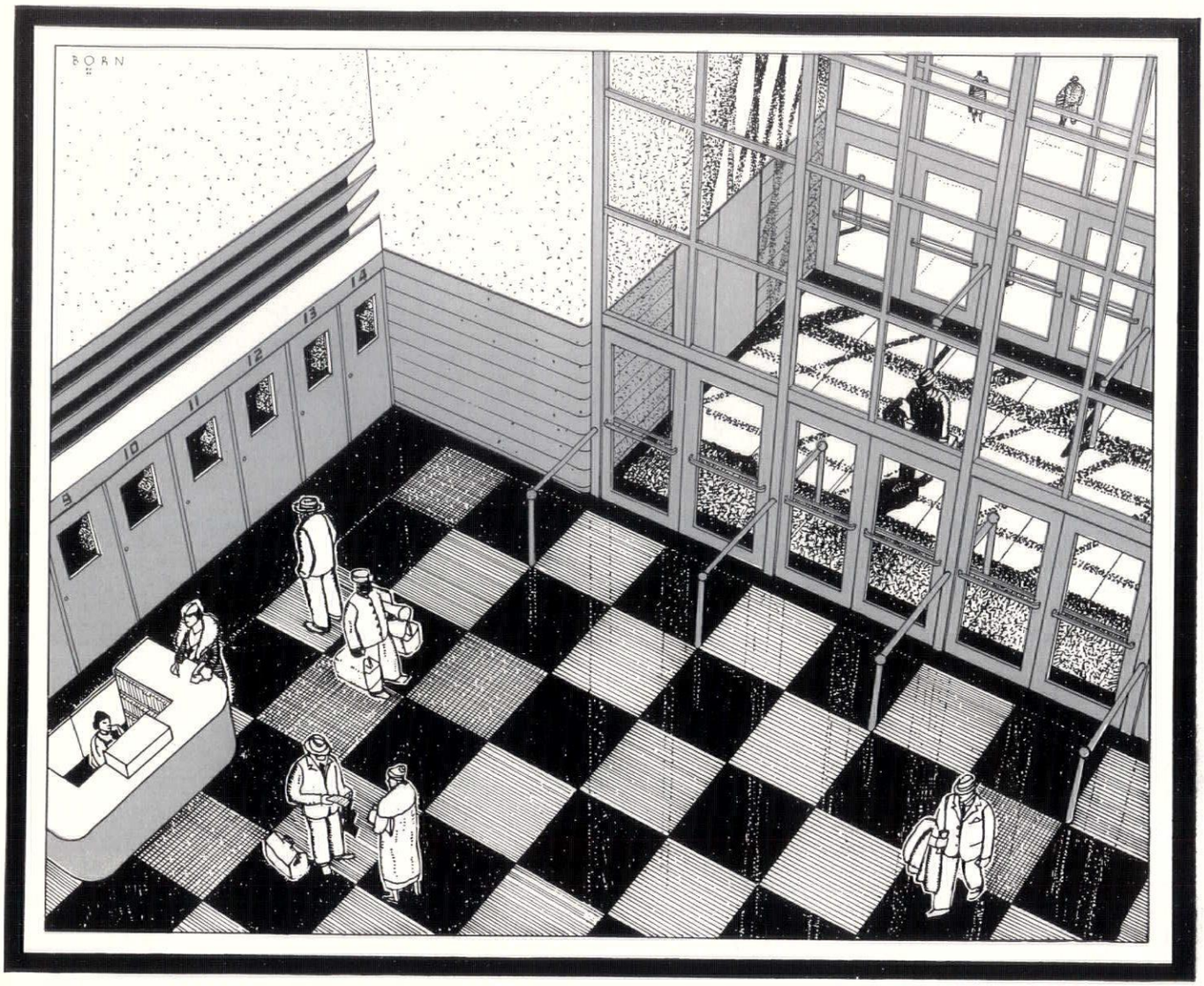

THE DOOR . . .

Focal point of design . . . typifying the very spirit of the building ★ Aluminum lends itself perfectly to the execution of architectural details and confers that supreme benefit: light weight ★ A lavish variety of finishes, all luxurious and lasting, is at the command of the designer ★ Manner of construction is dictated only by preference, for versatile alloys in every needed form are available to fabricators ★ Aluminum Company of America, 1895 Gulf Building, Pittsburgh, Pa.

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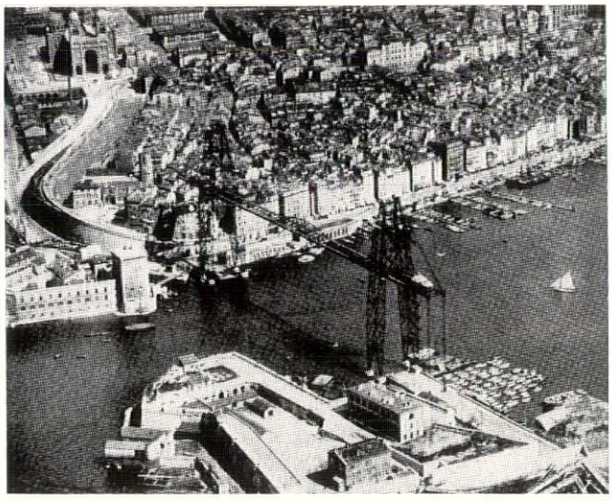


Above, illustration from "Slum Clearance and Reconditioning of Insanitary Dwellings." Right, House in "The Modern House"

SLUM CLEARANCE AND RECONDITIONING OF INSANITARY DWELLINGS

Edited by International Housing Association. Published by Julius Hoffmann, Stuttgart, Germany. Volume 1. Text, 221 pages, 40 illustrations. Volume 2. Plans, 87 pages, 81 plan plates. Two volumes, price RM 16.

EXPERIENCE has taught us that as long as there are slums people will live in them. They must therefore be eliminated before the greater part of the rest of the housing problems can be attacked. These volumes consist of a collection of reports from different towns and countries to the International Housing Congress in Prague and represents a comprehensive survey of unusual interest on the whole problem of slum clearance. Architects who are interested in this phase of American rehabilitation will find these volumes interesting and of real worth.

●

THE MODERN HOUSE

By F. R. S. Yorke, A.R.I.B.A. Published by The Architectural Press, 9 Queen Anne's Gate, S.W. 1. London, England. Second Edition, February 1935. Illustrated; 215 pages; size 8 x 10; price 21 shillings.

ALTHOUGH it contains about 500 illustrations including many plans and construction details, this book is not primarily a picture volume dealing with the modern house. About half the pages contain text outlining the requirements to be met in the type of individual dwellings commonly called "modern." Discussed at length are materials to be employed, the various structural portions of the house and types of plans best suited to the development of characteristically "modern" design. The author says little about design philosophy. Sixteen pages of additional material have been added which include examples of the most recent developments in design and bring the book up-to-date.

●

MECHANICAL AND ELECTRICAL EQUIPMENT FOR BUILDINGS

By Charles Merrick Gay and Charles De Van Fawcett. Published by John Wiley & Sons, Inc., New York City. Cloth covers; 428 pages; size 6¼ x 9¼; price $5 plus postage.

THIS volume, intended primarily for use as a textbook, presents the essentials of mechanical and electrical equipment for buildings, embracing simple concise statements of the fundamental theories involved, together with their broad application in architectural design.

Although it makes no pretense of being a "handbook" for the purpose of engineering practice, it should be found useful in the every day work of architects. Since the volume deals with the basic principles of electrical and mechanical design it is applicable for use in architectural and technical schools, and in the preparation for civil service and state examinations.

The book is divided into five sections, covering the subjects of Water Supply, Plumbing and Drainage; Heating and Air Conditioning; Electrical Equipment and Acoustics. Each chapter is fully illustrated with mechanical drawings, charts and formulas.

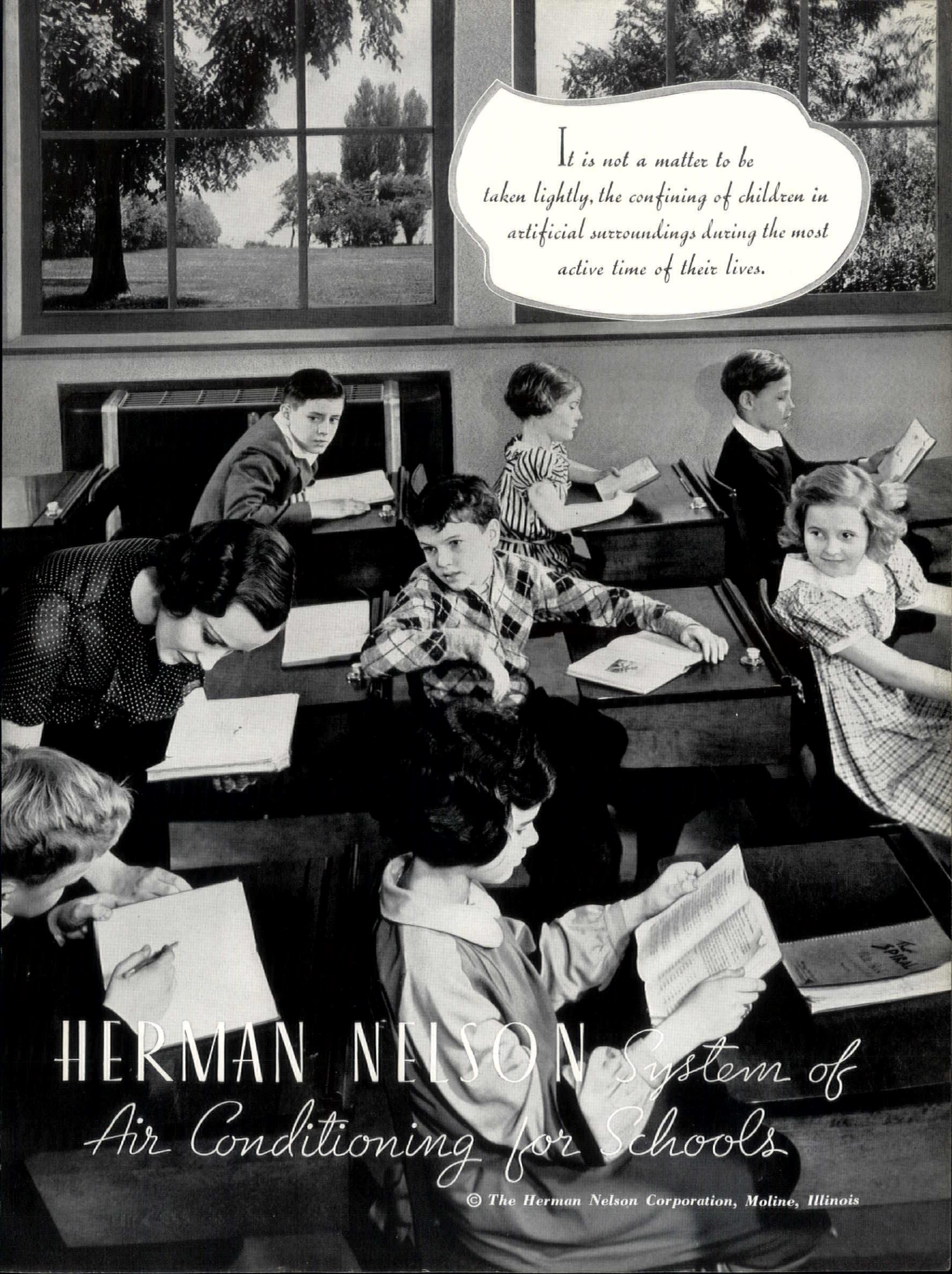
●

MEMOIRS OF THE AMERICAN ACADEMY IN ROME

Published by The American Academy, Rome, Italy. Volume XII; 17 plate illustrations; 184 pages.

THIS is the ninth volume, issued since 1917, in a series of studies, by the students of the American Academy at Rome, which is five theses bound as one volume. The subjects covered are: The Origins of the Insulae at Ostia, by Philip Harsh. The Regia, by Frank E. Brown. The Archaeological Evidence for the "Tuscan Temple," by Agnes Kirsopp Lake. The House of Marcus Loreius Tiburtinus at Pompeii, text by A. W. Van Buren and restoration by Thomas D. Price. The Excerpts of Heiric "Ex Libris Valerii Maximi Memorabilium Dictorum vel Factorum," by Dorothy M. Schmullian.

Besides 17 plate illustrations there are numerous floor and plot plans. Members of the American Academy and architects generally who are interested in antiquity should find this latest edition of value.



HERMAN NELSON *System of Air Conditioning for Schools*

The Readers Have a Word to Say

• TIME-SAVER STANDARDS APPRECIATED

Editor, AMERICAN ARCHITECT:

MAY I take this opportunity to again congratulate you on the splendid Time-Saver Standards sections you have been publishing in AMERICAN ARCHITECT.

In my perusal of the articles on Heating, Cooling and Air Conditioning, it occurred to me to suggest that reference data on Hot and Cold Water Supply would be very useful to architects. This might include the requirements of various types of buildings as offices, residences, multi-family buildings, etc. as to quantity requirements; the sizing of mains, risers, circulating lines, branches to fixtures, etc.; methods and details of piping; pressure and gravity tanks; hot water tanks and instantaneous coils in boilers; materials, etc.

This is a subject which generally is only superficially covered in an architect's education, and one which I feel he often wishes he had more knowledge of. I hope this suggestion may be of use to you in the preparing of forthcoming Reference Data sections.—*William H. Leyh, Architect, Brooklyn.*

• BUILDING CODES

Editor, AMERICAN ARCHITECT:

SOMETHING should be done about out-moded building code requirements. Within their own communities, I believe, architects can foster an educational program that will influence the public sentiment toward a more enlightened method of stating requirements. The subject does not lend itself well to dramatization, however, and the most sensitive point at which the public can be approached is that of construction cost. I should like to see careful estimates made in each community, using prevailing costs of materials and prevailing wage rates, and creating a comparison between the code requirements in use as contrasted with more liberal requirements. The results would probably not be as startling as is generally supposed, but they would present the subject in such a concrete way that the general public could understand. Architects are in a particularly good position to do this work.

Obviously, somebody or some group has to study the matter continuously and determine what the proper basis of performance really is. If it is left to the interpretation of individual designers operating under a vague requirement for safety, the solutions achieved are likely to be as different as the ability and conscience of these designers. The protection of the public will be, in effect, delegated to them without any standards being set up. That is why I think architects should co-operate in the setting up of standards so that the performance basis could take on reality.

Whether in the creation of performance standards or in getting them accepted for local use, architects would be helpless without assistance of building officials, fire protection experts, engineers, realtors, and others. There is however, plenty of machinery already established through which architects can function it they want to take a leading place, as they should, in code improvement.—*George N. Thompson, Division of Codes and Specifications, Dept. of Commerce, Washington, D. C.*

• CONTRACTOR ACTION

Editor, AMERICAN ARCHITECT:

ARCHITECTS should have a stronger cohesion which would not only enable them to take disciplinary measures against any members of their profession who deserve it, but which also would make it possible to discipline contractors who do not behave. Such contractors should know of the strength of such a body, and the dangers of their being put on a black list for various reprehensible acts.

Example: a low bidder, for a contract of less than $4,000, whose record is investigated and found unsatisfactory is not awarded a contract—which goes to a higher bidder. The low contractor, through spite, sends the architect an exhorbitant bill ($650) followed by a lawsuit for alleged services rendered.

I am sure no fellow architect would let this man bid on any of his work if his name were known. If the architect in question had had the means to let the matter be known to his colleagues, the contractor would not have dared to annoy him.—*Vahan Hagopian, A. I. A., New York, N. Y.*

• DROP HIGH COST OF BUILDING

Editor, AMERICAN ARCHITECT:

CONDITIONS in the Middle West are much improved and this is reflected in the building industry. Large construction work is still very scarce, but there is a large volume of small work—much of it alterations and reconditioning. The residence shortage in cities like Peoria is getting to be very acute. One real estate firm here has only six vacancies out of nearly twelve hundred properties handled. Store vacancies, very numerous not so long ago, are now rare.

The answer to this condition is to be found largely in the high cost of building, which seems to be out of line with what individuals and commercial concerns can afford to pay for rent. The result is that building investments cannot be made to pay a fair return.

The policy of the Administration seems to be to keep up the high cost of building with the hope that other things can be brought into line. Undoubtedly a drop in the cost of building would bring on an immense amount of work. Whether the pressure of increasing demand, aided by cheap money, will eventually break down the cost resistance remains to be seen. The white collar wage will have to be materially increased if even the present standards of housing are to be maintained.—*H. E. Hewitt, Hewitt, Emerson & Gregg, Architects, Peoria, Ill.*

• ERRATA

Editor, AMERICAN ARCHITECT:

I APPRECIATE very much your distress in that the perspective for the St. Albans, Vermont, Post Office and Custom House was not credited to me in the August number of AMERICAN ARCHITECT.

This project is a particular favorite of mine, partly because it received the Commendation for Design at the recent Exhibition of Federal Architecture. I wonder whether it is too much to ask that you note in your next number that this was an error and that it should have been credited to me.—*Lorimer Rich, Architect, New York, N. Y.*

CORK

.... *combines* **BEAUTY** *and* **SILENCE** *in floors*

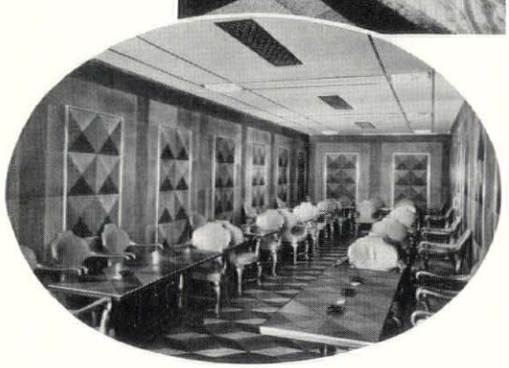
ABOVE—*In Bowery Savings Bank, New York, quiet floors of Armstrong's Cork Tile are laid directly over concrete.*

~ ~

RIGHT—*This cork floor in the model library of Barker Bros., Los Angeles, shows the possibilities of Armstrong's Cork Tile in homes.*

~ ~

BELOW—*In Pittsburgh's smart Duquesne Club bar, the floors, walls, and ceilings are Armstrong's Cork Tile.*



WHERE silence is golden . . . in hospitals, libraries, banks, and private homes . . . you can insure quiet with floors of sound-absorbing cork tile. Armstrong's Cork Tile is made of pure resilient cork containing millions of dead-air cells to hush footsteps and muffle reverberation.

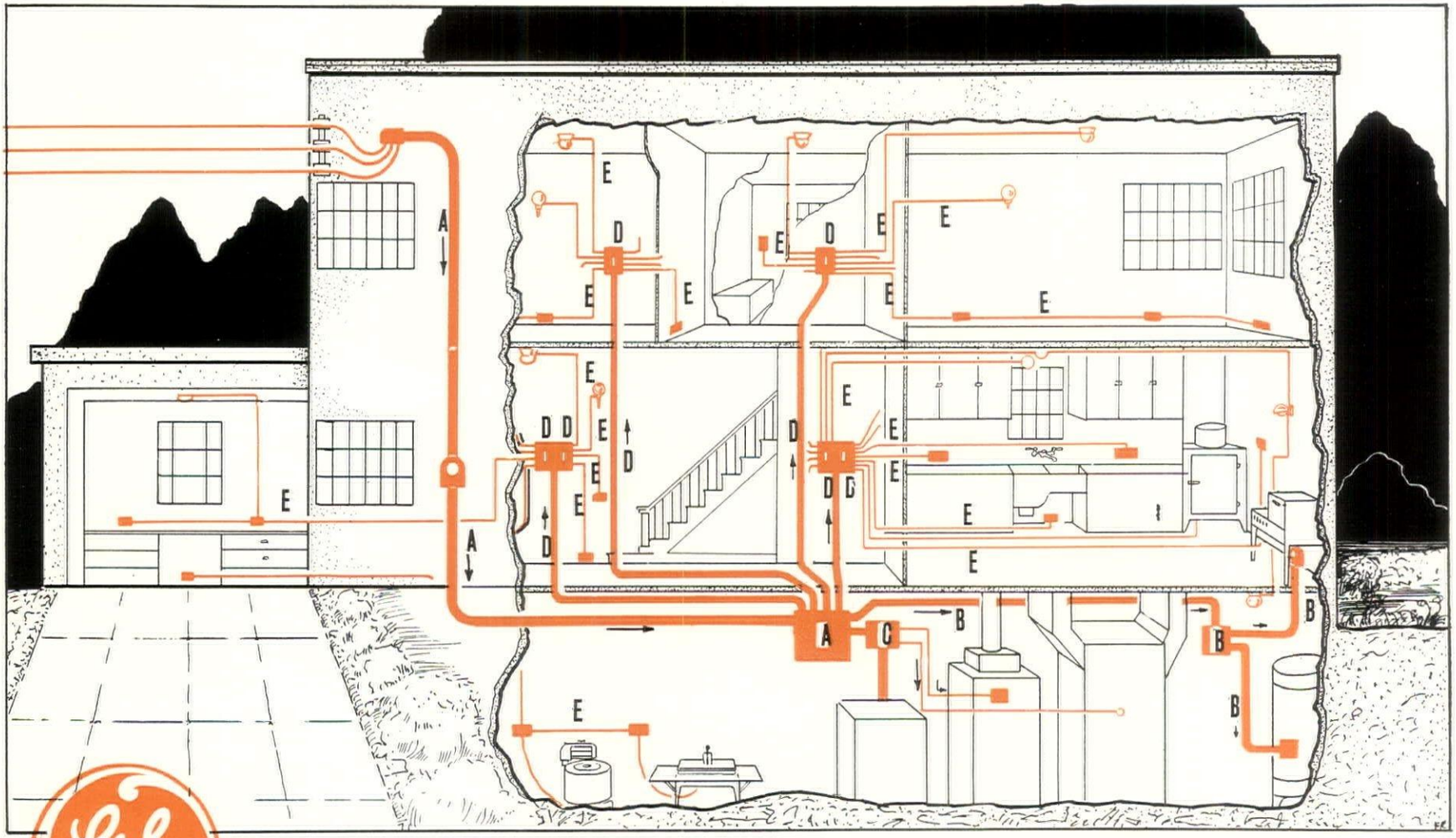
Yet for all its resilience, Armstrong's Cork Tile is exceptionally durable. Right now, it is demonstrating its wear-resistance in hundreds of busy public buildings. Simple washing and waxing keep it clean and beautiful for years.

Finally, Armstrong's Cork Tile lends itself to all manner of delightful designs. Its three rich, warm tones of "cork brown" offer you a wide range of decorative possibilities. See Sweet's, Section 15, Catalog 35, pages 15 and 21—and write now for samples and a file-sized copy of "Armstrong's Cork Tile Floors." Armstrong Cork Products Company, Building Materials Division, 1201 State Street, Lancaster, Penna.

Armstrong's

CORK TILE FLOORS

"NEW AMERICAN" HOME WIRING SYSTEM



GENERAL ELECTRIC WIRING SYSTEM

PRESENTING

THE G-E RADIAL WIRING SYSTEM

To Satisfy The Electrical Requirements of Your Modern Homes

On drawing boards of architects the country over, modern homes are being designed. Whether their architecture is modern or traditional, they have one thing in common . . . They are all-electric homes. Your clients demand electric kitchens, laundries, air-conditioning, and other labor-saving appliances. Perhaps they cannot install them all now, but they want all-electric homes as soon as possible. To do that economically and efficiently, the architect must carefully plan the wiring system, through which the electricity flows, . . . consider the electrical requirements for present and future needs.

To help you meet such broad specifications, General Electric Engineers have developed a revolutionary new wiring system. It is being built into all the General Electric sponsored "New American" Homes now under construction throughout the country.

The New G-E Radial Wiring System

The G-E Radial Wiring System offers many advantages to home owners. It is simple in design and construction. It reduces voltage losses to the minimum, making the current paid for do useful work without waste. It provides new-type, efficient circuit breakers at convenient points throughout the house. These circuit breakers act also as switches and are so compact as to actually fit in standard outlet boxes. And when additions or changes are necessary in the future, they can be made easily and inexpensively. The Radial Wiring System is based on the principle of sub-circulating branch circuits arranged in radial runs from circuit breakers. This decentralized distribution system eliminates the obviously poor practice of placing a large number of outlets on a branch circuit. It substitutes back feeders to convenient points throughout the house where it places controls for the radial circuits. It is adequate in copper, using wire sizes suited to modern loads. All details, of course, conform to National Electrical Code requirements.

In the schematic drawing, you can see exactly how the G-E Radial Wiring System functions. The specifications call for an all-electric home with major fixed appliances and a complete outlet and lighting system with modern switching. The wires marked A designate the service entrance cables going through the meter to the Totalizing Unit in the cellar. For all-electric homes, these should never be less than three No. 4's. The circuit marked B is a sub-feeder to the range and water heater made up of not less than three No. 8 conductors properly fused at the Totalizing Unit. A limiter device in this circuit cuts off use of water heater while range is in operation. The sub-feeder circuits C of No. 10 wires lead from Totalizing Unit A to the Air-conditioning Panel from which the air-conditioning equipment is run.

The risers, labeled D consist of No. 10 conductors. They lead direct from the Totalizing Unit A to all Flush Branch Circuit Breakers. These Circuit Breakers or control units must be of suitable capacity to properly protect the wires which fan out into the devious circuits over the house. You thus see that we have 4 points of sub-control conveniently located around the house. These breakers are no more obtrusive than is the standard switch in the circuits of today. The home owner does not object to them because in their operation of protecting the circuit there is no fuse blowing — they are operated the same as a switch. The Circuit Breaker locations are centered to minimize all circuit lengths.

These sub-circuits of No. 12 conductors, labeled E are fanned out from the Circuit Breakers to the lighting or convenience outlets. Wherever possible, convenience outlets are circuited separately from lighting outlets.
The kitchen circuiting is particularly noteworthy. Appliance outlets are protected by a 20-amp. Circuit Breaker served by one of risers D. From it, sub-circuits are fanned out to individual appliance outlets. Thus each of the No. 12 wires are subjected to the load of only one outlet.
Such is the basic design of the G-E Radial Wiring System. Additions and modifications can be made to meet all conditions encountered in specific designs.

The Advantages

The sub-circulating of branch circuits and radial runs, which are characteristic of the G-E Radial Wiring System, is adequate from every standpoint. There are full provisions for fixed electrical appliances for lighting and convenience outlets. There is copper adequacy which prevents voltage losses in the system. Electricity is carried efficiently to appliances and outlets with minimum loss of current. Another important advantage is the ease of remodeling and extending the system in the future. The problem of breaking into a limited sub-circuit and its rerouting is simpler than where a long circuitous, concealed run must be revamped to suit changes.

This G-E Radial Wiring System utilizes only General Electric Wiring Materials. A booklet has been prepared giving detailed specifications of the new G-E Radial Wiring System as applied to one of the smaller "New American" Homes. Send for a copy of this manual at once. Write Section CDW-2410, Merchandise Department, General Electric Company, Bridgeport, Connecticut.

GENERAL ELECTRIC

WIRING MATERIALS

GENERAL ELECTRIC COMPANY, MERCHANDISE DEPARTMENT, BRIDGEPORT, CONNECTICUT

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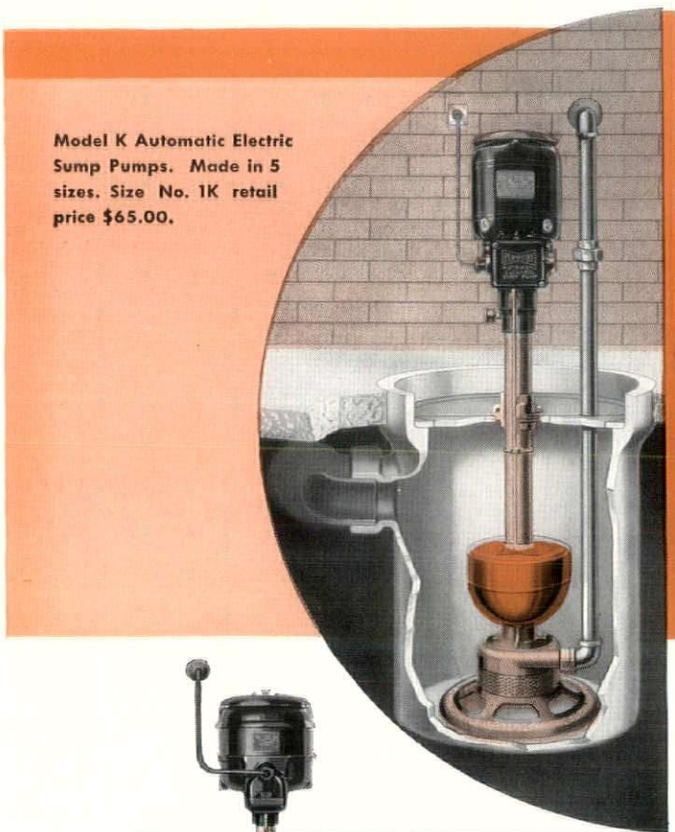
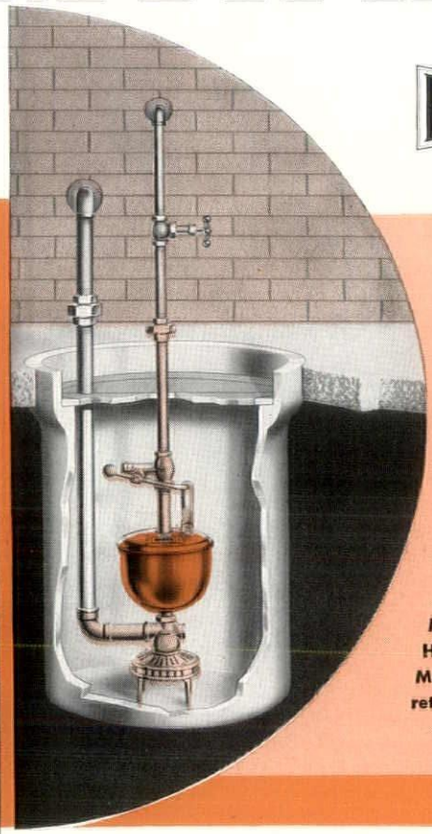
wherever seepage water must be removed

PENBERTHY PRODUCTS

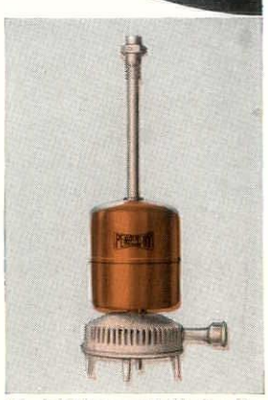


Model K Automatic Electric Sump Pumps. Made in 5 sizes. Size No. 1K retail price $65.00.



Models R and L Automatic Hydraulic Cellar Drainers. Made in 5 sizes. Size 1R retail price $25.00.

Model 33 Automatic Electric Sump Pump. Made in 1 size only. Retail price $39.50.



Model S Automatic Hydraulic Cellar Drainer. Made in 1 size only. Retail price $14.50.

All prices are f. o. b. Detroit

PENBERTHY PUMPS are so universally used wherever seepage water accumulates because they have invariably demonstrated their superiority in this service. Their outstanding performance is grounded in their simple and rugged design, their careful workmanship, and the fact that they are built of copper and bronze throughout.

Leading jobbers throughout the country stock Penberthy Automatic Electric Sump Pumps and Penberthy Water Operated Cellar Drainers.

Manufacturers of Quality Products Since 1886

PENBERTHY INJECTOR COMPANY

DETROIT, MICHIGAN
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AMERICAN ARCHITECT

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VOLUME CXLVII NUMBER 2638

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CHICAGO

PHILADELPHIA

NEW YORK

The Art of City Building

TO ELIEL SAARINEN the city plan holds the key to the future of architecture . . . Integrated regions, flexible growth-patterns for organic communities; these must come through architectural leadership . . . Why and how are pointedly set forth in this interview recorded by Roger Wade Sherman

"POUR a drop of water on a table. Press it with a fingertip and the borders move outward in radial extensions. A quick pressure breaks the drop, scattering the water around in smaller spots, varying in size and in distance from the original. The result is a miniature plan of the decentralized city."

With such compact phrases does Eliel Saarinen express the essence of contemporary city planning problems. Embodied in his metaphor are the actions and reactions that influence the growth and pattern of urban areas. The globule of water represents the organic components of modern living. The pressure of the fingertip indicates the force of complicated social and economic growth. And the spattering result of pressure illustrates the growing trend toward decentralization—a development of satellite towns about a parent center.

But the metaphor is apt only in so far as it demonstrates physical results of causes—causes which can be measured to a degree consistent with a detailed knowledge of their extent and arrangement. The result itself is accidental. It is without organization. And because of this, the decentralized pattern is not necessarily a better solution to modern problems than is the crowded unity of a medieval walled town or the sprawling, formalized gridiron of a prairie settlement.

To Eliel Saarinen, organization is the seed, root, branch and flower of the city-planning tree. Long years of preoccupation with civic problems have matured his conviction that cities develop primarily from the cultural necessities of society. Adequate satisfaction of these necessities involves material means—streets, parks, transportation, buildings. Only to the extent that these material means are organized into a projected plan which will provide for the mental progress of society can the city be regarded as a successfully integrated instrument for the complicated business of modern living.

This concept recognizes the city as a dynamic organism. The growth and development of human society involves constant change. And in no period of history has change been a factor of such importance as it now is. During the last forty years mechanical developments alone have almost completely revolutionized society's daily habits of life. They have also profoundly influenced the attitude of the nation toward acceptance of new things and new customs. Thus one cardinal principle of city planning is the organization of material means not only to fulfill present requirements, but also to make certain that no dogmatic obstacles are placed in the path of the city's future progress.

From this point of view the city-planning process appears to be the delineation of a dream. And to this statement Eliel Saarinen would be among the first to subscribe. He has plotted dreams for many cities. In his lifetime few if any of them will become realities. But already his method of dreaming has had a vital effect. His invited design in the Chicago Tribune Tower Competition—though never built—has had a marked influence in developing a more organic form in tall building design. Helsingfors, capital of his native Finland, is slowly expanding according to an orderly program developed in principle by him in 1923, and which was presented in some of its phases in the March, 1935, AMERICAN ARCHITECT.

In this country Hartford, Connecticut, Madison, Wisconsin, Cleveland, Detroit and Chicago have been subjects for planning studies by students at Cranbrook Academy, under the direction of Mr. Saarinen. In every instance his planning method is the same. It involves, first, *analysis* of the city's past, present and probable future; second, *synthesis* of the social, economic, political and cultural components in terms of an organized pattern of civic activities; and, third, *projection* of a physical program of future development, based on this synthesis.

PHOTOS: FAIRCHILD AERIAL SURVEYS, INC.

ANALYSIS—

It is easy to say that because of the automobile, the radio and the airplane we live in a new age and therefore have no such civic problems as produced the walled cities of Europe. But, precisely the opposite is true. Humans lived in the medieval towns; humans with the same type of characteristics are building cities today. We deal only with the change and the expansion of their material means. From the very beginning of history no conclusive proof has been offered that would indicate a fundamental change in human nature. Phases of that nature can perhaps be sublimated by improving the conditions of living. Other phases can be strengthened by the same means. And to those ends the city planner directs his analytical efforts.

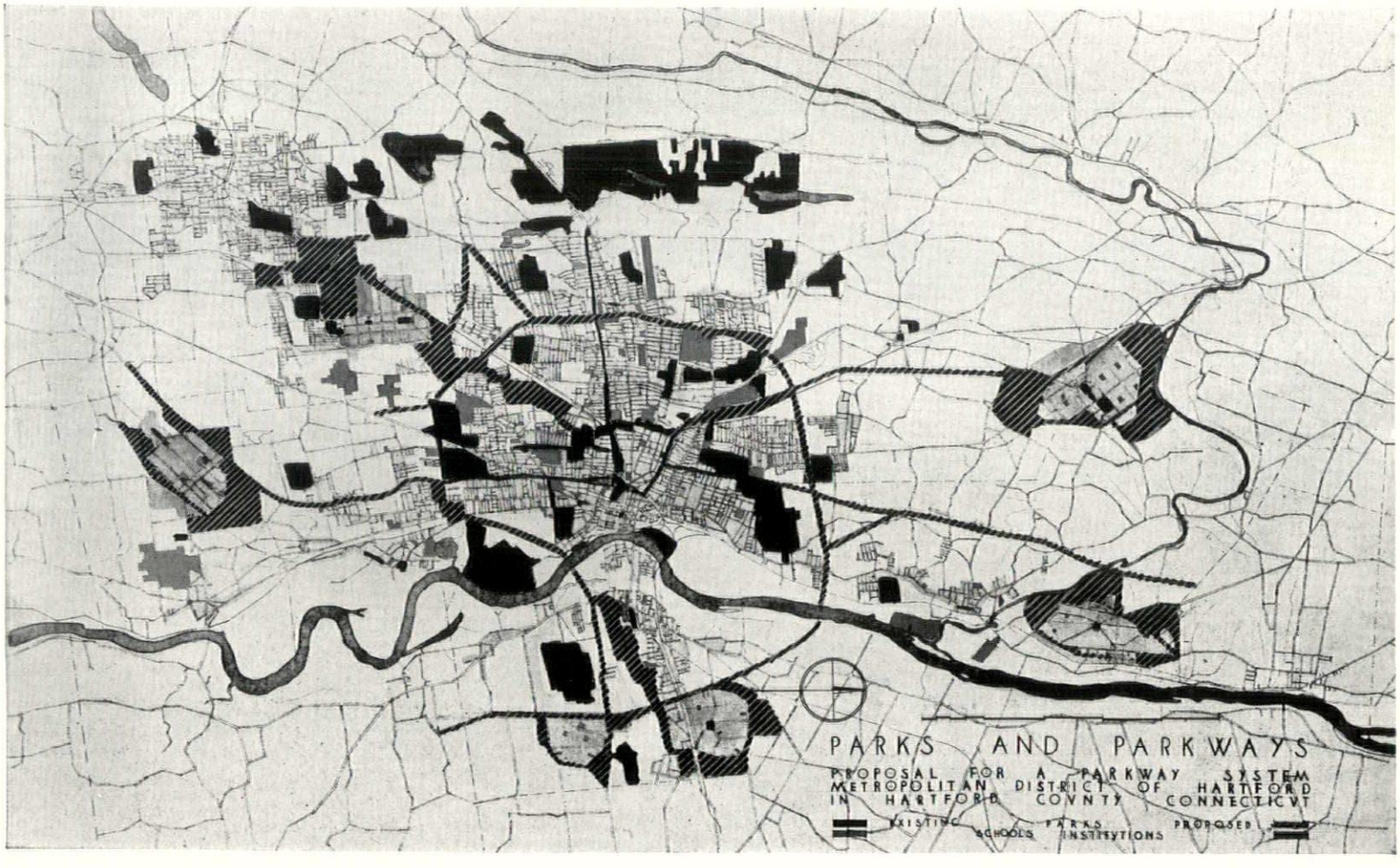
Analysis, therefore, deals primarily with the individual. True it is that the city planner is concerned with mass-problems. But the mass is only a group of individuals. And, if civilization produces mass-actions, cultural movements are the result of individual mental growth. The object of city-planning is the mental progress of society. Thus, by analyzing the ways by which the mental progress of the individual may be secured, we establish a practical approach to the objective.

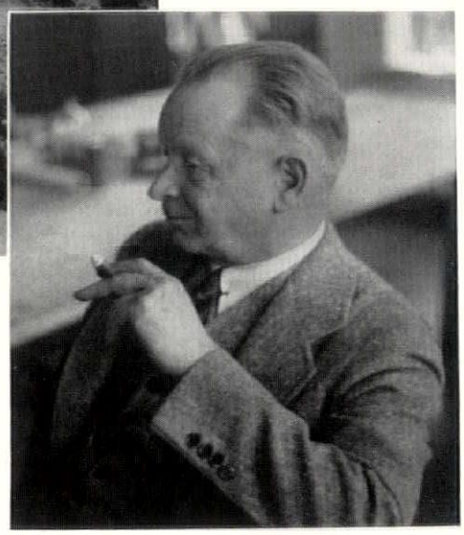
Inevitably this progress is linked with material means. It is also influenced by the intricacies of commercial and industrial actions and reactions and by both broad and detailed policies of a society's administration. These last are inextricably tied to land. It is no longer possible to consider either government or economics in the abstract sense. The activities of both are a fundamental influence in the culture of a nation, a community or an individual. They will always be so. And no mental process that disregards this fact can be termed truly analytical.

Because this is true the inter-dependence of individuals must be appreciated. Similarly the inter-dependence of communities within a tactical region must be recognized. So the concern of the city planner goes beyond the locality of the neighborhood, over the political boundaries of a city and embraces a region wherein commercial, industrial and social characteristics are similar and where a definite inter-relation between activities can logically be developed.

These are the broad factors involved. They concern the localization of industrial, commercial and residential areas, an organic system of communication between them—a schematic allocation of the controlling elements which are the primary cause of the city's existence. From this broad pattern the detail of individual communities will take form.

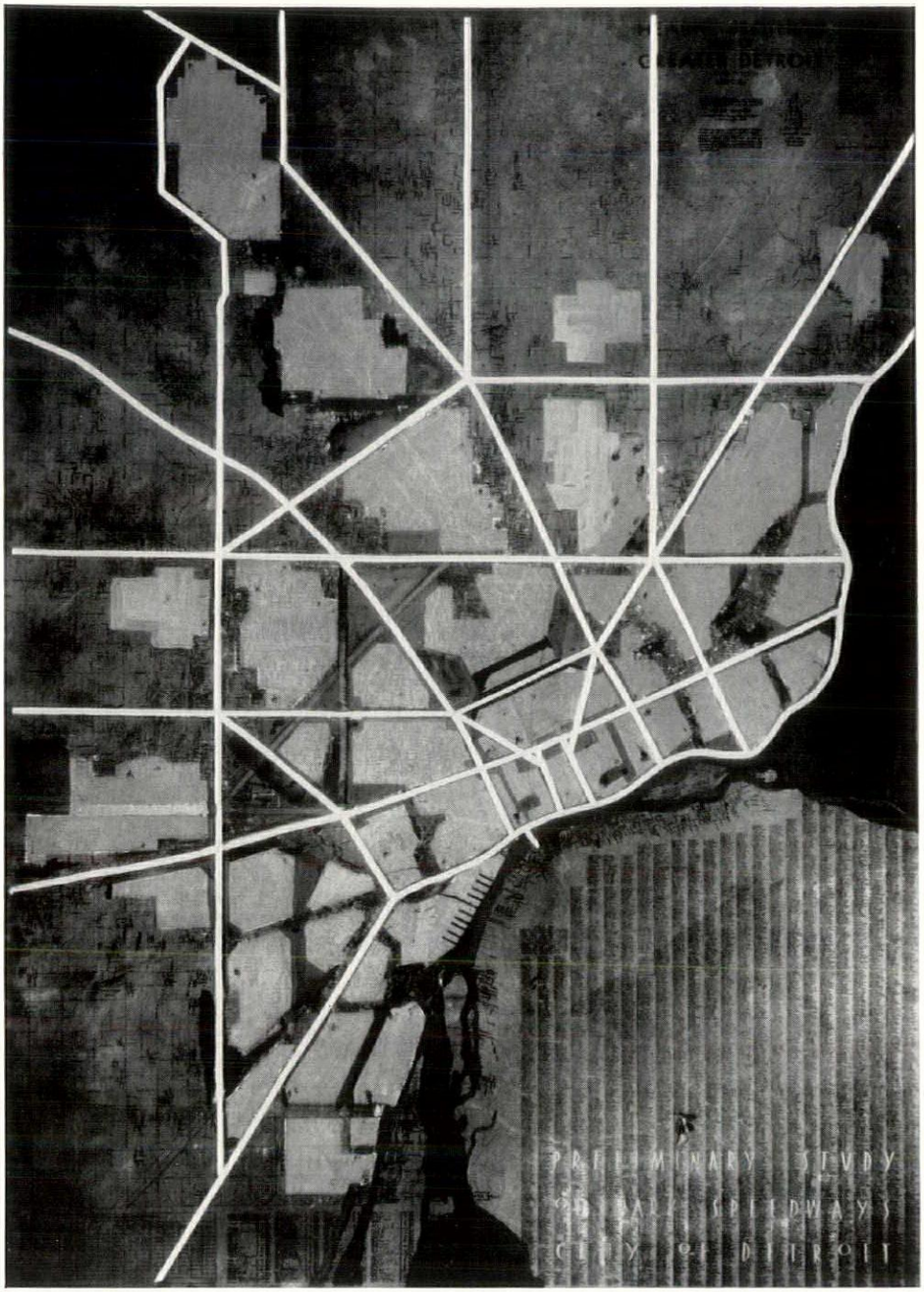
It is not possible to set down a series of rules for planning a region, a city, a neighborhood or a building. All that can be indicated regarding technique is an analytical approach to an orderly segregation of function and an orderly means of relating functional units so that the individual can benefit by a progressive culture.





PHOTOS: DICK ASKEW, CRANBROOK ACADEMY STAFF PHOTOGRAPHER

To the Cranbrook Academy of Art, Bloomfield Hills, near Detroit, Eliel Saarinen, draws students of the Art of City Building. Here the master and student think through specific problems together, the master conferring, guiding, suggesting, criticizing. The plans below evince the study technique; at left, a pattern of Hartford parks and parkways, both present and projected; and on this page, a regional plan worked out on an accurate contour map of Hartford, Conn., by Bradford Tilney



Stages in studies of organization and integration. Left: Areas in the Greater Detroit Region are spotted as present and future developments indicate. Speedways streak the map with white in a preliminary study.

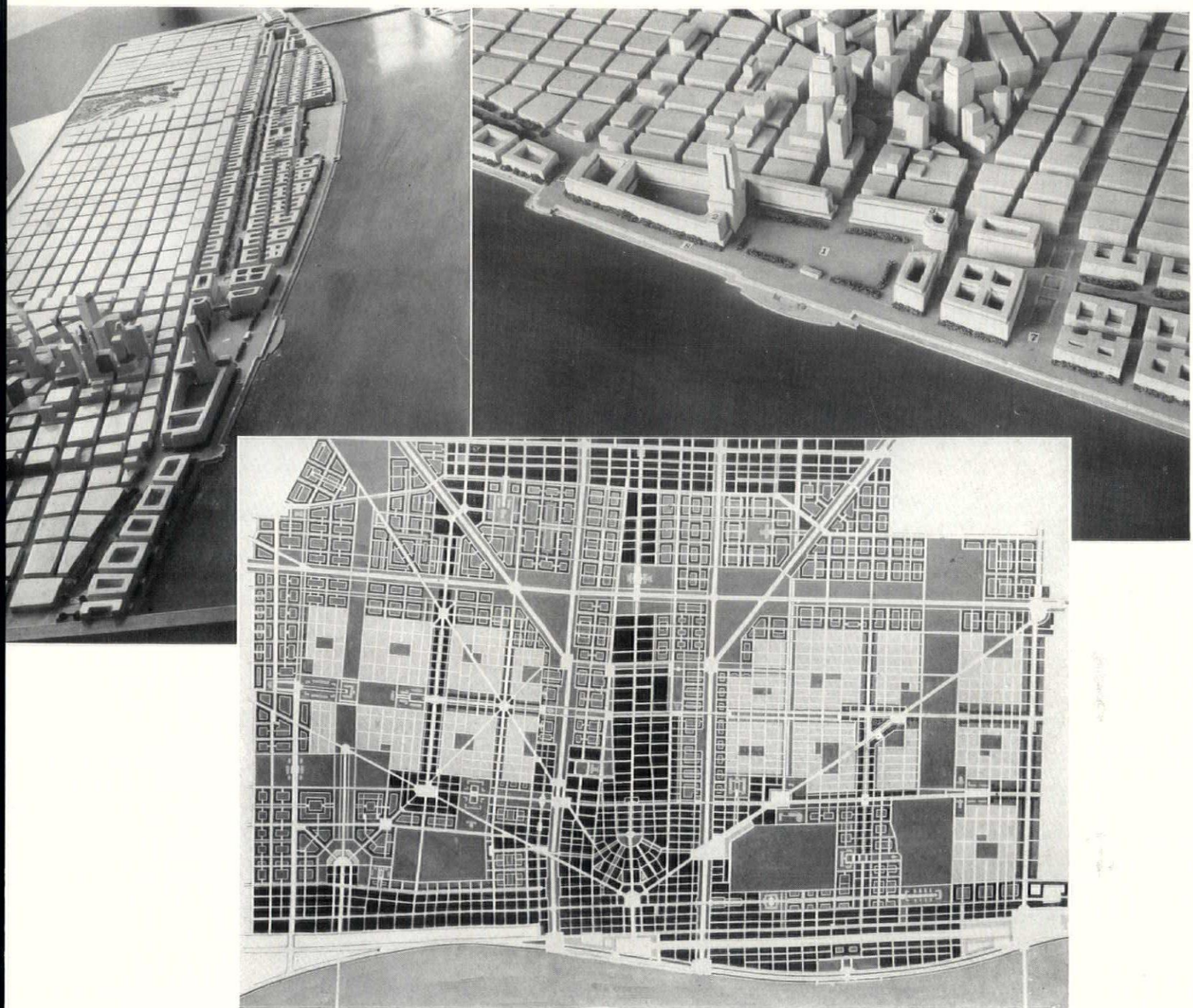
On opposite page: the central area of Detroit in plan and in models. The map is a land-utilization study showing possible organization and correllation of areas for their special functions; open spaces commercial districts, residential, cultural, industrial, recreational. The Detroit river front is potentially developed in the models above the map. Old structures and new are shown so that the layman can visualize the suggested project. They were developed by Walter Hickey at Cranbrook

Today this orderly arrangement is lacking. Most of our cities have grown so fast that there has been no chance to analyze, much less plan. In only a few decades we have seen a growing congestion; a subsequent extension of the city's boundaries, the founding of satellite communities. Side by side has gone the rapid development of traffic means and the almost unbelievable extension of industrial techniques. These last two are factors of the greatest significance. They are making possible the realization of the city planner's dream. Yet, at the same time they may sometimes prove his greatest obstacle in the attainment of the objective, the mental progress of society—something that can only come through order.

In the case of the city, "order" has a dual meaning. Practical order is a matter of reasoning; esthetic order involves the artistic instinct. Both must be virile factors of city planning in all its phases. Each affects the other. The esthetic has such a vitally constructive effect upon the practical that without its influence "practical considerations" are bound gradually to bring forth disorder.

SYNTHESIS

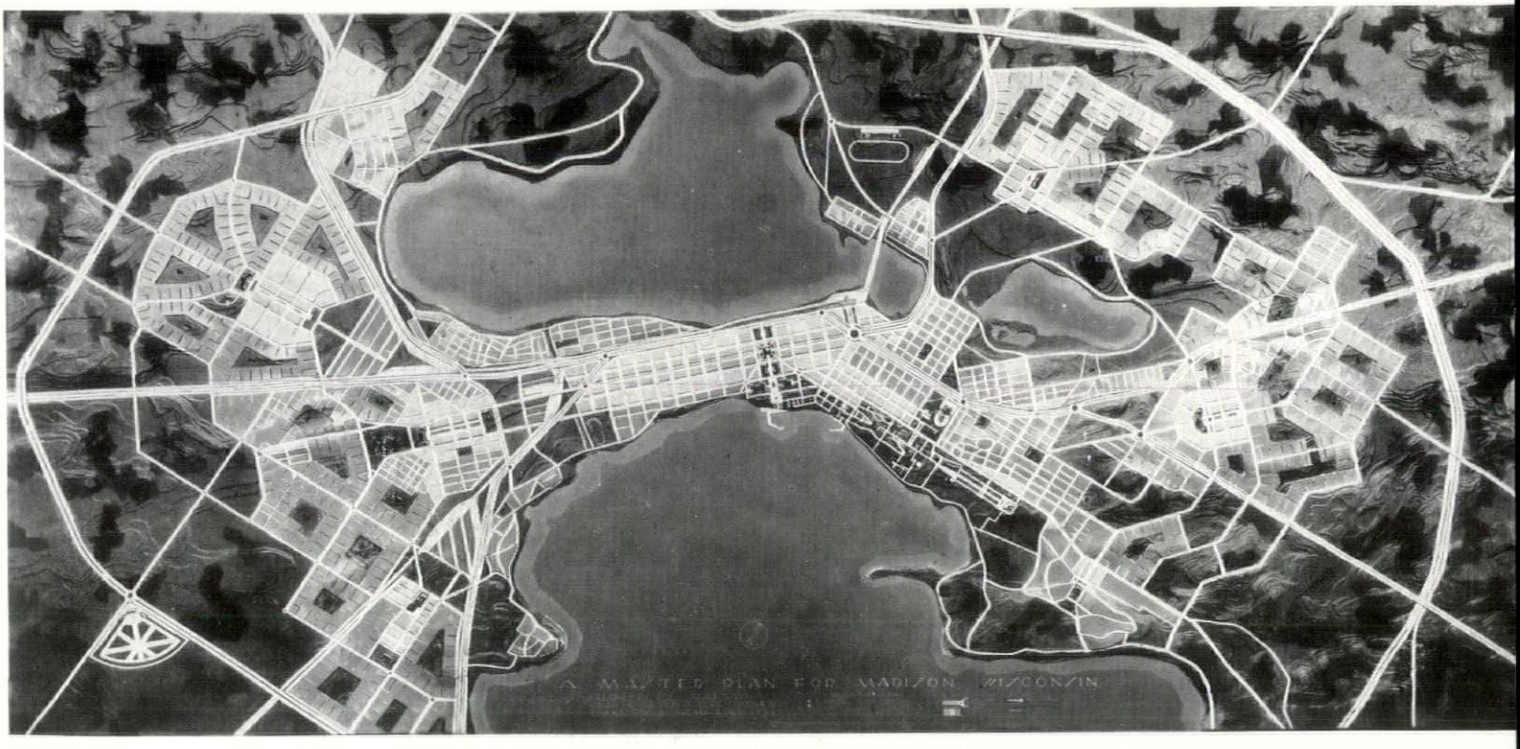
Analysis of the various details involved in the co-ordination of the esthetic and practical realities leads to a number of conclusions. Each is important as a fundamental upon which a city-planning program must be organized.



It is obvious, for example, that as a town grows in size, congestion increases in degree, land values become unreasonable, living conditions unbearable. The city, created because of modern industry and commerce, makes inconvenient, often impossible, the fullest use of industry's finest products. Thus in New York and in Washington, D. C., the parking problem has become so acute due to congestion that the automobile as a popular means of interurban transportation has been largely abandoned. Yet to a large number of people home life is insupportable in such a city. Relaxation in suburban areas has become general.

This presupposes the necessity for complete satellite communities. It calls for the perfection of swift transportation between communities. It implies the desire for recreational and cultural facilities near residential areas. And, as the congestion of the city lessens due to suburban development the re-making of the city itself can be forecast with a fair degree of accuracy.

Synthetically, therefore, can be formulated a social, economic and physical program. As the mechanics of mobility develop greater general usefulness, regions in which there is a variety of related interests will expand. Yet individual interests will tend gradually to form groups. Thus, a region must be served by arterial highways so planned as to permit high speed with safety and to eliminate interference with local community traffic.



The procedure under Eliel Saarinen is always from the general to the particular, from the controlling factors to the variable. This Master Plan for Madison, Wisconsin, (a project developed by William Kaeser, Architect, at Cranbrook), shows a complete regional traffic system. Such a plan is made after an analysis of present conditions and a synthesis of current trends

Traffic means of all sorts are an important characteristic of modern living. And so is housing as Eliel Saarinen understands the meaning of the term. In it are categorically included houses in which to live, houses in which to work, houses in which to gain recreation of various kinds. The distinction between them is a matter of practicality tempered by an esthetic attitude that regards the self-sufficient building—however beautiful in the abstract sense—as out of harmony with community organization. Architectural beauty springs not from details, but from fine proportions, materials and their relation to the organism as a whole.

Implied here is a definite social control of the city compound, its neighboring communities and the region in which all lie. But "control" is not visioned according to any Soviet formula.

Control of the future city—and all city planning is done for the future—will be vested in government, the city itself. It will cover all lines of transportation, including highways and a "green belt" parkway system surrounding communities and linking them with one another. It will extend to the allocation of areas for commerce, for industry and for residential use and in time will develop a coordination of building design and grouping through a system of zoning restrictions.

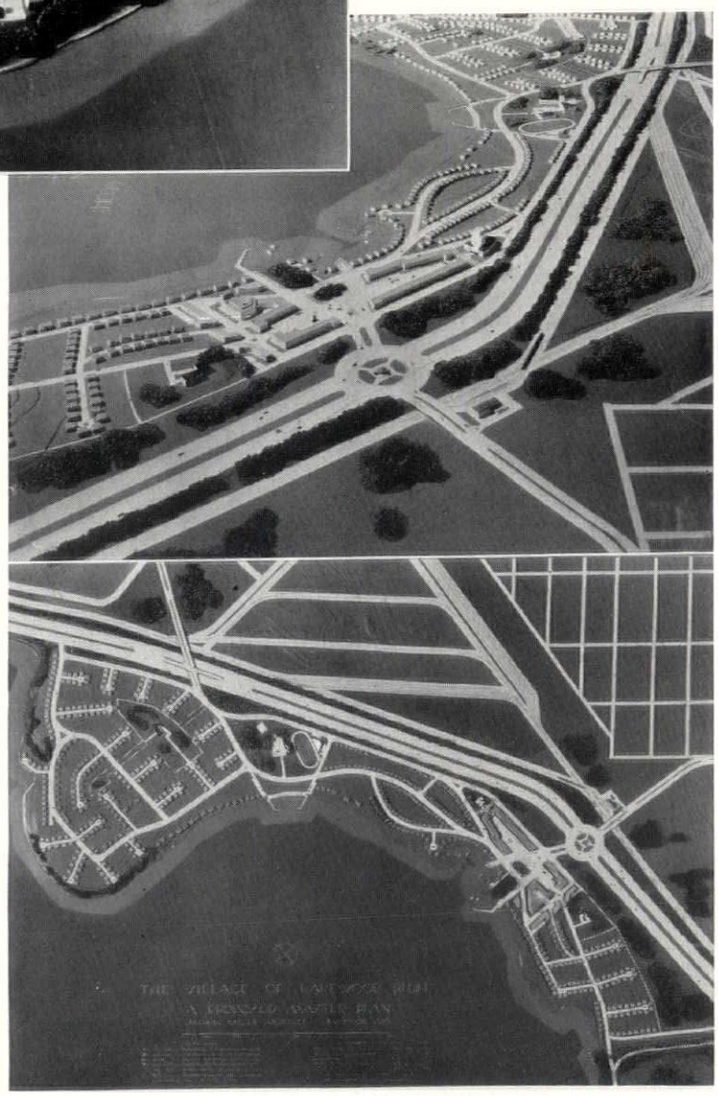
The practical method of obtaining such control is by the purchase and use of areas now marginal to existing cities. As these are progressively developed sales or land commitments will be made to individuals under restrictions already mentioned. Thus, Eliel Saarinen does not propose the elimination of "reasonable speculation." But none of his city-planning projects vision the possibility of the "laissez-faire" land utilization that has generated in the past the unconscionable living conditions and congestion which are now characteristics of urban America.

PROJECTION—

Necessarily brief have been the foregoing paragraphs on the analysis of civic problems and the synthesis of a city-planning program. They suggest the only method of city planning which will provide a realistic basis for a graphic solution of the many problems involved. For city planning is a never ending task. In Eliel Saarinen's estimation there is no such thing as "a city plan" except as it may represent a set of static conditions which constitute the start from which improvement may be made.

Thus, the actual projection of a city-planning program is a kind of visual memorandum of what analysis and synthesis show to be desirable. Depending upon the method of attacking the problems, maps and models can be made for a future of ten, twenty-five, fifty or seventy-five years distant. Pro-

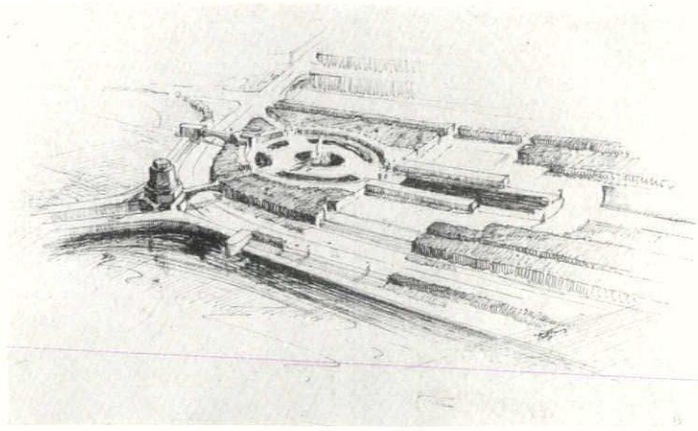
A point of land, shown on the Master Plan opposite, has been developed in model form by the same architect. It is a residential suburb, "The Village of Lakewood Bluff." Roads, houses, schools, churches, shopping center, and recreation facilities are co-ordinated. Their relation to local and through traffic arteries is carefully studied



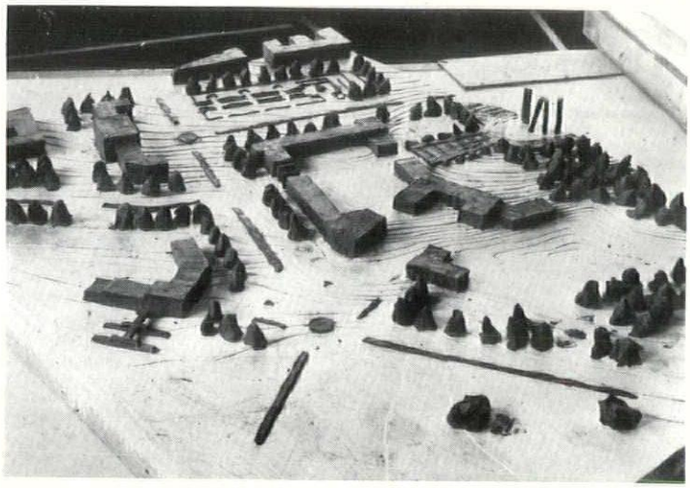
gressively they show less and less concern with existing conditions and more and more preoccupation with developments of broad significance.

For example, today's plan of any city might show a heavy downtown congestion and scattered houses along a road at the city's rim. In a twenty-five year plan the congestion may have been opened by a park cleared from the slums; the road may have become an arterial highway; the group of houses a suburban community. In fifty years railroad lines have been relocated, commerce and industrial areas have replaced older residential districts. The highways have been moved out of town; the city's limits have expanded to a region interspersed with parks and dotted with communities, integrated as to size, function and design so as to insure all inhabitants the chance for mental progress that results from an esthetic approach to the solution of practical problems.

Most of Eliel Saarinen's city planning studies—maps and models—have been executed from this broad view of future probabilities. But they have been developed with a tolerant regard for the impossibilities of an immediate accomplishment. Saarinen's professional philosophy includes the belief that complete organization is an ideal. He preaches it and argues for it in each of his projected city schemes. But he sees the ideal in relation to the



Preliminary sketch for bathing pool and approaches, by Carl Feiss



Sketches, thumb-nail perspectives, are used in studying variations in a solution or alternate schemes. Three dimensional studies on built-up contour maps carry the solution still further, as in the preliminary model by William Kittle. Buildings are studied in their relationships to the city plan, as effective units in a great functioning organization

practical exigencies of the moment. He recognizes that progress is slow even along a well-defined trend and is not disturbed unduly when a building occupies a site that should be—and ultimately may become—a park or the underpass of a high-speed road.

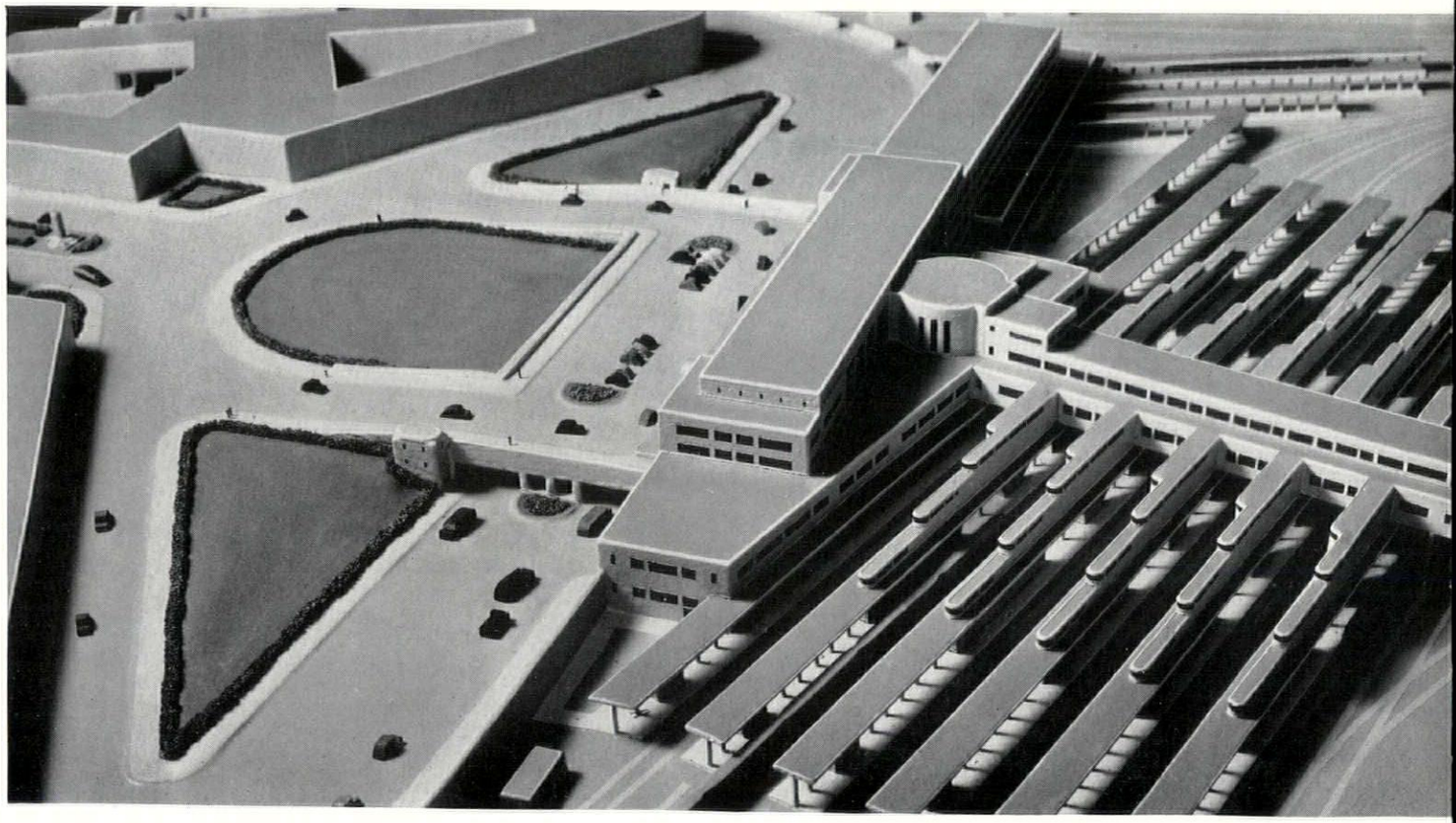
Such conditions are in one measure obstacles to progress. But insofar as they impress the observer with this fact, they are at the same time forceful arguments for a sweeping civic improvement and the adoption of a city-planning program which will ultimately involve their demolition.

The general recognition of the necessity for city planning is a matter of public education. The actual preparation of a program and the step-by-step execution of its details is a professional matter.

"We are facing the discouraging fact that unless the whole architectural profession solidly supports the principles of the art of building cities, the present disorderly situation is doomed to remain. And the more generally it understands its duty in this respect and shows it by its actions, the stronger will be the public's confidence in the architectural profession and the more power will architects gain in city-building matters.

"When all architects work as a body toward this end, they will become leaders in the development of cities and in the control of an organic coherence. With public confidence as an aid they will be able to control even the activities of parasitical speculators who, under the guise of architecture, spread bad taste and confusion over the country.

"Thus, architects become the educators of the public and the designers of the cities. And therein exists the spirit of an adequate city-planning control."

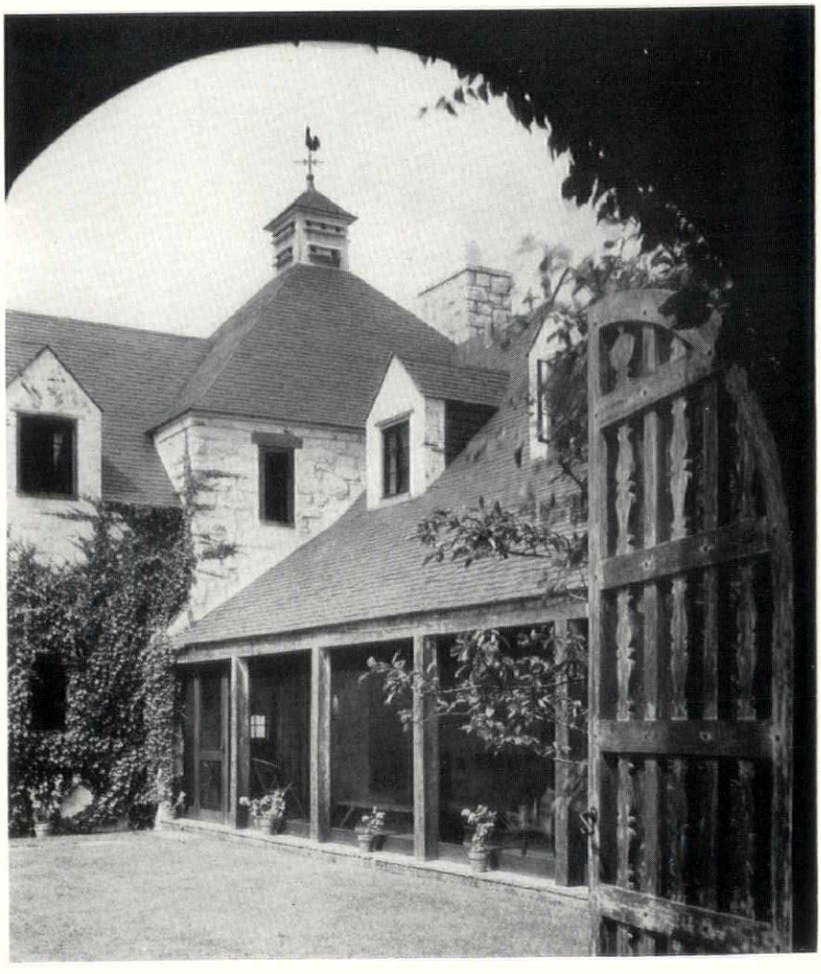


PHOTOS: SAMUEL H. GOTTSCHO

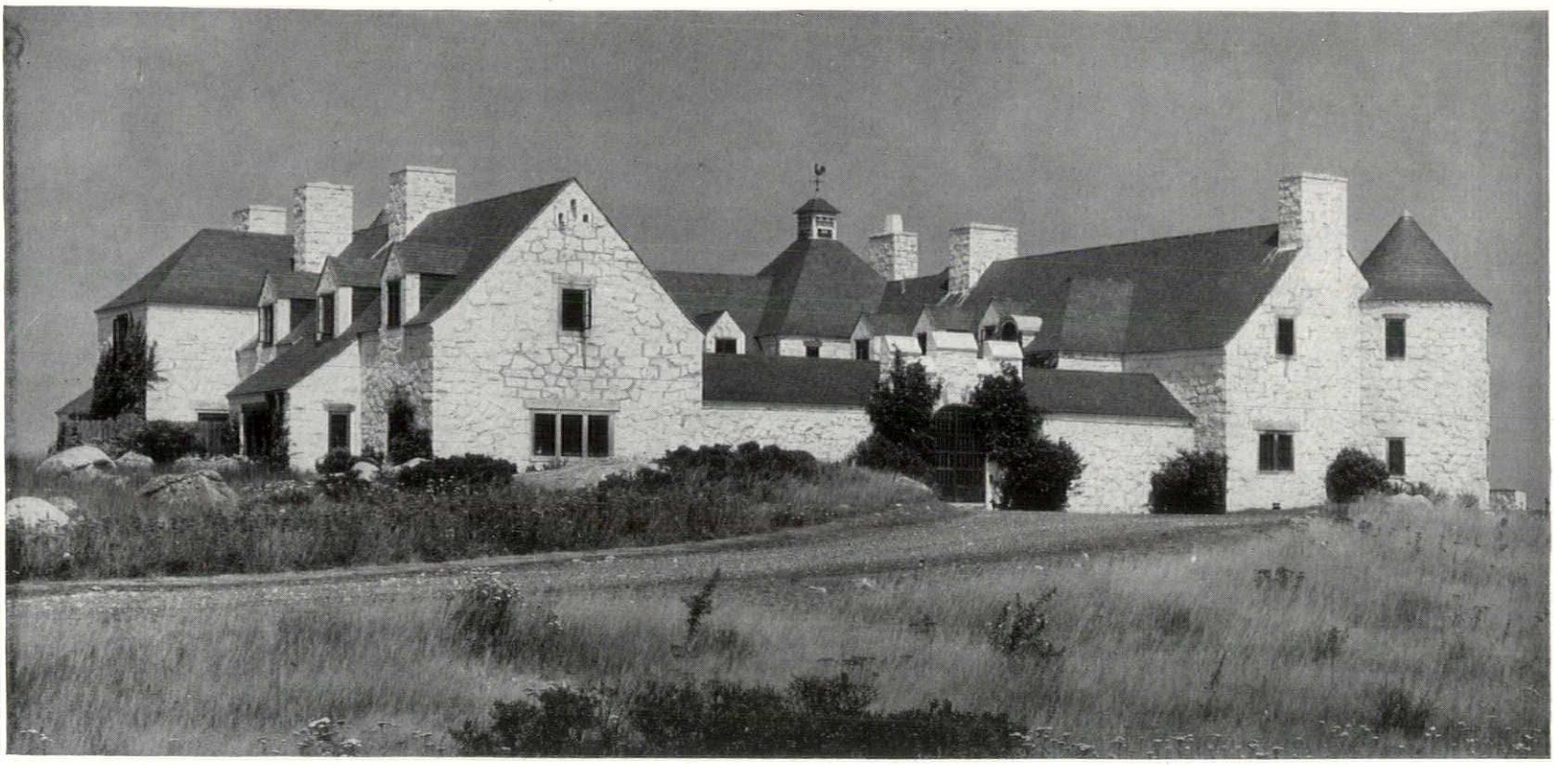
HOUSE OF GRANT SIMMONS

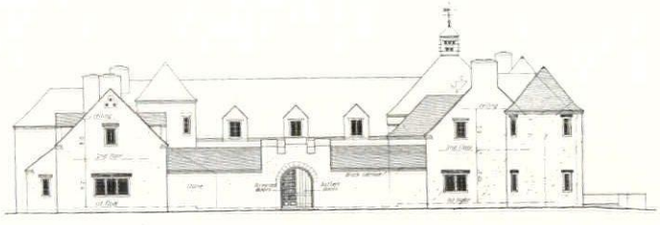
FISHERS ISLAND, NEW YORK

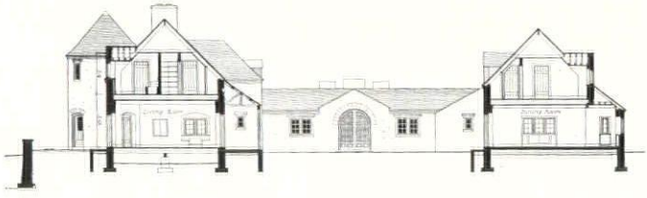
ERIC KEBBON, ARCHITECT

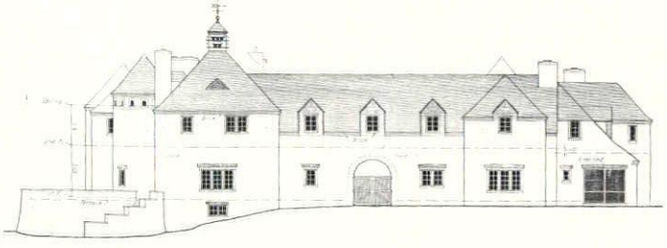


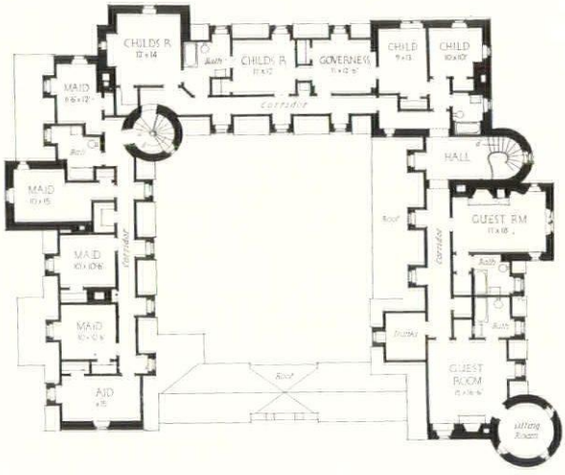
Above: View of living portion from the east. Right: View of porch in the courtyard

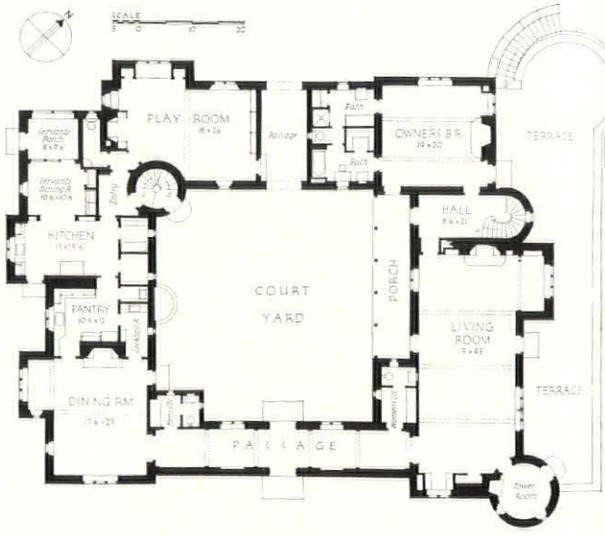




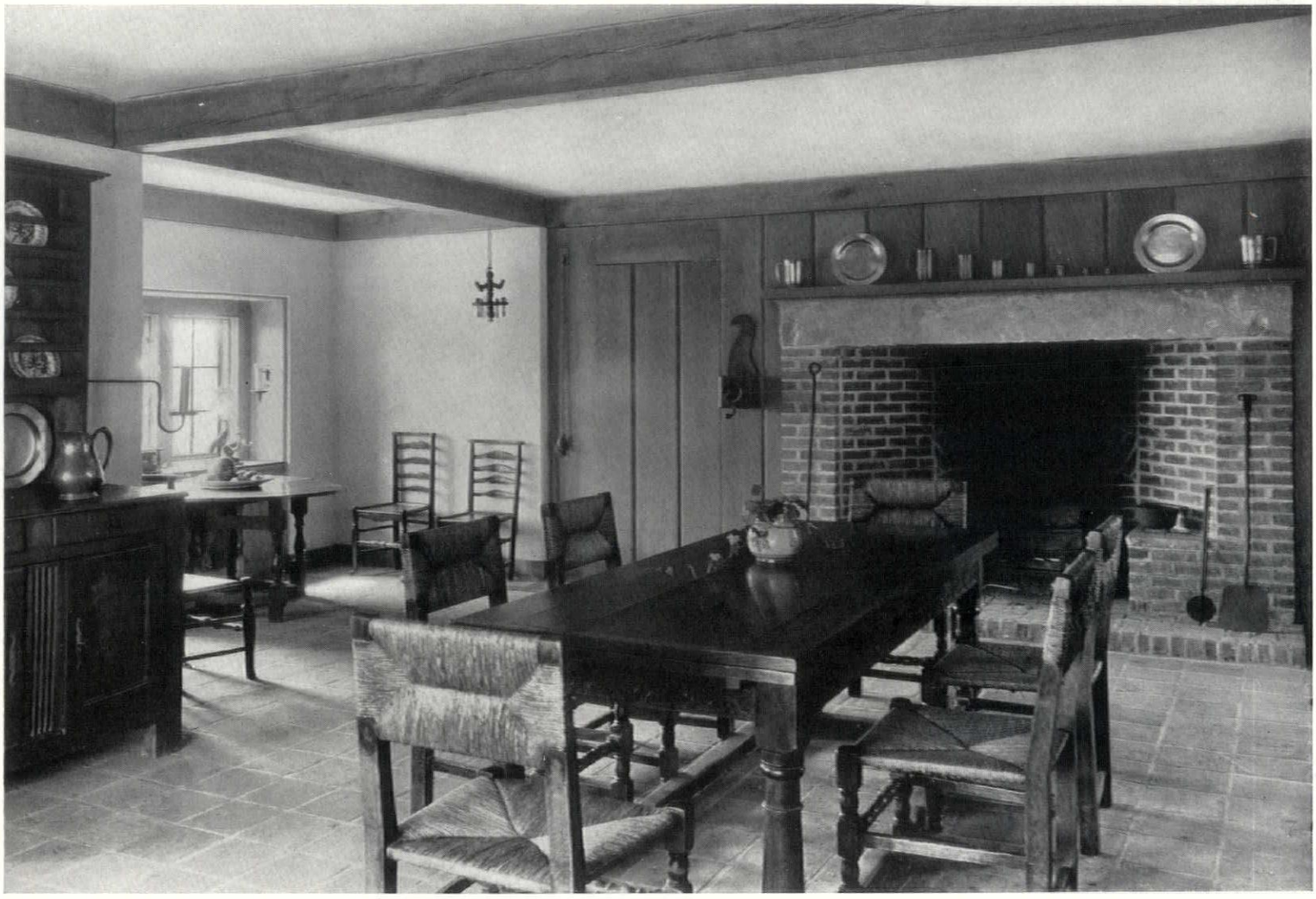








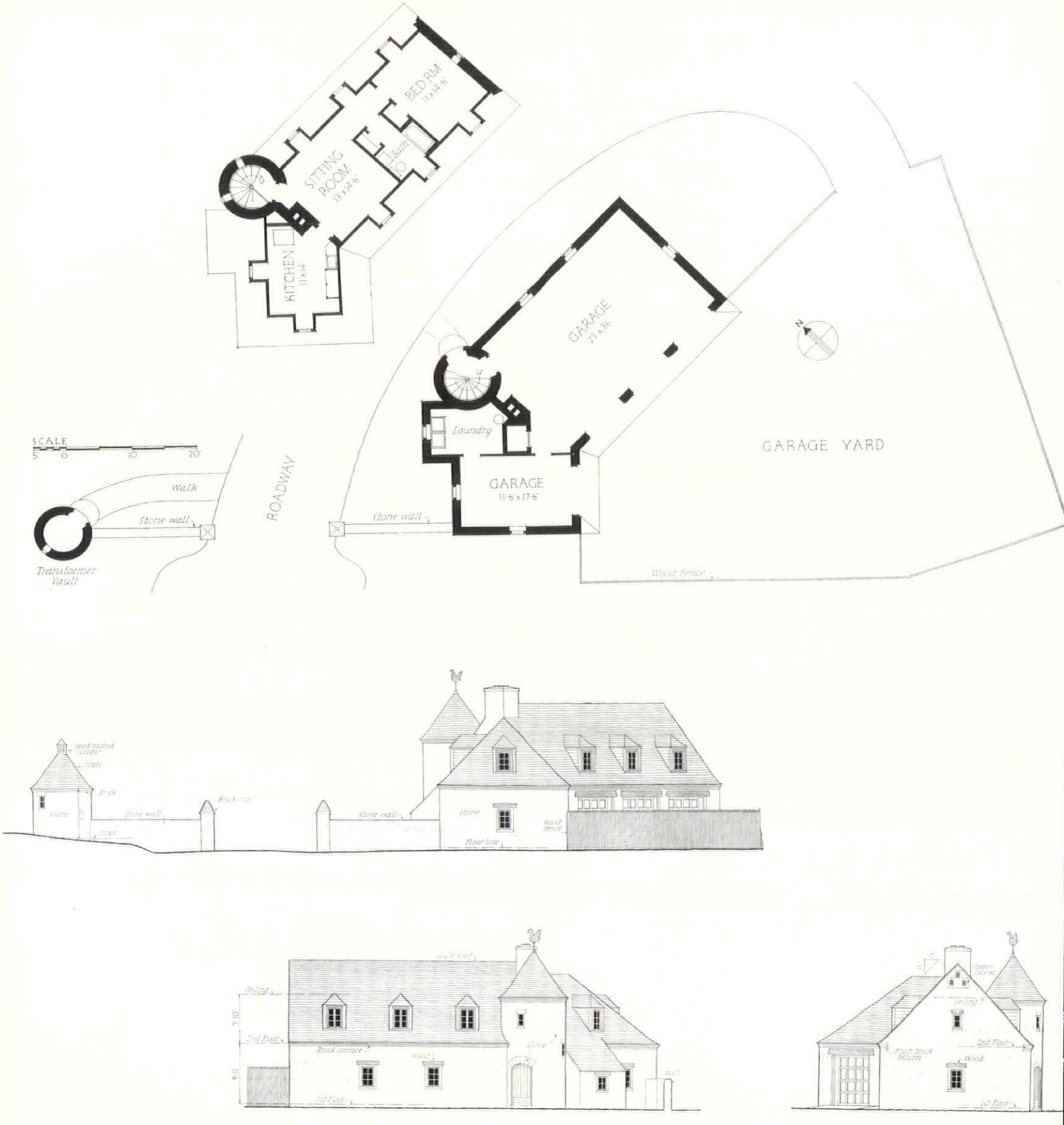
HOUSE OF GRANT SIMMONS, FISHERS ISLAND, N. Y. ERIC KEBBON, ARCHITECT



Above: View in the dining room; below is seen the living room and, on facing page, detail of the winding staircase; in house of Grant Simmons, Fishers Island, New York. Eric Kebbon, architect

Facing page: View of connecting passage between living and dining rooms in the Grant Simmons house. Above: Garage and servants' living quarters, with transformer vault at the left across entrance driveway

HOUSE OF GRANT SIMMONS
FISHERS ISLAND, NEW YORK
ERIC KEBBON, ARCHITECT



Above: Plans and elevations of garage and servants' living quarters for house of Grant Simmons, Fishers Island, N. Y. Eric Kebbon, architect

BRINKMAN, VAN DER VLUGHT AND A. VAN TIJEN, ARCHITECTS

Rotterdam's Machine for Housing

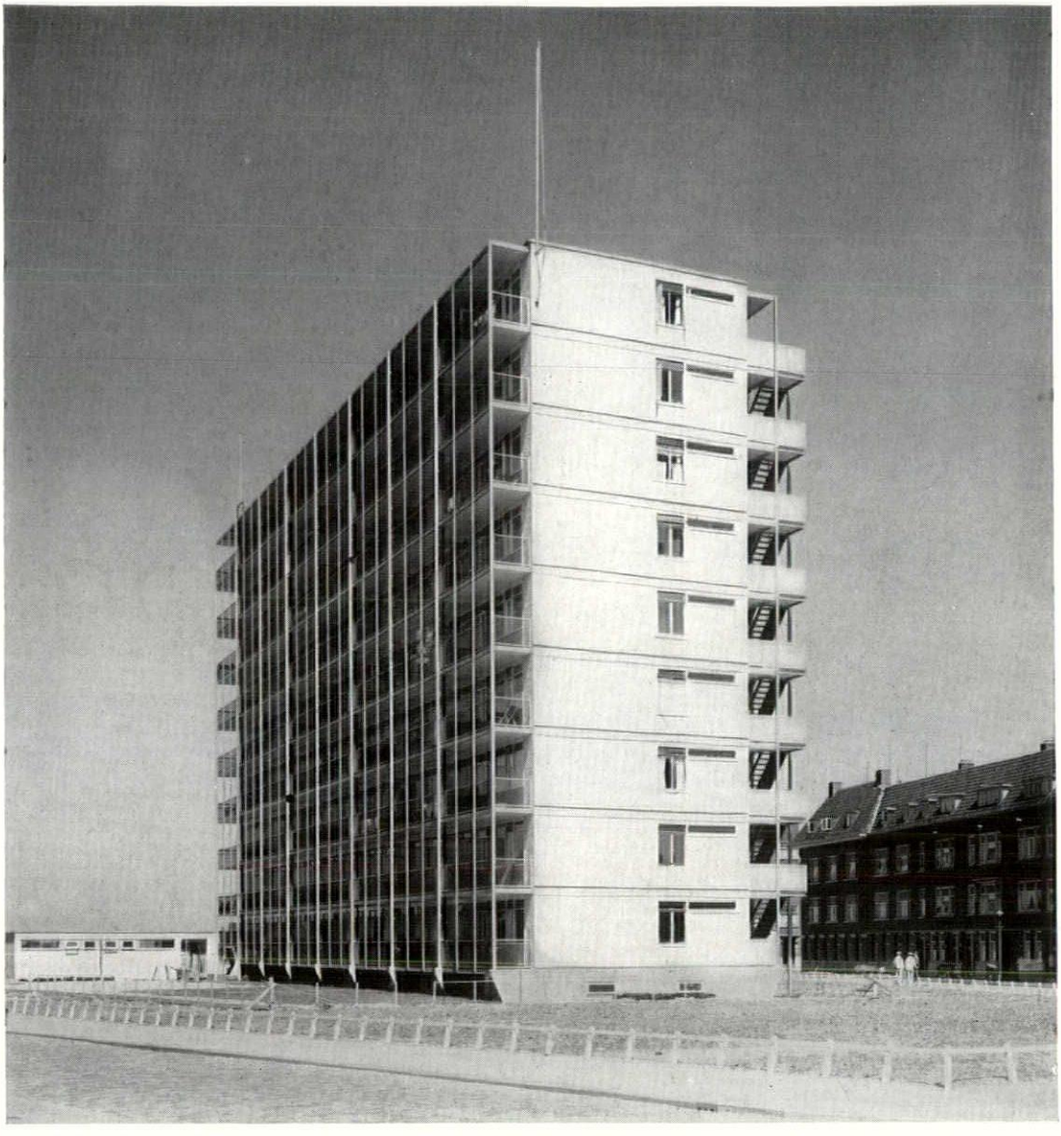
BY TALBOT FAULKNER HAMLIN

THE logical, clearcut approach to the problems of plan and construction,—the daring search for economy and lightness,—the absolute freedom from hampering style traditions,—the thought-through space utilization—are admirable characteristics of this work of architects Brinkman, Van der Vlught and A. Van Tijen. Built for neat, careful, thrifty Rotterdamers, the Bergpolder Apartments amply fulfill their requirements for cheap homes. For the equivalent of approximately $5 a room, Dutch "lower-income bracket" families enjoy their central-heated four-room quarters in a thoroughly modern, sun-drenched, through-ventilated dwelling. At this low figure they cannot expect all the privacy, the fire-safety or the rapidity of vertical transportation and communication demanded by American government standards for new "low-cost" housing.

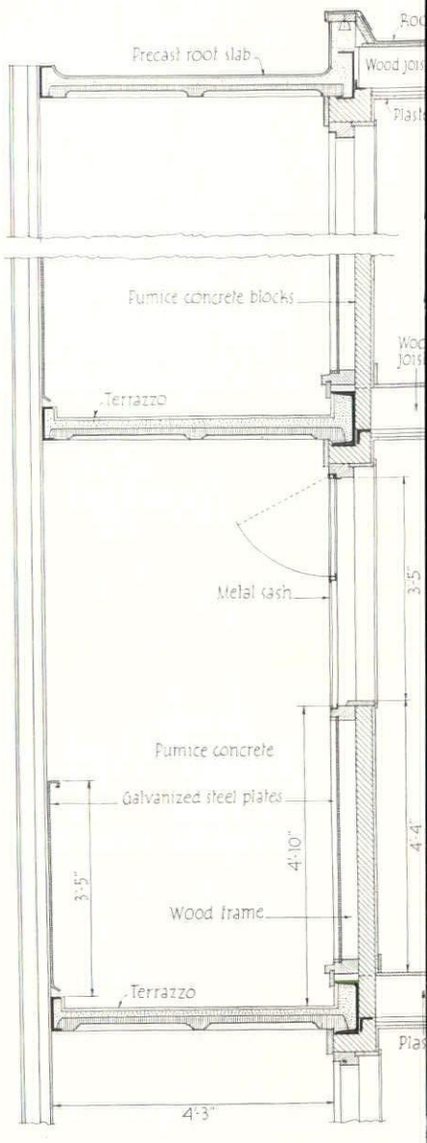
Two factors make possible the low rentals of the Bergpolder Apartments, both are worthy of American architects' study. The first is the liberal Dutch system of housing-loans; the second, the technical studies of the architects which produced the economies of structure and plan.

Groups needing housing in Holland form a building association; to this the government lends the entire amount necessary at two per cent interest and requires a correspondingly low amortization. Rents, then, need only cover this small carrying charge (about five per cent) and running expenses. But, even considering this favorable set-up, the building shows remarkable economy, due to skillful study and elimination alike of waste space and unnecessary weights.

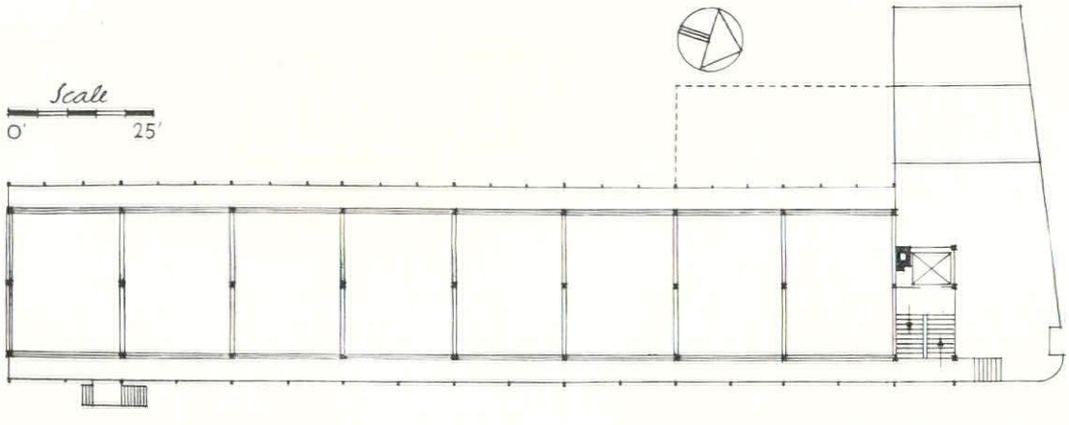
The planning is simplicity itself, ingenious, and in conformity with tenant-modes-of-living; nine floors, eight apartments on each floor, each apartment a rectangle 20′-4″ wide by 27′-0″ deep, each rectangle providing a multi-use living room, two bedrooms, an efficient kitchen, a bath and toilet and a

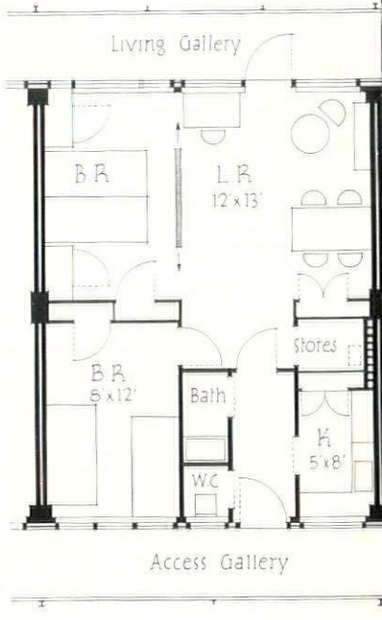


South end of building showing living balconies on west side

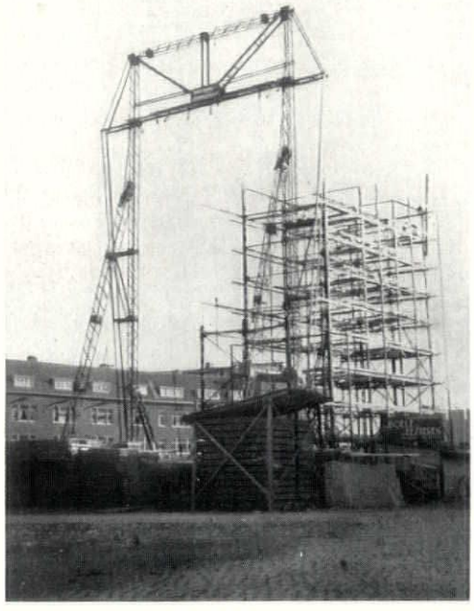


Section through Balcony





Above: Detail of section through balcony, showing an ingenious form of panel construction. Below: Plan of floors, with 8 identical apartment units divided by double partition walls, with a single lift at the north end. Right: Typical plan of individual apartments. Each unit is a rectangular space, 20 feet, 4 inches wide by 27 feet deep. The exterior of the building is silver-gray metal, yellow brick and glass. Brinkman, Van der Vlught and A. Van Tijen, Architects



PHOTOS: KAMMAN

large storage closet. Communicating "hall" balconies front east, living balconies face west.

Such planning allows a light, simple, steel skeleton of H columns, I beams and channels which support the wood-joist floors and the precast, coffered, balcony floor-ceiling units. Every third floor is of reinforced concrete as a fire stop, the whole thus approximating three 3-story buildings on top of each other. All exterior walls are of an ingenious panel construction,—4″ pumice concrete blocks, asphalted, fronted by a wood panel which is easily built and installed, and in which are placed the door and window units. Over the wall surfaces are sheets of zinc-covered steel 2 mm. thick. The brick walls at the ends and between apartments are double, supported on paired channels, with a 2″ air space between, making a soundproof and fireproof separation. The channels, exposed on the exterior, are painted aluminum color, like all other exposed steel, and form a pleasant rhythmic note. Repainting of so much metal may become a major maintenance charge after five years.

The use of such a light and standardized scheme for America is debatable. Light and airy as they are, these apartments lack sufficient wall space for usual types of furniture. The continuous living balconies with only light wire screens between those of adjoining apartments make privacy impossible. Moreover, the fire risk from a 9-story building with wood floors is considerable, especially with so much uncovered structural steel. Even the fireproofing of the central I beam girder with just one coat of plaster seems inadequate. Exposed access balconies would be questionable in the rigorous climate of northern United States. Bedrooms opening on this public balcony are not desirable. (*Continued on page* 122)

The method of setting frames by means of a traveling crane, promoting speed in erection, is illustrated at top left. Above right: A part of the living room, with its modern small furniture and table, which is used also for dining. Above: Corner of living room, showing movable partition at left which increases the apparent size of this room. The partition can be moved as indicated by arrows on the plan, combining bedroom and living room.

The Architects' o

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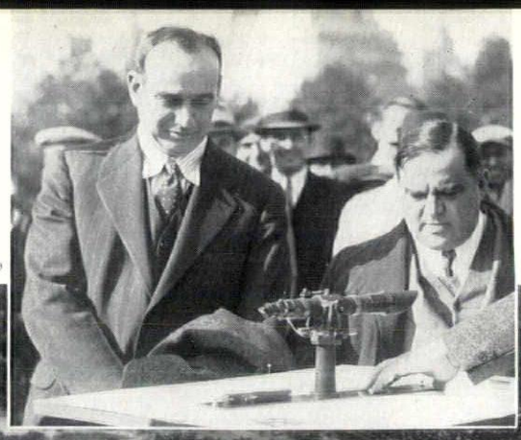
WIDE WORLD



ACME

Park Commissioner Robert "Bob" Moses and Mayor LaGuardia survey the site for New York's International Exposition, 1939. The 1,003 acres, perhaps augmented by further acquisitions, extends in a two-mile strip from Flushing Bay to Kew Gardens. City-owned, it will become a park and recreation center after the Fair. Building sites and limpid lagoons will rise from dank swamps and dumps like this, when relief workers get their orders

TO commemorate Washington's inauguration in New York 150 years ago, but with an eye to the future city, New York launches the world's greatest fair. Brussels had its fair this year and San Diego, too. Dallas, Texas, opens a World's Fair in 1936. Paris is preparing for 1937 and San Francisco plans one for '38. Tokio will follow in '40.

Already the steering committee, headed by George McAneny, is pushing plans; public and political support is assured, and some 300 potent names are listed for the general organization. They will "make no little plans," but as yet no Burnham has been selected to direct the design and plan, to be the executive head, to correlate the efforts of the legion of architects, designers, landscapers, draftsmen, contractors and concessionaires. With other fairs in mind we may expect the direction of design and construction to be concentrated in a small committee, perhaps of three, headed by an executive architect, a site planner and a design genius. Thus can the hundreds of architects design the individual buildings in conformity with the fair-as-a-whole, and unity with stimulating variety can be achieved in an organized way. Perhaps a competition or many competitions—local, national or even international—may be held to give architectural opportunities.

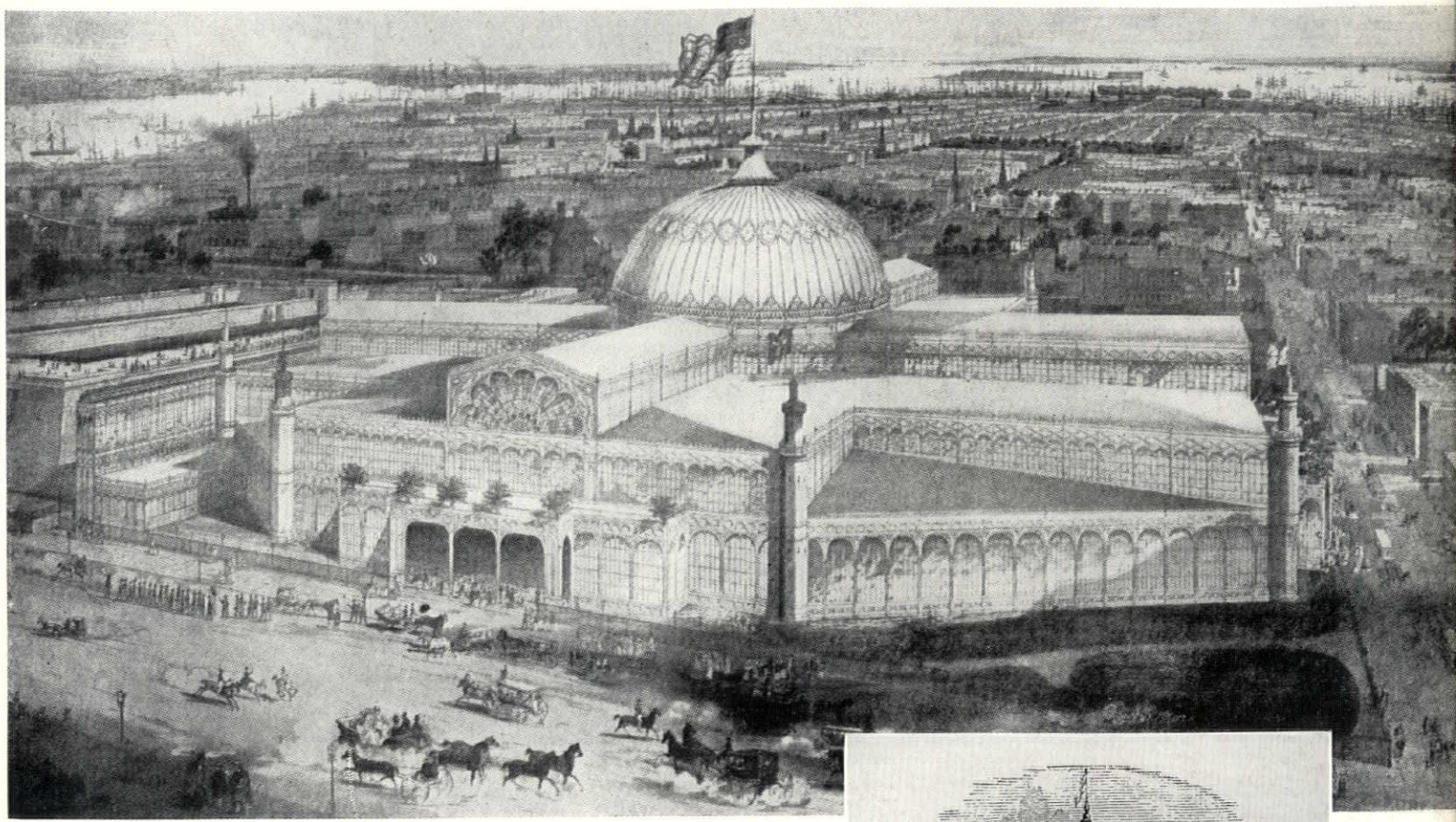
In any event, the World's Fair will mean work for many, for designing must be done for exhibitors and concessionaires as well as for the principal buildings, permanent or temporary. And that is not all; the whole city will dress or redress itself architecturally for the occasion. Hundreds of correlated and corollary projects for housing, amusing, catering and selling the Fair visitors, are already in the minds of promotors.

The profession welcomes the Fair, all Fairs, and will do its utmost to make New York's '39 Exposition the best as well as the biggest.

CHARLES P. CUSHING

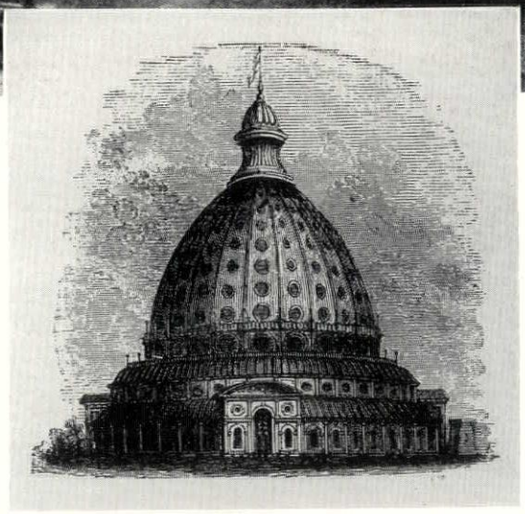
New York's WORLD'S FAIR, 1939

City-Owned 1,003 Acre Site, a 40 Million Dollar Budget, and Advise Aplenty



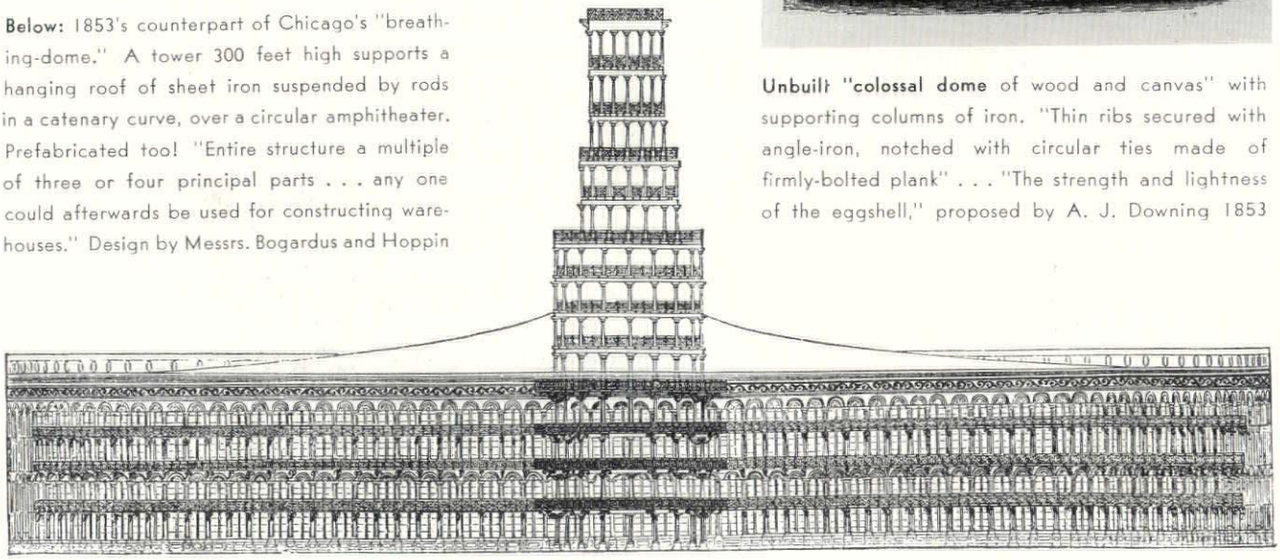
PHOTOS: ROBERT FRIDENBERG

Crystal Palace, built for the Famous Fair of '53, New York's previous exposition. Now relandscaped Bryant Park at 42nd Street. Glass and iron, like its predecessor in London, it was the acme of the Modern to George Carstensen its architect. More Modern still are the "unaccepted" designs, the also-rans we also show



Unbuilt "colossal dome of wood and canvas" with supporting columns of iron. "Thin ribs secured with angle-iron, notched with circular ties made of firmly-bolted plank" . . . "The strength and lightness of the eggshell," proposed by A. J. Downing 1853

Below: 1853's counterpart of Chicago's "breathing-dome." A tower 300 feet high supports a hanging roof of sheet iron suspended by rods in a catenary curve, over a circular amphitheater. Prefabricated too! "Entire structure a multiple of three or four principal parts . . . any one could afterwards be used for constructing warehouses." Design by Messrs. Bogardus and Hoppin



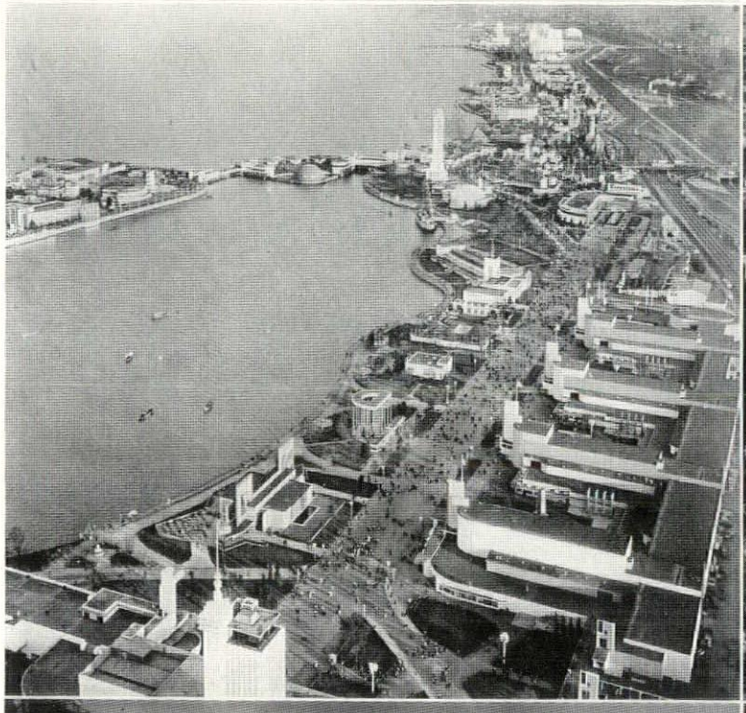
FASHIONS OF FORMER FAIRS

PHOTO: BROWN BROS.

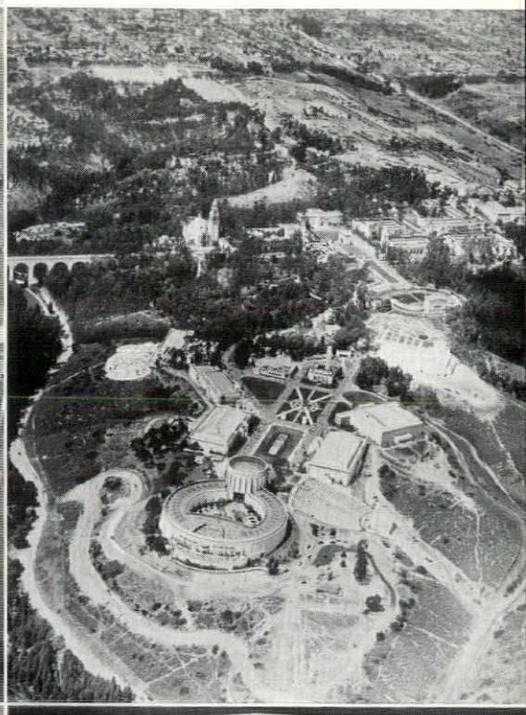
Left: Before the 'rickshaw era, wheel chairs for the weary at Chicago's Fair of the Gay Nineties.

Below: San Diego this year; the new in the foreground—the fair of '15 just beyond; and Goodhue's rich facade of the permanent California building.

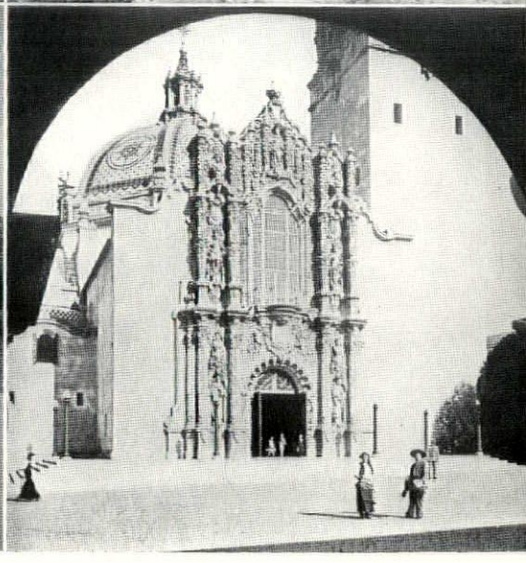
WIDE WORLD



Looking down on A Century of Progress Exposition, Chicago, 1934



Reflections of the Panama Pacific Exposition, San Francisco, 1915. The Palace of Education, Bliss & Faville, architect



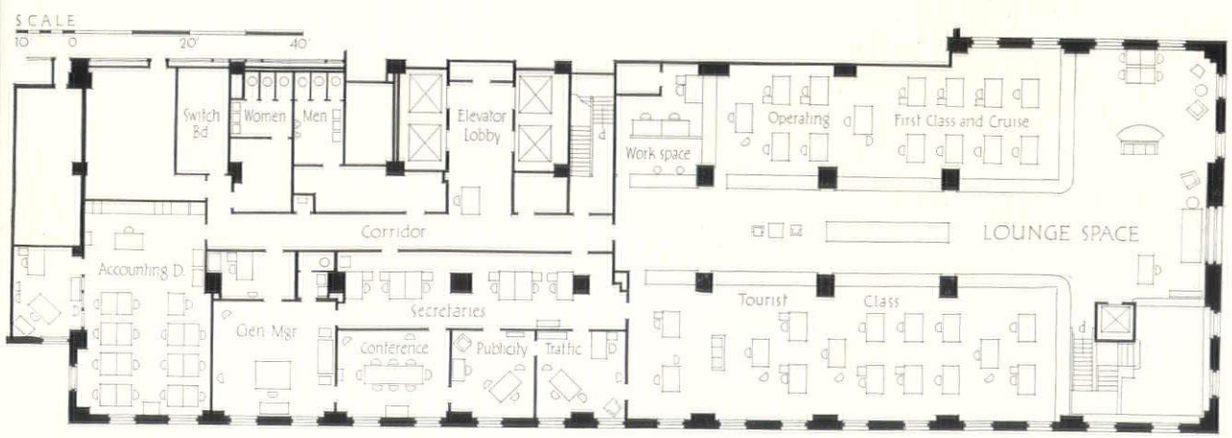
Builds a Modern Office

ON FIFTH AVENUE AT ROCKEFELLER CENTER, NEW YORK, IN KEEPING WITH THE MODERN DESIGN OF ITS FLOATING PALACES . . . REINHARD & HOFMEISTER, ARCHITECTS

STRIKING in the simplicity of its architectural details, the design of the Italian Line Office, depends almost wholly upon the use of materials and harmonious color blending for its character and interest. It is thoroughly modern and forceful in its advertising appeal. Due to the fact that the architects had complete control over, and were privileged to design, all the decorative elements, from the smallest ash tray to the most sumptious piece of furniture, they have created a setting of luxury without ostentation, in keeping with the purpose it serves.

The plan shows a practical solution to an interesting problem. A paramount consideration was the provision for an intimate contact with the public, at the same time, a considerable amount of working space had to be provided for carrying on the many and varied operating details in connection with a large steamship office. Without jeopardizing that most essential element—an intimate relation with the public—the architects solved the problem by planning the small corner ground floor space, facing Fifth Avenue, as a high-ceilinged reception room or information lobby, as illustrated on the facing page. The walls of this room are finished in an Alpine burl veneer of a rich golden brown. The panel directly back of the information desk is leather, carrying out the color scheme of the Italian flag; dark green at left, creamy white in center, dark red on the right; the center crest is done in the same colors, and "Italian Line" letters in a blue plastic material. The information desk is Brazilian rose-wood. The floors are black terrazzo with bronze inserts of nautical devices. The ceiling is in light green.

From the information lobby, a short flight of steps leads to the second floor, where another attractive reception room or lounge has been provided for use of customers while waiting to be served. Adjoining this lounge on each side of a corridor are the First Class and Cruise, and the Tourist Class compartments where the business between the company and customer is transacted—a practical business-like arrangement in a clean-cut and comfortable setting.



Left: General plan of the working space on second floor. Below: Plan showing furniture arrangement in reception room on ground floor

PHOTOS: SAMUEL H. GOTTSCHO

OFFICE OF THE ITALIAN LINE
NEW YORK

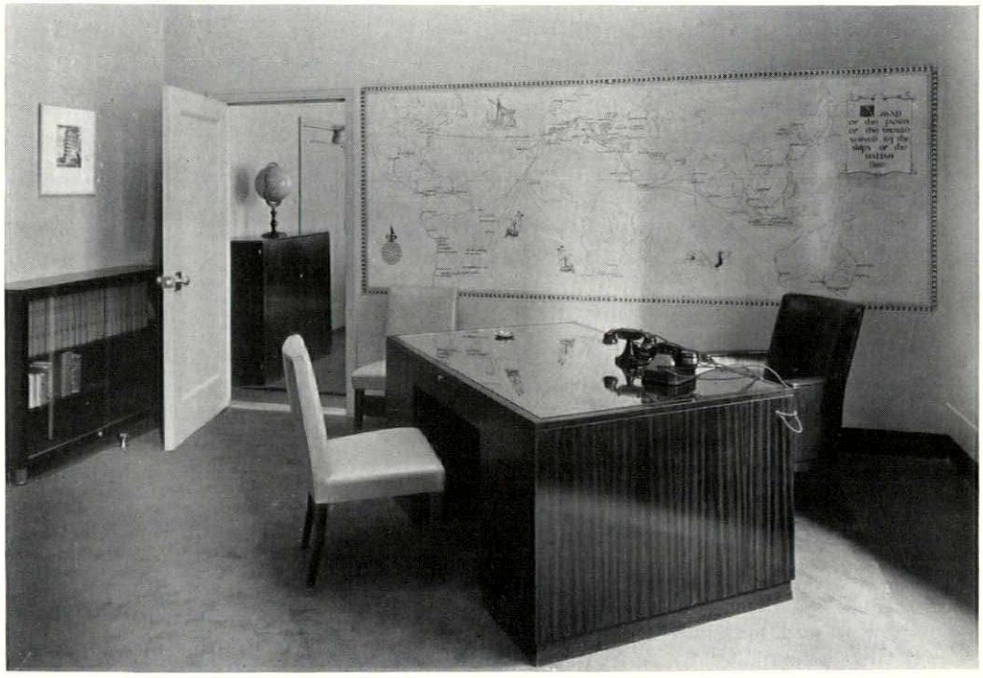
Detail above of ground floor Information and Reception Room from stair balcony looking toward entrance on Fifth Avenue. Left: Corridor on second floor dividing working space. Plaster walls; black terrazzo floors, inserts of nautical devices in bronze

REINHARDT & HOFMEISTER
ARCHITECTS

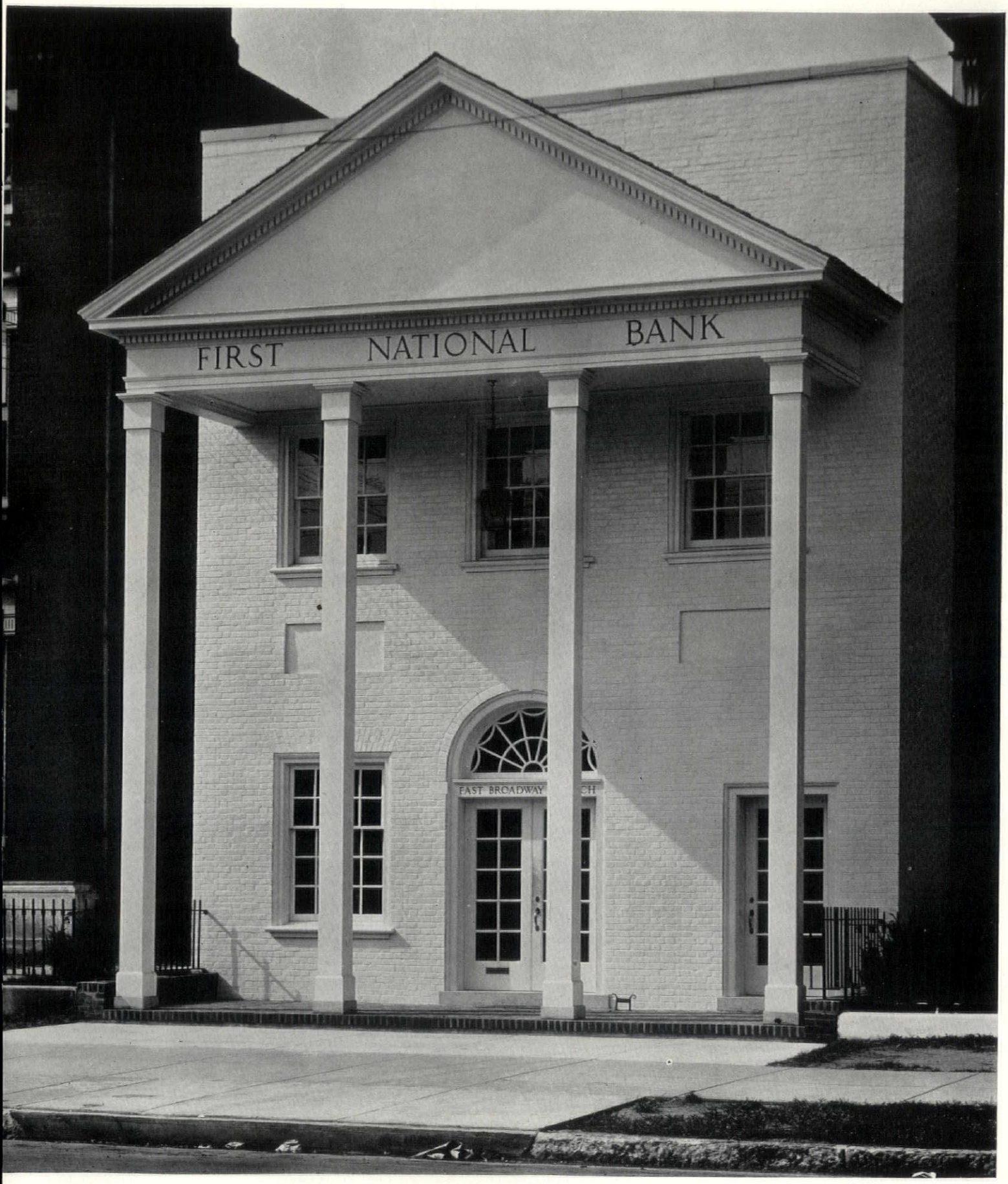
Second Floor, Reception Loung above. Walls plaster in special green after those of Princess Gallery, S. S. Conte de Savoia. Floors, black terrazzo with bronze nautical design inserts. Right: Desk space, Tourist Class Passenger Department on second floor

OFFICE OF THE ITALIAN LINE, NEW YORK

REINHARD & HOFMEISTER, ARCHITECTS



Above: Office of the General Manager, second floor. Walls, plaster with leather wainscot; furniture, specially designed by the architects. Right: Office of the Director of Publicity



ST BROADWAY BRANCH, FIRST NATIONAL BANK, LOUISVILLE, KENTUCKY. CARL A. ZIEGLER, ARCHITECT

WAVE TO HOUSING

HOUSING is stranded on the rocks. Wave to Housing a fond farewell!

Housing is coming like the tide. The wave to Housing surges on under FHA.

• • Can both statements be true? It all depends on what is meant by Housing. Consciously or unconsciously, the confusion was caused by naming the mortgage-insuring, debt-protecting, credit-stimulating branch of the government the "Federal *Housing* Administration." Until then Housing had a definite meaning, and it still has, to the lay public, to the architects, the sociologists, the city planners and the city fathers most directly interested in providing decent dwellings for the low-wage population. This was the meaning when Housing was hailed as the answer to the problem of putting men to work, of starting needed construction as the primer for the capital-industries pump. PWA accepted this meaning. The profession responded. Projects were planned and promoted. Fear that promoters or landowners might profit, bureaucratic puttering, land acquisition difficulties, absence of adequate equity, local objections and obstructions—all conspired to thwart actual Housing construction.

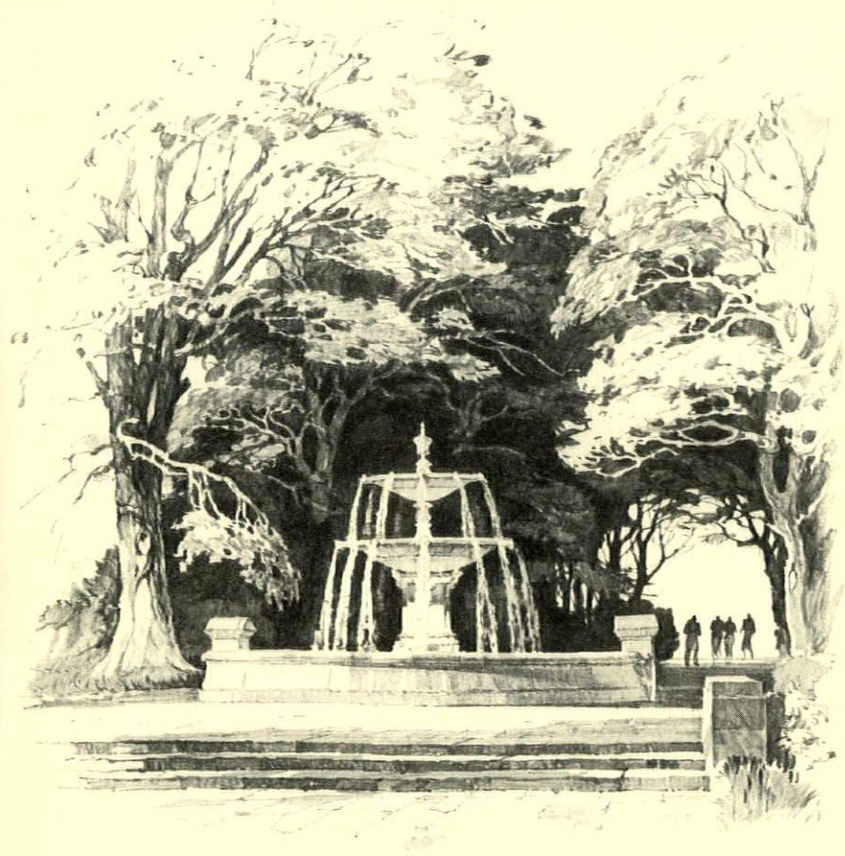
• The necessity of choosing high-labor-cost projects to speed up spending has drained off PWA funds into WAP so that now only thirty-seven housing projects are definite, some $100,000,000 worth, out of the four billion dollar Work Relief Fund. PWA's Housing program is thus reduced to a few "demonstration" projects. Housing in the President's Summary of Budgetary Calculations is allotted nothing in the "Estimated Fiscal Year 1936 in 1936 Budget." This signifies the Administration's attitude toward Housing.

• The efforts of the PWA Housing Division and local Housing Authorities toward a Housing Program have not been all in vain, for much has been learned of the practical, technical, financial and political problems involved. The technique of site and building planning has made progress toward scientific solutions. Housing experts are better prepared, but the opportunity for action is vanishing. Only the political pressure of a demand for low-cost Housing on the part of those who will benefit can bring back the opportunities that seemed to open up when PWA began.

• The emphasis has changed from a public works program to one of stimulating private construction and modernization by insuring lenders against loss, first up to $2,000, now loans up to $50,000. The wave of FHA mortgage-insuring business has reached a total of over 350 million dollars. FHA also insures loans up to $10,000,000 each for private limited-dividend Housing corporations. Twelve such housing projects have been approved. But many low-cost Housing projects break down under the FHA's risk-rating, as only those that are economically sound obtain approval. And so, with the wave to low-cost Housing ebbing away the building industry turns with renewed effort to Modernizing Main Street and to riding the wave of new residential building made possible by a renewing of confidence in this class of real estate investment.

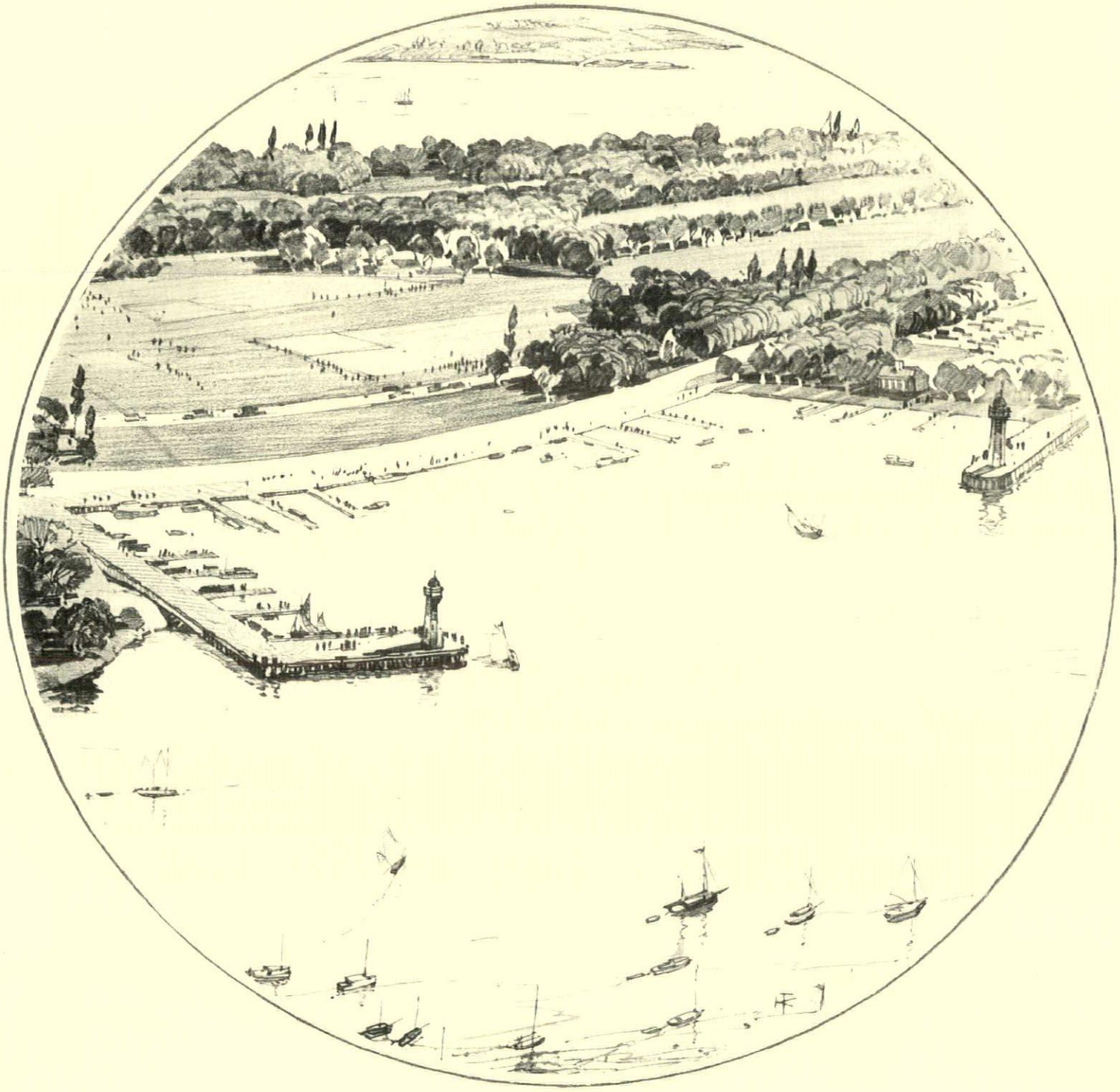
BREATHING SPACES FOR NEW YORK

Expressed crisply in black and white, sunlight and shadow, atmosphere and distance, ideas take on real meaning. The value of the perspective sketch, always so heart-warming to the architect, is appreciated by New York's hard-headed, quick-acting Department of Parks. It not only uses countless renderings to visualize and compare alternate schemes of planning or planting, but publishes renderings of approved projects in the daily press to create widespread interest and to promote public acceptance. For such purposes, Theodore Kautzky's facile pencil has produced these sparkling studies in varying techniques



Above: Proposed changes in Olmstead Brothers' time-honored monumental staircase and arcade are planned to make it a rendezvous for refreshment-seekers. Without changing the Victorian architecture, this northerly terminus of Central Park's Mall-of-summer gayety may once again become a popular center through its open air café dotted with bright umbrellas. Left: The splashing water of the Jacob Schiff Memorial Fountain adds life to the cooling shade in Seward Park

Above: Bridges over through-traffic arteries serve both utilitarian and esthetic purposes. The simple suavity of this proposed bridge on Park Road, New York, for the Hendrik Hudson Park Authority, is ably shown in this sunny delineation. Below: A rapid-fire sketch which freely expresses the interpretation of the artist looking north on West Street, New York, from the Battery. With economy of line, a few quick tones and the necessary accents of shadows, a true impression is created



PROPOSED YACHT BASIN

PELHAM BAY, BRONX, NEW YORK

With the growing leisure, New York's surrounded-by-water population should be provided with facilities for boating and aquatic sports. The Park Department therefore has been planning yacht basins to popularize these forms of recreation

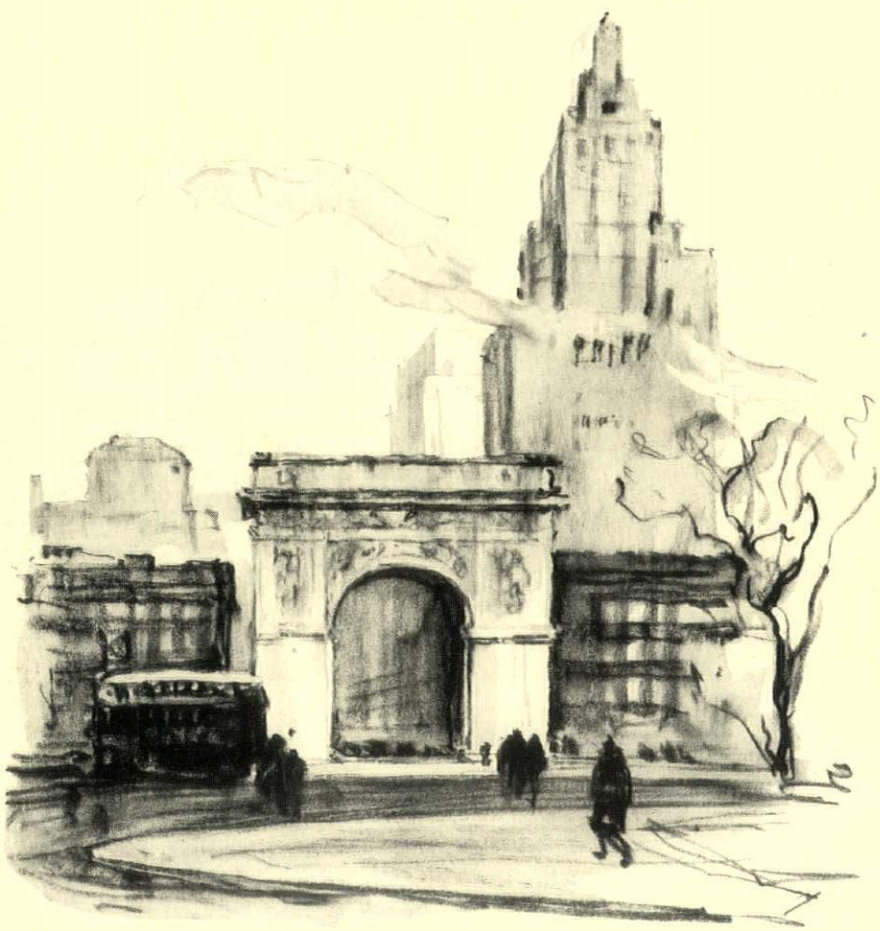
PROPOSED YACHT BASIN

MARINE PARK, STATEN ISLAND, NEW YORK

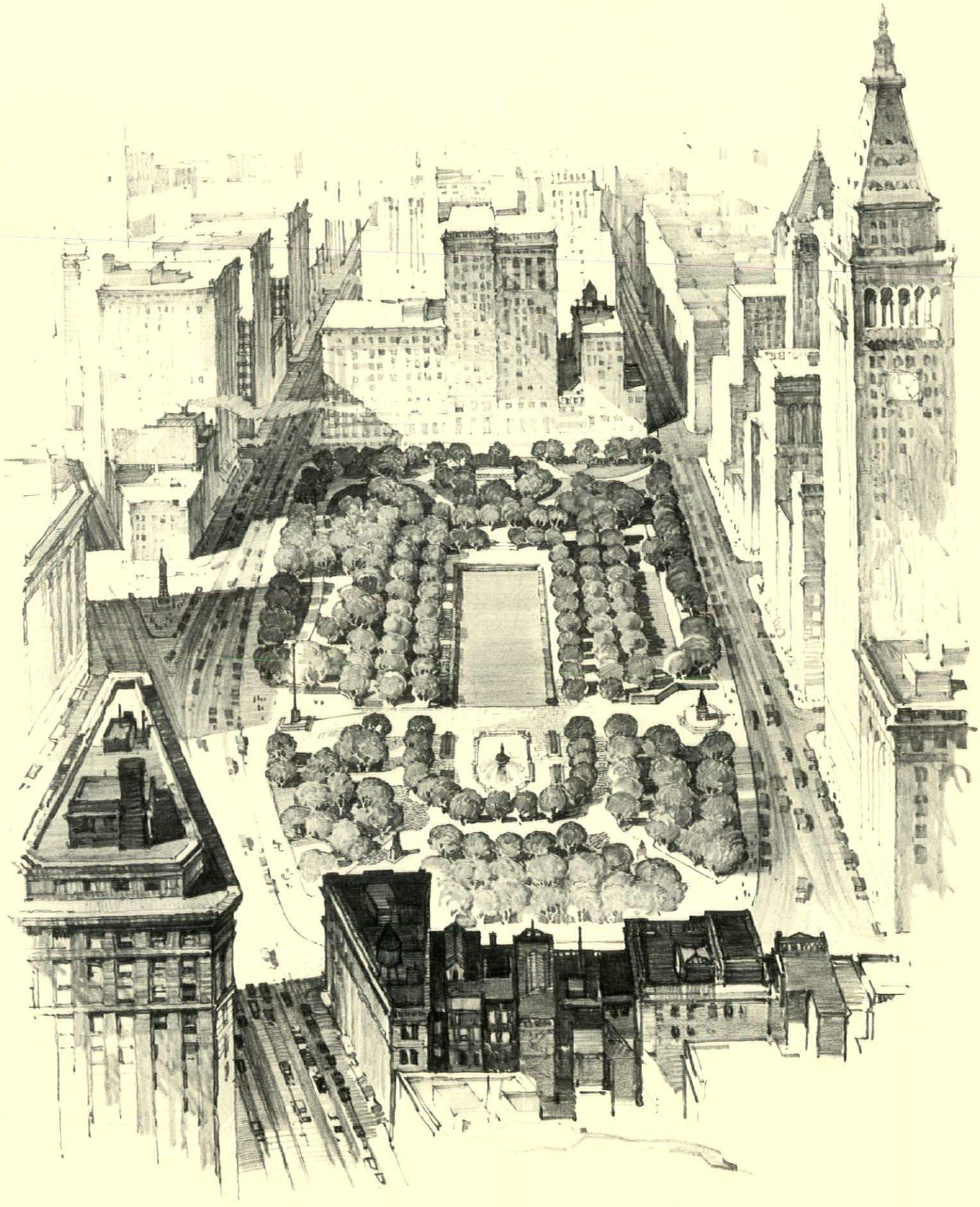
Imaginary airplane views show best the form of the basins and their relations to the parks. In these two sunlit sketches, Theodore Kautzky shows the contrasting treatments of the same type of problem, both of which are equally effective

SKETCHES OF PROPOSED CHANGES
WASHINGTON SQUARE, NEW YORK

Washington Square has been the subject of a series of several proposed changes in which Stanford White's Washington Arch is the center of interest. The atmosphere of the famous old square was caught in the charcoal sketches made on the spot which were later used to advantage in the renderings of proposed changes



Two schemes for enlarging the Arch by the addition of colonnade wings are shown. The one on the opposite page is the less elaborate design looking north up Fifth Avenue. The above interesting perspective, full of sunlight and reflected shadows, is a more pretentious variation as it would appear to one looking south into the Park



Direct plans of possible changes in Madison Square might be dry, or even unintelligible, to the lay mind. An air view, however, shows clearly the effect a contemplated replanning would have and demonstrates to the man in the street (and the man above) the desirability of the re-designed area

The Legal Side of Architecture

BY CLINTON H. BLAKE

Blake and Voorhees, Counsellors-at-Law

Architects Can Recover If Omissions Are Not Substantive Part of Contract

WE have discussed recently a number of decisions dealing with the general doctrine of substantial performance. These have involved both performance on the part of the contractor and performance on the part of the architect. We have seen that the general rule is that failure to perform in unimportant details will not preclude a right of recovery, but that the recovery will be limited to the full amount, less the cost of making good the defects. We have seen, also, that the defects and the cost of curing them must be established so that the court will be able to arrive at the net amount due.

A recent decision by the Supreme Court of Oklahoma (Raitman v. McCune, 30 Pacific Reporter (2d) 878) is interesting in this connection. In a sense it deals with a case of specific performance, but it is based apparently on a somewhat different ground than that upon which the ordinary specific performance issue is decided.

ACTION AGAINST BONDED LIEN SAME AS STRAIGHT MONEY SUIT

IN the case in question an architect entered into an oral agreement with the client to survey certain property at Tulsa and to draw plans and specifications for and to superintend the construction of a residence thereon for a total compensation of five per cent of the cost of the work. The architect claimed that he had fully performed his services. The client admitted the contract, but denied that the architect had complied with its terms, and offered proof to show that he had not fully performed the agreed services. He claimed that the architect had undertaken to design and supervise the construction of a building which should be similar to the one in which the client was then living, and that the building as erected was different in several particulars. The case was tried before a jury which gave a verdict for the architect for the amount which he demanded. It appeared that the client discharged or attempted to discharge the architect before the last details of work on the building had been completed. The case came up as the result of an action by the architect to foreclose a mechanic's lien which he had filed covering his claim. The defendant had bonded the lien and the case had the effect, therefore, of a straight suit for a money judgment by the architect. The client, as an additional defense, claimed that in an action to foreclose a mechanic's lien a judgment for damages could not properly be awarded, where the contract was not fully performed.

RECOVERY DEPENDS ON PROOF OF CONTRACT PERFORMANCE

THE Supreme Court of Oklahoma, in reviewing the judgment secured by the architect said:—"Defendant cites a number of authorities which in effect hold that one employed to superintend the construction of a building not completed because of the owner's financial inability has an action for damages in which he can recover profits he would have made had the contract been fully performed, but that he cannot recover damages in an action to foreclose a mechanic's lien.

"The authorities cited have no application here. In the first place, plaintiff contended that he had fully complied with his contract and commenced the action to foreclose his lien. Defendant did not in his pleadings deny the contract, but contended for a different amount of compensation, and alleged that plaintiff had breached the contract. Furthermore, no lien was adjudged in favor of plaintiff. At the trial it was stipulated that defendant had made the deposit and given the bond provided for in section 7465, C. O. S. 1921.

"Defendant pleaded that he had procured the discharge of the lien by depositing the money and giving the bond, and the court found that such deposit had been made, and the judgment does not give a lien for the amount of the claim or any other amount. After the deposit was made, the lien was discharged by operation of law. Thereafter it became a question of how much, if anything, plaintiff was entitled to recover. This issue was tried to the jury on conflicting evidence as to the terms of the contract as well as the alleged breach of the contract by plaintiff. True, the evidence does show that a very small amount of work remained to be done on the building at the time the (*Continued on page* 113)

As It Looks

GIVING YOURSELF AWAY?

A LAWYER acting as head of a building committee was recently asked by an architect what he would do when approached by a man who, seeking his thoughtful professional opinion in solving a legal problem, told him he intended to ask four or five other lawyers for corresponding opinions: he would then consider these opinions and decide which jurist to retain. He replied: "I should kick him down stairs." The Committee on Ethics, Boston Society of Architects, thinks architects should follow the same line of procedure regarding prospective clients who seek free sketches and other free professional service. But architects, unfortunately still persist in re-establishing in the public mind a definite impression that under certain circumstances professional services for which a substantial fee is legitimate, may be secured without any compensation whatsoever. In all relationships the public is prepared to accept exactly the valuation an architect puts upon himself and his services. The Boston Committee reiterates that in its opinion much could be accomplished to acquaint the public with the true value of architectural service through an educational campaign. A campaign to architects along the same line might be helpful.

PROMOTE THE IDEA

PUBLIC opinion, although it may change as does the wind, still remains the only gage by which any endeavor can be judged with any degree of satisfaction, whether it be social, political or even architectural. The promoter of a recent architectural competition in England, who happened to be one of London's leading merchants, evidently recognized this truism when he insisted that the awarding jury be composed of the general public and the winning design be selected by popular vote. Here is a suggestion which American architects might promote to advantage in creating public interest in architecture and the value of architectural service.

DEPLORABLE!

EVIDENCE of any conscious thought directed to the designing and planning of homes in local communities, throughout the country, without regard for the sentiment, tradition and life of the people is deplorable, in the opinion of Miles L. Colean, Technical Director, Federal Housing Administration. He feels that this condition is due largely through failure to consult architects. "It is vital to the future of our civic development, as it is possible of development, as a source of remunerative endeavor, that architects strive to co-ordinate and extend that type or style of domestic architecture in their communities which is especially fitted to the life of the people." The extent to which architects can capitalize on such a development depends upon what influence they are able to exert as citizens and professional men in their communities.

FIVE YEARS FROM NOW

DURING the past five years many architects and and draftsmen have been forced to abandon their profession. They have found other fields—more lucrative financially perhaps, if not more interesting and will likely remain outside the strictly professional limits of architectural practice. Architects have complained to us about their present difficulty in finding good draftsmen. Professor Leopold Arnaud, Acting Dean, Columbia University School of Architecture, says: "Even now there may be a dearth of skilled architects, and students who are now entering our professional schools will begin practice under the most favorable conditions." This is significant in view of a prediction by Roy Wenzlick, St. Louis Realty Analyst, that a building boom such as we have never experienced will reach its peak in 1940. The question is: How well will these future architects be able to cope with the new structural and mechanical problems which will be inevitable; the result of science in the development of new materials, structural and mechanical changes which will greatly influence the type of buildings demanded by the public in 1940?

FIND THE SOLUTION

WITH the large number of public and semi-public buildings already projected throughout the country for erection in the near future; it seems timely that some method should be immediately established by every municipality that would eliminate personal and political favoritism from entering into the selection of architects to plan and design these structures. Mayor LaGuardia of New York has adopted at least one method of approach to the problem. Eight of the leading architectural and civic organizations, at his suggestion, have selected a jury of three who will select fifty architects to handle all municipal work during the coming year. A questionnaire has been sent to every registered architect in the metropolitan area asking for an outline of their experience and special qualifications for handling the proposed work. From the

to the Editors

data obtained the jury will determine the fifty architests best qualified to participate in New York's building program. Perhaps a similar plan might work to the advantage of architects in other cities. It's up to you as architects to find a solution.

A WARNING

HOUSING Administrator, Stewart McDonald, says: "We are trying to encourage that type of operative builder who looks upon the production of homes as a manufacturing and merchandising process of high social significance, and who, preferably, assumes the responsibility for the product, from the plotting and development of the land to the disposal of completed dwelling units. Likewise, the creation of dwellings, the stability of which will be assured by the protection offered against inharmonious land uses, by thoughtful group planning, and sound, attractive, economical building by organized construction suitable to calculate demands of planned neighborhoods." If such a plan is to be successfully carried out it simply means one of two things . . . either architects must co-operate with organized housing corporations thus increasing their opportunity for more work, or else we must expect bootleg architecture at the hands of trained designers working in offices of these corporations.

IN THE FUTURE

BANKING institutions are becoming vitally interested in the quality of building construction, for which their money is being used, according to Kenneth B. Norton, architect for the Manufacturers Trust Company of New York. The security of the mortgagee is based on the character of the design, plan and construction, as well as on the character of the mortgagor. The record of real estate adventures, and the consequent loss, due to poor construction in recent years, points to the need of architectural service—perhaps lending institutions will look with more favor upon architects in the future.

MEETING COMPETITION

THE answer made by Goldwin Goldsmith to architects who complain about the retail lumber dealers who furnish house plans in competition with local architects is: "Why not start a lumber company owned by architects and permit only contractors who buy lumber from this company to bid on plans and specifications for homes." If the profession's code of ethics permitted ventures of this kind, it could at least meet competition on the same level.

THERE IS NO LIMIT

A DISTINGUISHED English architect, with an international reputation for his clear vision and keen analysis of architects' problems, recently remarked: "I feel convinced that architects stand on the threshold of a great adventure; circumstances are playing into their hands." In the present opportunity he visions planning as the great need of the moment and the soft-pedalling of the artistic qualifications of the architect as desirable in winning the confidence of the practical-minded public. In this issue of AMERICAN ARCHITECT is presented an article by Eliel Saaranin on "City Planning" which brings again to the architectural profession the vast possibilities for service inherent in the current dilemma. Every large city in America finds itself in a quandry with its slums, blighted areas and uncontrollable traffic congestion. If architects, generally, are to enjoy the confidence of the public they must look beyond the narrow limits of artistic expression in buildings and must endeavor to plan, so far as possible, for the future of these cities.

MONEY! MONEY!

ENCOURAGEMENT for the construction of new homes, the Reconstruction Finance Corporation has announced it will now buy and sell insured mortgages. A $10,000,000 revolving fund has been made available to the RFC Mortgage Company for this purpose. It is understood that the new plan was adopted due to inability of the FHA to get national mortgage loan associations started by private capital. This new source of mortgage money should have a healthy effect upon new construction financing and a consequent benefit to architects.

FAKE ARCHITECTS

"I AM a prospective home builder, and, in searching for ideas have visited a number of model homes open for inspection. Recently a stranger introduced himself as an architect, showing me some specimens of his drawings and gave some good references; with the request that I allow him to plan my new home. I looked up his references, which were worthless and also discovered he was not a duly registered architect. I would like to know why persons of this type are permitted to solicit business?"

This terse comment appeared in the Detroit News, under the caption "Voice of the People." It involves a matter which strikes at the very vitals of the legitimate architect.

PHOTO: ELLA BARNETT

Above: Back from a tour of the Continent come Mr. and Mrs. Eliel Saarinen in route to their home at Cranbrook

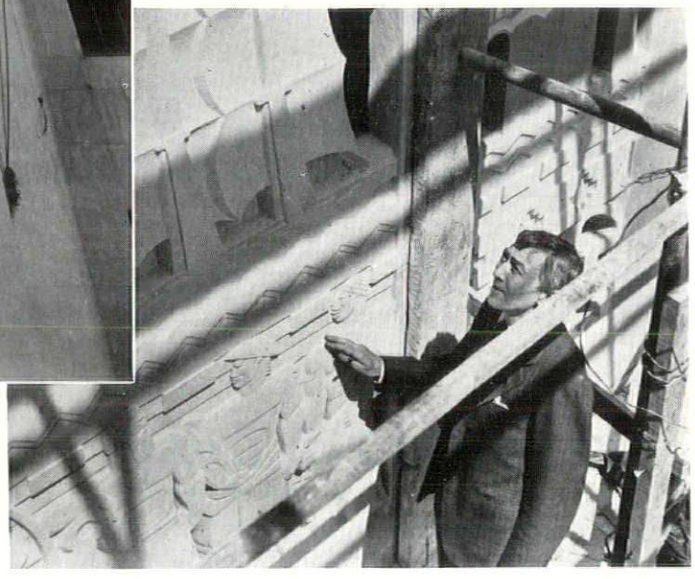


PHOTO: WENDELL MCRAE

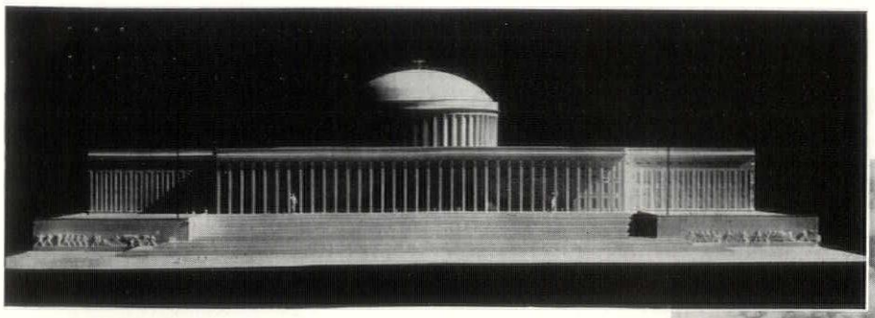
Above: Depicting man's history in the stone grille over door to International Building, Rockefeller Center, New York. **Right:** Lee Lawrie, the sculptor, inspects his work. **Below:** "Grafito" paintings now adorn exterior walls on the new German buildings

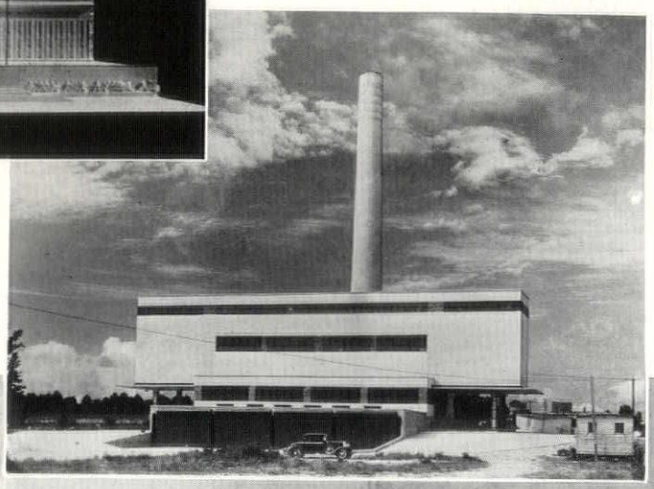
PHOTO: GLOBE

Trends and

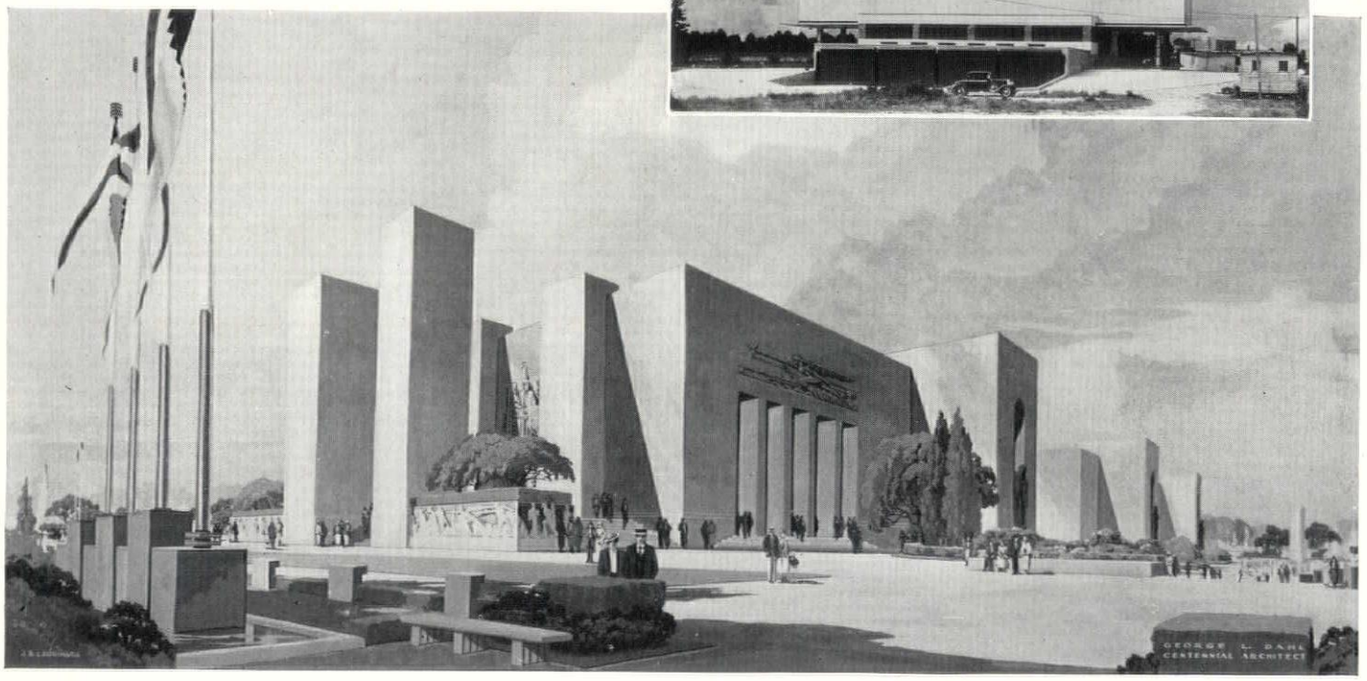
NO MORE APARTMENTS FOR RENT . . . More than two thousand four hundred families have rented and occupy apartments or houses in the seven limited-dividend corporation housing projects sponsored by the PWA, according to A. R. Clas, Director of the Housing Division. The overwhelming response in the form of tenants demonstrates that this phase of the Government low-cost housing program is establishing a new standard of housing in the United States.

All of the 960 units of the Boulevard Gardens project in the Borough of Queens, New York, were rented two months before completion. Hillside Housing, Bronx, New York, has 1,019 living units in its incompleted total of 1,416 rented. Philadel-





Above: New House of Labor, Cologne-on-the-Rhine, Clemens Klotz, architect. **Right:** Modern incinerator plant, Shreveport, La., erected by PWA. **Below:** Electrical Industries Building for Texas Centennial Central Exposition opening in Dallas in June 1936. George L. Dahl, architect



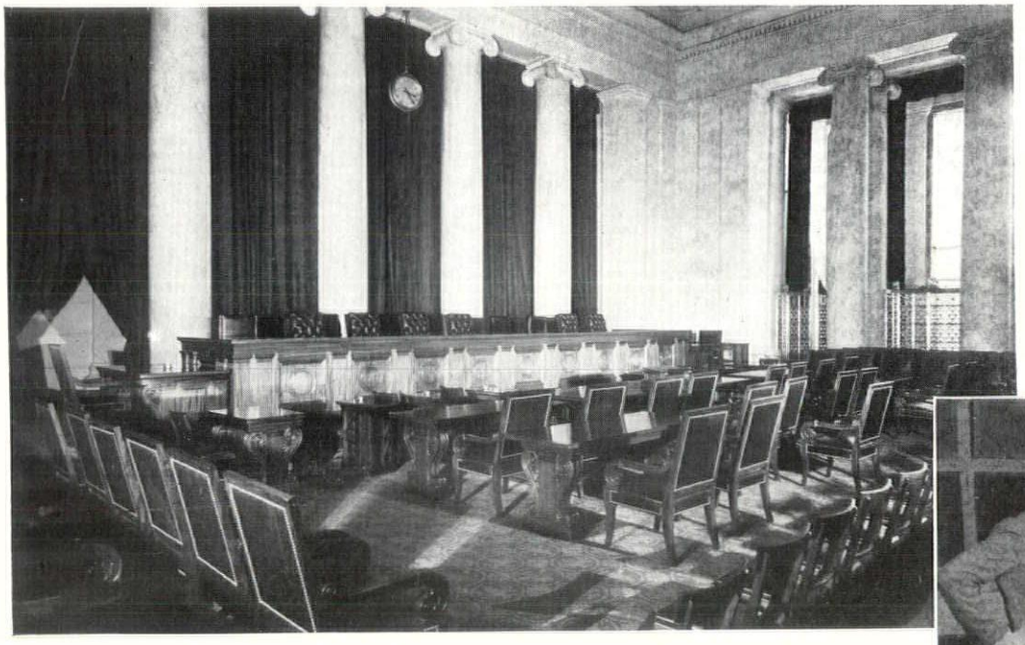
Topics of the Times...

phia's Carl Mackley Houses have 27 living units still unrented of a total of 284. The Boylan Housing development in Raleigh, North Carolina, was 100 per cent rented before completion. Neighborhood Gardens, St. Louis, now has 60 of its 253 living units open for inspection and leases are being taken daily. In Alta Vista, Virginia, 50 single family dwellings have been constructed and are all now rented.

Boulevard Gardens and Hillside Housing units are renting for $11 per room per month. Boylan's 54 units rent for $10.99 a room monthly; Carl Mackley Houses are charging $9.50 and Neighborhood Gardens, $10.24 per room per month. The Alta Vista houses are renting at the rate of $3 and $4 per week.

OUTMODED BUILDING CODES . . . A study, looking toward unification of building codes and redrafting of outmoded regulations in many cities throughout the country to conform to modern construction standards is being sponsored by the American Standards Association. Conflicting regulations in different parts of the country, and even in some neighboring communities have served to confuse and upset manufacturers of building materials, architects and builders and make estimating of construction cost almost an impossibility. The American Standards Association estimate that some 642 of the 1,630 codes now in existence need drastic changes to make possible a more economical use of new materials.

JUDGES AND . . . JURY IN ACTION



Left: Judges of the U. S. Supreme Court convened for action in this room for the first time on October 7th, thus opening their new building at Washington. The late Cass Gilbert was the architect

Left: New American "Future House" opened at Rockefeller Center, New York, on October 1st, an outcome of the recent General Electric Competition. Enjoying the comforts of the model home are, left to right: Jay Downer, Rockefeller Center director; Nelson Rockefeller, Julian Gerard, Regional Administrator, FHA; Langdon Post, Chairman, New York City Housing Authority; and Gerard Swope, President General Electric Company

Just above, at the right, are the jurors of the "Modernize-Main-Street" Competition in action. In the foreground is Melvin T. Copeland, Professor of Marketing, Harvard University; Albert Kahn, Detroit architect with the ruler. In the background, left to right, are: John W. Root, Chicago architect; J. Andre Fouilhoux, New York architect; F. R. Walker, Cleveland architect; Kenneth C. Welsh, architect and vice president, Grand Rapids Store Fixture Company; Kenneth K. Stowell, professional advisor for the competition, and William Lescaze, New York architect. Entries in the competition totaled 3,042. Drawings were divided as follows: Drug Store, 22 per cent; Apparel Shop, 31 per cent; Food Store, 19 per cent and Automotive Sales-and-Service, 28 per cent. The competition was sponsored by Libbey-Owens-Ford Glass Company, Toledo, O., and conducted by the Architectural Record.

Prize Winners: Drug Store: 1st M. Righton Swicegood; 2nd G. Foster Harrell, Jr.; 3rd Nicholas B. Vassilieve. *Apparel Shop:* 1st Suren Pilafian and Maurice Lubin; 2nd Lester Cohn; 3rd Raoul L. duBrul and Harry J. Trivisonno. Food Store: 1st G. Foster Harrell, Jr.; 2nd A. Waldorf and S. L. Katz; 3rd J. R. Sproule. *Automotive Sales-and-Service Station:* 1st Alfred Clauss; 2nd Suren Pilafian and Maurice Lubin; 3rd Isadore Shank. There were also forty Honorable Mentions.

• The Cranbrook Academy of Art, Bloomfield Hills, Michigan, announces that the first year of its Post-graduate Architectural Department, under direction of Eliel Saarinen, will begin with the current session. Instruction is available to both men and women.

BASEMENT PLANNING

AMERICAN ARCHITECT
REFERENCE DATA
Number 19 October 1935

Without excuse today is the dank, cave-like cellar of yesterday's house. Advances in modern building practices have rendered it taboo. And to a rapidly expanding public the basement of a residence represents an investment in enclosed space that should be made to pay rich dividends in comfort, convenience and utility. To the architectural profession the public rightly looks for basic progress in residential developments. And in the following pages architects will discover a practical guide to technical and esthetic means for planning better basements

Basement Planning

BY ROGER WADE SHERMAN and TYLER STEWART ROGERS

A DANK, cave-like space under a house was a necessary evil only a few years ago. In the majority of homes "basement" meant "down cellar"—a place for a dusty heating plant and a catch-all for discarded things, broken chairs, an old baby crib, the pottery that was Aunt Hetty's anniversary offering. In one gloomy corner was a cupboard to hold the products of summer canning seasons. There were bins for apples and potatoes, possibly a sand pile for winter-keeping carrots and parsnips. And under a small, dirty window stood a tinkering bench and a few rusty tools.

Overdrawn? Perhaps; but the picture emphasizes the fact that advances in building practices have rendered dampness, dirt and darkness inexcusable today in any basement. Revulsion of the public mind to the subsurface squalor of yesterday's house has produced—from among thousands—the useful, cheerful rooms illustrated herewith.

Today the basement represents an investment in enclosed space, which—in new or old houses—can be made to pay as rich dividends in comfort, convenience and utility as any other room. True it is that not all houses are built with basements. Conditions of climate, topography, sub-soil conditions, size and coverage of lot, type of heating system and the relative costs of sub-surface and above-surface construction—all these influence the desirability of planning for basement areas. And all houses do not *require* basements—hard-shell enthusiasts to the contrary. But if conditions and the owner's attitude indicate the space as desirable, certain factors of planning and equipment require special study in developing the technical possibilities of well-planned residential basements.

In an existing house a basement can usually be regarded as surplus space capable of utilization as a kind of luxury beyond the bare necessities of living. In a new house, conditions of site and costs may demand a development of all basement areas to produce the fullest possible measure of value for expenditure of an owner's funds. Both involve the greatest care in planning details of space utilization.

LAYOUT

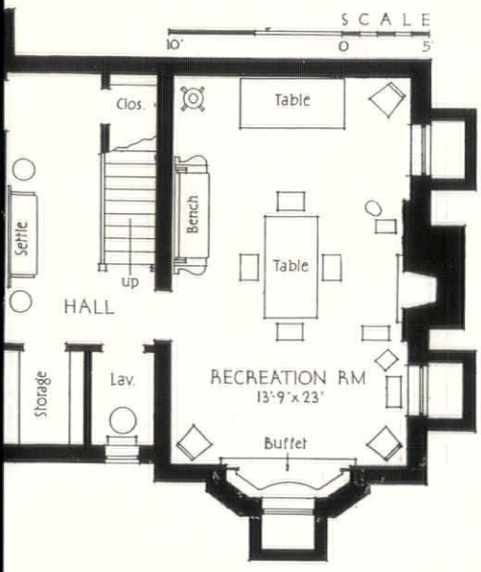
GENERALLY speaking, any basement plan can be divided into, (1) space for utility and mechanical equipment, (2) service areas and storage spaces, (3) spaces for toilet facilities, (4) circulation space, including stairs, and (5) special living and recreational areas of various sorts. Within these classifications may occur a multitude of different space uses. Laundries, garages, shooting galleries, bowling alleys, swimming pools, bar rooms—all these and others represent a possible use of subsurface floor space. Obviously, limitations or unusual space possibilities are natural functions of each problem. The accompanying check list outlines a broad scope of potentialities, useful or not as they prove economically justifiable under any set of definite conditions.

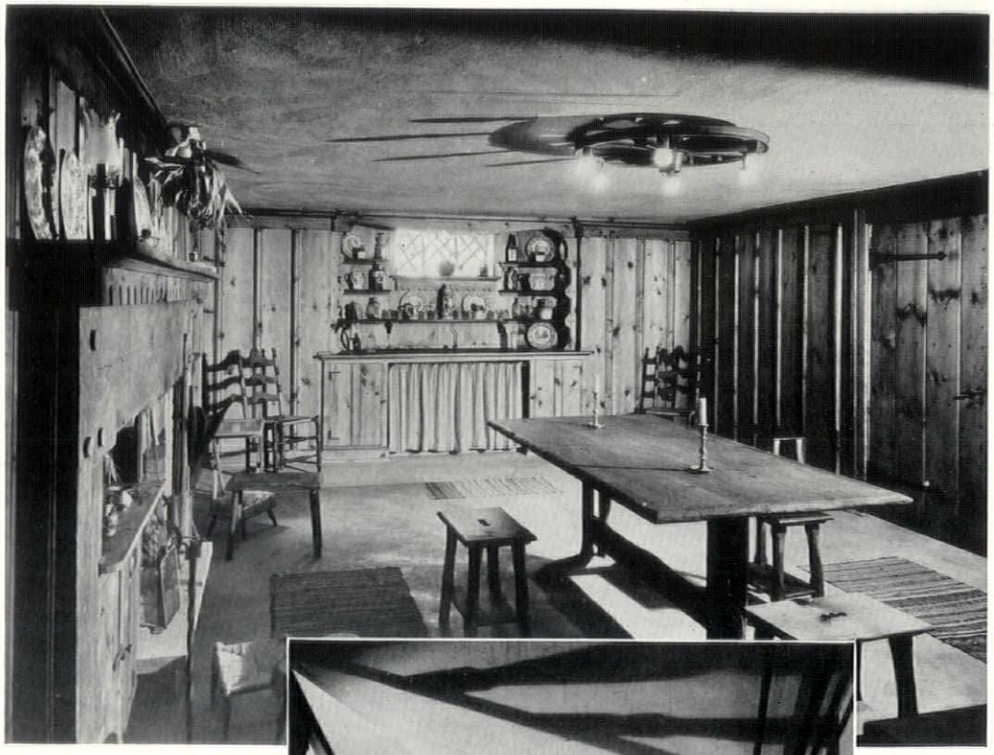
The relation of various spaces to one another and to the floors above is a fundamental that determines the convenience of individual areas and hence the efficiency of the basement plan as a whole. Obviously no definite rules can be laid down in regard to this, since individual conditions govern results. But in every case the location of columns and beams should be studied so that no interference with space utility will exist. Stairs should be placed for convenient access without breaking up desirable units of area. Windows should be placed adequately to serve specific rooms. And the ceiling height should be such that headroom can be maintained under all pipes, ducts and beams. These factors require more thought than is usually accorded them. It is hardly worth while to spend the effort and money upon development of basement areas which may be rendered inconvenient or even useless by inadequate headroom due, for example, to a duct crossover which might have been eliminated by advance planning.

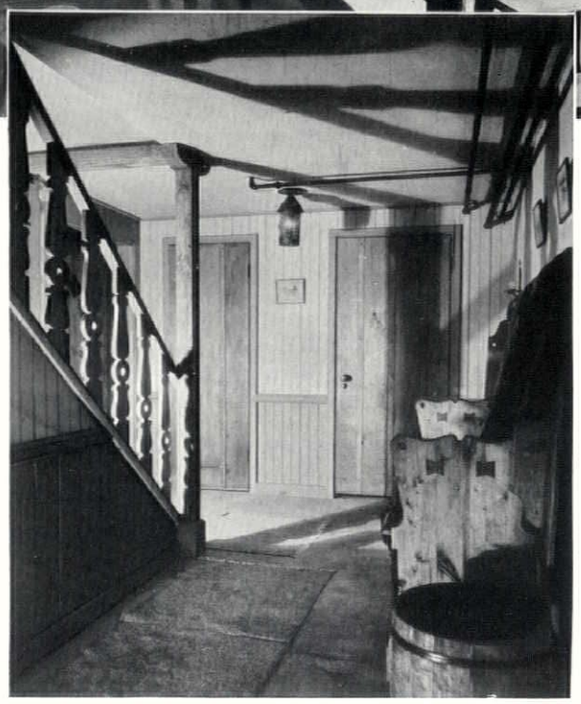
UTILITY ROOM

MECHANICAL installations loom large in any adequate solution to the Basement planning problem. These should be grouped, their specific location planned well in advance of installation and a Utility Room developed in which all mechanical units, including heating plant, tanks, pumps, meters, etc. can be segregated by dust-proof walls from other basement areas.

Since it contains the heating plant, the utility room should be located as centrally as possible for economy in piping and duct layouts. It should also embrace a chimney serving the heater and incinerator and should be in contact with the wall through which







CARL F. WAITE

Good organization of traffic and essential conveniences is revealed by the plan of the basement facilities in the home of I. J. Witmer of Walker & Weeks. At right, recreation room. Below, detail of hall

water and gas mains and the sewer connection enter. All meters, including the electric meter if the latter is not of the newer outdoor type, should be included within this space. The room should have direct access to the grade entrance. Adjusting these various requirements calls for no mean skill, for obviously some of them conflict with each other and may interfere with the effective use of the remaining basement space.

In so far as possible, the room should be patterned after the engine room of a boat or the mechanical area of a modern office building. The enclosure should be reasonably dust-tight and preferably soundproofed to some extent. Hollow tile, glazed brick, gypsum or cinder blocks, wood studs—any of these can be used for wall construction. If wood is used, cement plaster on metal lath will conform with requirements of most fire codes. When painted it provides an excellent surface which requires virtually no maintenance. The ceiling should be surfaced thus or covered with sheets of pressed steel or asbestos board regardless of the wall material unless the floor above is a reinforced concrete or brick slab. As a further structural protection against fire, spaces between studs and ceiling beams can be filled with rock wool.

So important a basement factor is the utility room that it, together with the type and extent of the equipment it contains very largely controls the entire basement layout. The room itself should be planned and permanently constructed to care for its ultimate equipment capacity. An owner may not at first install complete air-conditioning equipment for example. But space for it should be provided within the utility room which, until pressed into service otherwise, can be used, say, as a work shop.

A list of mechanical equipment appears on page 68 containing some items which may not be the subject of an immediate specification, yet which deserve consideration in allotting space. With exceptions that obviously refer to special conditions, most of the units will be found necessary to the well-equipped residence basement.

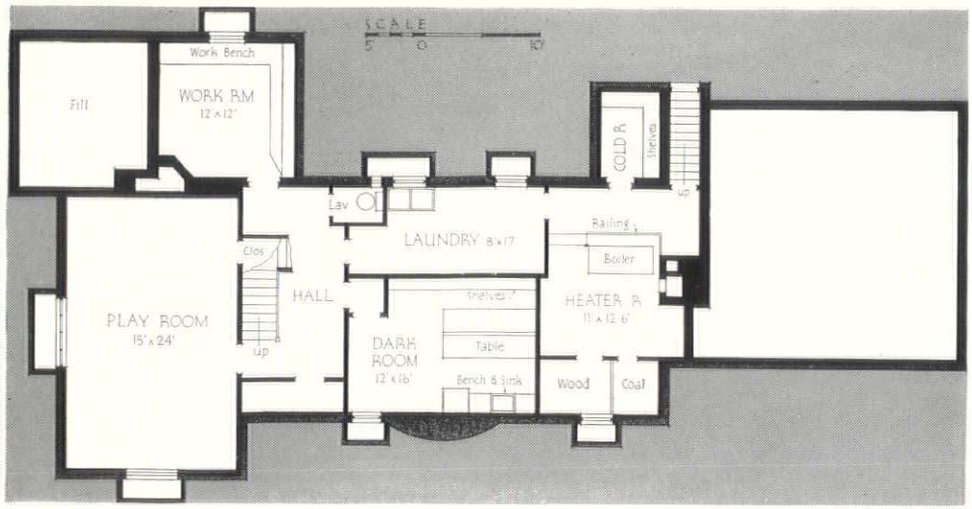
LAUNDRY

CONTINUING for the moment with the service areas usually or logically placed in the basement, the laundry introduces planning problems similar to those encountered in locating the utility

CHECK LIST OF BASEMENT SPACE POSSIBILITIES

Unit	Location and Sizes	Equipment	Notes
Laundry	Near service stairs: access to laundry yard; directly below laundry chute	Laundry chute, tubs, washing machine, clothes dryer, ironing board or machine, mangle, work top for sorting, boiler or stove for starch, etc.	Sanitary walls and ceiling. Floor, concrete or tile, drained. Ample ventilation and all natural light possible. Cove base on floor
Garage	Access to main stairway and hall	Floor drain with removable sand collecting box to storm drain or dry well; with trap, if to sewer. Revolving overhead washer, ¾" connection or tap with hose coupling. Sink or wash tray with ¾" hot and cold water connections. Dry sprinkler system. Battery trickle charger with time switch. Means of heating. Work bench and tool cabinets.	Ceiling, fireproof; insulated if below heated rooms. Floors, concrete, pitched to drain. Window for light and ventilation
Toilets Shower and locker rooms	For chauffeur and out-servants, near garage or outside entrance; for in-servants, near service entrance; for family and guests, near recreation room	Showers, toilets and lavatories. Benches as indicated by purpose	Sanitary floors, walls and ceilings. Provide adequate ventilation, natural light. Soundproof piping and walls if near recreation space
Wine and Liquor Storage	Preferably in corner or recess of basement, using two or more uninsulated walls below grade for temperature equalization. Accessible to stairs	Metal grid or solid metal light vault, or burglar-proof door. Racks for wine bottles laid on sides; shelves or racks for liquor bottles; racks for kegs and barrels	Insulated walls and ceiling adjacent to heated space. Sanitary floors, walls and ceiling. Constant but slight ventilation. Do not permit heating pipes through wine cellar
Fuel Storage	Near boiler room	Solid fuels; bin, coal chute, coal door, stoker equipment. Liquid fuels; tank (if not buried outside), tank gauge, shut-off valves	Coal bins should have sloping floor and dust-tight walls and ceilings
Fruit and Vegetable Storage	In corner or recess of basement wall below grade for temperature equalization. Accessible to service stairs	Ventilated bins, open shelves or racks. Space for barrels	Provide constant ventilation. Protect against freezing but avoid steam pipes. If necessary, insulate walls adjacent to heated space
Screen and Blind Storage	Access to bulkhead or outside door	Racks, preferably suspended from ceiling for easy cleaning of floor beneath. For all removable window screens, screen doors, storm sashes, shutters, awnings	Walls and floor protected against condensation to avoid mildew on awnings
Baggage Storage	Near trunk lift, dumbwaiter or elevator, if any. Otherwise near stairs	Fixed or adjustable racks and shelves for trunks, suit cases and bags raised above floor	Walls and floor insulated against condensation and dampness
Clothing and Fur Storage	In corner or recess of basement wall for temperature equalization	Refrigerating machine outside of vault, evaporator coils within. Dust-tight and vermin-tight vault. Racks for hanging clothing free of walls	Fireproof construction; sanitary finishes all around; moth-proof, verminproof and dustproof vent equipped with glass fibre filters
Treasure Vault	Preferably concealed	Vault door, burglar-proof construction; shelves, boxes or racks for silverware, records, etc.	Burglarproof construction—usually reinforced concrete with heavy mesh grids or bars
Storage for Athletic Equipment	Near garage or outside entrance, or near game rooms	Racks for bats, balls, golf bags, skiis, sleds, toboggans, fishing tackle, shelves for small equipment	Walls protected against condensation. Avoid dampness or excessive heat.

Unit	Location and Sizes	Equipment	Notes
Garden Tools Storage	Near grade entrance or garage	Racks and floor space for cultivators, garden tools, lawn mowers, hose, etc.	No special requirements
Badminton Court	Singles: Net size of court, 17'0" x 44'0". Overall size, including clearances, 23'0" x 60'6". Doubles: Net size of court, 20'0" x 44'0". Overall size including clearances 26'0" x 60'0"	Marked floor, elevated net, adequate indirect lighting	Preferred flooring, hardwood or cork; other non-slippery floors acceptable
Billiards	Full-sized table, 12'0" x 6'-1½". Playing area, 22'0" x 16'0". Smaller tables are also available	Table, racks for cues and balls, shaded direct overhead lighting	
Ping Pong or Table Tennis	Table size, standard: 5' x 9'. Minimum: 4' x 8'. Provide 3' to 6' clearance each end; 2' or more each side	Table, net, racks for bats and balls, shaded direct overhead lighting	
Deck Tennis	Net size of court, 18'0" x 40'0". Overall size including clearances, 24'0" x 56'0". Net, 5'0" high at posts, 4'0" at center	Marked floor, elevated net, adequate indirect lighting	Preferred flooring, hardwood or cork; other non-slippery floors acceptable
Four-Wall Handball	Standard courts, with 4 walls and a ceiling, 22' x 46' x 22'	Marked floor, adequate indirect lighting and ventilation	Preferred flooring, hardwood or cork; other non-slippery floors acceptable
Gymnasium	Size according to equipment desired.	Exercise apparatus and machines, including bars, trapeze, strides, ladders, tumbling mats, punching bag, rowing and reducing machines, electric horse, boxing and wrestling rings, etc.	Flooring, wood, cork, linoleum, rubber. Provide ventilation and adequate lighting
Shooting Gallery	50, 60 or 75 ft. long, 8' ceiling. Width, 2 targets, 8'; 4 targets, 14'	Lighted target chamber, ricochet baffles, steel butts and sand pit and firing shelf, target trolleys	Sound absorbing material on walls and ceiling. Lights shaded from firing end
Shuffle Board	Size of board 45'0" x 6'0". Overall size including clearance, 50'0" x 10'0"	Marked floor, adequate indirect lighting and ventilation	Smooth wood or grainless floor
Squash Rackets	Size of court, 32'0" x 18'6". Height of front wall, 16'0"; rear wall, 9'0'	Marked floor and walls, adequate indirect lighting and ventilation	Preferred flooring, hardwood
Bowling Alleys	One alley: 6'3¼" x 82'2"; two alleys 11'6" x 82'2". Allow 4' clearance at playing end		Special acoustic treatment, special lighting; consult manufacturers' data
Children's Playroom and Theater	Special wiring. Accessible independently from first floor	Games and equipment, such as blackboards, bookcases, easel, ping pong, sand box, shuffle board, quoits, table hockey, boxing, wrestling, stage equipment	Provide for charades, dances, pageants, pantomimes, plays, puppet shows; projector for motion pictures
Adult's Recreation Room	Easily accessible from first floor and grade	Billiards, bookcases, card tables, darts, deck tennis, horse shoes, ping pong, quoits, shuffle board, table games, dancing, etc.	Bar may adjoin. Room may open to terrace, or have special lighting to simulate daylight
Hobby Shops	Access to grade and main floor	According to purpose	Types include: wood art, music, photo studios, dark rooms, trophy, gun rooms, etc.



Typical utilization of basement space, appropriate to many houses of like size, and proper segregation of service functions from hobby shops and recreation area are evidenced in the Crawford Goldthwait residence, Winchester, Mass., designed by Royal Barry Wills, architect

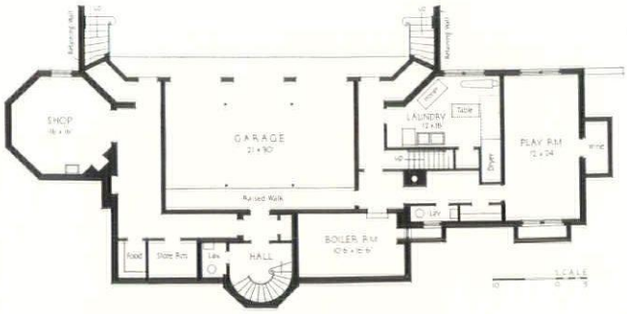
room, of which, however, it should not be a part. It should be accessible to the grade entrance; it should be beneath the laundry chute; it should be related to the sewer lines; and it should receive as much natural light as possible.

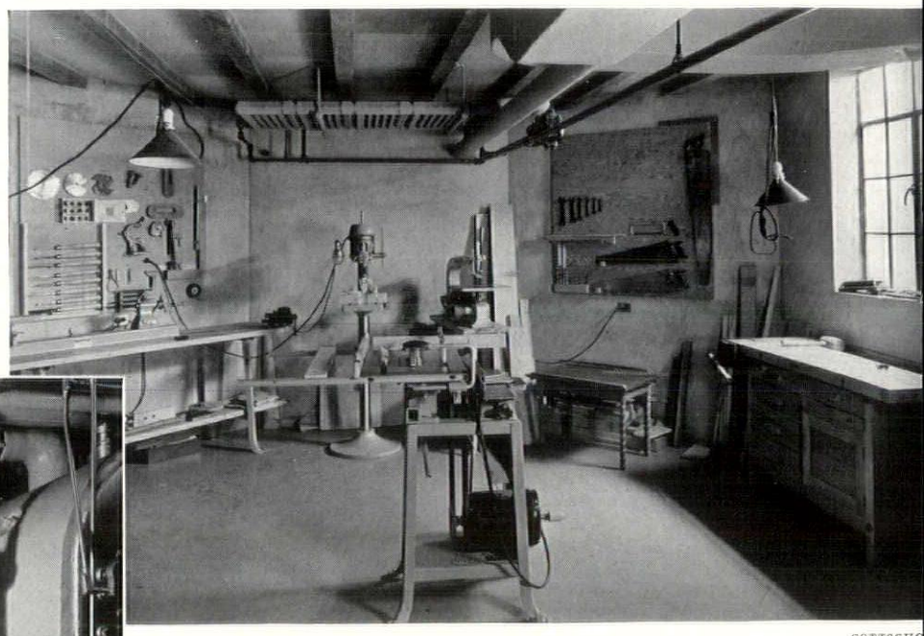
In plan the household laundry should be arranged for logical sequence of operations. Assuming complete equipment the elements should be organized approximately as follows: At the clothes chute or entrance provide a sorting table or work top of adequate size for separating articles by colors and fabrics and for spot cleaning. Adjacent to this provide the cleaning center consisting of a washing machine or laundry trays, a hot plate for boiling clothes to be sterilized and for preparing starch, and a wringer or centrifugal extractor. Near the extractor provide a work top or stand for clothes basket or hampers. The former is used if a basement dryer (gas or electrically heated) is part of the equipment. The latter is required if clothes are carried outside for drying. An indoor dryer is highly desirable and should be situated near the cleaning center.

After drying, clothes are moved to a sorting table or work top, sprinkled and rolled, and then ironed by machine or by hand. Hence the work top for this purpose should be adjacent to the flat ironer or mangle or the hand-ironing board. After ironing the clothes should be hung on racks placed within

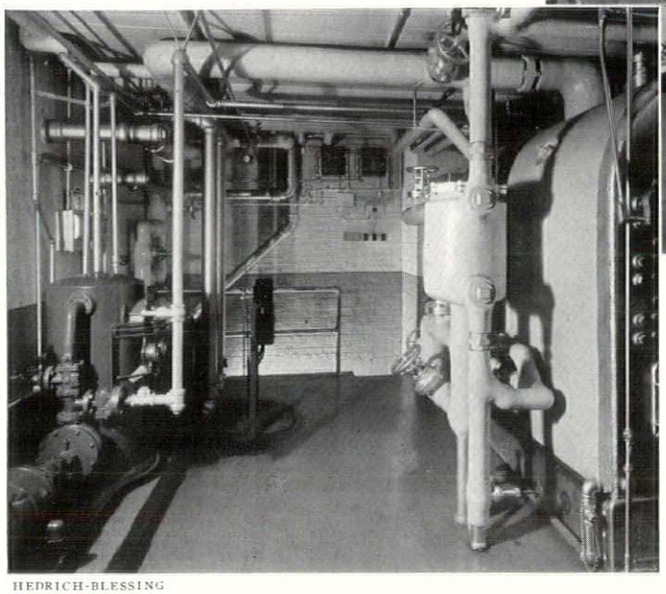
GOTTSCHO

An area-way that doubles as a conservatory is an ingenious detail in the room above designed by Carina Eaglesfield Mortimer, architect. At right: In the residence of Walter B. Crittendon, Longmeadow, Mass., Dwight James Baum, architect, has frankly left exposed the structural walls and air conditioning ducts without loss of distinction and interest





GOTTSCHO



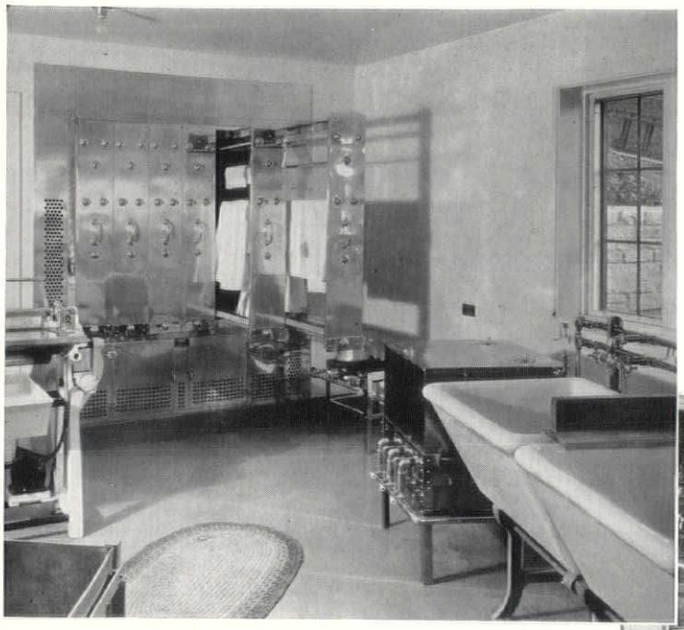
HEDRICH-BLESSING

UTILITY COMES FIRST IN ALLOTTING BASEMENT SPACE

The use of a basement garage as a major entrance to the dwelling is shown in the plan of the residence of Dr. A. W Stephenson, West Hartford, Conn.; Adams & Prentice, archi tects. The octagonal hobby shop is from the same project At left is the exceptionally "ship-shape" utility room whic

CHECK LIST OF BASEMENT MECHONICAL EQUIPMENT

Unit	Location	Type, Size, etc.	Notes
Boiler, Furnace, Air-Conditioner	Utility room — near chimney, grade entrance, fuel storage	Depends on house. Pipes and ducts influence basement ceiling height	Heating plant requires air vent equal to area of chimney flues. Intake also necessary
Incinerator	Utility room — part of or adjacent to chimney	Built-in type. Size depends on size of house	Allow space in front (about 4 feet) for cleaning
Ash Cans	Utility room	Corrugated galvanized iron with covers. Apt. House size holds approximately 100 lbs	2 cans are usually sufficient for a six-room house with semi-weekly ash removal
Automatic Stokers	Front of heating plant near fuel storage	Depends on type of fuel and heating plant	Special connection with fuel storage according to manufacturers' data
Oil Burner	Front or back of heater or enclosed in furnace casing	Depends upon heating plant	Connection with inside or outside tank depending on size
Ash Hoist	Locate near heating plant	Standard city-sidewalk elevator type	Necessary only for large residences under special conditions
Meters	Utility room — near and easily accessible from grade entrance or bulkhead for outside servicing	Standard	Place near shut-off valves or switches, protected against freezing and soundproofed with respect to piping
Water Supply	Intake in utility room, also pump, hot water tank, filters, water softeners, etc.	Varies with house and characteristics of local water supply	Soundproof pump foundations. Check pipe sizes to avoid air hammering or rush noises
Drainage Outlets	In garage, laundry, utility room, workroom, shower and toilet rooms	Standard bell-traps except in utility room, garage and laundry which require sumps with grease traps	If sewer is high, drainage from sump pit and automatic pump located in utility room will be necessary
Drainage Pumps	In utility room	Automatic electric or hydraulic sump pump to remove seepage or lower ground water level, as required	Needed wherever sanitary sewer or natural drainage cannot be used to remove water
Disposal Pumps	If necessary, in utility room	High sanitary sewer levels require use of sewage ejectors for basement toilets. Size depends upon number, fixtures and level lift. Should be automatic in all cases	Raising fixtures above normal floor levels may give sufficient pitch depending upon sanitary line and depth of basement
Electrical Equipment	Meters, etc., in utility room or outdoor type	Outlets for tools in workroom; for lamps, motion picture equipment, radios, etc., in recreation room	
Fire Protection	Preferably throughout basement. Particularly in shops, recreation and utility rooms and garage	Dry alarm system, sprinkler system, chemical system, portable hose lines. Choice depends upon needs	
Cen. Radio, Private, Automatic Telephone Exchange	In utility room; easily serviceable	Each requires free-standing panel board or cabinet 5 ft. high; floor space approximately 1'-6" x 2'	Should be well ventilated, free from dust and dampness



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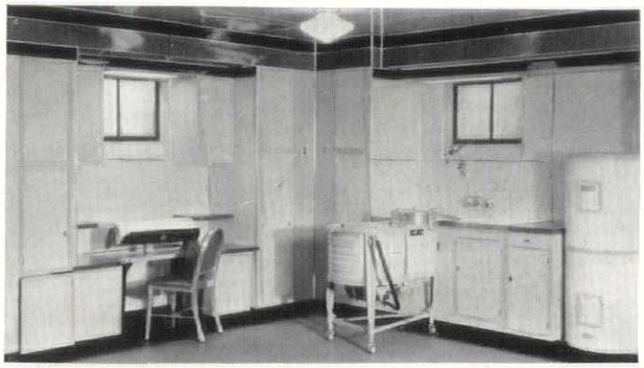
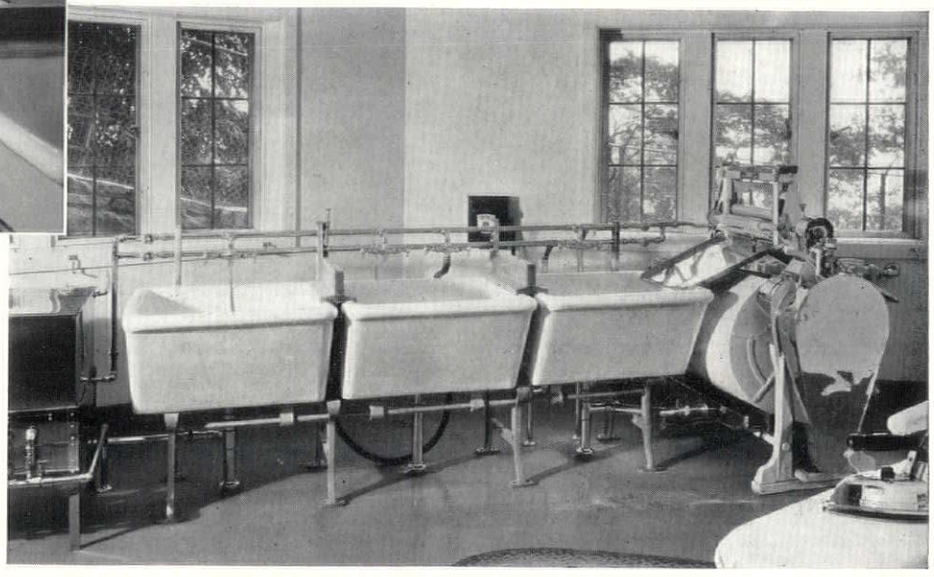


COURTESY: WESTINGHOUSE



contains all mechanical equipment and meters in the C. P. Dubbs residence of which other features are illustrated on pages 71 to 74. Philip B. Maher, architect. Two views of the well equipped laundry in this same residence and a "model" demonstration laundry by Westinghouse are shown on this page

easy reach of the ironing device. They are then removed from the racks, sorted again on the work top, if necessary, and returned upstairs.

For space economy in small laundries the same work top used for sorting may be employed later for sprinkling and final sorting if the ironing equipment and drying racks can be arranged near at hand. This is made possible by the fact that laundering operations fall into two cycles, cleaning and ironing, and these cycles are seldom concurrent in small laundries.

BASEMENT TOILETS

SINCE toilets, shower rooms and dressing rooms involve plumbing lines and sewer connections, their location should be studied at the start in relation to pipe lines. When used by owners and guests in connection with sport areas they require careful placement in relation to grade entrance (for outdoor games) and to the indoor areas they serve. Toilets used by "outservants" (gardeners, chauffeurs, etc.) must be near the grade entrance; those used by house servants should be readily accessible to the service stairs.

STORAGE SPACE

WINE cellars and cold rooms for storing bulk and preserved foods are distinctly basement units, because they can be placed against uninsulated masonry walls to take advantage of the relatively uniform earth temperature. Both types of rooms should be enclosed by solid walls insulated from heated basement space and free of heating pipes. Both should be ventilated, preferably to out of doors, to keep the air sweet.

Many other storage spaces are normally required in the well equipped residence, as indicated on the check list on page 66. Of particular importance are storage racks for screens and winter windows, trunks and heavy luggage, bicycles and outdoor sporting equipment used only in certain seasons, and garden implements that are not accommodated elsewhere.

Data on the storage of solid and liquid fuels is presented in Time-Saver Standards—"Basement Planning—Fuel Storage Data."

GARAGES

SLOPING sites often make it feasible to place the garage in the basement. The chief advantages are accessibility, ease of heating and utilization of space. In some cases architects have recognized the modern dependence on motor transportation by making the garage a recognized entrance to the house itself, giving it a dignified treatment and providing a special doorway and stair hall to accord with its new importance.

Certain obvious disadvantages may be offset by proper planning. Construction must be fireproof or fire-resistant, according to local codes; materials suggested for finishing the utility room are usually adequate. The garage ceiling should be heavily insulated to protect heated space above when garage doors are open. Effective ventilation is essential; heating lines must be protected against freezing; if warm air heating is employed no recirculation should be permitted.

RECREATION ROOMS

HAVING thus disposed of the essential or logical utilitarian elements that may be incorporated in the basement plan, the remaining space becomes available for manifold special uses. The check list on page 66 indicates a great many uses to which such areas have already been put; it is by no means complete, for architects and owners are constantly finding new hobbies to serve or new facilities for the entertainment of the family and guests.

Obviously the amount of space left for such purposes is governed not only by the size of the house but also by the skill with which the entire plan is organized. Planning of the basement may well influence the arrangement of upper floors in order that suitable stairways and traffic arteries on each floor may be co-ordinated satisfactorily. All these matters, however, are the commonplace problems of architectural planning, differing in nowise from the organization of other parts of the plan.

STRUCTURAL DETAILS

SPECIAL problems involved in assuring a dry interior, a proper selection of floor and wall finishing materials and adequate clearances under heating and plumbing pipes and ducts are analyzed in the Time-Saver Standards accompanying this article on pages 84 through 95.

Waterproofing methods are summarized in convenient form in Time-Saver Standards sheet, "Residence Basements—Waterproofing." A thorough study of this subject may also be found in AMERICAN ARCHITECT Reference article No. 17, April 1935, "Waterproofing and Dampproofing."

Floor Surfacing materials appropriate for use over concrete below grade are limited to hard masonry products, such as stone, terrazzo and tile, and to semi-resilient asphalt tile unless extraordinary precautions are taken to assure freedom from dampness. All of the true resilient floorings including wood, cork, linoleum and rubber must have permanently dry sub-floors and even then manufacturers of the latter products will not assume responsibility for the performance of their products on floors below grade.

The best practices now apparent for installing finished floorings over concrete below grade are presented in Time-Saver Standards, "Residence Basements—Floor Surfacing."

Wall Surfacing methods are summarized in Time-Saver Standards, "Residence Basements—Wall Surfacing." Aside from decorative value, the insulation of basement walls with an inner surfacing is highly desirable to minimize or prevent condensation and to conserve fuel.

Ceiling Heights in basements are influenced in many cases by the space occupied by heating pipes and ducts. Furthermore the disposition of doors in basement partitions and the layout of return lines is directly influenced by the type of heating plant installed. These matters are reduced to fundamental principles and simplified planning data in two Time-Saver Standards, "Basement Ceiling Heights—Piping" and "Basement Ceiling Heights—Duct Work."

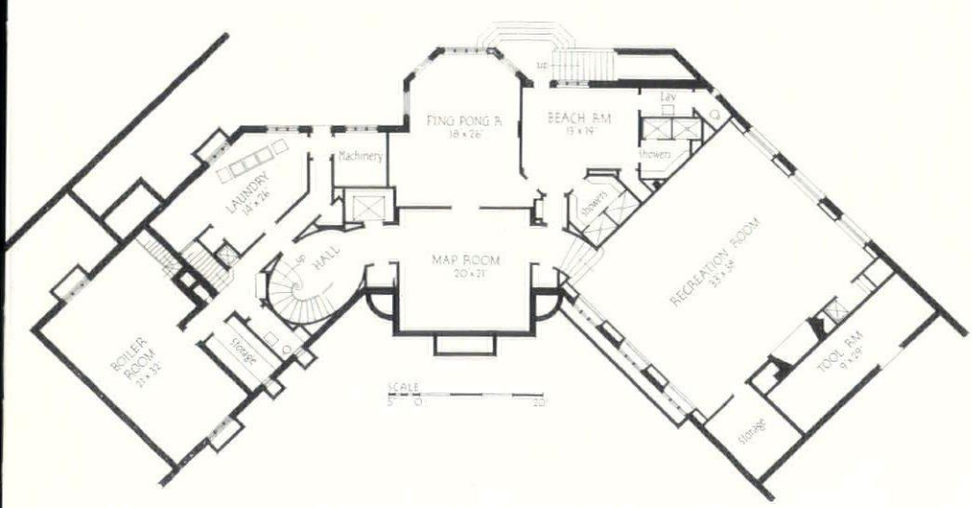
PETERS

Remodeling hitherto wasted basement space in existing dwellings into pleasant areas reflecting the owner's hobbies and interests is often very inexpensive yet worthy of architectural talen

HEDRICH-BLESSING

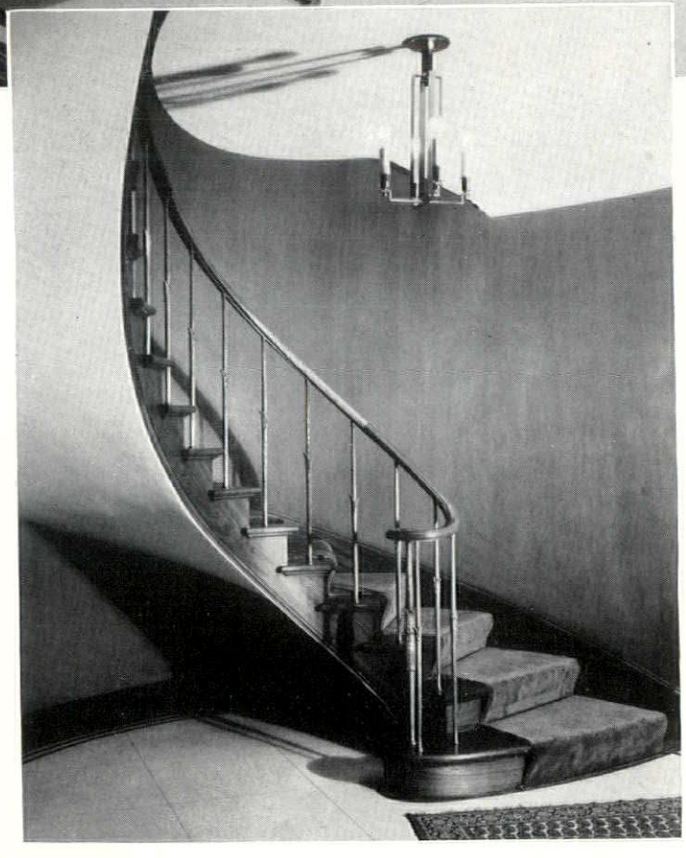
Basement Design in Practice

Five results of applying imagination and technical skill to planning better basements

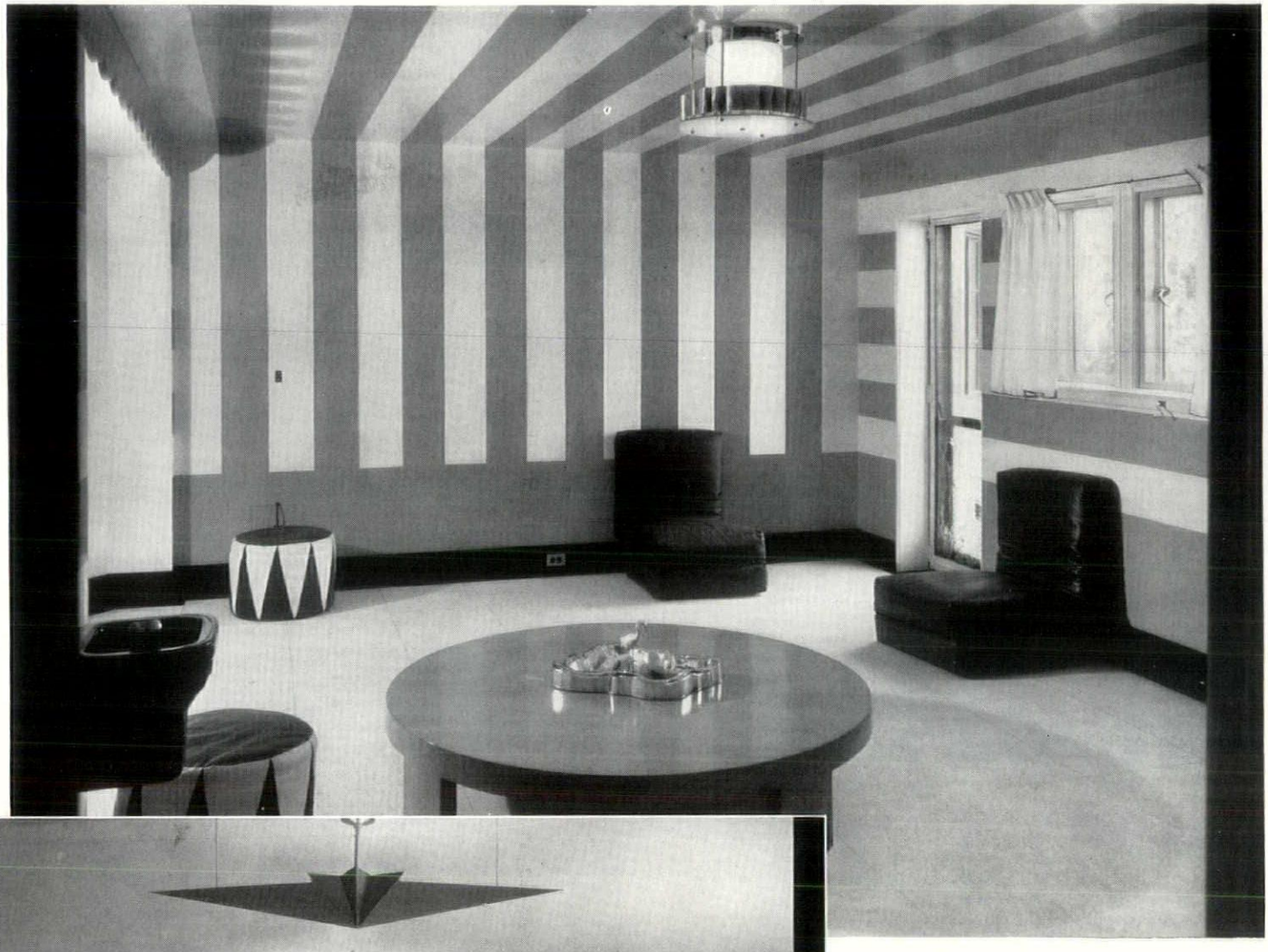


Philip B. Maher, Architect. The house of C. P. Dubbs, Wilmette, Ill., is built on the crest of a bluff that overlooks the beach of Lake Michigan. Different levels have been utilized in developing the entire basement. The Recreation Room, above, has a ceiling height of twelve feet; the remainder of the area is nine and one-half feet in height

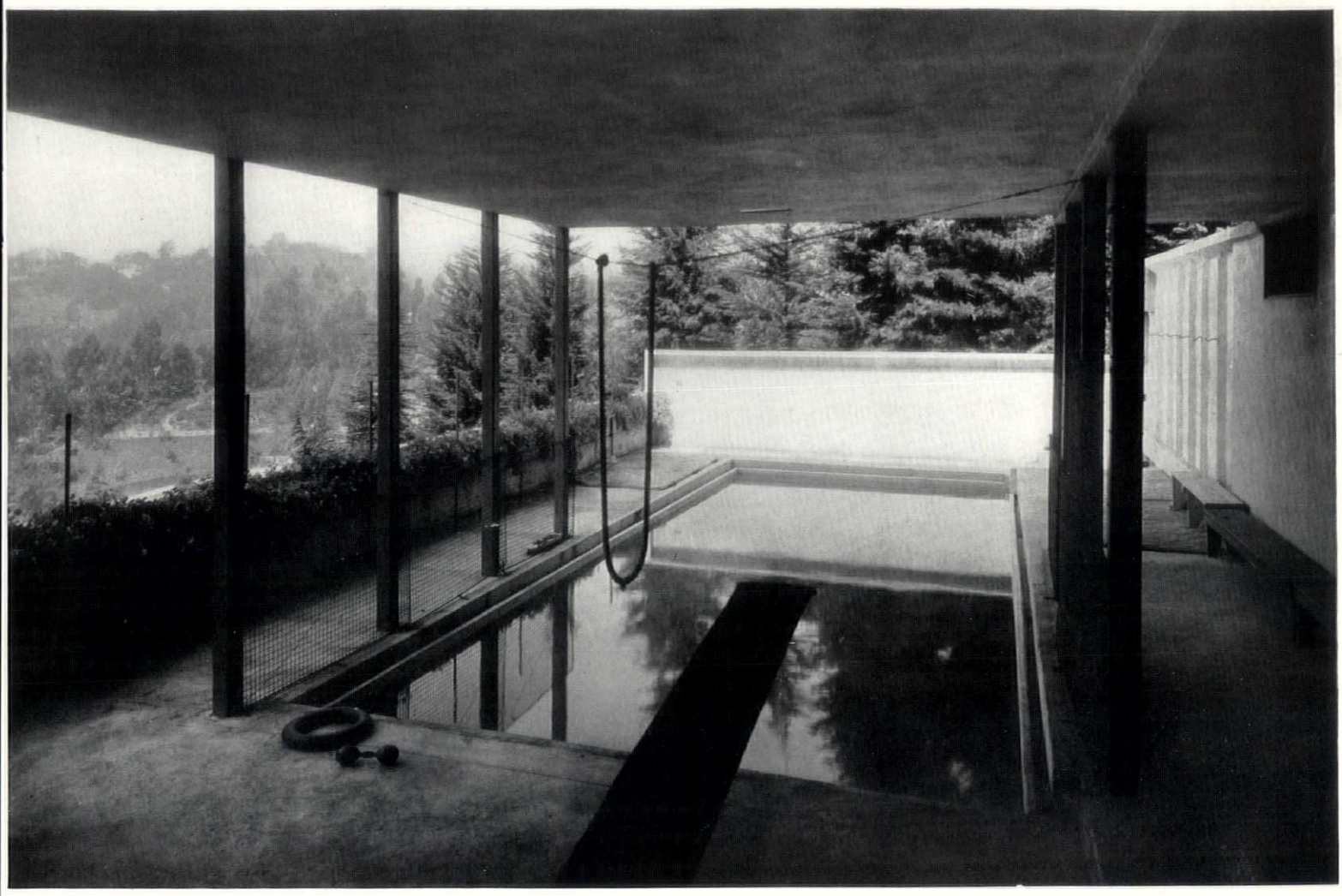
HEDRICH-BLESSING PHOTOS



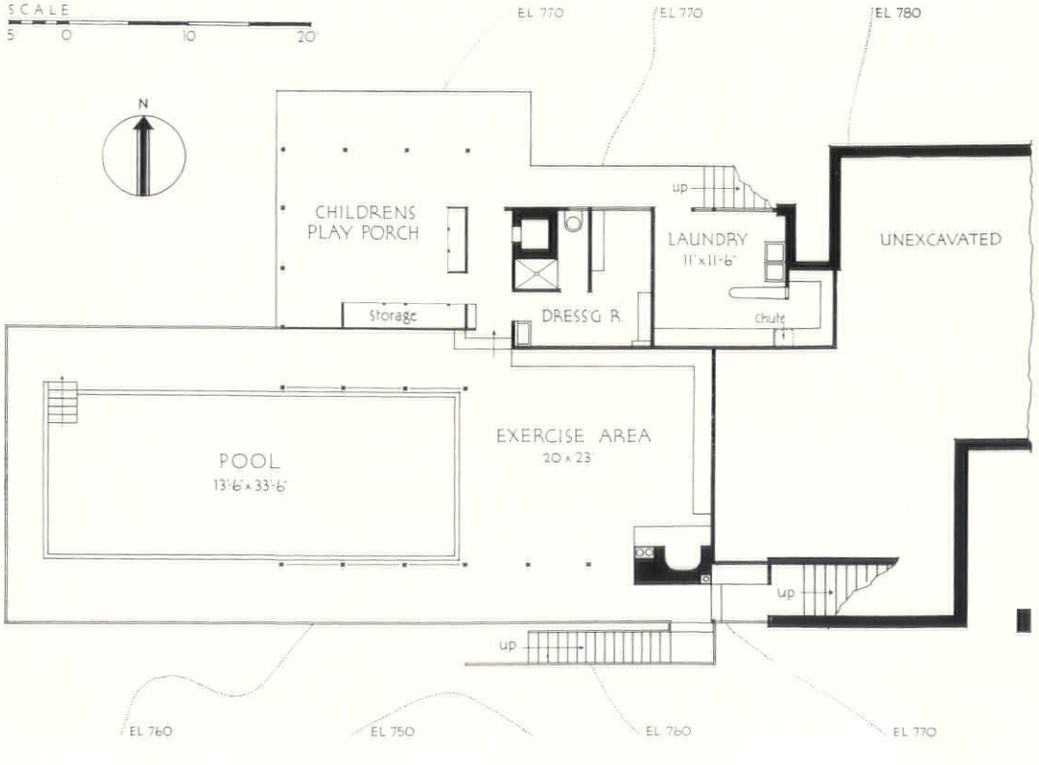
Above and on the opposite page are two more views of the Recreation Room in the basement of the C. P. Dubbs house at Wilmette, Illinois. Floor is cream-colored terrazzo, bordered with black. Walls are painted white. Furnishings for all the basement rooms were designed and executed in the office of the architect, Philip B. Maher, under direction of Robert Breckenridge, decorator. The stair at the left leads to the first floor from the main hall in the basement



Other basement rooms in the C. P. Dubbs house for which Philip B. Maher was architect. Top of page, the Beach Room, walls of which are painted with stripes of white and vermilion. The Map Room, above, has a white background for colorful posters, maps, and yellow rugs. Fixtures, including globe stand, are chromium. Right; view from corridor

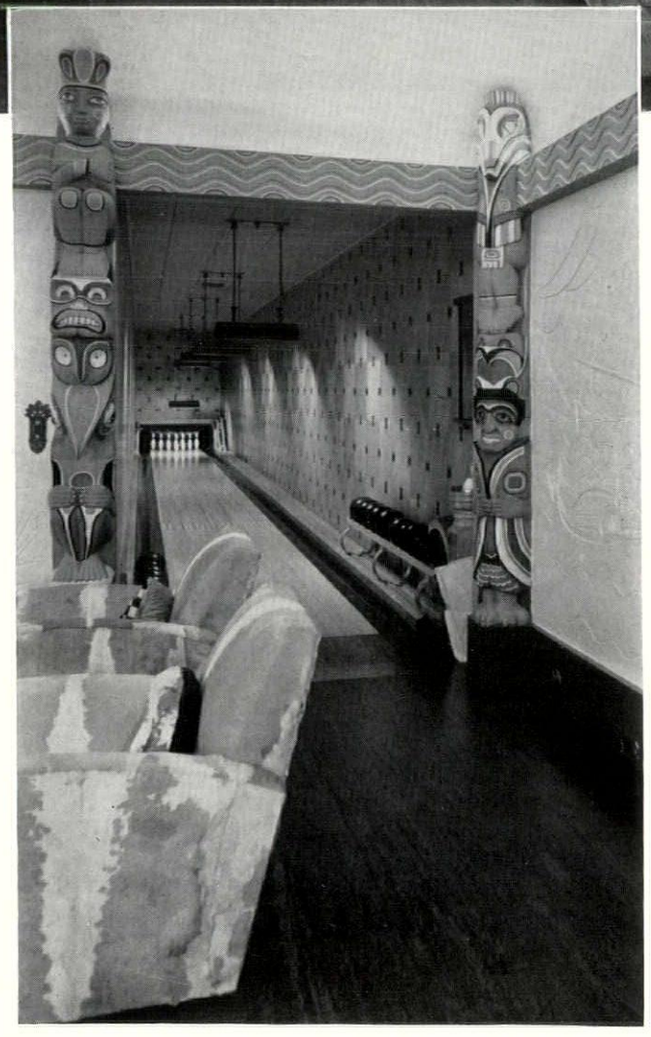


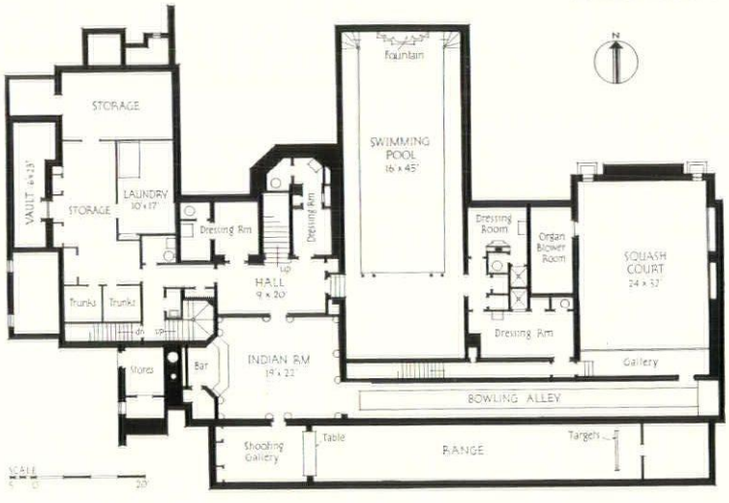
RICHARD J. NEUTRA, ARCHITECT



Another case where contours of site determine the use of basement space. The pool illustrated becomes an open terrace, though actually it is an extension of the basement level. Plan and its development are worth noting as a practical idea which could be admirably adapted in many instances

GOTTSCHO PHOTOS





EDGAR I. WILLIAMS. ARCHITECT

Basement in House of Mrs. C. R. Holmes, Sands Point, Long Island, New York. Murals, wood and plaster carvings by Gardner Hale; furniture and fabrics by Roy Belmont

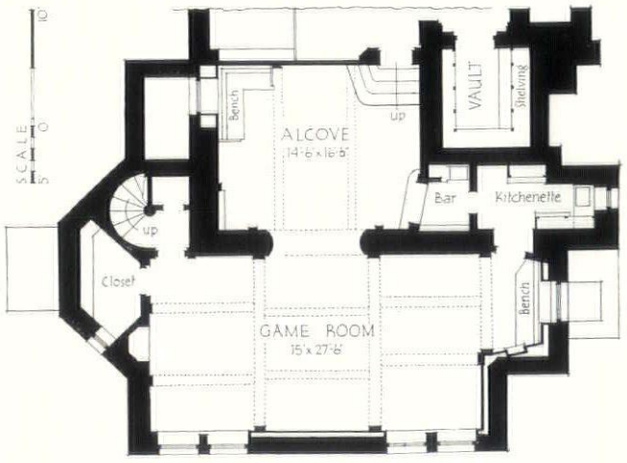
GOTTSCHO PHOTOS

Basement rooms in the house of Mrs. C. R. Holmes, Edgar I. Williams, architect, are noteworthy for the consistency of their development, decorative and otherwise. Above: the Swimming Pool, entered directly from a central hall and adjacent to dressing rooms and a squash court. (See plan, page 76.) Right: one of the dressing rooms

BARNES PHOTOS

WALTER T. KARCHER and LIVINGSTON SMITH, ARCHITECTS

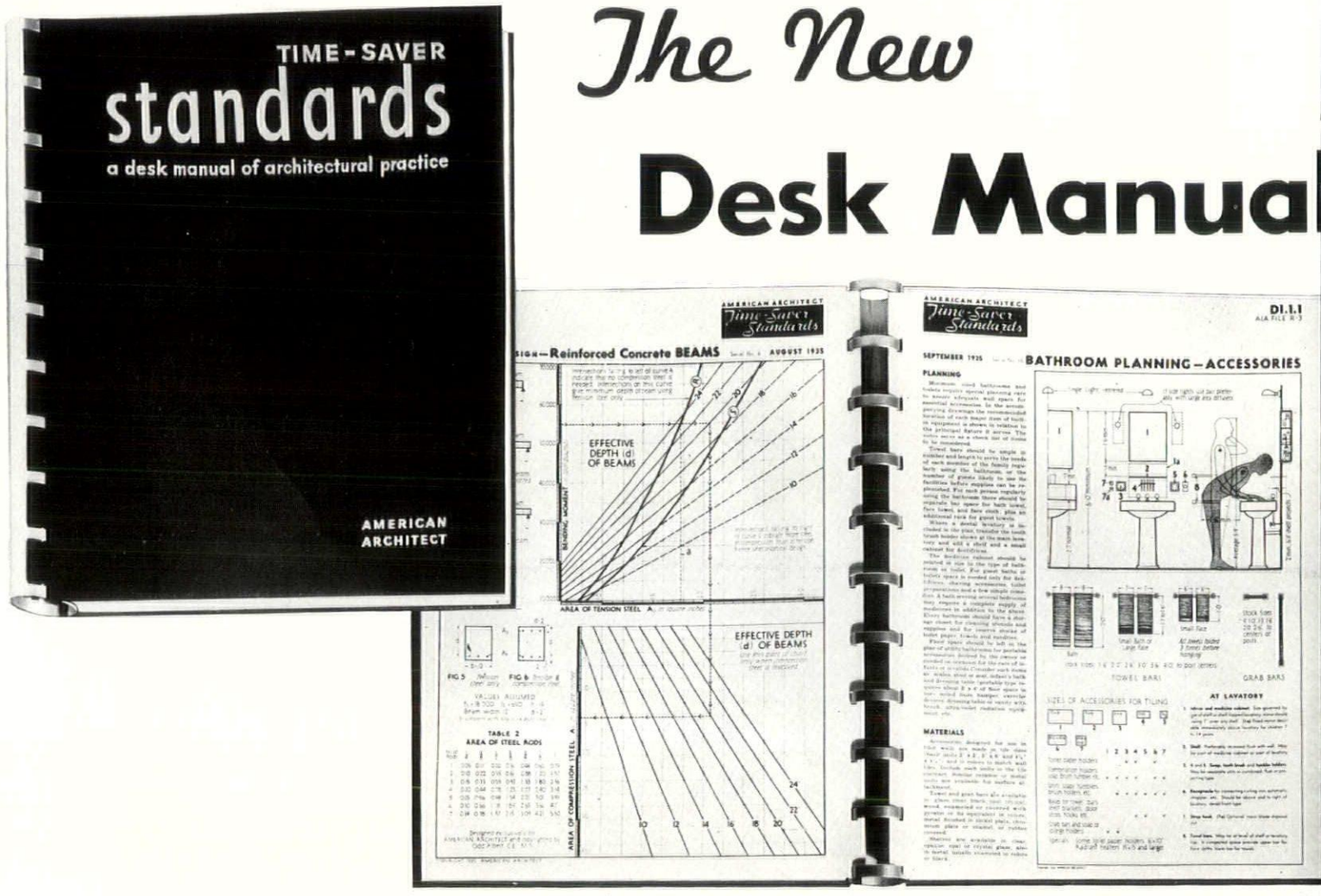
Basement in House of H. M. Hessenbruch
Wynnewood, Pennsylvania



HEDRICH-BLESSING PHOTOS

DESIGNED BY ABEL FAIDY

Basement in House of Colonel R. H. Morse
Lake Forest, Illinois



The New Desk Manual

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FUEL STORAGE DATA

AMERICAN ARCHITECT
Time-Saver Standards

OCTOBER 1935 Serial No. 11

Residence Basements—WATERPROOFING

PROCEDURE

When basements are to be used for recreation, living, storage or other purposes beyond the mere housing of essential utilities, dampness, as well as actual water seepage, must be eliminated from walls and floor. The following precautions should be reviewed and methods adopted which best suit each job condition.

ON SLOPING SITES

Wherever the site offers a drainage outfall below the level of the base of foundation footings, place 6″ open drain tile at the footing level completely around foundation and connect to one or more open gravity outfalls. Use no tile smaller than 6″ to avoid silting and filling. In damp or wet soils, or where springs are encountered, also place network of drains beneath basement floor in gravel filled trenches. Back-fill outside drain trenches with gravel or crushed stone (not cinders) and if water is still likely to come in contact with basement walls of unit masonry construction, consider sub-grade dampproofing of outside surfaces with two or more heavy coats of asphaltic or pitch compounds. Where site conditions permit their use, these are minimum precautions and represent the least costly method of assuring dry basements.

NON-DRAINABLE SITES

Where a free-flowing outfall below footing level cannot be obtained for drains, observations should be made of subsoil conditions and maximum ground water level by means of test pits or by study of nearby basements of equal depth. Choice of method is then governed by the absence or prevalence of hydrostatic pressures above lowest floor grade.

NO HYDROSTATIC PRESSURE

Self-draining soils which have a water-table below footing level require no special precautions beyond sound masonry construction and positive drainage of roof leaders away from foundation walls. However, severe storms, deep frost or slow-draining, heavy soils may occasionally produce damp conditions warranting the use of one or more of these five precautions:

(1) Sub-grade dampproofing on exterior of walls (before backfilling) with suitable bituminous compounds.

(2) Use of monolithic concrete formed as specified by the Portland Cement Association for water-tight concrete, using a water-cement ratio not exceeding 1:6. Concrete, if properly placed without segregation of materials and without formation of laitance, and if properly cured, will be inherently water-tight.

(3) Use of a cement plaster coat on exterior of unit masonry foundation walls, using a mixture of 1 part cement to 2 parts sand (usually with a stearate or other integral waterproofing compound) applied in at least two ⅜″ coats and properly cured.

(4) Use of an interior cement-plaster or cement-iron-oxide coat on either unit masonry or monolithic walls. This method may be applied after completion as a remedial measure. Follow instructions of reputable manufacturers of iron-oxide compounds.

(5) Use drain tile as for sloping sites, including under-floor drains, and bring complete network to a sump-pit in cellar floor. Install an automatic electric or hydraulic sump pump to remove water and eject it to sewer or elevated outside drain.

WITH HYDROSTATIC PRESSURE

If ground water level at any time stands above lowest floor grade, hydrostatic pressure will exist amounting to 62.5 lbs. per square foot for each foot of height to the water table. Since mass concrete weighs about 150 lbs. per cubic foot, it will require 5″ of concrete to offset the upward thrust of each foot of water head. Side thrust on walls is considered to be half upward thrust on floor. Hence both walls and floor must be designed to withstand these pressures. Floor and side walls must be bonded by key construction or reinforcement, or both. Acceptable waterproofing methods include:

(1) Membrane method, employing a continuous membrane beneath reinforced concrete floor slab, extending over footings and up exterior of side walls without break. Requires alternate layers (2 to 4 or more) of hot pitch or asphalt and impregnated felt or fabric. Forms a positive seal superior to other methods, but somewhat more costly.

(2) Monolithic concrete walls and floors as described above.

(3) Interior cement plaster or cement-iron-oxide as described above.

(4) The sump pump method described in paragraph 5 above may be employed when hydrostatic pressures occur only periodically or when it is cheaper to pump out ground water than to install effective waterproofing.

FLOOR DRAINAGE

Where footing drains or self-draining soils permit, slope floors toward walls and leave open joint, filled with gravel or crushed stone, as indicated in detail of "draining floor." This provides for removal of both wall and floor condensation, yet may be concealed beneath furred walls with raised baseboards. Otherwise make joint watertight.

AMERICAN ARCHITECT

Time-Saver Standards

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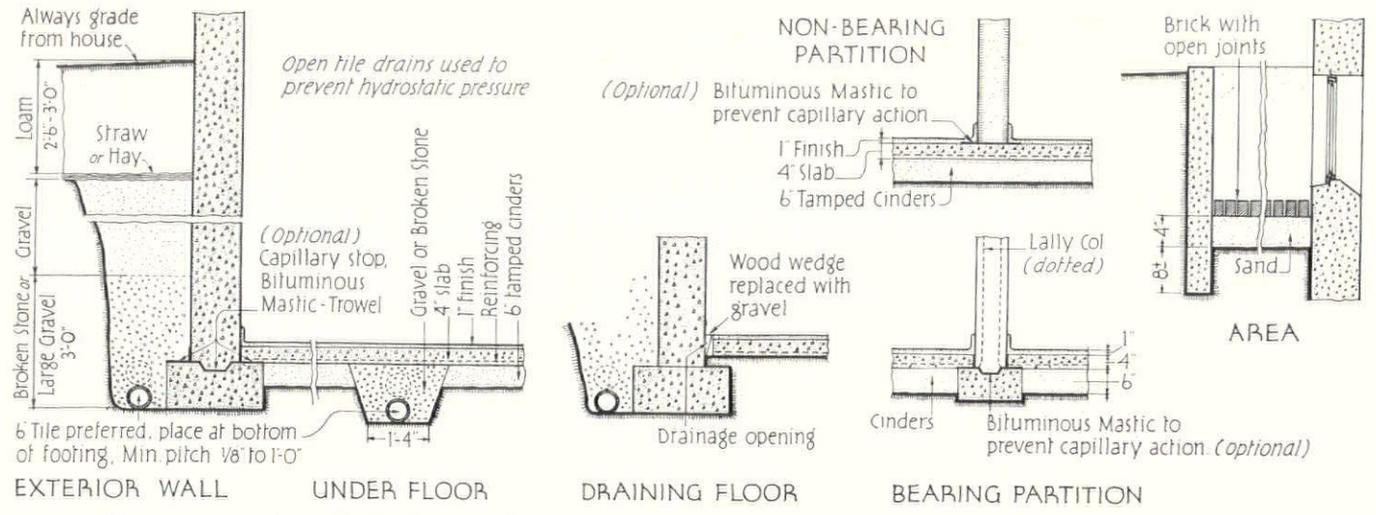
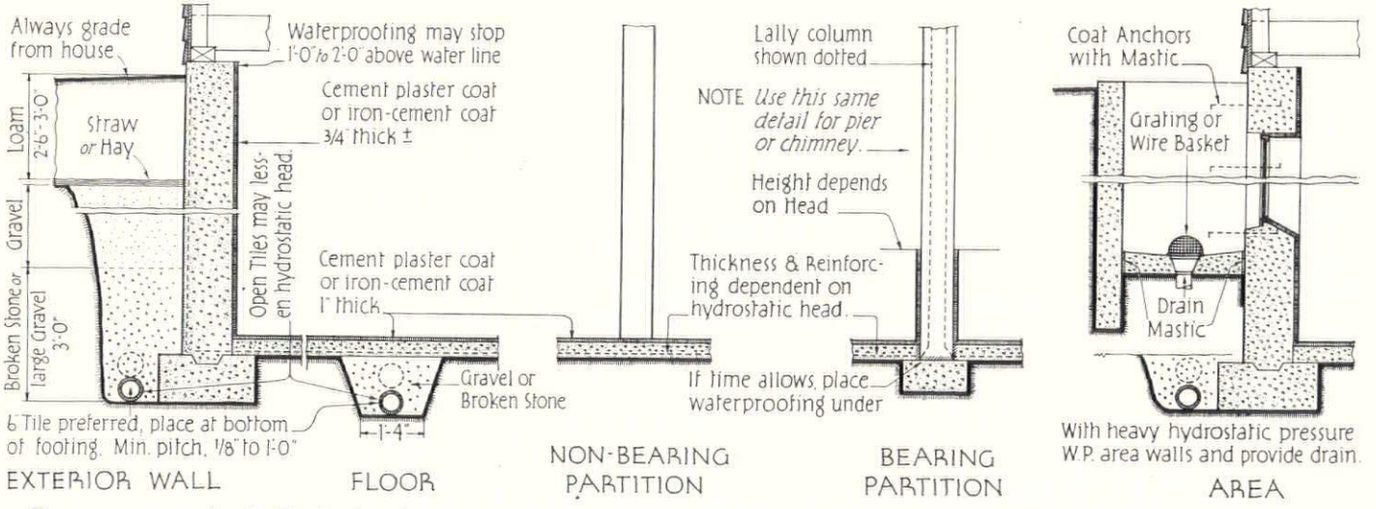
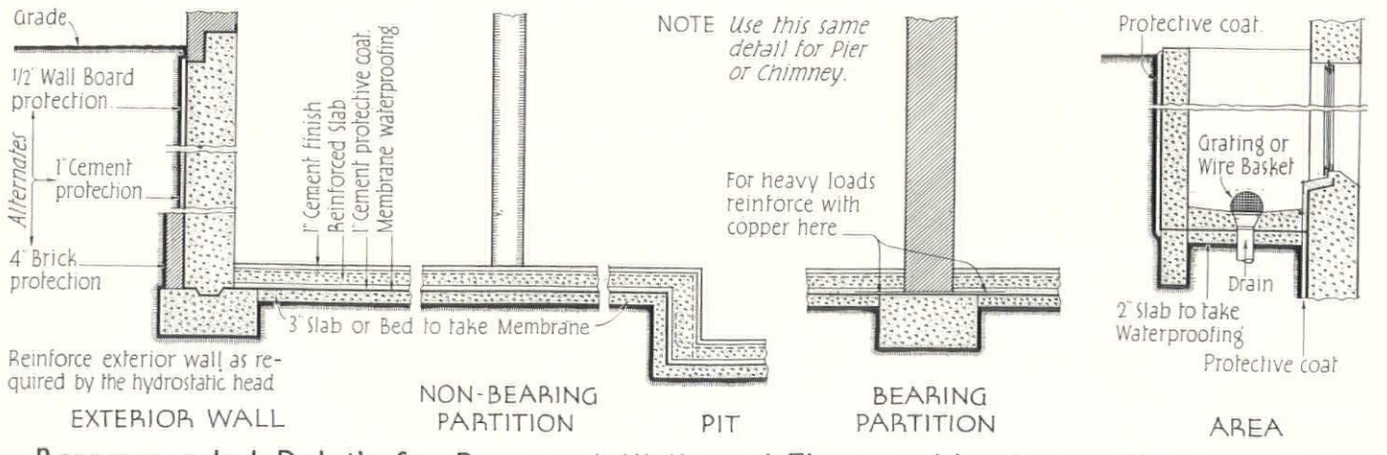
Residence Basements — WATERPROOFING



Recommended Details for Non-waterproofed Basement Walls and Floors



Recommended Details for Basement Walls and Floors. Internally Waterproofed



Recommended Details for Basement Walls and Floors. Membrane Waterproofed

All details drawn to scale of 1/4" = 1'-0"

AMERICAN ARCHITECT

Time-Saver Standards

OCTOBER 1935 Serial No. 12

Residence Basements—FLOOR SURFACING

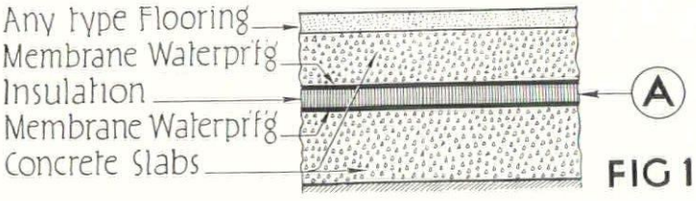


FIG 1

FLOORS OVER CONCRETE ON EARTH

Moisture is a factor of importance in the choice of any sub-surface floor finish. Under varying conditions it may occur by infiltration as a result of insufficient waterproofing or through condensation because of improper insulation or inadequate means of ventilation. Thus if materials are to be used as floor finishes that are susceptible to damage by moisture, a rough concrete floor must be thoroughly waterproofed before the materials are laid and structural or mechanical means employed to eliminate effects of condensation.

SUB-FLOORS WITHOUT MEMBRANE

Only such floor surfacing materials as are not inherently damaged by dampness should be used. Those tolerating dampness are: cement, terrazzo, tile, brick, stone of all sorts.

SUB-FLOORS WITH MEMBRANE

Under ordinary dry conditions and when no hydrostatic head requires special construction of a concrete sub-floor over earth, asphalt tile, wood blocks and the usual type of hard wood strips or planks may safely be used according to the details shown. But these should not be laid until the concrete is absolutely dry. The permanence of such installations depends largely upon the care with which the concrete has been waterproofed and upon adequate ventilation of the basement area to avoid surface condensation. Details of satisfactory construction for the permanent protection of wood or asphalt tile floors are shown at the bottom of the detail page.

Linoleum, cork tile, rubber tile or surfaces of any similar nature are not recommended for use on basement floors of concrete over earth. Many such floors have been installed. Some of them have apparently stood up well. But the nature of the materials, the difficulty of eliminating moisture from basement areas and the expense of construction to assure permanently dry conditions cause manufacturers to disclaim satisfactory performance of such materials as floor surfaces in most basement spaces.

CONDENSATION AND HEAT LOSSES

Condensation will occur on basement floors under conditions described in "Residence Basements—Wall Surfacing" (Serial No. 13) even though waterproofing (see "Residence Basements—Waterproofing," Serial No. 11) methods have been employed. In addition there will occur appreciable heat losses through such floors. Heat losses can be prevented and effects of condensation minimized by the use of an insulating surface material or the incorporation of some form of insulation within the floor construction itself.

In Table I is shown the heat loss through typical masonry floors in contact with earth, both untreated and with various types of surface or interlarded insulations. The overall coefficient of heat transmission U gives the heat movement in Btu per hour per square foot per degree F difference in temperature between the air above and the earth beneath. For ordinary purposes the minimum earth temperature is assumed to be 32F and the air temperature may be taken as 5F lower than the breathing zone temperature normally maintained (70 − 5 = 65F). The normal difference is therefore 65 − 32 or 33F. Multiplying the coefficient U by 33 and by the area of the floor will give the loss of heat in Btu per hour through the floor—a loss that must be balanced by artificial heating.

Bold face figures show the per cent of heat transfer stopped by insulation or finished floorings of limited types, as compared to the loss through an ordinary concrete floor. These data are adapted from computations published in the A.S.H.V.E. Guide 1935 Table 10 page 109.

TABLE I. HEAT LOSSES THROUGH BASEMENT FLOORS

(Coefficients are expressed in Btu per hour per square foot per degree in temperature between the ground and the air over the floor and are based on still air [no wind] condition. Percentages—in bold face—show reduction in heat loss by use of surface or intervening insulation as compared to plain concrete floor.)

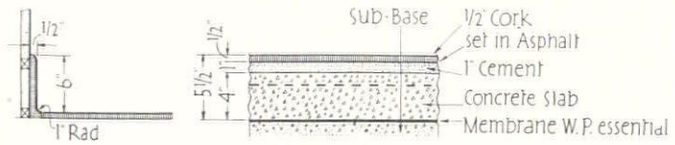
	4" Concrete Directly on Earth		4" Concrete Over 3" Cinder Concrete		8" Concrete Over 3" Cinder Concrete	
	U	%	U	%	U	%
No Intervening Insulation						
(a) No Flooring (concrete bare)	1.07	Base	0.66	Base	0.54	Base
(b) Yellow Pine Flooring on Wood Sleepers Resting on Concrete	0.35	67	0.29	56	0.27	50
(c) Maple or Oak Flooring on Yellow Pine Sub-flooring on Wood Sleepers Resting on Concrete	0.28	74	0.24	64	0.23	57
(d) Tile or Terrazzo on Concrete	0.98	8	0.63	5	0.52	4
(e) 1/4" Battleship Linoleum Directly on Concrete	0.60	44	0.44	33	0.39	28
1" Rigid Insulation Within Concrete Slab at Point A, Fig. 1						
(a) No Flooring (concrete bare)	.....	....	0.22	67	0.21	61
(b) Yellow Pine Flooring on Wood Sleepers Resting on Concrete	.....	....	0.16	76	0.15	72
(c) Maple or Oak Flooring on Yellow Pine Sub-flooring on Wood Sleepers Resting on Concrete	.....	....	0.14	79	0.13	76
(d) Tile or Terrazzo on Concrete	.....	....	0.22	67	0.20	63
(e) 1/4" Battleship Linoleum Directly on Concrete	.....	....	0.19	71	0.18	67
2" Corkboard Within Concrete Slab at Point A, Fig. 1						
(a) No Flooring (concrete bare)	.....	....	0.12	82	0.12	78
(b) Yellow Pine Flooring on Wood Sleepers Resting on Concrete	.....	....	0.099	85	0.096	83
(c) Maple or Oak Flooring on Yellow Pine Sub-flooring on Wood Sleepers Resting on Concrete	.....	....	0.093	86	0.090	83
(d) Tile or Terrazzo on Concrete	.....	....	0.12	82	0.12	78
(e) 1/4" Battleship Linoleum Directly on Concrete	.....	....	0.11	83	0.11	80

AMERICAN ARCHITECT

Time-Saver Standards

OCTOBER 1935 Serial No. 12 **Residence Basements—FLOOR SURFACING**

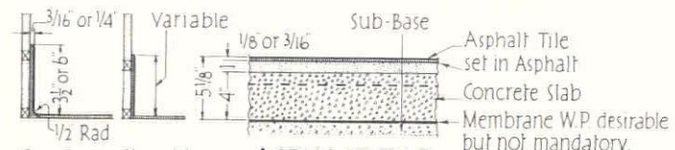
FLOOR FINISHES DEMANDING DRY CONDITIONS



Cove Base

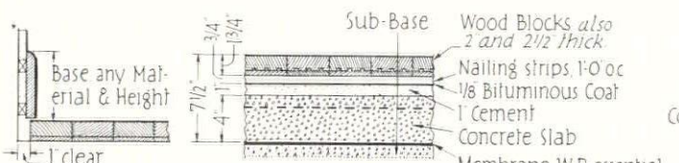
CORK TILE *

Scale 3/4"=1'-0"

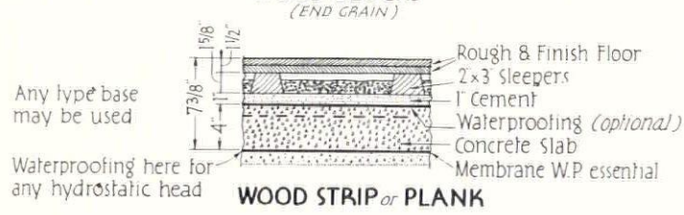


Cove Base *Straight*

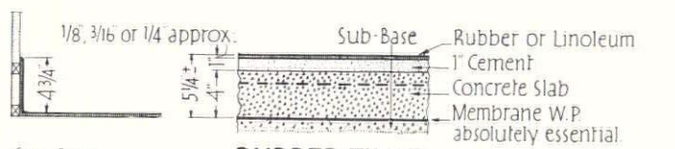
ASPHALT TILE



WOOD BLOCKS
(END GRAIN)



WOOD STRIP *or* **PLANK**

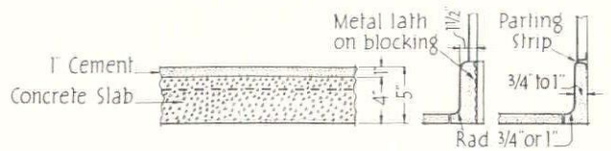


Cove Base

RUBBER TILE & LINOLEUM *

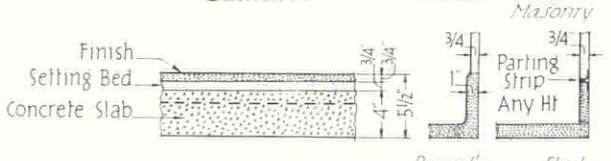
* *Not recommended by Manufacturers unless permanently dry conditions prevail.*

FLOOR FINISHES TOLERATING DAMPNESS



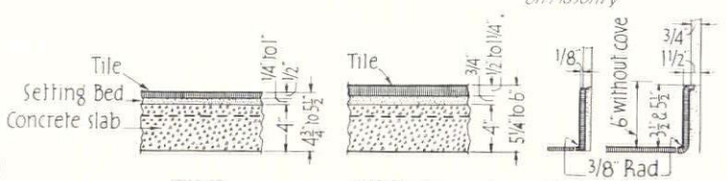
CEMENT

On wood *Flush on Masonry*



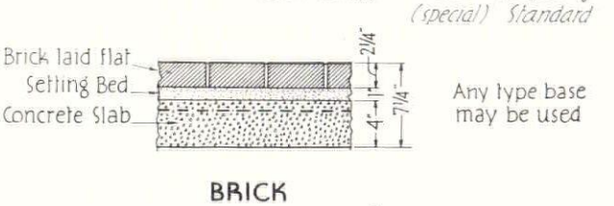
TERRAZZO

Project'n on Masonry *Flush*

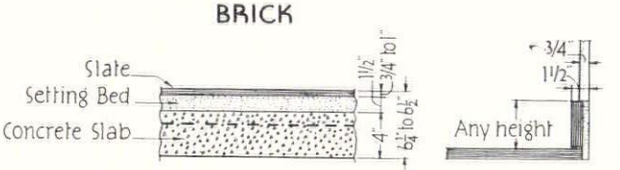


TILE **TILE** *(Quarry)*

Flush (special) *Projecting Standard*



BRICK

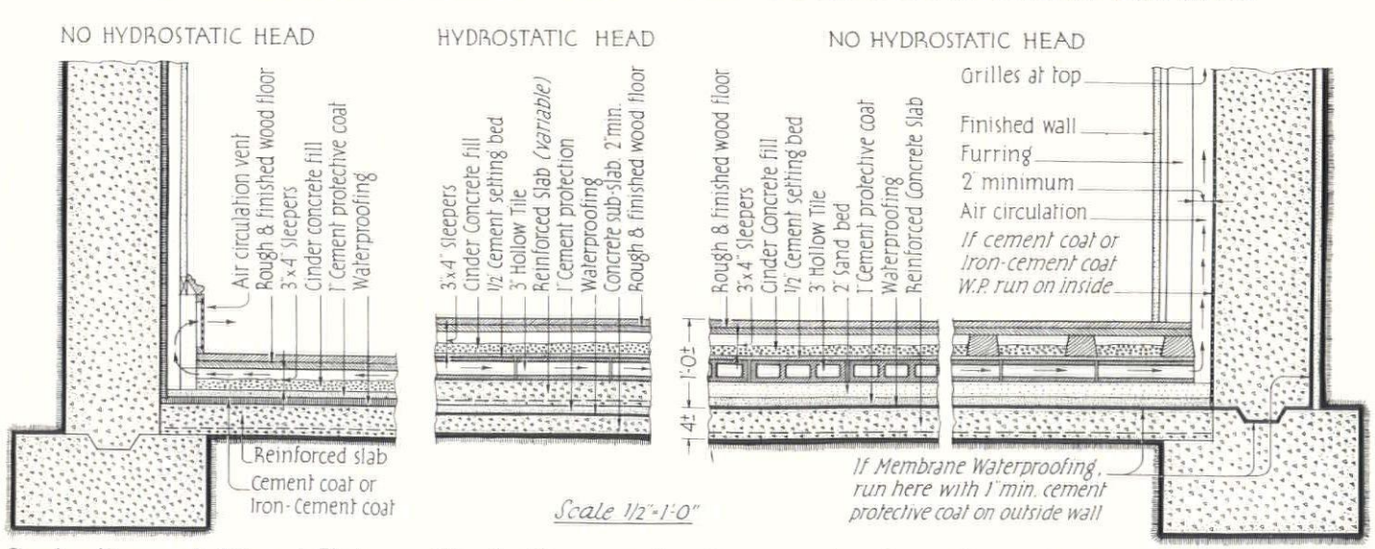


SLATE OR FLAGS

On Masonry

All concrete structural slabs shown are 4" thick. Increase overall dimensions by any additional slab thickness above this minimum

Overall Thicknesses of Suitable Floor Finishes on Concrete in Contact with Earth



Protection of Wood Strip or Plank Flooring for Basements, Squash or Handball Courts, Etc.

AMERICAN ARCHITECT
Time-Saver Standards

OCTOBER 1935 Serial No. 13

Residence Basements—WALL SURFACING

EARTH TEMPERATURES

In winter earth temperature to frost line may be taken as 32F except in severe climates where it may go well below this point near the surface. Below frost line, for average depth basements earth temperature may be considered as 32F, though actually it will be slightly warmer. At average basement levels earth temperature is usually cooler in spring and summer than prevailing mean air temperature and slightly warmer than prevailing mean air temperature in fall and winter. Basement walls and floors of masonry, unless artificially heated, develop an inside surface temperature equal to that prevailing in surrounding earth.

CONDENSATION

When such surfaces (and exposed cold water or drain pipes) are cooler than the dew-point temperature of entering air, condensation forms and may accumulate. This dampness may be drained away, or allowed to dry out by providing adequate circulation. To minimize damaging effects of condensation two methods are available:

(1) Direct insulation of masonry walls (and floors) by applying materials of low heat transmission to interior surfaces.

(2) Separation of masonry in contact with earth from interior finished surface by an intervening air space. The latter may be formed within wall, as in the case of hollow wall construction; or, more commonly, by use of furring. In either case, condensation may still form on the cold masonry itself, even behind furred walls; hence a condensation gutter and drain at junction of floor and walls is usually desirable.

HEAT LOSSES

In addition to furring or insulation to prevent condensation it may be advantageous to use insulation to minimize heat losses from basement areas that require warmth in winter. Types of insulation that may be used with representative finished wall constructions are indicated in accompanying details.

Loss of heat through typical basement walls, with and without surface finishes and insulation materials, is indicated in Table I for a limited selection of combinations. The table will suffice to show importance of insulation where space is to be heated and relative effectiveness of various methods.

The coefficient U of heat transmission gives heat movement in Btu per hour, per square foot of interior surface of assembled construction, per degree F difference in temperature between inside air and the outside, or earth face. This figure, multiplied by temperature difference (normally 70 − 32 = 38F) and by area of wall surface in square feet will give loss of heat in Btu per hour from basement through side walls. Data are based on calculations published in the A.S.H.V.E. Guide, 1935 (Table 4, p. 102) and are not corrected for error due to exterior contact with earth instead of air. They are sufficiently accurate for comparative purposes, however.

WATERPROOF WALLS

When basement walls have an interior surface waterproofing of the cement coat or iron-oxide type, it is imperative that no nails, plugs or other attachment devices be driven into or through waterproofing material. Furring strips, in such cases, must be held in place by attachment to floor beams above or held in position by their weight or by bracing or wedging as circumstances permit.

TABLE I. INSULATION OF BASEMENT WALLS

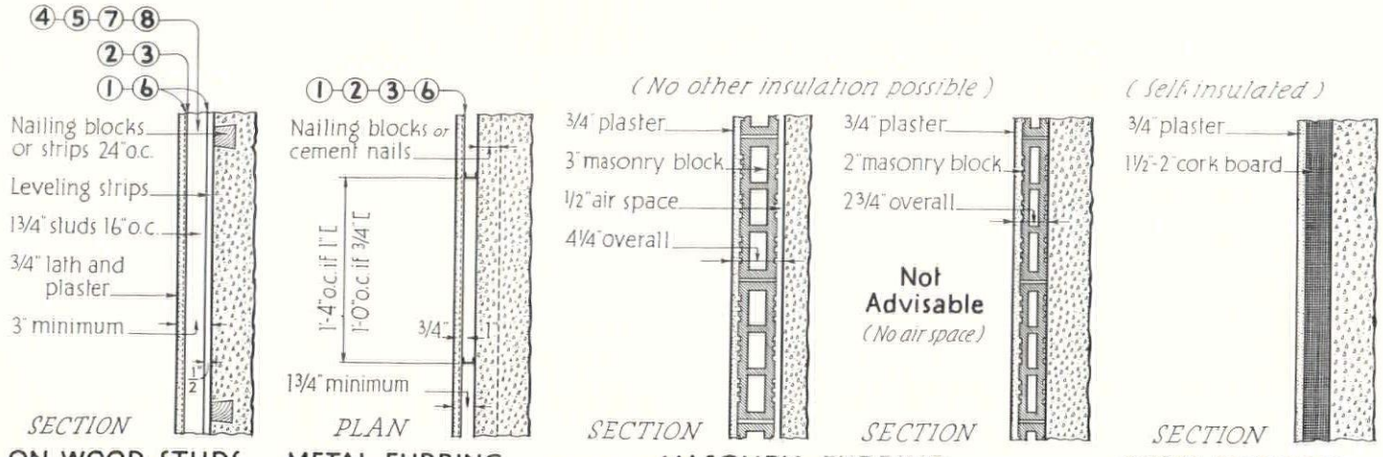
(Showing approximate overall coefficient of heat transmission U and per cent of heat transfer stopped by several insulated wall finishes)

	12" Solid Brick		16" Stone		10" Solid Concrete		12" Hollow Concrete Blocks	
	U	%	U	%	U	%	U	%
Plain walls—no interior finish	.36	....	.49	....	.62	....	.49	....
Decorated building board (1/2") no plaster—furred	.19	47	.22	55	.25	60	.23	54
Plaster (3/4") on metal lath, furred	.25	31	.31	37	.37	40	.32	35
Plaster (1/2") on plaster board (3/8")—furred	.24	33	.30	39	.34	45	.30	39
Plaster (1/2") on rigid insulation (1/2")—furred	.19	47	.22	55	.24	61	.22	55
Ditto—insulation 1" thick	.14	61	.16	62	.18	71	.16	62
Plaster (1/2") on corkboard (1 1/2") set in cement mortar—not furred	.12	67	.14	72	.15	76	.14	72
Plaster (3/4") on metal lath on furring strips—furred space over 3/4" wide faced one side with bright aluminum foil	.19	47	.22	55	.25	60	.23	54
Plaster (3/4") on metal lath on furring strips (2") with mineral fibre fill (1 5/8") protected by waterproof membrane	.11	70	.12	76	.13	79	.12	76
Plaster (3/4") on metal lath on furring strips (2")—flexible blanket type fibre insulation (1/2") between furring strips forming 1 air space only	.17	53	.20	59	.22	65	.20	59

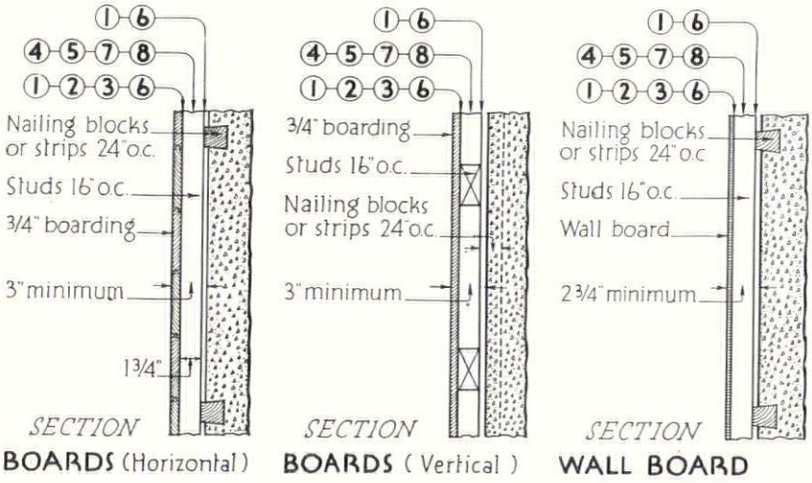
AMERICAN ARCHITECT

Time-Saver Standards

OCTOBER 1935 Serial No. 13 **Residence Basements—WALL SURFACING**



PLASTER FINISH Walls having no internal waterproofing

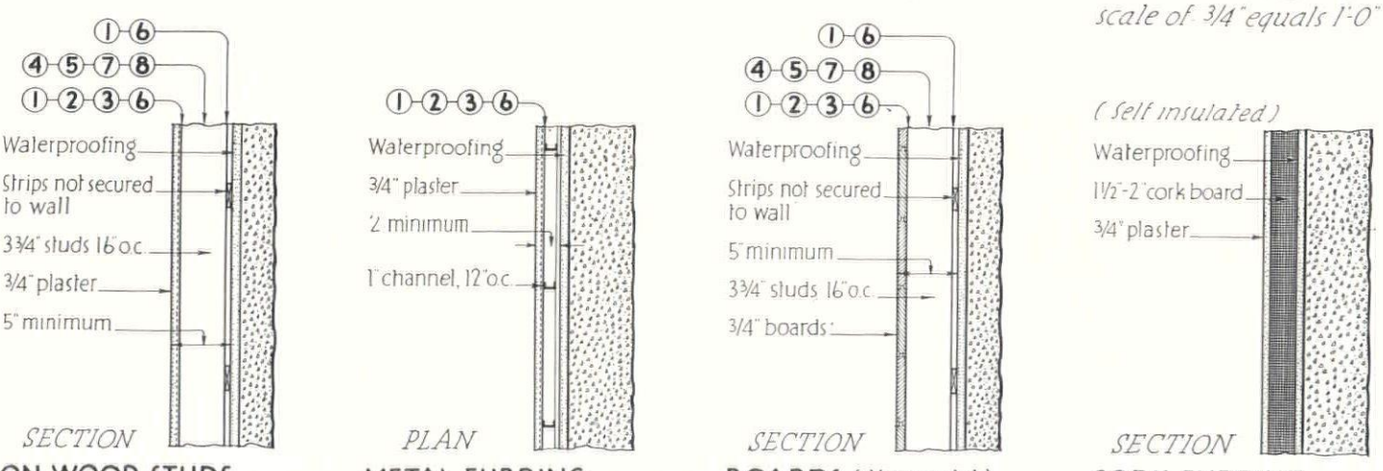


KEY TO INSULATION METHODS

① Rigid fibreboard added at point shown.
② Rigid fibreboard in place of pl. base or finish shown
③ Flexible blanket type added at point shown
④ Flexible blanket type midway in air space
⑤ Fill type, (mineral, rock or glass wool, or powdered cork or gypsum,) insulation in all space retained where needed by waterproof paper.
⑥ Bright metal curtain, single face towards air space inserted at point shown. (Where plaster is used may be bright metal-backed plaster board or plaster base)
⑦ Bright metal curtain, two-faced, dividing air space, inserted at point shown.
⑧ Bright metal multiple curtain, 2 or more layers with air space between, inserted at point shown.

WOOD *and* **WALL BOARD FINISHES** No internal waterproofing

All details are drawn to scale of 3/4" equals 1'-0"



TYPICAL FINISHES Over walls waterproofed internally by the cement-coat or iron-cement method

AMERICAN ARCHITECT
Time-Saver Standards

OCTOBER 1935 Serial No. 14

Basement CEILING HEIGHTS—PIPING

PURPOSE

Height of basement ceilings is often governed by the space required for piping or ducts over doorways or points requiring a fixed headroom. More rarely it is governed by the size and type of heating plant alone, as when ceiling heights must be kept at a minimum, regardless of headroom.

FACTORS AFFECTING DIRECT RADIATION SYSTEMS

The following affect all types of steam, vapor and water (piped) systems:

1. Slope or pitch of piping. Recommended practice 1″ in 10′; where space is limited a slope of 1″ in 15′ is permissible; absolute minimum is 1″ in 20′.

2. Length of runs of piping. Total space required to allow pipes to slope for drainage is governed by both the pitch and the length of continuous runs. Divide the length in feet along pipe from high point to low point by 10, 15 or 20 to find total drop in inches. Example: Total length of run 80′; pitch 1″ in 10′. Space required for slope of pipe is then 80/10 or 8″.

3. Clearance under piping. When piping must pass over doorways or be concealed by hung ceilings of fixed height, or when headroom is required under exposed piping at certain places, the minimum heights thus established, together with the pitch and length of pipe lines from those points, govern the amount of additional space needed under structural beams, joists or slabs to make room for the remaining piping. Arrangement of rise and drip at Y will overcome excess height from door overpass.

4. Clearance around piping. All dimensions are given to center line of piping. Allowances must be made for diameter of pipes plus thickness of pipe insulation. It is also advisable to allow an air space between piping and structural members for painting or repairs and for wrenches or welding torches used during installation.

The following factors affect only the indicated types of heating systems:

5. Steam mains in all steam and vapor systems of the up-feed type slope continuously from a high point over boiler downward to the ends, which are then "dripped" to a dry or a wet return. The main should terminate at least 24″ above boiler water line.

6. Dry returns require a drip of 24″ below the end of steam mains and should never slope to less than 6″ above boiler water line before dropping to a wet return. Hence, boiler water line plus 30″ (24″ + 6″) plus rise of dry return due to length and slope fixes the lowest point at which steam main may end. Slope of main added to this fixes minimum height of high point in main at boiler. Example: Assume a boiler water line 42″ above floor; a steam main having a total length of 75′ and a dry return of 15′. All pipes to slope 1″ in 10′. What is minimum height of main at boiler? From par. 2, rise of dry return is 15/10 = 1.5″; rise of steam main is 75/10 = 7.5″. Total rise in piping is 9″. Dry return must end 6″ over boiler water level and drip from main must be 24″. Adding these dimensions to the boiler water level we have 42″ (water level) + 24″ + 9″ + 6″ = 81″ or 6′9″ minimum height of main at the boiler. For 3″ main covered with 1½″ of insulation, ceiling height over boiler should not be less than 81″ + 3″ = 84″.

7. Wet returns should slope uniformly to boiler intake or to vacuum pump or receiver. It is possible, though often costly and troublesome, to bring wet returns below floor grade. For best practice keep them above boiler intake. Note that wet returns so arranged are obstacles to traffic unless brought along blank walls or partitions until they reach the boiler space.

8. Gravity hot water mains used in up-feed systems slope up from above boiler toward the last riser. High point at last riser is then determined as follows: From manufacturers' data find height of supply nipple above floor. To this add the rise due to slope and length (par. 2), the height added by elbow or tee connection at supply nipple and the clearances around pipe (par. 4). This height is rarely great enough to affect ceiling heights; it is usually necessary in small plants to elevate the mains at the boiler to provide normal headroom.

9. Gravity hot water returns are governed by the same considerations as wet returns (par. 7).

10. Forced circulation hot water mains and returns can be placed without regard to gravity requirements as circulation is wholly dependent upon the circulating pump. Slopes are required only for draining system.

BASEMENT RADIATION

11. One-pipe steam or vapor systems require basement radiation to be above mains. Add to height of main at least 8″ for trap and riser to radiator for steam and 2″ for vapor systems, plus height of radiator plus about 6″ above radiator to assist air circulation. The high ceiling required by this method can be avoided by providing basement radiation of the vacuum or vapor type with its own dry or wet returns, thus converting this part of the installation to a 2-pipe system.

12. Two-pipe steam systems permit radiation to be placed below steam main as in any down-feed system, providing the radiator return outlet is 24″ or more above boiler water line. Connect to dry or wet return in normal way.

13. Two-pipe vapor and vacuum systems have special requirements. (a) In vapor systems, vent and return traps are required, as indicated. Radiators can be placed 2″ above dry return. Height from boiler water level to low point of dry return where it enters vent trap depends upon EDR (See Legend, Value J). (b) If low ceiling must be held, a vacuum receiver and pump are used, placed on boiler room floor. The water level in receiver becomes the false water level. Cost of operating the pump must be considered. (c) If sub-level radiation is required, receiver and pump can be placed in a pit.

14. Gravity hot water systems permit basement radiation to be located below a down-feed main at any height that will keep the return outlet of lowest radiator 6″ above grate level of boiler. If this grate level is not given in manufacturers' data allow a minimum of 18″ from floor to radiator return outlet.

PROCEDURE

Make a tentative layout of basement partitions with their required doors. Indicate ceiling areas where all pipes must be concealed. Locate required columns and beams. Assume tentative heights from floor to door heads, underside of beams and surface of finished ceilings.

Superimpose upon this plan a tentative layout of supply and return mains, using arrows to indicate direction of slope downward from high point to low point. Study the two layouts together and seek adjustments which will keep wet and dry returns along walls or partitions which have no doorways to cross, and rearrange doorways so far as possible, to come near the high end of supply mains.

Find points in layouts where a fixed clearance under piping is necessary. Measure length of mains and returns from these points back to boiler. If conflicting pipe is a supply main, calculate the rise to high point (see par. 2) and add to fixed clearance height. Also add clearances required around piping (par. 4). The sum will be required ceiling height at high point in the main. By similar methods check height of main where it passes under structural beams or girders to determine height above floor required at these points.

If conflicting pipe is a dry return, calculate the rise in both dry return and supply main it serves and include an allowance for drip as in pars. 6 or 13. Also check downward slope toward boiler to see that dry return drips to a wet return from a point at least 6″ above boiler water line.

The highest point required in any supply main should be taken as the structural ceiling height for entire basement, unless the plan is such that different ceiling levels can be arranged according to piping requirements. If height is excessive, restudy layout and consider pit installation for boiler.

AMERICAN ARCHITECT

Time-Saver Standards

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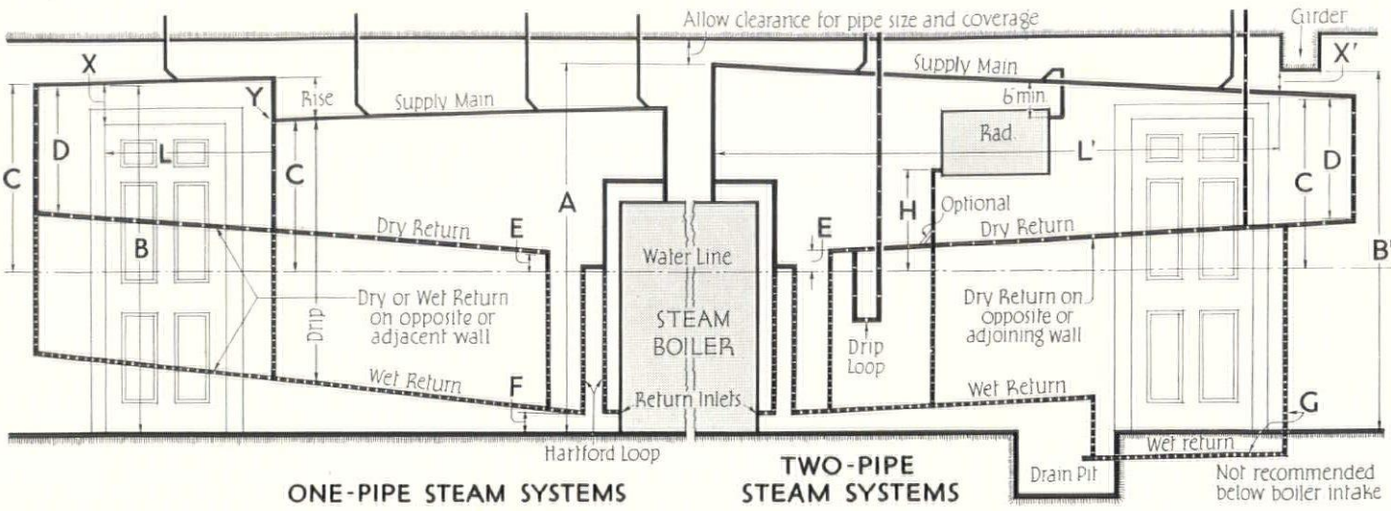
Basement CEILING HEIGHTS—PIPING



ONE-PIPE STEAM SYSTEMS

TWO-PIPE STEAM SYSTEMS

LEGEND

A = High point in piping.

X = Fixed clearance point below which no pipe passing this point may drop. X' — a fixed point in ceiling, such as a beam, above which no pipe may rise.

B, B' = Height of fixed clearance points. Height A is then governed by length L from point X along piping to high point and the slope or pitch of piping, usually 1" in 10 ft. Special condition shown at "Y".

C = Low end of steam main should not be less than 24" above boiler water line. See condition D.

D = Drip from low end of supply main to high end of dry return should be not less than 24".

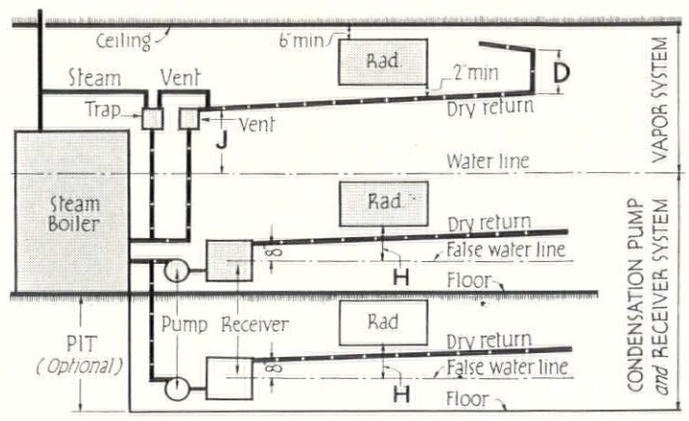
E = Low end of dry return should drip to wet return from a level not less than 6" above boiler water line.

F = Wet return should slope to return inlet. See manufacturers' data for height. Also see special condition G.

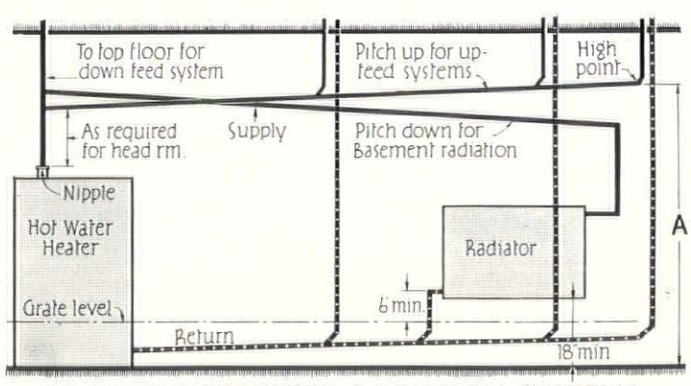
G = Wet return under floor (or below boiler return inlet) is permissible, but not recommended. Drainage pit and accessible cleanout must be provided at low point to flush out scale and sediment periodically.

H = Basement radiator outlet should not be less than 24" above boiler water line. Add height of radiator and allow 6" minimum drop from main to radiator inlet.

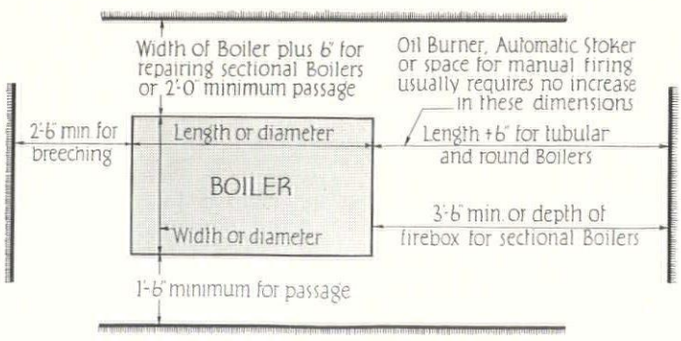
J = Height from boiler water level, to low point dry return connection at vent trap. J = 20" for 1500 sq. ft. EDR, 23" for 2500, 25" for 4000 sq. ft. EDR.



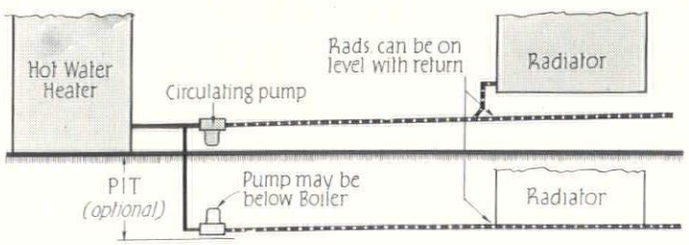
TWO-PIPE VAPOR OR VACUUM SYSTEMS



GRAVITY HOT WATER RADIATION SYSTEMS



MINIMUM HORIZONTAL CLEARANCES AT BOILER



FORCED CIRCULATION HOT WATER SYSTEM

AMERICAN ARCHITECT
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OCTOBER 1935 Serial No. 15

Basement CEILING HEIGHTS—DUCT WORK

PURPOSE

When dwellings are equipped with central warm air heating or air conditioning systems, basement ceiling heights are largely governed by the depth and disposition of the supply and return ducts and the required headroom or clearance beneath them. Methods of determining these factors are presented here.

DUCT SIZES—FORCED CIRCULATION

In all types of forced circulation air distribution systems the diameter or depth of the largest duct is the chief factor determining ceiling heights or headroom clearances in basements.

Rule 1. To estimate size of individual supply and return ducts: (a) Determine amount of air to be circulated through the duct in cubic feet per minute (cfm) as follows: Compute the volume of the rooms served in cubic feet and multiply by the desired number of air circulations per hour (see Table 1). Divide this product by 60 to convert to cubic feet per minute.

(b) Assume a velocity in basement ducts ranging from 600 to 1000 feet per minute (fpm) unless the desired velocity is known. For estimating purposes 800 fpm may be used.

(c) Divide the volume of air moved (cfm from paragraph a) by the velocity (fpm from paragraph b) and multiply the quotient by 144 to reduce to square inches of duct area. In case round ducts are to be used determine the nearest diameter in even inches from tables of areas of circles. If rectangular ducts are to be used divide the area in square inches by a minimum desired depth; if the width thus found is not over 4 times the depth selected, the dimensions thus established may be used.

Rule 2. To estimate the size of main supply and return ducts: (a) Compute the area of all branch ducts served by the main as in Rule 1.

(b) Starting at the extreme end of the main and working back toward the furnace or conditioner, add the areas in square inches of the two or more branches which leave the end of the trunk and deduct 10% to find the area of the duct at this junction.

(c) Repeat at each junction of each branch, adding the area of the branch and deducting 10% from the sum, but in no case let the trunk area fall below 70% of the area of all branches.

(d) Convert the area in square inches at the furnace to a rectangular shape as in Rule 1, c.

GRAVITY WARM AIR SYSTEMS

Individual Supply Ducts (called leaders) are required for each register or riser. They should rise not less than 1 inch per foot of length from the furnace bonnet and should not exceed 12 feet in horizontal length for satisfactory performance. Connections at the "boot" forming the base of each riser should be made with bends having a radius on the inside face equal to the leader depth.

Rule 3. To find the ceiling height required by leaders serving a gravity warm air system: Add to height from floor to top of leader take-off at bonnet of furnace (A) the rise of the longest leader (B) due to its required slope, which is the same in inches as the length of the leader (E) in feet. To this total add the diameter of the leader (F) to allow for the elbow entering the riser boot (C). This will give the minimum ceiling height D which is permissible in good practice.

Note that this has no relation to headroom under the leaders. If the octopus-like arrangement of leaders interferes with the use of basement space for other purposes it is advisable to install a furnace fan in the return duct and convert the installation to a "fan heater system." In such cases duct layouts may be arranged and ceiling heights fixed as for air conditioning systems (Rule 4).

Return and Fresh Air ducts in gravity warm air systems are normally combined and brought to the bottom of the furnace casing. Best practice is indicated by arrangement (1) in the gravity system diagram. When headroom is required under the duct, arrangements (2) or (3) may be adopted with only slight loss in operating efficiency.

TABLE I. AIR CIRCULATION PER HOUR RECOMMENDED FOR TYPICAL AREAS

Residences	3 to 4
Offices, Stores	4 to 6
Assemblies	5 to 7
Dining Rooms	6 to 8
Kitchens	30 to 60

FORCED AIR CIRCULATION SYSTEMS

Any warm air heating or air conditioning system having a fan or blower to force air movement through the ducts may employ horizontal ducts at the ceiling level. Two principal types are designated in the diagrams thus: (1) fan heater systems in which individual leaders feed each register or riser (as in gravity systems) and (2) air conditioning systems in which one or more main trunk ducts with branches serve a group of registers and risers. The distinction is more convenient than precise. In all cases, however, ceiling heights are influenced by the same factors.

Rule 4. To determine ceiling heights when horizontal forced circulation air ducts must clear any given headroom: (a) Determine depth (F) of largest main duct by Rule 2.

(b) Add to this depth (F) any clearance (G) required between the duct and the ceiling members to allow for the addition of duct insulation or to comply with local fire-safety regulations. A clearance of 2″ is considered good practice.

(c) To the sum of these dimensions (F and G) add the desired headroom H at any critical point in the plan. The total will give the required ceiling height (D) unless further allowances are required as below. Headroom H should be not less than 6′-3″ where ducts are exposed; if the ducts are to be concealed, dimension H becomes the desired finished ceiling height plus the thickness of the false ceiling construction plus clearance for duct insulation as required.

(d) All branches should turn from the horizontal to vertical risers through an elbow having a minimum inside radius equal to the depth of the branch. If elbows do not come between floor joists increase clearance G by the depth of the branch.

(e) Similarly main ducts rising out of the furnace or air conditioner should have long radius bends. Therefore check ceiling height by adding to the bonnet height (A) twice the depth of the largest duct (F) and the required clearances (G). If this total exceeds the ceiling height determined in paragraph c, increase the height D accordingly.

Return Air Ducts in forced circulation systems are designed in the same manner as supply ducts. They may enter the heater casing by any of the arrangements shown in the diagram (1, 2 or 3) as required by the unit. If return ducts must cross supply ducts, they should be located beneath the latter, and headrooms figured accordingly.

CLEARANCES AROUND UNITS

Furnaces and air conditioners should be located in the basement plan in such manner as to allow the following horizontal clearances: At stack connection side allow at least 2′-6″ for flue pipe. Make connection as at (5) in fan heater diagram whenever possible; method (6) is less desirable unless headroom is required. At sides allow minimum clearances shown on plans A and B but check with manufacturers' data to provide ample room for removing filters, water coils, boiler tubes or sections and for access to fans or blowers, motors and controls. At front allow space (M) for burner or stoker plus the indicated allowance for servicing the unit. In the case of manually fired heaters dimension M should be at least 3′-0″.

AMERICAN ARCHITECT

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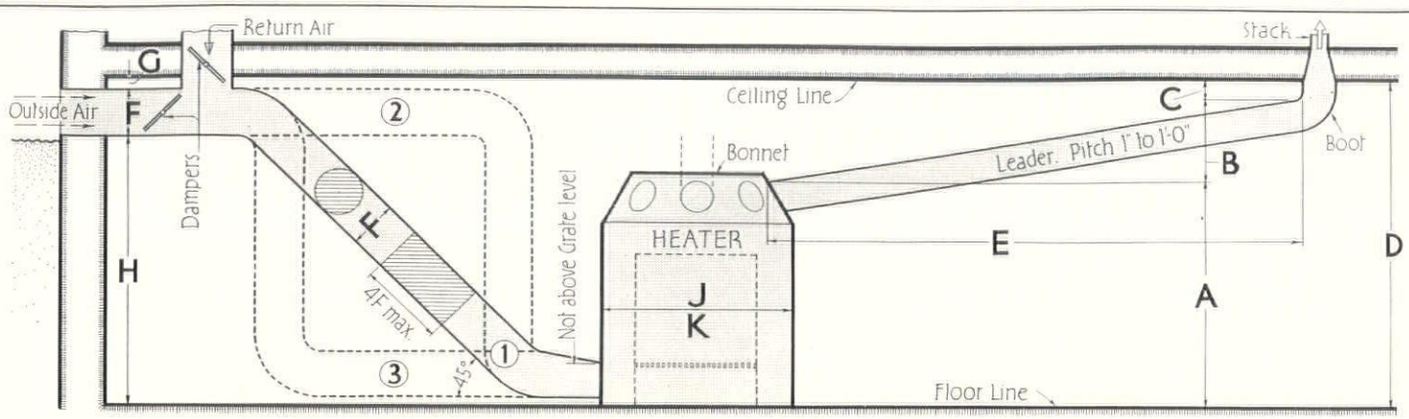
OCTOBER 1935 Serial No.15

Basement CEILING HEIGHTS—DUCT WORK



GRAVITY WARM AIR SYSTEM

LEGEND

A—Height, floor to top of leader take-off at bonnet.

B—Leader rise, one inch per foot of length = E/12.

C—Clearance for bend to boot at foot of riser = duct depth F.

D—Ceiling height. See text. In gravity systems D = A + B + C. In forced circulation systems D = H + F + G or sometimes H + 2F + G.

E—Length of Leader in feet. Not over 12'-0" for gravity warm air system.

F—Depth or diameter of duct. Should not be less than 1/4 duct width.

G—Desired clearance between duct and structural ceiling for fire safety or for duct insulation; usually 2".

H—Required headroom under lowest part of duct. Include thickness of duct insulation, if any. Desirable minimum to bare duct 6'-3".

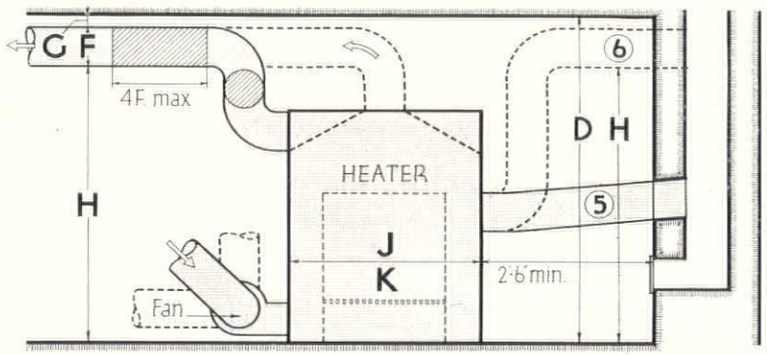
J—Width or diameter of Heater or Conditioner.

K—Length of Heater or Conditioner.

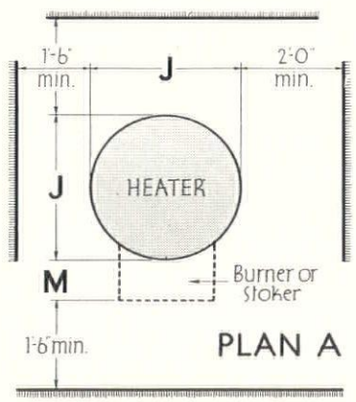
L—Space to withdraw filters, coils, tubes or sections and for access to blowers, motors, etc. See manufacturers' clearance diagrams.

M—Space required by burner or stoker. In manually fired units M = 3'-0" minimum.

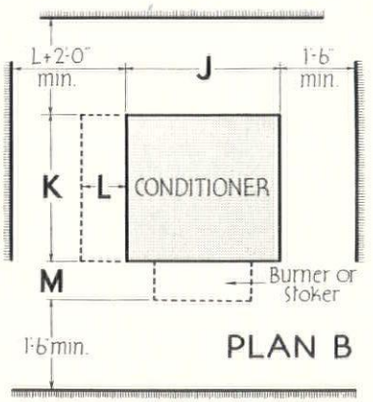
N—Girder, beam or other ceiling construction. Ducts may be bent beneath such obstructions with long radius bends if essential; straight ducts better.



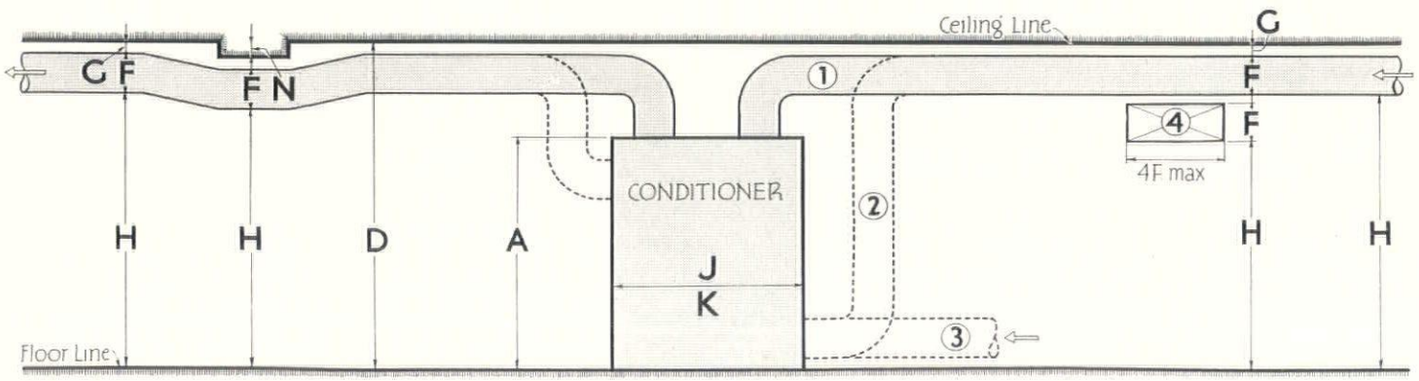
FAN HEATER SYSTEM



PLAN A



PLAN B



AIR CONDITIONING SYSTEM

AMERICAN ARCHITECT
Time-Saver Standards

OCTOBER 1935 Serial No. 16

Residence Basements—FUEL STORAGE DATA

PURPOSE

The accompanying charts and table enable the architect to determine fuel storage requirements of houses up to approximately thirty rooms in size.

Steam, hot water and warm air heating with coke, bituminous and anthracite coals and fuel oil are considered.

Data have been developed from records and practices of nationally responsible fuel distributors. They recommend that the quantity of fuel to be stored in the average residence shall be approximately 20% of the total amount of fuel required during the entire heating season. The total heating season is assumed as 210 days in computing the accompanying charts. The average load throughout the season is assumed to be one-third the maximum season load.

These recommendations are based on the further assumption that fuel deliveries can be made throughout the season with reasonable promptness after an order is placed. If the residence is so isolated that deliveries cannot be relied upon, greater fuel storage capacity than is indicated by this chart is advisable.

DATA REQUIRED

Determine type of fuel, type of heating, the trim line height in the case of solid fuel storage (as indicated on the accompanying diagram) and the Equivalent Direct Radiation, as indicated below.

HOW TO DETERMINE EQUIVALENT DIRECT RADIATION (EDR)

In new buildings the total heat loss in Btu or in EDR (steam) should be calculated in the usual manner, adding the correct allowances for piping and pick-up losses or duct losses, as the case may be. To convert the total heating load in Btu (including all losses) to EDR, divide by 240 for steam or 150 for water. In the case of warm air heating or air conditioning, convert to equivalent direct steam radiation and use the steam lines on the accompanying chart.

In existing buildings the total output of the installed boiler or furnace can usually be obtained by reference to manufacturer's data. Otherwise calculate as if for new buildings, or measure the total square feet of free standing radiation and add the normal allowances for piping and pick-up losses.

The EDR shown on the accompanying chart represents the total capacity of the boiler or furnace at its outlet.

HOW TO DETERMINE SOLID FUEL STORAGE

Find EDR at upper left margin of chart. Read right to diagonal Type of Fuel line. Read down to intermediate margin and note cubic feet of recommended storage. Continue down to Height of Trim line diagonal. Read right to Directrix. At Directrix read either right across to obtain square feet as floor area, or read down to find side of square bin equal to square foot area. Plan bin as square as possible.

Example: Anthracite fuel, steam heating. Trim line 5′-0″ (assumed). 800 EDR. Enter chart at left on 800 EDR. Read right to anthracite-steam diagonal. Reading down indicates 216 cu. ft. as recommended minimum storage. Continue through 5′-0″ trim line and Directrix to margin giving an area of 43 sq. ft. Side of square bin equal to this area is shown as 6′-7″ reading down from Directrix. No bin should be less than 3′-0″ in either direction. On chart the Anthracite-Steam and Coke-Hot Water diagonals coincide mathematically. No definite relation between them exists.

HOW TO DETERMINE LIQUID FUEL STORAGE

Liquid fuel is here considered to be fuel oil for domestic burner purposes. Since tank sizes are standardized, a considerable range of heating loads may be served by one size of tank. Find in the first or second column of the accompanying table the EDR for steam or hot water nearest to the total load in the given project. Read to the right for the standard size of tank in gallons and in the remaining columns for its approximate size and proper location. If the total project load in EDR is between the EDR loads shown in Columns 1 and 2, it is generally advisable to install the larger tank thus indicated unless the dwelling is in a suburban locality where prompt fuel deliveries are assured at all times.

Example: Assume the project has a load of 800 sq. ft. EDR, steam heating. Upon examination of the table this load appears to fall between 700 and 1400 EDR steam. A tank with a capacity of 550 gallons may be used in locations with adequate delivery services, but better practice would indicate the use of the next larger size tank having a capacity of 1080 gallons.

The 275-gallon tanks are generally obround; i.e. flat top and bottom and rounded sides; and are usually placed inside. Larger tanks are cylindrical. Standard tanks larger than those listed in the table are available. There are two 2000-gallon tanks good for 2700 steam or 4320 hot water recommended minimum storage, one being 5′-4″ diameter and 12′-0″ long and the other 5′-0″ x 14′-0″, and two 3000-gallon tanks good for 4000 steam and 6400 hot water, one 6′-0″ x 14′-0″ and the other 5′-4″ x 18′-0″. In addition, 5000- and 10,000-gallon tanks are available, but sizes vary.

FUEL TONNAGE IN RECOMMENDED STORAGE

To find the weight of fuel in tons which can be accommodated in storage bins of the recommended size, multiply cubic feet required by 0.015 for coke, 0.0235 for bituminous, and 0.0265 for anthracite coal. Fuel oil is already determined in gallons from table.

Example: 220 cu. ft. recommended minimum storage. 220 x 0.0265 = 5.83 tons anthracite.

FUEL STORAGE FOR TOTAL SEASON

Recommended minimum storage is for urban districts with normal fuel delivery service. In outlying or isolated districts it may become necessary to provide additional storage for part or all the total heating season requirement.

To find the cubic feet of space required to store the solid fuel needed throughout an entire heating season, multiply the recommended storage capacity in cubic feet by 5. Divide this by the trim line height to obtain the area of the bin in square feet.

Example: 220 cu. ft. recommended minimum storage (assumed). 220 x 5 = 1100 cu. ft. required for total season.

To find the size of fuel oil storage tank required to hold an entire season's requirements, multiply the steam heating load (EDR) by 5, before selecting tank size in gallons.

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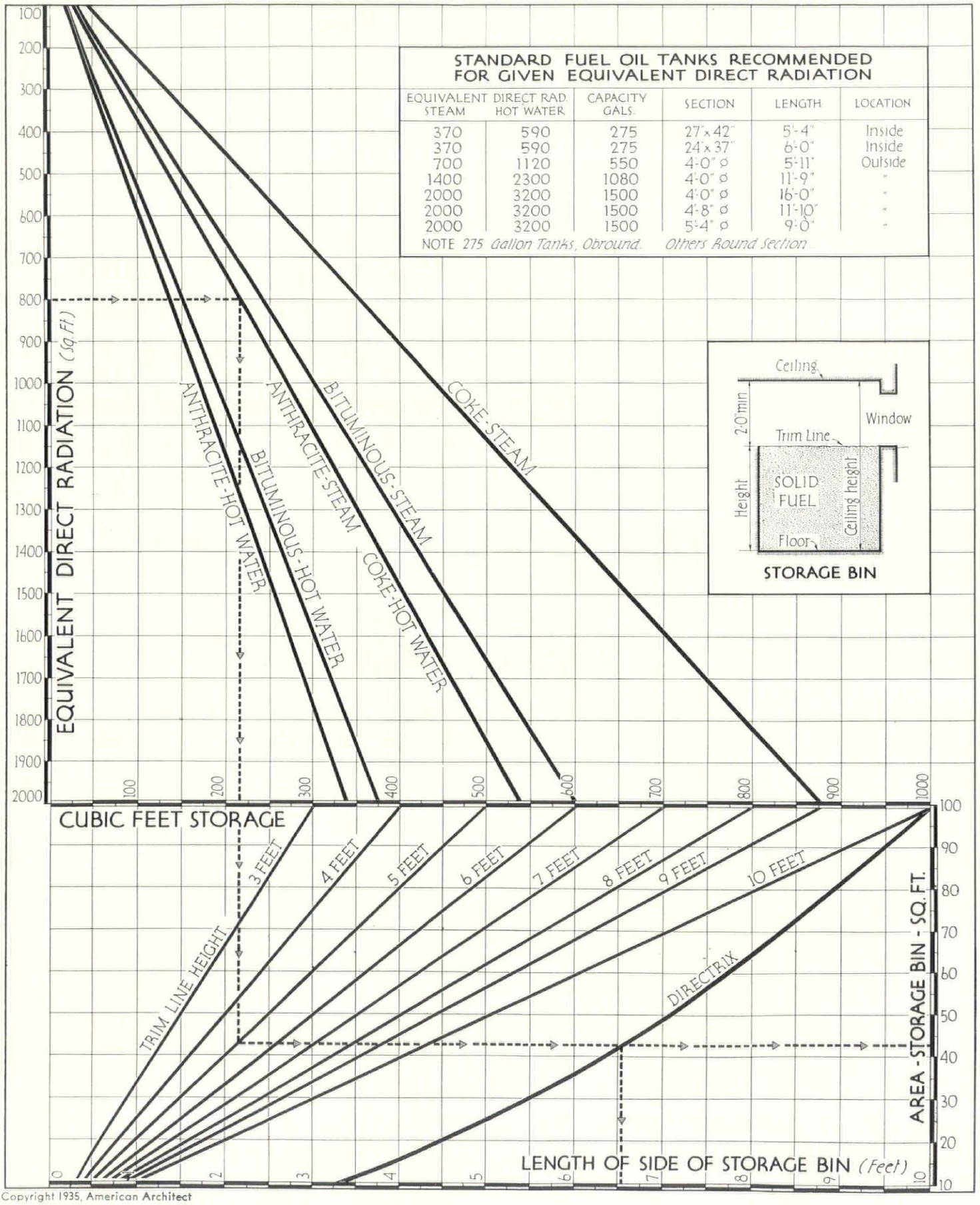
OCTOBER 1935 Serial No. 16

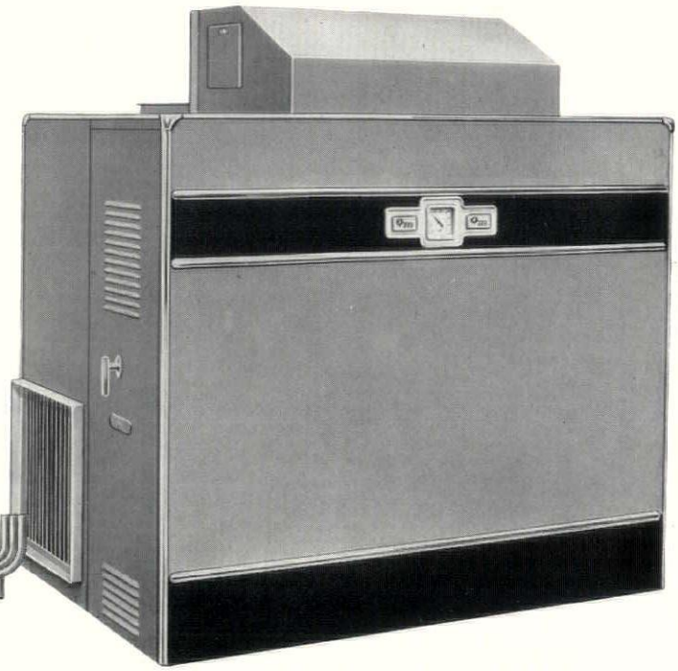
Residence Basements—FUEL STORAGE DATA



STANDARD FUEL OIL TANKS RECOMMENDED FOR GIVEN EQUIVALENT DIRECT RADIATION

EQUIVALENT DIRECT RAD. STEAM	HOT WATER	CAPACITY GALS.	SECTION	LENGTH	LOCATION
370	590	275	27"x42"	5'-4"	Inside
370	590	275	24"x37"	6'-0"	Inside
700	1120	550	4'-0" ø	5'-11"	Outside
1400	2300	1080	4'-0" ø	11'-9"	"
2000	3200	1500	4'-0" ø	16'-0"	"
2000	3200	1500	4'-8" ø	11'-10"	"
2000	3200	1500	5'-4" ø	9'-0"	"

NOTE 275 Gallon Tanks, Obround. Others Round Section



introducing the new

QUIET MAY

"steam-air-conditioner"

combining . . . . conditioned warm air heating
. . . . steam radiation heating
. . . . all-year tankless domestic hot water
. . . . controlled summer air circulation

EXPERTS in heating and air conditioning have long agreed that in residential work both radiation heating and conditioned warm air heating should be combined for ideal results. They also seek automatic all-year domestic hot water and some simple method of securing summer comfort.

. . . because warm air heating of living rooms and bedrooms permits effective air conditioning at minimum cost.

. . . because radiation heating in kitchens, bathrooms, garage and sometimes servants' quarters prevents the recirculation of odors or noxious fumes through the air conditioning system, or saves long extensions of duct work.

. . . because domestic hot water is needed at all times and can be cheaply provided by coils submerged in a steam boiler.

. . . because the same blower and filters needed for winter conditioning can maintain cleaned air circulation all year, to the great improvement of summer comfort.

FOR the first time these ideals are met in a single unit—the Quiet MAY "steam-air-conditioner." It heats by both steam radiation and conditioned warm air, it automatically provides domestic hot water all year around by a tankless heater of unique type; it cleans and circulates the air in winter as part of its air conditioning function and in summer to produce the cooling effect of a gentle breeze. Mechanical cooling and dehumidifying equipment may be added at any time by making simple provisions in the duct work.

All equipment is contained within a compact cabinet of furniture steel beautifully finished in grey and black with chromium trim.

The foundation of this new Quiet MAY "steam-air-conditioner" is the successful Quiet MAY Oil Furnace featuring the sapphire atomizer and Gerotor pump, the patented Ther-MAY-lator, combustion chamber, and the year 'round *tankless* domestic hot water heater submerged in the boiler water.

Incorporated in the engineering design are—a large capacity slow-speed centrifugal blower; oversize Air-mat replaceable filters for air cleaning; a fully automatic evaporating type humidifier of adjustable capacity and a simple "dry-back" heat economizer which forces the flue gases to part with all waste heat before entering the stack.

Carefully balanced and integrated through newly devised controls, this scientifically designed "steam-air-conditioner" is easily installed in old houses utilizing the existing warm air duct distribution system; or in any house, new or old, in which both ducts and radiators can be introduced for ideal results.

The following pages give complete design and layout data covering all eight models (four different sizes) in which the Quiet MAY "steam-air-conditioner" is available.

MAY OIL BURNER CORPORATION
Factory and Executive Offices: Baltimore, Md., U.S.A.
MAY OIL BURNER OF CANADA, LTD., Toronto, Can.
Consult Telephone Directory for Nearest Quiet MAY Branch Office or Authorized Dealer

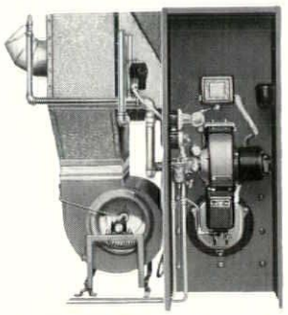
A PRODUCT OF MAY OIL BURNER CORPORATION, BALTIMORE, MD.

AMERICAN ARCHITECT
Time-Saver Standards
OF ADVERTISED PRODUCTS

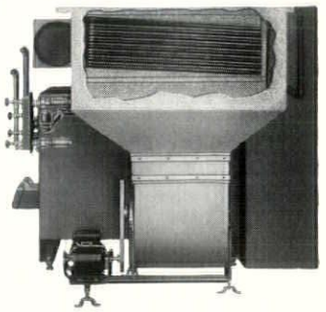
OCTOBER 1935, Serial No. A3.1

QUIET MAY "STEAM-AIR-CONDITIONER"

FRONT VIEW



UNCOVERED LEFT END VIEW



UNCOVERED REAR VIEW

PURPOSE

The Quiet MAY "steam-air-conditioner" is designed for so-called "split" or, more properly, "combined" systems of radiation heating and winter air conditioning, including an all-year around tankless domestic hot water supply. This type of system supplies conditioned warm air through ducts to certain rooms while permitting other areas (such as bathrooms, kitchens, garage, from which recirculating ducts are not desirable) to be heated by steam radiators or convectors. The unit is made in sizes suitable for residences and similar buildings, and may be used in existing structures having a duct distribution system as well as in new buildings. Cooling and dehumidifying equipment may be added at any time.

DESCRIPTION

(1) **Heat** is supplied by a Quiet MAY Oil Furnace of the improved design successfully introduced over two years ago. Steam is delivered in part to mains supplying direct radiators or convectors and in part to extended fin-type heat transfer coils in the air conditioning chamber within the unit. In addition, a "dry-back" heat exchanger in which flue gases release their heat units to circulating air acts as an economizer.

(2) **Air circulation** is provided by a quiet, low-speed centrifugal blower of large volume capacity.

(3) **Air cleaning** by oversized Air-mat replaceable filters is provided in either or both return air intakes, as required.

(4) **Humidification** is provided automatically by an evaporating tray mounted directly upon the boiler shell in the path of the air stream, with an adjustable float-controlled supply. Humidistat control can be provided, if desired.

(5) **Domestic hot water** is provided by a submerged tankless heater of sufficient size to utilize practically the full output of the boiler.

(6) **Summer comfort** is aided by use of fan and filters to provide controlled circulation of cleaned, *unheated* air. A damper makes this possible without interfering with summer domestic hot water heating.

CONTROLS

Domestic hot water is maintained at proper temperature, summer and winter, by an aquastat uniquely positioned within the heater tubes, that has precedence over all other operating controls. Room temperatures are governed by a room thermostat which, upon call for heat, first starts the oil-burner and prepares the fan. The fan, however, does not operate until there is heat in the steam-to-air heat exchanger.

HOW TO SELECT PROPER SIZE

The total heat loss from the building to be served should be calculated by usual methods, room by room, and expressed in Btu's per hour.

Determine which rooms are to be heated by radiators or convectors, and which are to be air-conditioned through a circulating duct system. In general, use radiation in rooms from which objectionable odors or noxious gases may be recirculated, such as garages, kitchens, bathrooms; also in servants' quarters, attic space or wherever conditioned air is not needed.

Add to the total direct radiation load (in Btu) the allowance for the calculated piping and pick-up losses. It is recommended that the combined piping and pick-up loads be taken as about 70% of the standing radiation. The gross direct radiation, including piping and pick-up loads in Btu should not exceed the capacity indicated for the selected unit in Col. IV of the accompanying selection table.

Similarly, compute the total heating load supplied by warm air through ducts and add a normal allowance (usually 25%) for duct losses. The gross warm air load including duct losses (in Btu) should not exceed the capacity indicated for the selected unit in Col. II, nor should it be less than the minimum Btu to air indicated in Col. III of the selection table.

The total load, consisting of standing direct radiation, piping and pick-up loads, warm air heating load and duct losses, should not exceed the total Btu output of the selected unit shown in Col. I of the selection table.

DOMESTIC HOT WATER LOADS

Note that no allowance for domestic hot water supply need be made in determining loads on boiler. This is due to the fact that the automatic control of the tankless heater does not permit the boiler to be taxed simultaneously by the heating load and the domestic hot water load. Check the domestic hot water requirements in gallons per hour for 90 F rise; if it does not exceed the capacity indicated for the selected boiler in Col. V an ample supply is assured. If abnormal domestic hot water loads must be served a submerged heater and tank may be used, but in this event the advantages of the Quiet MAY tankless heater are lost and the domestic hot water load, in Btu, must be added to the heating loads when determining the total required boiler output.

DESIGN OF DUCT SYSTEM

The duct system, consisting of supply and return ducts, should be designed in the normal manner, with a total resistance pressure not exceeding ⅜" of water on units number 17 and 18 and ¼" on units number 15 and 16. Because of the oversize blower, the manufacturer can modify fan speeds and air volume to provide the desired cubic feet per minute air delivery at grille outlet temperatures down to 120 F. Fan speed is adjusted on the job by changes in pulley ratios and the system is properly balanced as part of the installation contract.

ENGINEERING SERVICE

Architects are invited to submit drawings of new or existing projects for complete engineering service. Communicate direct with factory or nearest Branch Office or Authorized Dealer.

QUIET MAY

MAY OIL BURNER CORPORATION
Factory and Executive Offices: BALTIMORE, MARYLAND, U. S. A.
MAY OIL BURNER OF CANADA, LTD., Toronto, Canada

AMERICAN ARCHITECT
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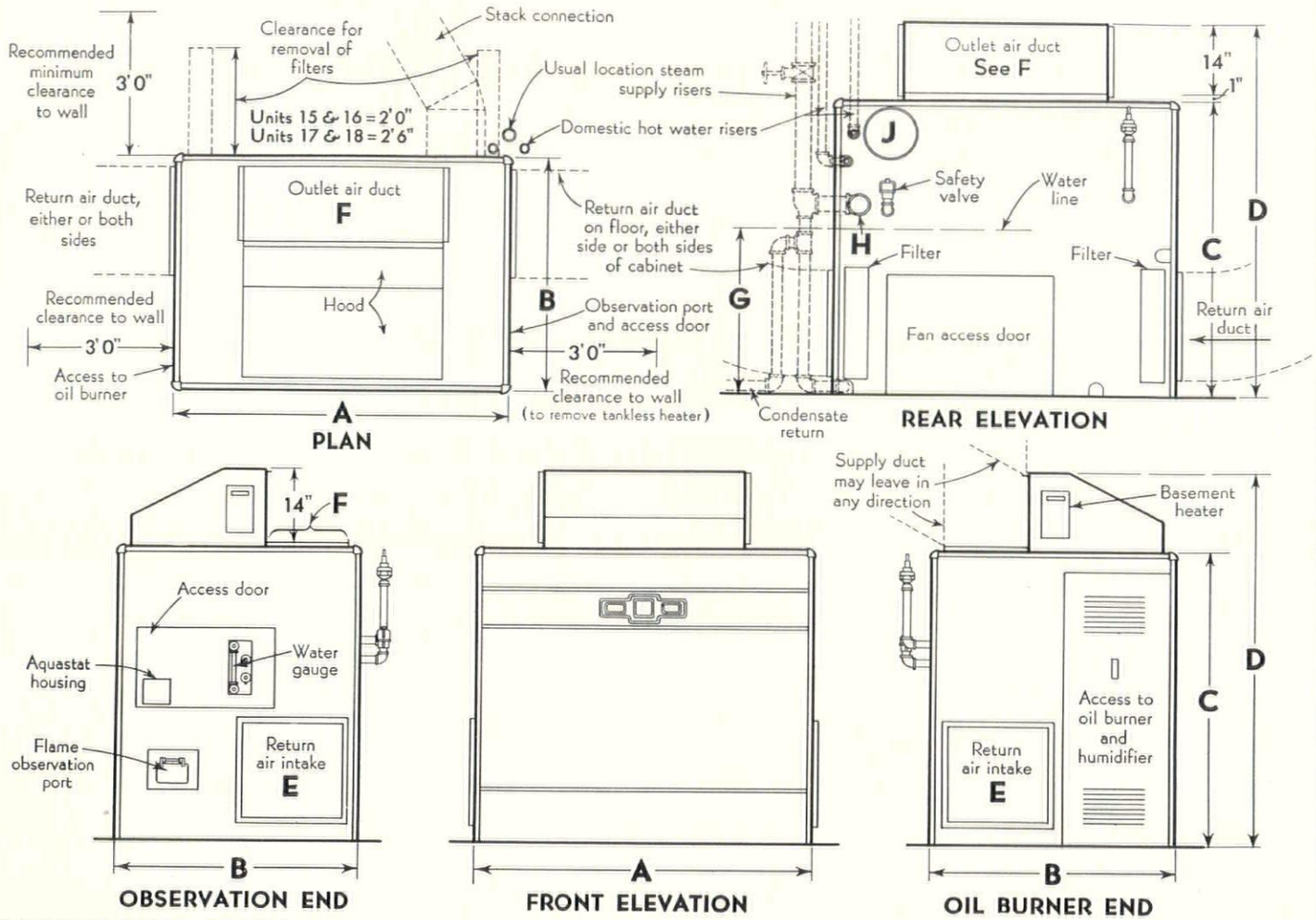
OF ADVERTISED PRODUCTS

OCTOBER 1935, Serial No. A3.1

QUIET MAY "STEAM-AIR-CONDITIONER"



SELECTION TABLE

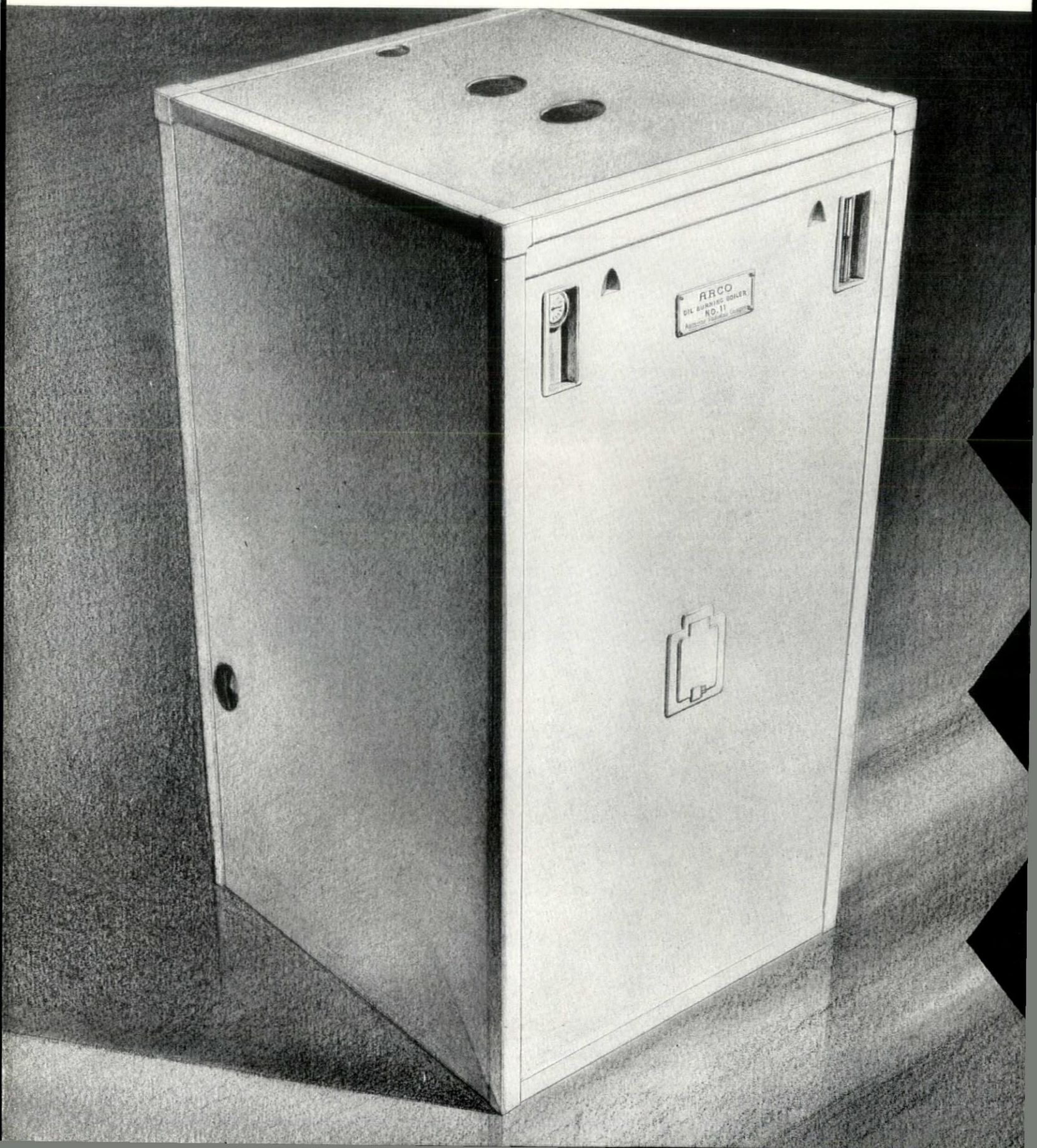
DIMENSIONS

UNIT		TOTAL OUTPUT	AVAILABLE FOR WARM AIR DISTRIBUTION		AVAILABLE FOR DIRECT RADIATION	DOMESTIC HOT WATER	CRITICAL PLANNING DIMENSIONS see plan for clearances required									
Models designated "A" have enough air heating capacity to supply total output to warm air system. Those designated "R" have smaller heat exchangers and part of capacity must be used for direct radiation.		Maximum available for heating, including all duct and piping losses. May be divided between air and steam within limits shown in Cols. II, III and IV.	Total air heating demand, including heat delivered at registers plus duct losses. This total may be any part of max. Btu to air (Col II) but not less than min. Btu to air (Col. III)		Total direct radiation demand including standing radiation plus piping and pick-up loads.	Domestic hot water load is independent of heating load with Quiet May tankless heater and controls, see text. Use this column only for checking capacity	MIN. WIDTH DOORWAY ADMITTING UNIT	LENGTH of cabinet	WIDTH of cabinet	HEIGHT of cabinet without dome	OVERALL HEIGHT of cabinet with dome	RETURN AIR CONNECTIONS (2 each)	OUTLET AIR CONNECTION - horizontal area	WATER LEVEL of boiler above floor	STEAM MAIN OUTLET, pipe diameter	FLUE CONNECTION, diameter
			Total warm air heating demand plus direct radiation demand may not exceed total output of boiler (Col. I)													
Model No.	Oil Rate (Gals./hr.)	Total Output in Btu COL. I	Maximum Btu to Air COL. II	Minimum Btu to Air COL III	Maximum Btu to Radiation COL. IV	Gallons per Hour, 90 F Rise COL. V		A	B	C	D	E	F	G	H	J
15-A 15-R	1.07	120,000	120,000 60,000	60,000 40,000	60,000 80,000	133	1'8½" 1'8½"	5'0½"	3'7½"	4'6¾"	5'9¾"	20"x 20"	36"x 15"	2'6¾"	2"	10"
16-A 16-R	1.51	170,000	170,000 85,000	85,000 55,000	85,000 115,000	200	1'8½" 1'8½"	5'0½"	3'7½"	4'6¾"	5'9¾"	20"x 20"	36"x 15"	2'6¾"	2"	10"
17-A 17-R	2.32	260,000	260,000 130,000	130,000 65,000	130,000 195,000	300	2'0" 2'0"	7'7"	4'6½"	5'4¾"	6'7¾"	20"x 22"	48"x 21½"	3'0½"	2½"	12"
18-A 18-R	3.06	340,000	340,000 170,000	170,000 85,000	170,000 255,000	400	2'2" 2'2"	7'7"	4'6½"	5'4¾"	6'7¾"	20"x 22"	48"x 21½"	3'3"	3"	12"

Notes: All ratings based on 2 pounds steam pressure. Volume and velocity of air, and grille temperatures are adjusted on job by installer by varying fan speed to suit conditions. ¼" water for units 15 and 16, or ⅜" water for units 17 and 18 is allowed the designer for resistance pressure of duct system.

QUIET MAY

A NEW OIL BURNING boiler joins the



products in the complete line of

AMERICAN RADIATOR HEATING SYSTEMS

NO. 11 ARCO

OIL BURNING BOILER
for small homes

Designed especially to meet the requirements of automatic heating in small homes

Winter and summer hot water supply and other necessary accessories are built in

Available with regular or extended jacket completely enclosing burner and all controls

• In the new No. 11, the small home now has a *small*, cast iron, oil burning boiler that is not a makeshift, but was designed specifically to meet the requirements of automatic oil heating.

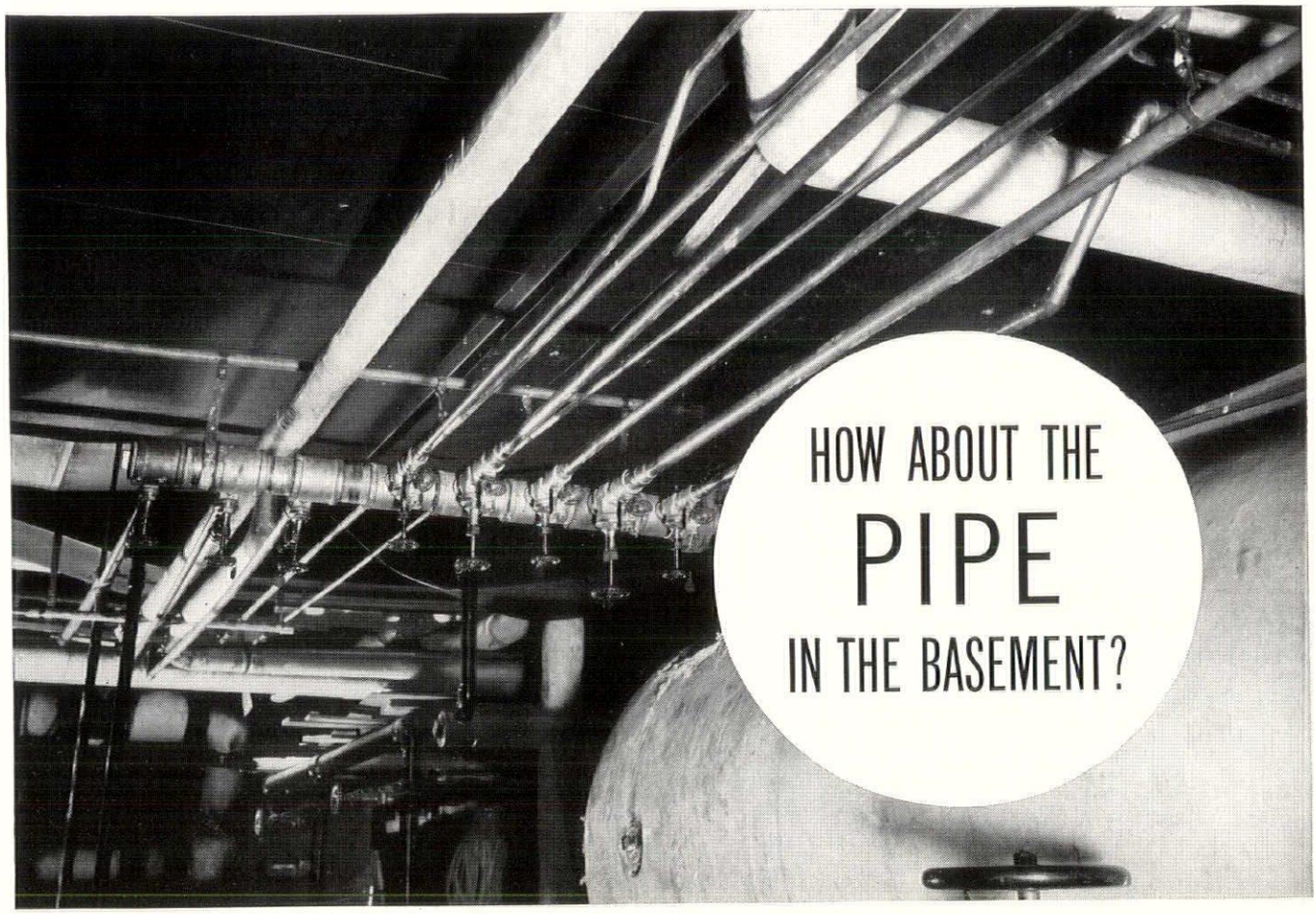
• The No. 11 is a companion to the famous No. 12. It includes all the features of the No. 12, plus new features developed through field work and research. The design of the sections for example is such that the boiler can lose a considerable amount of water before the line will drop appreciably. This overcomes a common cause of trouble in automatic heating where the boiler is rarely looked after.

• Likewise, the solution of other practical problems dictated the design of the high arched combustion chamber; the novel arrangement of flue passages; and many of the other features that make the No. 11 virtually a new kind of boiler.

• Like all other heating products in the complete line of American Radiator Heating Systems, the No. 11 Oil Burning Boiler is backed by the resources of the world's largest manufacturer of heating equipment. Its performance is assured by the best known name in heating.

AMERICAN RADIATOR COMPANY
40 West 40th Street, New York, N. Y.
Division of AMERICAN RADIATOR & STANDARD SANITARY CORPORATION

BETTER HOUSING PROGRAM



WHEN you lay out plans for a basement, give careful thought to the piping. Choose a plumbing pipe that is modern and attractive, easy to install and not in the way, rust-proof and trouble-proof for years to come.

Revere Copper Water Tube meets these requirements. It is trim and neat, thanks to Streamline soldered Fittings. It is easy to install, because it comes in long lengths. And since it can be bent around obstructions, it fits in tight places and hugs the wall or ceiling. In addition, Revere Copper Water Tube is rust-proof and leak-proof for the life of the building . . . future repairs and replacement are reduced to a minimum. For these reasons, more architects every day specify Revere Copper Water Tube.

In specifying this tube, note that it is available in three types . . . K, L and M . . . to meet the corrosive conditions and price considerations of the particular installation. It comes in two tempers: Hard, for new and exposed work . . . Soft, for concealed replacement work and those places where flexibility is desired. Revere Copper Tube is 99.9% pure copper . . . and 100% useful metal, because no threading is required.

Copper tube is just one of Revere's many copper, brass and bronze products. Architects have long known and recommended Revere Sheet Copper for roofs, flashings, skylights, cornices, and other sheet metal work . . . Revere Leadtex (lead-coated sheet copper) for special decorative sheet metal effects . . . Revere Architectural Bronze Panel Sheets and Extruded Shapes for entrances, fronts, and grilles . . . Revere Brass Pipe and Red-Brass Pipe . . . Herculoy, Revere's patented high-strength non-corrosive alloy, for hot water storage tanks . . . and now, the new Revere Thru-Wall Flashing or Cheney Flashing.

For further details about Revere Copper Water Tube or any other Revere products, address our Executive Offices, 230 Park Avenue, New York City.

Revere Copper *and* Brass

FOUNDED BY PAUL REVERE 1801

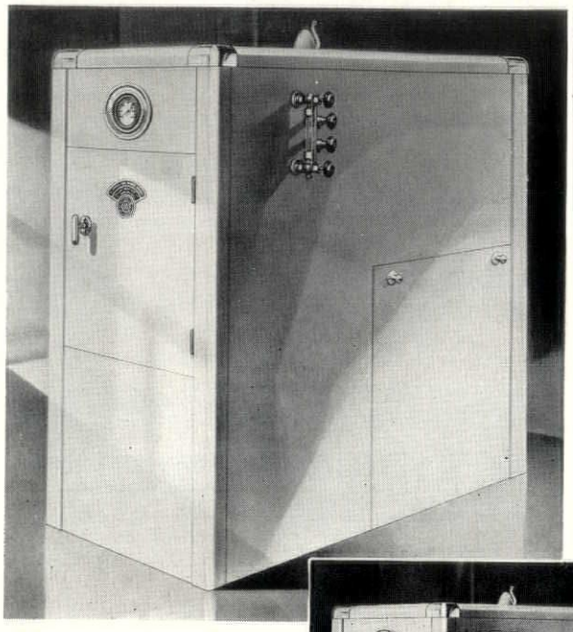
INCORPORATED

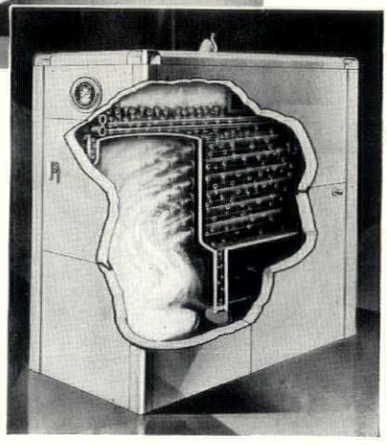
EXECUTIVE OFFICES: 230 PARK AVENUE, NEW YORK CITY · MILLS: BALTIMORE, MD. · TAUNTON, MASS. NEW BEDFORD, MASS. · ROME, N. Y. · DETROIT, MICH. · CHICAGO, ILL. · SALES OFFICES IN PRINCIPAL CITIES

FITZGIBBONS OIL-EIGHTY AUTOMATIC

. . . *The*

basement planner's *best friend* . . .





The MODERN BASEMENT is the offspring of automatic oil heating . . . and the starting point of basement planning is the heating unit.

The greatest aid to basement planning is a heating unit that provides the maximum of compactness and attractiveness, of course, in combination with efficient heating performance.

And that is precisely what the FITZGIBBONS OIL-EIGHTY AUTOMATIC offers. Modernly beautiful outside, and a masterpiece of scientific boiler design and construction inside, this enduring, corrosion-resistant COPPER-STEEL boiler is the best friend any basement planner ever had.

Two advantages of this boiler in particular, add greatly to its space-saving and appearance-enhancing advantages: The burner can be entirely concealed within the confines of the boiler jacket; INSTANTANEOUS HOT WATER can be provided *without a storage tank.*

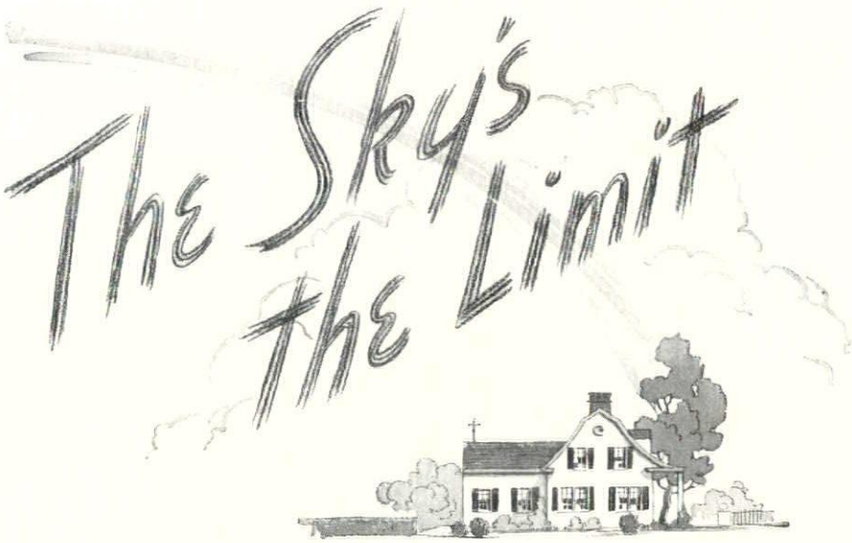
Whether it's for a new home or for one you are modernizing, start your basement planning with the FITZGIBBONS OIL-EIGHTY AUTOMATIC. It is adapted to steam, hot water or vapor systems, and comes in *13 different sizes* to fit any residence from the small home to the large estate. And it can be bought on the FITZGIBBONS FHA THREE YEAR PURCHASE PLAN.

The FITZGIBBONS
OIL-EIGHTY AUTOMATIC

has another advantage— it leaves free the selection of the oil burner, *for it will team up with any one to form a modern unit of outstanding efficiency — a unit that will assure the contentment of adequate, dependable, low-cost oil heat, plus the added comfort of copious clean hot water.*

Fitzgibbons Boiler Company, Inc.

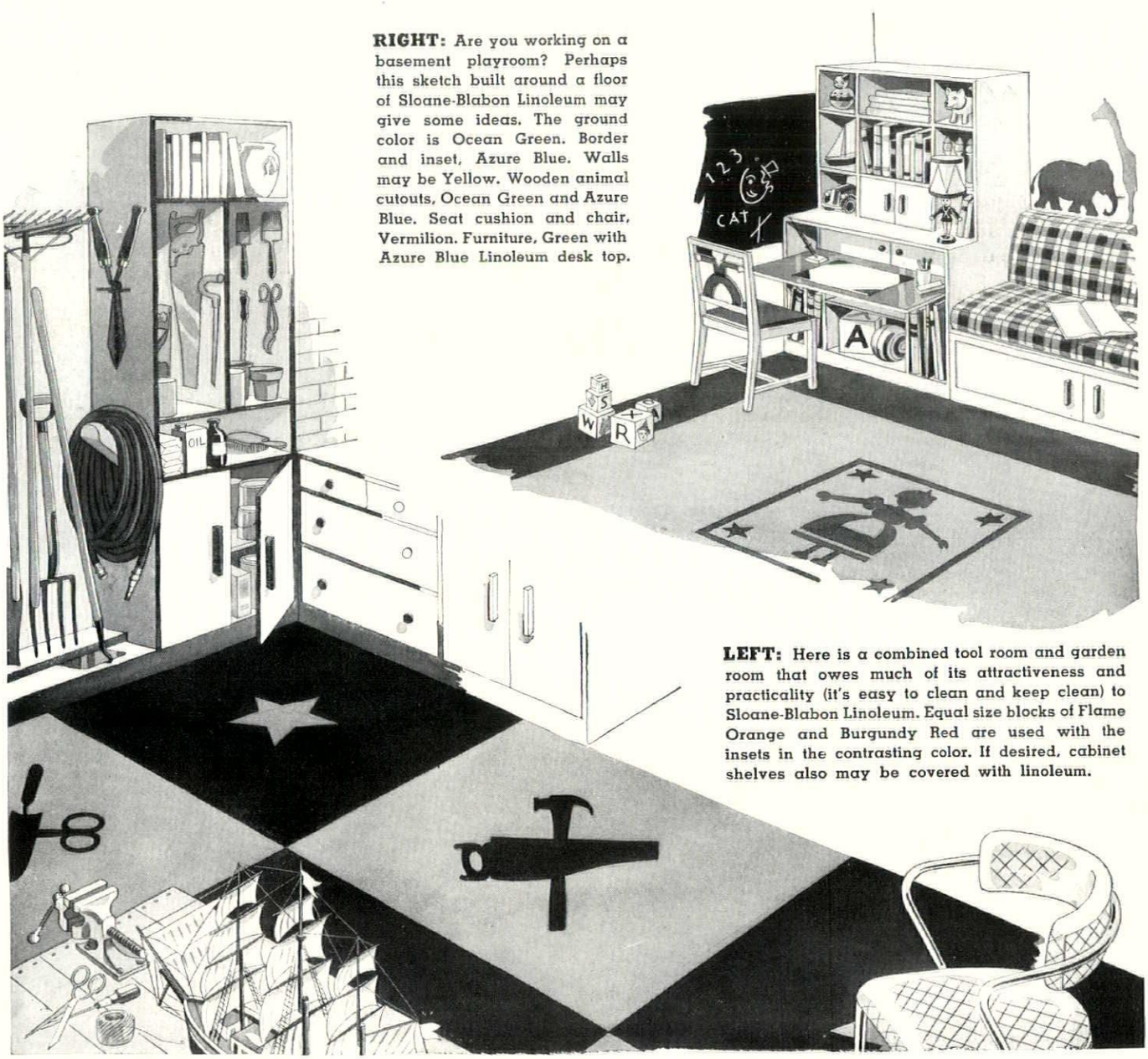
GENERAL OFFICES: 570 SEVENTH AVE., NEW YORK, N. Y.
Works: OSWEGO, N. Y.
BRANCHES AND REPRESENTATIVES IN PRINCIPAL CITIES



WITH the new pastel shades in three gauges now available in Sloane-Blabon Linoleum there literally is no end to the distinctive floor designs you can work out. The sky's the limit . . . even in basement rooms. Why not let us send you samples so that you can visualize their possibilities? W. & J. Sloane Selling Agents, Inc., 577 Fifth Ave., New York.

SLOANE-BLABON LINOLEUM

RIGHT: Are you working on a basement playroom? Perhaps this sketch built around a floor of Sloane-Blabon Linoleum may give some ideas. The ground color is Ocean Green. Border and inset, Azure Blue. Walls may be Yellow. Wooden animal cutouts, Ocean Green and Azure Blue. Seat cushion and chair, Vermilion. Furniture, Green with Azure Blue Linoleum desk top.



LEFT: Here is a combined tool room and garden room that owes much of its attractiveness and practicality (it's easy to clean and keep clean) to Sloane-Blabon Linoleum. Equal size blocks of Flame Orange and Burgundy Red are used with the insets in the contrasting color. If desired, cabinet shelves also may be covered with linoleum.

How one Designer Planned a Basement

WITH

General Electric Air Conditioning

THE man who designed this basement game room for a "New American" home tells us he had a lot of pleasure in doing it. Inspired by the compactness and beauty of the G-E Oil Furnace and the straight, clean lines of the G-E Air Conditioning unit, he formed a fitting paneled alcove by an ingenious closet arrangement. In one closet is housed the household water tank. In the other the condensing unit for cooling.

The flexibility, long life and lower operating costs of G-E Air Conditioning equipment appeal to every architect. It is adaptable to new homes or old. One room, one floor or an entire house may be adequately conditioned. There may be a split system which permits of radiators where wanted and conditioned air through grilles in the other rooms. You have wide latitude in planning.

Your local G-E dealer with trained air conditioning specialists will supply you with all the engineering aid required, take full responsibility for installation, performance and service.

For quick specification data see your Sweet's Catalog. For surveys, estimates or more detailed information call either on the G-E dealer or write direct to General Electric Company, Air Conditioning Department, Division 32034, Bloomfield, New Jersey.

GENERAL ELECTRIC AIR CONDITIONING

KEWANEE

ROUND Type "R" Steel BOILERS

for HEATING HOMES with OIL!

KEWANEE Type "R" with ROUND Jacket

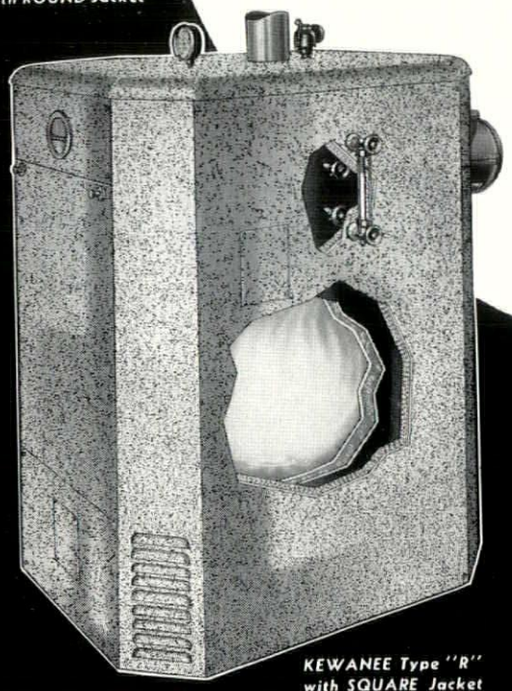
For those wishing maximum utility at least cost—the Round Kewanee with its attractive Round insulating jacket . . for those preferring streamline appearance—Square and Regal Jackets to completely enclose the Kewanee Round "R" with any type burner.

But with all this well groomed appearance, let's not forget that for performance: "It's what's under the jacket that counts." Hence the great importance of this "Heart of Steel" with all those features of design, engineering and construction which have made the Kewanee Round "R" Boiler so economical for heating homes and smaller buildings.

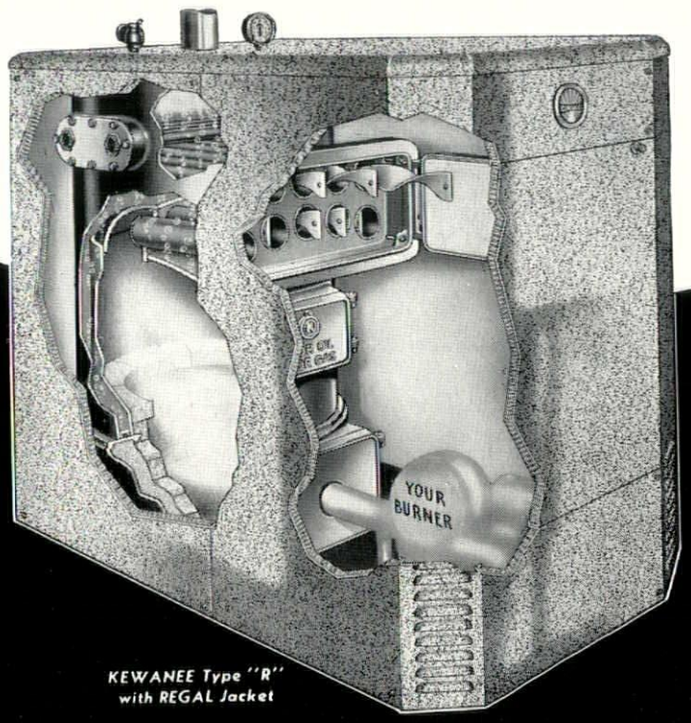
KEWANEE BOILER CORPORATION

KEWANEE, ILLINOIS *(Branches in Sixty-one Principal Cities)*

Eastern District Office: 37 West 39th Street, New York City



KEWANEE Type "R" with SQUARE Jacket



KEWANEE Type "R" with REGAL Jacket

ANNOUNCING

THE NEW SUNBEAM AIR CONDITIONING UNIT

IN THE NEW SUNBEAM Oil Burning Air Conditioning Unit, a pioneer organization in the heating, ventilating and air conditioning industry combines with efficiency of the highest order, beauty and attractiveness that heretofore have never been attained!

It is the result of 50 years of heating experience . . . . the result of successful air conditioning installations that number well into the thousands . . . . . installations that have performed successfully for several years, from New York to San Francisco and from Minnesota to Texas.

There is a Sunbeam Air Conditioning Unit for every type of home, large or small — and for every kind of fuel, gas, oil or coal, stoker-fired or hand-fired.

The services of a capable staff of factory engineers, who will prepare air conditioning layouts from building plans, are available to architects.

The coupon below will bring you data on Sunbeam Air Conditioning equipment. Fill in your name and return it — today.

THE FOX FURNACE COMPANY
ELYRIA, OHIO

A Division of

AMERICAN RADIATOR & STANDARD SANITARY CORP'N

SUNBEAM
AIR CONDITIONING UNIT

The Sunbeam Oil Burning Air Conditioning Unit

RETURN THIS COUPON

THE FOX FURNACE COMPANY
ELYRIA, OHIO

● Please send descriptive literature on the new Sunbeam Oil Burning Air Conditioner; also complete data on the five other types of Sunbeam Units.

NAME _____

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CITY and STATE _____

A-10

Burnham

Reduced Space Taking Boilers and Radiators

ISN'T it so, that the less space the boiler and radiators take up, the better you like it? If, then, you can secure the same heating results, for the same approximate cost, and take up less space in the rooms for radiators, and less space in the basement for the boiler, you are interested. That's exactly what a Burnham Cozy Comfort System does.

Space Saving Slenderized Radiators

When you learn that even a five-column Slenderized Radiator is only 5-11/16 inches wide, in comparison to the tube-type one that is 10 inches, you begin to see how true is the statement of their taking up 40% less room. The four-column one is no wider than the length of your forefinger. They are not only narrower and shorter, but also lower.

Their design is simple and chaste. The castings are unusually smooth. Surprising as it may seem, the thickness of the castings is the same as the old type radiators.

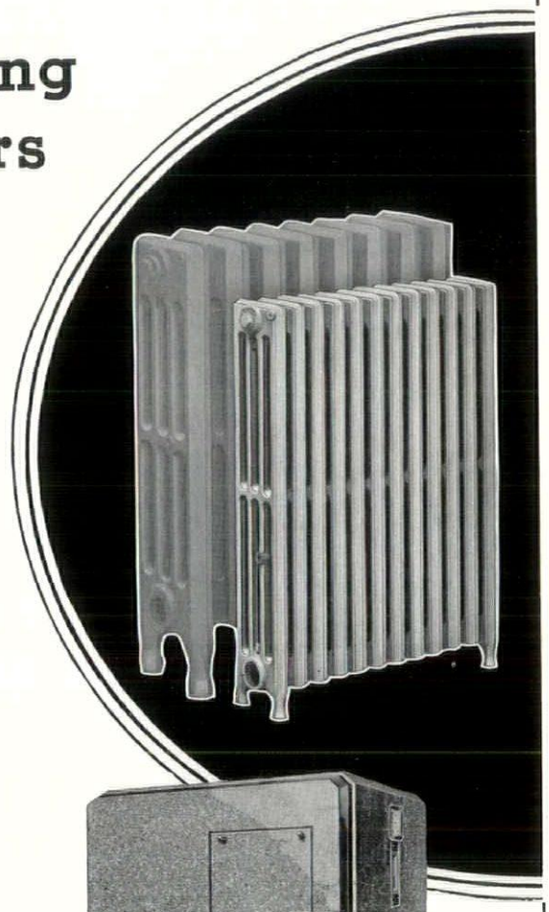
Another surprising thing is that they cost the same as the others for same square feet of radiation. They heat much quicker because there is 40% less air to be freed and less volume of water to be moved or steam to be circulated. Glad to send you freely illustrated detailed information.

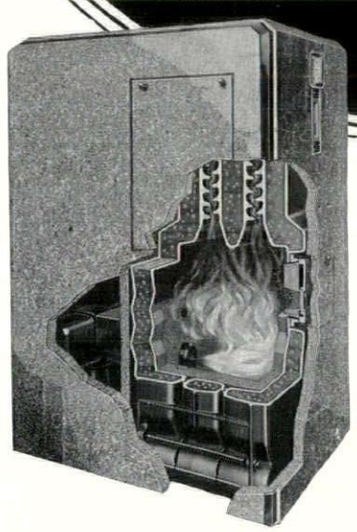
Space Saving Oil Boiler

The Burnham Built-In Oil Burning Boiler takes up less floor space than other boilers of equal capacity, because of its vertical flue construction. Those 19 inches of vertical flues, with their rows of heat-absorbing teeth, accomplish the same results as much larger boilers having much longer flues that are horizontal.

In spite of the less floor space this Burnham Boiler takes up, it still has appreciably less height than the average oil boiler. For basements that are to be used for Recreation Rooms and the like, this Burnham Oil Burning Boiler has distinct space-saving advantages. Furthermore, it is economical. You get an idea of this from the fact that in the 19 inches of vertical flues 1800 to 2000 degrees of heat are extracted.

Everything being built into the boiler, the jacket is clean and free from any extending parts. Its good looks is another thing you will appreciate. Glad to send you catalog giving facts in detail.





Burnham Built-in Oil Burning Boiler . . .

Takes up less room. Everything, even to the hot water supply coil, is all out of sight inside the jacket.

Burnham Slenderized Radiators Take Up 40% Less Room (see above) . . .

Heat quicker. Can be recessed between studs. Grille front furnished for recessed use where both radiant and convected heat are desired.

Burnham Boiler Corporation

IRVINGTON, NEW YORK

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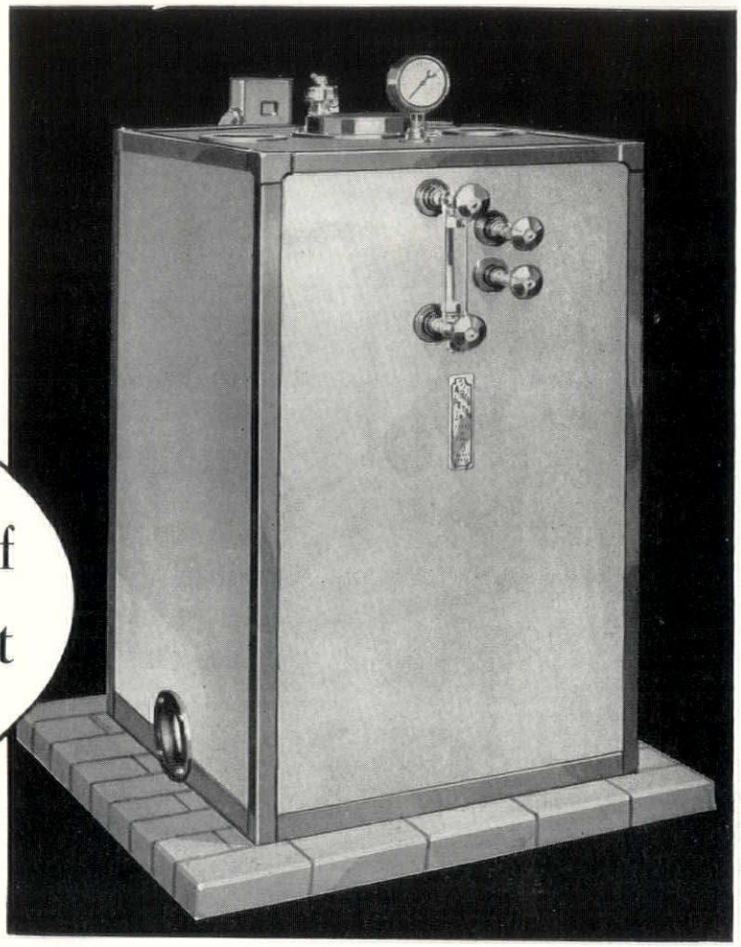

...for your closely figured estimates

ON OPERATIONS where the allowance for house heating must be held within a narrow margin, this new junior size of the famous Arco-Petro unit will be found an ideal specification.

Figured on any basis, Arco-Petro Junior is surprisingly low in cost. It is a complete oil heating furnace. Yet it costs no more than either a comparable boiler or a burner alone cost formerly.

Consisting of a special boiler made by the American Radiator Company and a burner of the modern pressure atomizing type perfected by the Petroleum Heat & Power Company, both correctly engineered and coordinated into a self-contained automatic oil furnace, Arco-Petro Junior sets a new standard for small home heating and domestic hot water supply. An unusually low water line makes basement radiation no problem.

Built and backed by the two oldest and largest manufacturers of automatic oil heating equipment, Arco-Petro Junior contributes to the market value of any home in which it is installed. For details, technical data, and dimensions, write for Bulletin No. 158

PETROLEUM HEAT & POWER COMPANY
STAMFORD, CONNECTICUT

ARCO-PETRO *junior*

AUTOMATIC OIL FURNACE

YOUR PLANS ,, and OURS

The architect . . . planning for today and the future. New homes, new schools, new structures of all kinds are on paper and on order. The contractor . . . the plumber . . . the carpenter . . . the bricklayer . . . all the myriad components of the building trades are in gear. The plans are finished. Approved. Ready for action!

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Now, as ever, the sturdy Richardson & Boynton products, known to generations of builders and home owners for their reliability, are at your service. New products, new types of R. & B. heating equipment are just entering the market, with the seal of Richardson & Boynton approval upon them. Still greater improvements are on the drafting boards! And if these should not meet with rigid R. & B. standards of quality and efficiency . . . out they will go, to the scrap heap . . . and our designers will start afresh, planning, testing, experimenting, until the stamp of perfection can be applied.

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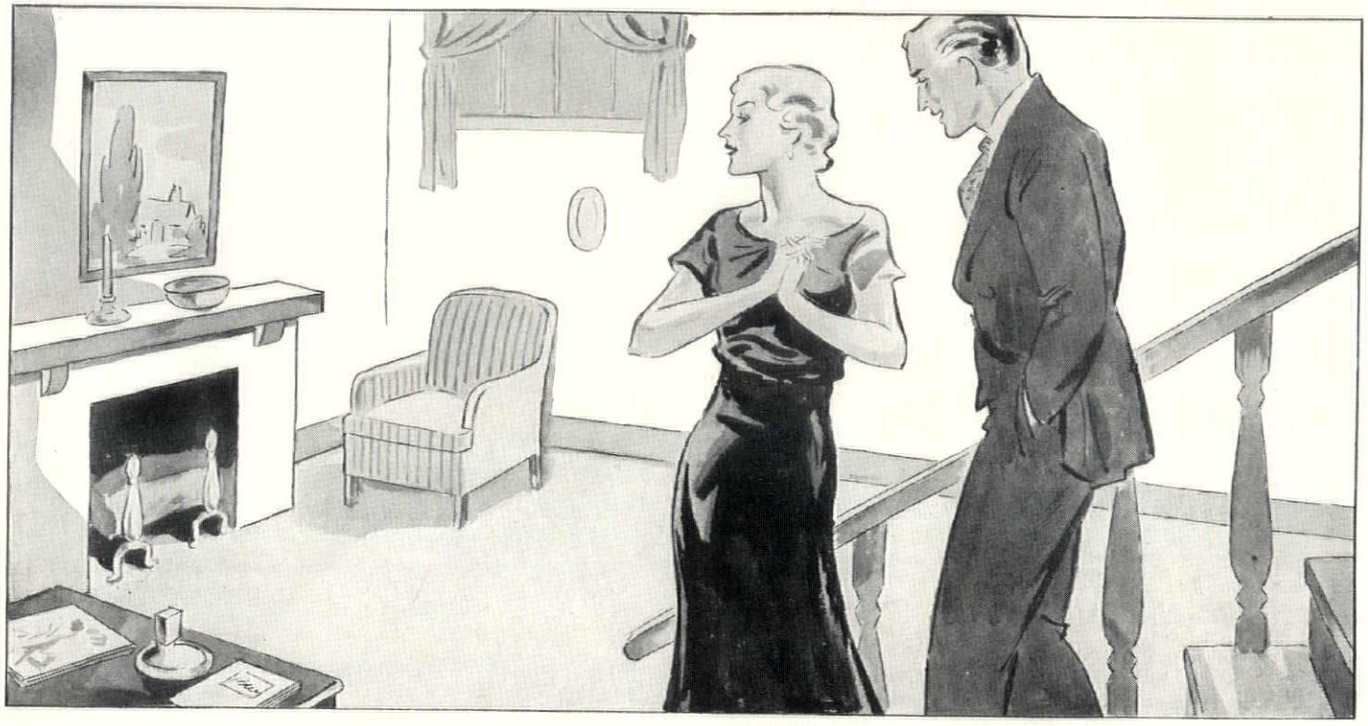

DRY ATTRACTIVE BASEMENTS

● Today the basement is acknowledged to be a livable part of the home. As such it must be dry and attractive—and any basement can be made dry and attractive by using these Medusa Products:

MEDUSA WATERPROOFED GRAY PORTLAND CEMENT. In new basements, footings, floors, and foundation walls must be made with Medusa Waterproofed Gray Portland Cement. This cement has been successfully used for 26 years to keep basements dry.

MEDUSA PORTLAND CEMENT PAINT. All new or unpainted basement walls can be beautifully decorated with this paint. It becomes a homogeneous part of the surface to which it is applied giving a hard, cement-like finish that is permanent, washable and prevents the penetration of moisture. It can be had in white and seven colors.

MEDUSA-LITE. This is the paint to use on basement walls that have been painted before. One coat of Medusa-Lite without the use of sizing or previous treatment on the surface gives basement walls a beautiful, washable, durable and economical finish. Your choice of white and seven popular pastel shades.

MEDUSA FLOOR COATING. This is the most practical covering for concrete floors. It is moisture-proof, acid, abrasive and alkali resisting. It makes a clean, colorful, and durable finish for basement recreation rooms and other concrete surfaces. It comes in six colors and black and white.

Send the coupon below, for complete information on any of these Medusa Products.

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Gentlemen: Please send me the literature checked below: How to make Basements Dry ☐, Medusa-Lite ☐, Medusa Floor Coating ☐, Medusa Portland Cement Paint ☐.

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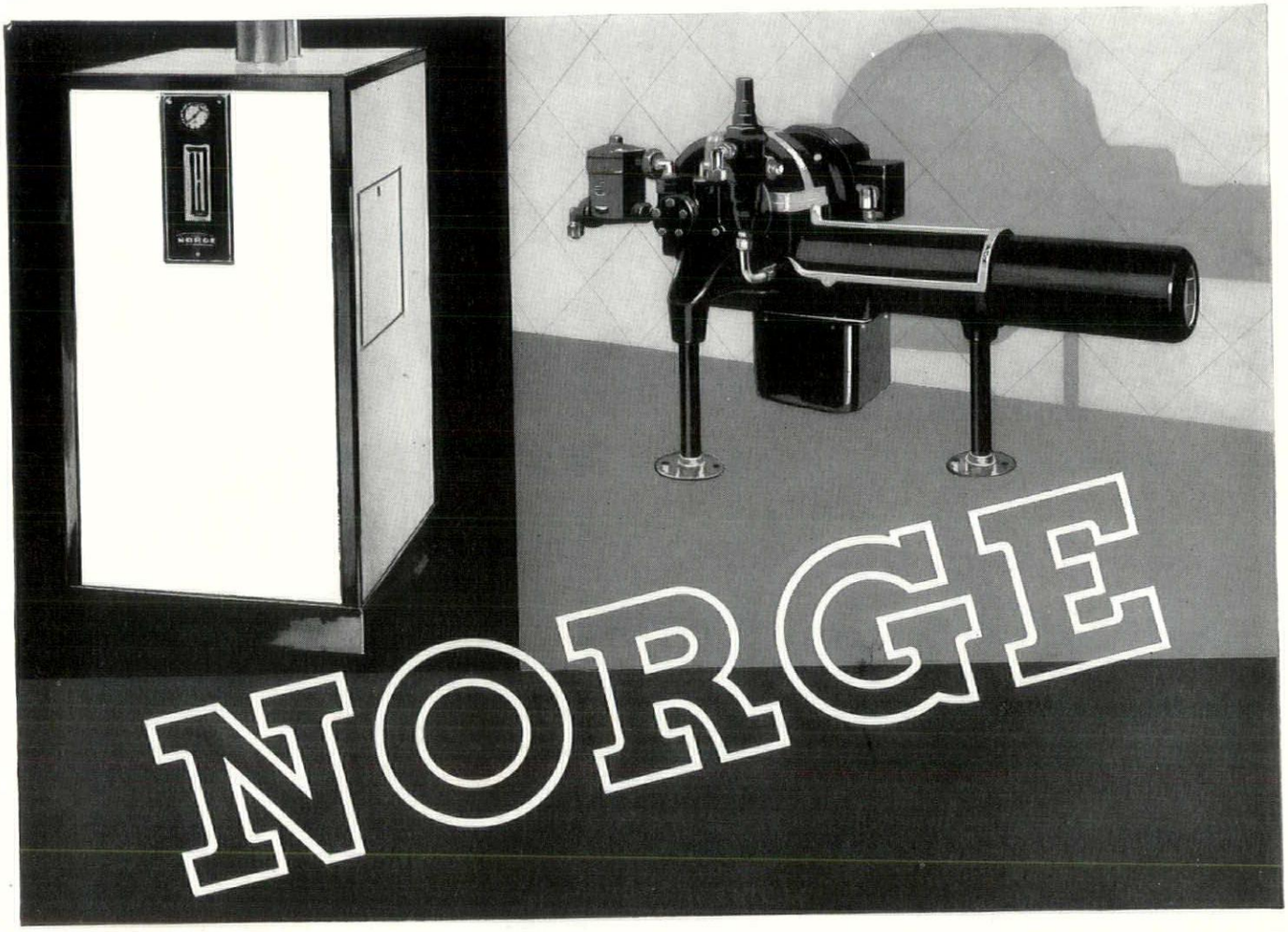

• A BETTER OIL BURNER BACKED BY A GOOD NAME

There is no doubt that the pressure type oil burner is the most practical for domestic use. Norge offers this type burner in its most advanced form.

The Norge oil burner has a number of distinct advantages. It is compact—small in relation to its heating capacity. Mechanically it is simple, easy to install, inspect and service. It is adaptable to any type of existing heating plant. It burns low grade oil with a high degree of efficiency.

Norge has built up an enviable reputation for fine home appliances. The Whirlator Oil Burner has the kind of built-in quality that the public has learned to expect of any product bearing the Norge name. That is an important consideration in selecting oil heating equipment.

Norge Whirlator Oil Burners are available in capacities from 800 to 8800 square feet of steam radiation or the equivalent in hot water, vapor or warm air. Norge-Ideal Boiler-Burner Units are available in five models with capacities from 500 to 1350 square feet of radiation.

Home builders today are interested in air conditioning. A Norge-Ideal Boiler-Burner Unit is the first step toward complete air conditioning. It is a comparatively simple matter to install conditioning equipment at any time after the Norge heating plant is in use.

Write for complete and specific information about Norge oil heat.

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THE WHIRLATOR PRINCIPLE...
An exclusive method of giving the oil and air mixture a whirling motion as it enters the combustion chamber. The result is smoother, cleaner, more thorough combustion—better performance with lower fuel consumption.

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BROILATOR STOVES • AEROLATOR AIR CONDITIONERS • GAS AND ELECTRIC RANGES

 (*Continued from page 57*)

defendant discharged, or attempted to discharge, plaintiff. But the building was substantially completed. It is not shown that the contractor in doing whatever was necessary to complete the building was not guided by the instructions given by plaintiff before he was discharged. So far as the record shows, no one was employed to superintendent the work necessary to complete the building.

"Omissions or imperfections so slight that they cannot be regarded as an integral or substantive part of the original contract do not deprive the contractor of his right to compensation. Whether a contract has been complied with is a question of fact for the trial court or jury, as the case may be. In this case the jury by its verdict must have found that plaintiff had complied with his contract.

COST OF OMISSIONS NOT SHOWN FULL CONTACT PRICE ALLOWED

"IN Gould v. McCormick, 75 Wash. 61, 134 P. 676, 679, 47 L. R. A. (N. S.) 765, Ann. Cas. 1915A, 710, a case in many respects like the one here under consideration, the Supreme Court of Washington quoted with approval from Sedgwick on Damages (9th Ed.) vol. 2, §614, the following: 'Where a contract price is fixed in the contract, this becomes the standard of value of the contract; the profit being the difference between the contract price and the cost or value of performance. The application of this rule may be examined in cases of several sorts. In the first class of cases the plaintiff on his side undertakes to perform some act for the defendant, and in return the defendant agrees to pay money for the plaintiff's act. In such a case the profit of the contract is represented by the contract price, less the cost of performing the act to be done by the plaintiff.'

"The rule stated was there made applicable in an action to foreclose a mechanic's lien for services of the same character as here involved. It is true that the evidence shows that defendant discharged plaintiff before the work was completed to the last detail. But, if he wrongfully discharged plaintiff, then under the rule above stated plaintiff was entitled to recover the contract price, less the cost of performing the act to be done by plaintiff. The cost of superintending the trivial amount of work yet to be done not having been shown, the jury was justified in allowing plaintiff the full contract price."

DECISION CONTRARY TO SPECIFIC PERFORMANCE RULE

THE court stated that the principal issue was not whether the architect's contract had been fully completed, but rather what was the amount of his agreed compensation. Nevertheless, the case seems clearly to have involved the issue of whether he had in effect fully completed his services. The court placed the decision in part at least squarely on the ground that any omissions or imperfections in the architect's work were so slight that they should not be regarded as an integral or substantial part of the contract, and that it should not, therefore, disturb the jury's verdict.

There seems to me to be some inconsistency in the court's position. If the imperfections on the part of the architect were such that they were not a part of the contract, they did not represent any failure in performance on his part and were therefore not really imperfections in his work. On the other hand, if there were any imperfections or omissions in his work under the general rule, the client should have been entitled to a credit for the cost of making them good. The court obviously believed that the architect was entitled to his money and did not want to disturb the jury's award. I think, however, that the case can not safely be considered as changing the general rule of specific performance or as opening the door generally to a recovery which does not give credit to the defendant for the cost of defects.

CHARLES S. PEABODY 1880–1935

• Long the partner of William Orr Ludlow in the firm of Ludlow & Peabody, Architects, Charles S. Peabody died at his Summer home at Lake George, N. Y., on September 10th, after an extended illness. He attended the Hill School and studied architecture at Harvard, graduating in 1903. A year later he enrolled at the Ecole des Beaux Arts in Paris. He is said to have entered there with the highest academic distinction of all foreigners who matriculated that year. He was graduated in 1908 and stood second highest in a class of three hundred. Mr. Peabody was decorated by the Greek Government for distinguished service in connection with the design of the "Temple of Youth" at Athens, in 1931.

Ludlow & Peabody designed many notable structures throughout the country, including office buildings, schools, and churches. During the World War they were commissioned to design two hundred model homes for shipyard workers at Newburgh, N. Y. and the plans were used as models for similar projects in all parts of the country. The architectural profession has lost a most distinguished member in the death of Charles S. Peabody. The work of Ludlow & Peabody will be continued by William Orr Ludlow.

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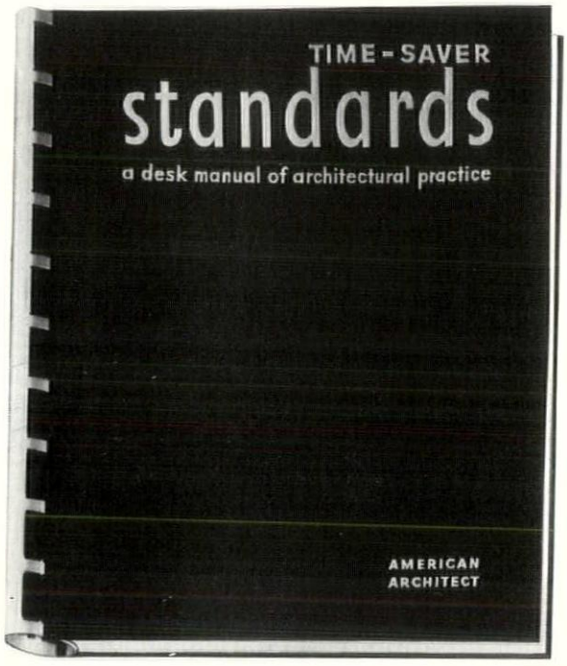

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"MODERNIZE MAIN STREET"

Competition

● On August 26, there met at Lake Champlain a Jury of Award composed of the following seven men representative of leading contemporary thought in architecture, design and merchandising: Professor Melvin Thomas Copeland, Harvard University; J. Andre Fouilhoux, New York City; Albert Kahn, Detroit; William Lescaze, New York City; John W. Root, Chicago; F. R. Walker, Cleveland and Kenneth C. Welch, Grand Rapids, Michigan.

After a two day session in which were considered hundreds of designs submitted by the more than 3,000 entrants in the Competition, the following awards were made:

FIRST PRIZES

To M. Righton Swicegood, New York City, $1,000 for the best design for modernizing a drug store.

To Suren Pilafian and Maurice Lubin, New York City, $1,000 for the best design for modernizing an apparel shop.

To G. Foster Harrell, Junior, New York City, $1,000 for the best design for modernizing a food store.

To Alfred Clauss, Knoxville, Tennessee, $1,000 for the best design for modernizing an automotive sales and service station.

SECOND AND THIRD PRIZES

To G. Foster Harrell, Junior, New York City, $750 and to Nicholas B. Vassilieve, New York City, $500, for the second and third best designs, respectively, for modernizing a drug store.

To Lester Cohn, Chicago, $750, and to Raoul L. Dubrul and Harry J. Trivisonne, New York City, $500, for the same awards for modernizing an apparel shop.

To A. Waldorf and S. T. Katz, Brooklyn, $750, and to J. R. Sproule, Seattle, Washington, $500, for the same awards for modernizing a food store.

To Suren Pilafian and Maurice Lubin, New York City, $750, and to Isadore Shank, St. Louis, Missouri, $500, for the same awards for modernizing an automotive sales and service station.

HONORABLE MENTIONS

each award including a cash prize of $50

For Drug Store designs: Harry Lon Ross, Philadelphia, Pennsylvania; Michael Auer, New York City; Isadore Shank, St. Louis, Missouri; Morrison Brounn, New York City; Montgomery Ferar, Detroit, Michigan; Melvin L. Wolfson, Oak Park, Illinois; Verner Walter Johnson, New York City and Phil Birnbaum, Far Rockaway, New York; Robert F. McClelland and Victor N. Jones, Seattle, Washington; William Tuntke, Hollywood, California.

For Apparel Shop designs: J. R. Sproule, Seattle, Washington; Irwin A. Sugarman, Chicago, Illinois; Anthony S. Ciresi, Cleveland, Ohio; Herbert L. Rodde, Chicago, Illinois; Lewis Eugene Wilson, Edwin Ellison Merrill and Robert Evans Alexander, Los Angeles, California; Joseph M. Hirshman, New York City; Orlo Heller, New York City; John Hironimus, New York City; Max Feldman, Ralph E. Leff and Harry Gottesman, New York City; J. Gordon Carr, Brooklyn, New York; George E. Recher, Chicago, Illinois; Donald M. Douglass, Georgetown, Connecticut.

For Food Store designs: Sigismund J. Von Rosen, New York City; Nowland Van Powell, St. Louis, Missouri; Maurice Lubin and Suren Pilafian, New York City; Royal Barry Wills and Hugh A. Stubbins, Boston, Massachusetts; Charles DuBose, New York City; Maitland C. Harper, Woodside, Long Island, New York; J. Gordon Carr, Brooklyn, New York; H. K. Brig, Chicago, Illinois; Edward Hedberg, Homewood, Illinois; Carl Maas, New York City; Theo. B. Voyvodick and Jos. J. Pankuch, New York City.

For Automotive Sales and Service designs: Thomas D. Taro, East Orange, New Jersey; G. McLaughlin, S. C. Reese and L. Berg, Knoxville, Tennessee; Henry T. Aspinwall and Paul F. Simpson, Great Neck, Long Island, New York; Charles DuBose, New York City; J. R. Sproule, Seattle, Washington; A. Albert Cooling, Los Angeles, California; Horace Hartman and George Wright, Detroit, Michigan; Victor Spector, Chicago, Illinois.

The uniformly high quality of the designs submitted was most gratifying to the sponsors, to the jury, and to the Architectural Record, which conducted the competition with Kenneth K. Stowell, A.I.A., as professional advisor. The widespread interest shown was considered particularly significant, for it presages new and profitable architectural activity in the several representative fields covered by the competition's program. We extend our sincere congratulations to the winners and our equally sincere appreciation of the effort expended by all competitors. The winning designs are reproduced in the October Architectural Record and will be released for general publication shortly thereafter. Checks have been mailed to all winners.

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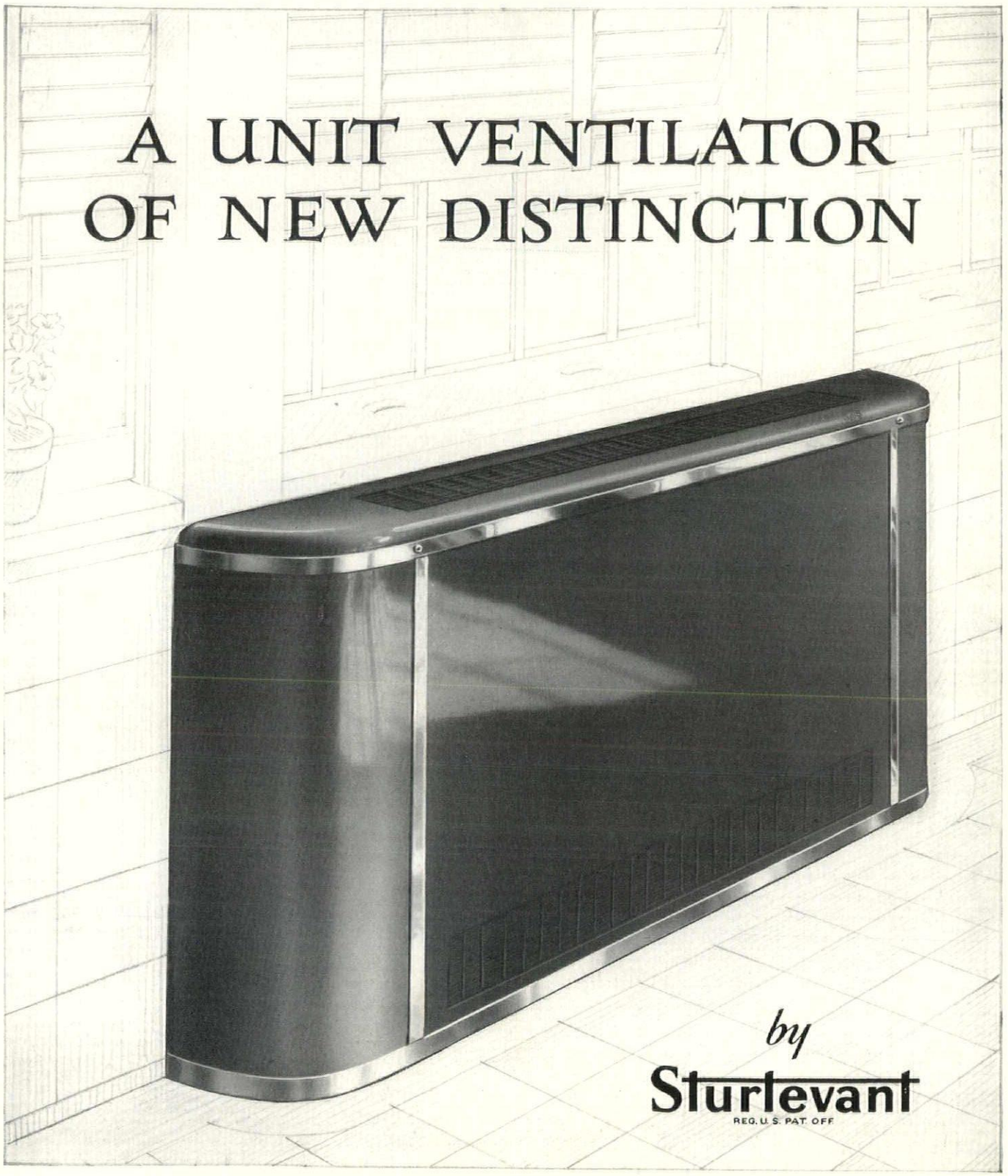

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NEW CATALOGS . .

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

MICARTA

770 . . . Westinghouse Electric & Mfg. Co., East Pittsburgh, Pa., has published a 40-page illustrated booklet covering the application of Decorative Micarta for interior and exterior finishes. The book contains color reproductions of 32 designs and patterns of Decorative Micarta and is divided into five sections covering the use of this material in (1) restaurants, grills, etc.; (2) stores, hotels, hospitals, theaters, public buildings; (3) transportation industry; (4) residences; (5) exterior finishing of commercial establishments. Each section contains installation pictures and application data.

STEEL BEARING PILES

771 . . . General and technical data on the use, performance, design and installation of CBP Section Steel Bearing Piles are contained in a comprehensive 78-page manual issued jointly by Carnegie Steel Company, Pittsburgh, and Illinois Steel Company, Chicago. The booklet is profusely illustrated and contains data never before published by these companies.

PORCELAIN STEEL BUSINESS UNITS

772 . . . The wide range of adaptability of porcelain steel modern business units is suggested by a number of typical arrangements, shown in color, in a 24-page booklet issued by Porcelain Steel Buildings Company, Columbus, Ohio. These buildings which can be moved from one place to another, or modified to meet changing needs, use porcelain on enameled steel as an exterior finish and steel structural shapes. Construction methods are described and a typical construction detail shown.

RESILIENT FLOORINGS

773 . . . A complete architectural catalog on Sealex Resilient Floors has been issued by Congoleum-Nairn, Inc., Kearny, N. J. The book opens with a photograph album of typical Sealex Floors installed in various types of buildings. This is followed by sections on Sealex Veltone Linoleum, Battleship and Plain Linoleum, Jaspé Linoleum, Inlaid Linoleum, Treadlite Linoleum Tile, structural details, representative list of users, installation methods, maintenance methods. Color illustrations of available patterns and typical installations are scattered throughout the book. Filing size; A. I. A. File 23-J.

FOR OCTOBER 1935

INSULATION GUIDEBOOK

774 . . . The Insulite Company, Minneapolis, Minn. has published a 24-page insulation guidebook which presents a discussion of insulation and its uses. Beginning with a simple definition of thermal insulation as applied to buildings, the book treats of the various uses of insulation for decoration, sound control and resistance to the passage of heat. It is well illustrated and gives application data for various Insulite products.

NATIONAL OIL BURNING BOILERS

775 . . . Data on performance, dimensions, construction details, etc. of National Jacketed Oil-Burning Boilers for gun or rotary type burners, are given in a new six-page broadside (Form No. 168A) issued by National Radiator Corporation, Johnstown, Pa.

WEATHERBEST STAINED SHINGLES

776 . . . Weatherbest Corporation, North Tonawanda, N. Y., has made up a package of samples of Weatherbest stained shingles for roofs and side walls which show the standard colors in which these shingles are available.

CARRIER AIR CONDITIONING

777 . . . Representative installations of Carrier Air Conditioning equipment in industrial, commercial, residential, transportation and other types of projects are listed and pictorially presented in a new 24-page brochure issued by Carrier Engineering Corporation, Newark, N. J. A discussion of the fundamentals of true air conditioning is also included.

SOUND CONTROL OF MECHANICAL EQUIPMENT

778 . . . Deadening or reducing noise produced by mechanical equipment through the use of sound dampening or sound absorbing materials and by isolating vibrating mechanisms is the subject of a brochure recently published by Johns-Manville. New York. It contains a discussion of the problem of sound control in air conditioning systems, mechanical refrigerators, oil burners, metal furniture and other equipment, as well as a description of the various materials used in typical installations. Special treatment is given to the subject of vibration isolation platforms for motors, fans, etc.

BENNETT FIREPLACE UNITS

779 . . . Discussion of the advantages, characteristics and application of Bennett Fireplaces is contained in a new 12-page catalog issued by Bennett Fireplace Corp., Norwich, New York. Ratings, dimensions and construction details are given, together with data and illustrations on Bennett Grilles for fireplaces. Filing size; A. I. A. File 14-E-2.

"WHEN YOU BUILD"

Have you secured your copy of "When You Build"—a booklet prepared by AMERICAN ARCHITECT to help architects secure new clients? If not, just check the return post card on this page when requesting other catalogs reviewed in this issue, and this fascinating booklet will be sent to you at once without cost.

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AMERICAN ARCHITECT, New York — October, 1935

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

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

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Duracal Washable Calcimine

780 . . . United States Gypsum Company, Chicago, has issued two small folders which give the pertinent facts about Duracal self-sizing washable calcimine. A color chart is included showing the eight standard colors other than white in which this product is made. Application data is also given.

Dresser Couplings

781 . . . A new booklet (Form 355) on pipe joints for water lines has just been published by the S. R. Dresser Mfg. Company, Bradford, Pa. It contains sixteen pages, and includes a number of installation pictures as well as detailed description of various pipe line products useful in building water lines.

Dumbwaiters and Elevators

782 . . . The leading types of Sedgwick dumbwaiters and elevators are illustrated and described in a new 32-page catalog published by Sedgwick Machine Works, New York. These types include freight, residence, sidewalk, mortuary and hospital elevators, several kinds of dumbwaiters, and other miscellaneous vertical transportation equipment. Standard sizes and specification data are also given. Filing size; A. I. A. File 33.

Convectofin Heater

783 . . . The Convectofin built-in heater for two-pipe vapor, vacuum or steam systems and the Simplex Convectofin system of single pipe steam heating are described in a 12-page catalog (Bulletin 8) issued by Commodore Heaters Corp., New York. Convector manufacturers' certified capacity ratings are listed for numerous combinations of heights and lengths for different heater sizes. Filing size; A. I. A. File 30-C-4.

Kawneer Sealair Window

784 . . . The light Sealair aluminum or bronze double-hung window is illustrated and described in a new 8-page filing-sized catalog issued by The Kawneer Company, Niles, Mich. Installation procedure, applications and typical details are given.

Stanwaco Waterproofing

785 . . . Illustrations of representative buildings which have been waterproofed in accordance with the Standard Waterproofing Method, and letters attesting to the results achieved, are presented in a new 32-page brochure issued by Standard Waterproofing Corp., New York. Also included is a single sheet which describes the various Stanwaco waterproofing products.

Linoleum Installation Specifications

786 . . . The linoleum manufacturers of the United States have adopted desirable specifications for installation of linoleum over suspended concrete subfloors and over suspended wood subfloors. These specifications have recently been issued in printed form by Linoleum and Felt Base Manufacturers Association, N. Y.

Dilecto

787 . . . The properties, manufacturing processes and uses of Dilecto, a laminated phenolic material, are illustrated and described in a 48-page, filing-sized catalog issued by Continental-Diamond Fibre Co., Newark, Delaware. Among the architectural uses of this material are: decorative designs on theater and store fronts, wall and ceiling paneling, partitions, cabinet and counter tops, wainscoting, etc.

Charak Furniture

788 . . . An interesting consumer brochure entitled "The Saga of Furniture" has been issued by Charak Furniture Co., Inc., New York. It tells how Charak furniture is manufactured, the types of woods used, and gives helpful hints on the care of furniture. Many pieces are illustrated. Short biographies of Chippendale, Hepplewhite and Sheraton are also included.

Recreation Equipment

789 . . . The line of play equipment for outdoor playgrounds, beaches and swimming pools manufactured by Recreation Equipment Company, Anderson, Indiana, is illustrated and described in a new 28-page filing-sized catalog just issued. Some of the devices include gymnastic ladders, swings, slides, see-saws, swimming pool ladders, diving boards, water slides, etc.

Armstrong's Accotile

790 . . . "Gay Floors for Basement Playrooms," a small-sized 12-page folder, has been issued by Armstrong Cork Products Company, Lancaster, Pa., which describes the advantages of Armstrong's Accotile for basement floors. Data on installation methods and illustrations of various patterns obtainable are included.

Electrical Equipment

791 . . . Complete specifications for the electric light and appliance wiring in the average-sized residence feature the new 16-page catalog (Bulletin 55) issued by Frank Adam Electric Co., St. Louis, Mo. Also included are illustrations and complete data on FA service equipment, enclosed cutouts, panelboards, circuit breakers, and auxiliary heaters. Filing size; A. I. A. File 31-d-3.

Arco-Petro Oil Furnace

792 . . . Petroleum Heat & Power Company, Stamford, Conn., has issued an 8-page filing-sized broadside which describes the features and advantages of the Arco-Petro Junior automatic oil furnace. Complete design, structural and operating data are given.

Boiler Plant Equipment

793 . . . A four-page bulletin has been issued by Combustion Engineering Co., Inc., New York, which describes, in condensed form, all the types of boilers, steam generating units, stokers, pulverized fuel systems and heat recovery equipment available from this company. Line drawings of such equipment are included.

Cement and Concrete

794 . . . The Portland Cement Association, Chicago, has issued a 28-page cement and concrete reference book which contains current statistics and general data about the Portland cement industry.

Walseal Pipe Fitting

795 . . . Walworth Company, New York, has issued an 8-page booklet which describes and illustrates its Walseal Threadless Bronze fittings for standard pipe size outside diameter brass or copper pipe. Complete specifications are included.

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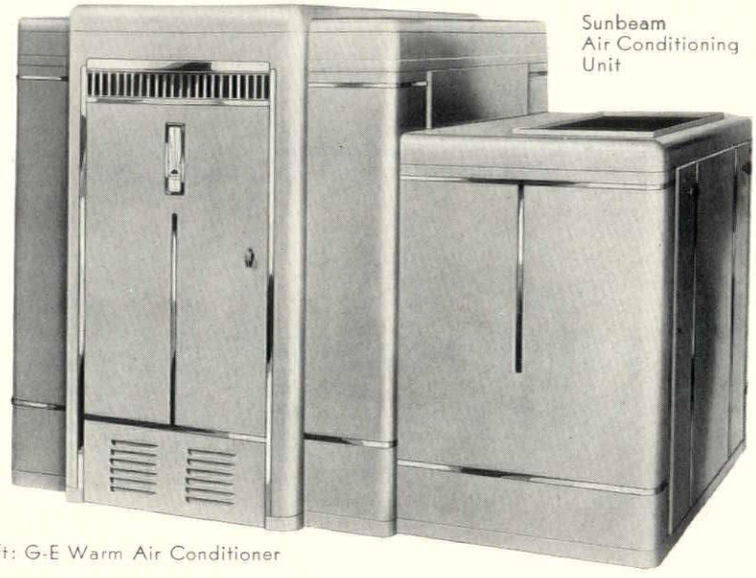
BRIEF REVIEWS OF MANUFACTURERS' ANNOUNCEMENTS TO KEEP THE ARCHITECT INFORMED OF NEW PRODUCTS

New Materials and Equipment



Sunbeam Air Conditioning Unit

Left: G-E Warm Air Conditioner

G-E Warm Air Conditioner

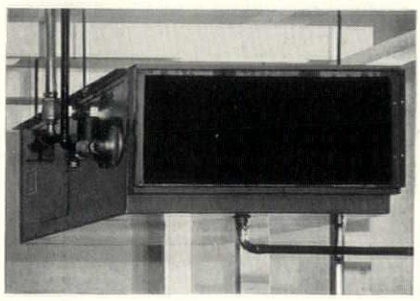
510M General Electric Company, Bloomfield, N. J., has developed a new direct-fired warm air conditioner, combining the functions of heating and air conditioning in one compact oil-burning unit. Designed for the small house of about six rooms, the new unit has a heat rating of 133,000 Btu per hour, and will deliver and circulate approximately 1680 cfm of cleaned, humidified, tempered air. The impact expansion atomization principle of oil burning is incorporated in this warm air conditioner. The flame burns downward and the flue is at the bottom. It is housed in an attractive rolled sheet steel jacket in two-tone gray, with black and chromium trimmings.

H & H Type C Tumbler Switch

511M The Arrow-Hart & Hegeman Electric Co., Hartford, Conn., announces a new line of fully enclosed 10-ampere Type C Tumbler Switches designed specifically for high intensity lighting in commercial, industrial and institutional buildings, and to take any Type C lamp load of 1250 watts. One of the features claimed is the full floating contacts which are self-aligning and automatically adjust themselves to correct position and tension. The units are made for single and double pole, three-and four-way connections in regular and lock style. The mechanism is enclosed in a Bakelite base.

Arco Air Conditioner

512M A new air conditioning unit which can be hooked in at any point on the supply line of a radiator heating system and which will condition a six-room house from that point, has been developed by American Radiator Company New York. In its simplest form, this Arco Air Conditioner, Model 101, is installed on a basement ceiling with an outlet through the floor above and a register in the floor at a distant point to provide a return of air to the basement. Only a steam or hot water connection from the radiator supply line and water supply and drain connection are required. The unit provides air circulation, filtering, washing and humidification. Provision is made for the installation of refrigerating coils for summer cooling and dehumidification.

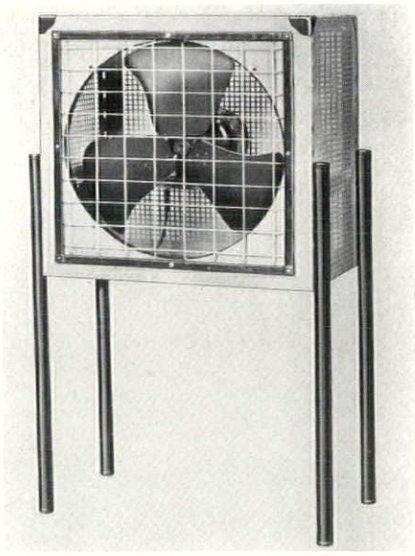


Sunbeam Air Conditioning Unit

513M The Fox Furnace Company, Elyria, Ohio, has introduced the Sunbeam Air Conditioning Unit, a warm air furnace which heats, circulates and filters the air. Provision is also made in the unit for the incorporation of humidifying equipment and controls when complete winter air conditioning is desired. The new unit is designed for oil burning exclusively. In one model the oil burner connects to the front of the heating element; in the second, the oil burner connects to the rear of the heating element. The finish is glossy green enamel baked on a cabinet of cold-rolled furniture stock, with chromium-plated trimming strips. All corners are rounded; bolts and screws are concealed.

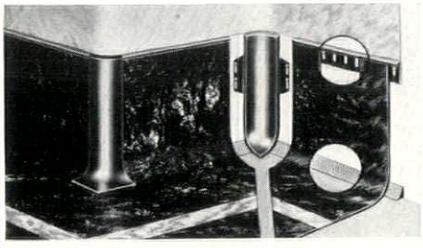
Triple Life Surface Coating

514M The Franklin Research Company, Philadelphia, has added to its line of maintenance materials a new product named Triple Life. It is a scientifically compounded liquid which, when applied to a surface such as paint, varnish, lacquer, metal, etc. leaves a transparent film of microscopic thickness said to be highly resistant to the elements, and to stop oxidation, to prevent colors fading and to slow down weathering processes. Triple Life may be applied by spray gun, cloth or lamb's wool applicator.



G-E Air Circulator

515M An improved air circulator, Type HV-1B, consisting of a motor mounted on a resilient base and a directly connected aphonic pressure-type propeller fan with orifice, has been announced by the Air Conditioning Department of General Electric Co., Bloomfield, N. J. This unit may be set in front of an attic window and plugged into the nearest electric outlet, or it may be permanently installed with duct connection to the outside and with suitable electric wiring, time switch and other accessories. It is assembled in a gray cabinet with nickel trim, and when connected to a 110-volt, 60-cycle circuit, will deliver from 2200 to 2900 cubic feet of air per minute, depending on back pressure.

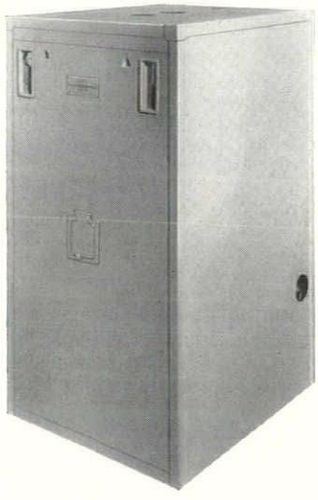


Flash-type Cove and Base

516M A new Flash-type Cove and Base has been announced by the Armstrong Cork Products Company, Lancaster, Pa. It consists of a 5/8 inch wax fillet strip, a metal binding strip, and metal inside and outside corners. The metal corners and binding strip are nailed in position; the fillet strip is cemented at the base of the wall; and the linoleum is coved from the floor, slipped under the binding strip, and cemented into place, eliminating a seam. It can be installed to form a border of any width and color in heavy, medium or standard gauge linoleum. No metal backing is used.

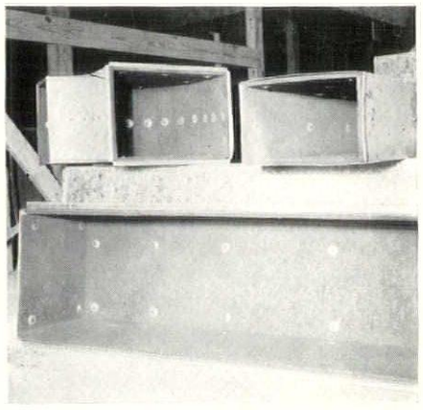
Adhesive Sealex Linoleum

517M A new type of inlaid linoleum, called Adhesive Sealex Linoleum, has been developed and patented by Congoleum-Nairn, Inc. of Kearny, N. J. Its special feature is an adhesive preparation that is applied at the factory to the linoleum which eliminates the need for laying the material over a felt lining. It is claimed for this new product that it is more economical to install, assures a stronger floor due to the fact that every square inch of linoleum is held tightly to the underfloor, and requires less time to lay.



Arco Oil Burning Boiler

518M A new kind of low-cost oil-burning boiler especially designed for the small home has been introduced by American Radiator Co., New York. Made in six sizes for gun or rotary type burners, the No. 11 Arco Oil Burning Boiler has fin surface construction, a boiler protection feature in the form of a low water cut-out, a built-in Taco hot water heater to provide year 'round supply of hot water, low water line and completely insulated jacket. Long flue passages with scientifically designed fins increase the heating surface and heat transfer. The fins are an integral part of the boiler itself, so located as to provide easy travel of the hot gases. The boiler is enclosed in a green enameled jacket, which completely encloses the oil burner, smoke hood, water heater and all the controls.



Air-Acoustic Sheets

519M Air-Acoustic Sheets, a new product designed to reduce or eliminate the noise transmitted through ducts in air conditioning and ventilating systems, have been announced by Johns-Manville, New York. These sheets consist of a sound-absorbing material in rigid block form made of rock wool and a suitable binder and are primarily used as duct lining. They are attached to duct surfaces either by spot cementing with acoustical cement or by mechanical fastenings. It is claimed that they will not smoulder or support combustion, that they are highly moisture resistant, and that they have very low thermal conductivity.

Globe Dri-Lap Roofing

520M A new galvanized 5V crimp sheet metal roofing, known as Globe Dri-Lap, has been introduced jointly by Globe Iron Roofing & Corrugating Co., and the Newport Rolling Mill Co., Newport, Ky. This roofing has an air lock bead rolled horizontally across the sheet 1" up from the lower edge. This bead is said to overcome the force of capillary attraction by placing an air lock in the path of the water as it seeps upward. Rolled into the center of the panel as an integral part of the air lock bead is a nail seat which provides for additional nailing. In the process of rolling the air lock bead, the lower edge of the sheet is bent down 1/16", making a snug-fit edge. A continuation of the air lock bead is rolled into the outer crimps, forming a self-aligning ridge. The new roofing matches with any standard 5V crimp roofing.

What the "New American" Home means to the Architectural Profession

SEVERAL hundred G-E "New American" Demonstration Homes are now open for exhibition all over the country. These homes, built and financed by a local builder and supervised by a local architect, are an outgrowth of the G-E nation-wide architectural competition last spring. They represent one of the greatest organized boosts that building has had since the war.

But the really vital thing about these homes from an architect's standpoint is the way they emphasize the importance of the architect in planning a house.

They start people thinking about such things as the relation of one room to another; saving steps; proper placing of windows to give more wall area and better light; doing away with unnecessary hallways that waste space; the need for outdoor living in good weather; making the garage part of the house; putting in lighting that is scientific rather than haphazard; dual use of space, such as combination living and dining room; providing a place for everything, including Junior's rubbers and bicycle.

They emphasize, too, that the really modern and economical servants are the electric ones that are planned for when the house is planned. For instance, a complete electric kitchen and laundry; air conditioning; automatic heat; electric clocks and radios in several rooms; a modern wiring system; modern lighting that is part of the room structure.

Watch for news of General Electric's 1936 plan for promoting the "New American" Home idea. It is even more far-reaching than the 1935 plan.

GENERAL ELECTRIC

MACHINE FOR HOUSING

(*Continued from page* 31)

Esthetically, the problem is one of standardization versus individuality and variety. The structure expresses downrightly the ideal of a standardized and mechanized life. If that is the ideal, then this type of building is logically inevitable. The building has undeniable "form"; its pattern is clear, geometric, novel. It says what it has to say with terse vigor; and its silver-gray metal, yellow brick, and glittering glass surfaces—behind which the stairs climb and the elevator goes up and down before one's eyes—are interestingly "modern." Yet, though one such building is interesting and vital, a whole district of them might be only deadeningly monotonous. The question is a deeper one than mere taste, for it implies a consideration of ultimate sociological—and hence human—ideals. Surely there are qualities of human scale, of "livableness," which are definite factors of any true housing program, as the Dutch have themselves shown so well elsewhere.

Many of its details are suggestive for possible American adaptation. The panel system of wall construction, but with substitution of rolled sections for the wooden frame work, might profitably be developed. In a work of large size like this, which required 144 panels of only two patterns, mass production and complete prefabrication of units—each not too large to handle easily—might become feasible. The use of wardrobes instead of solid partitions, and the development of double-use space, like the south bedroom, are both adaptable to American usage. In the Bergpolder Apartments we see actually built (and completely rented within two months of its completion) a large, modern apartment building,—airy, sunny, surrounded by wide open space, at a cost which has been kept down by careful, technical study to a figure remarkably low in Holland—about 26 cents a cubic foot, not counting the balconies—a forward-looking, practical housing study.

• The Government has set up an appropriation of $100,000 for the establishment of a national monument at Appomattox Court House in Virginia under the administration of the National Park Service. The site was the scene of the surrender of Lee to General Grant on April 9, 1865.

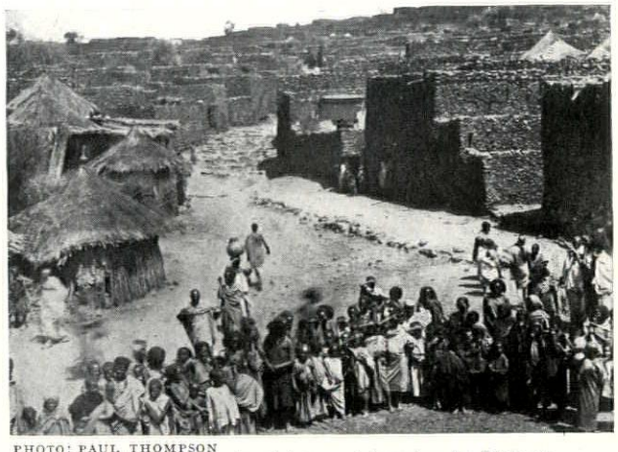


PHOTO: PAUL THOMPSON
A striking example of low-cost housing in Ethiopia

PERSONALS

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• Le Corbusier, famous French-Swiss architect, will arrive in New York in October to give a series of lectures throughout the country under the sponsorship of the Museum of Modern Art, where a showing of his work will be held. This will be his first visit to the United States, although, his fame and influence have long preceded him. Le Corbusier, will lecture in French and have as his interpreter an American architect, Mr. Robert Jacobs, who has worked with him in Paris for some time.

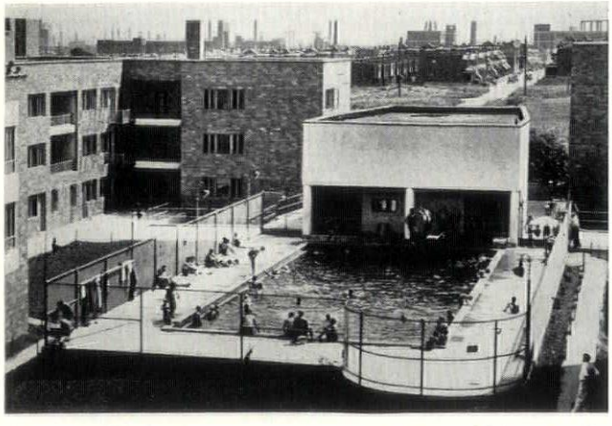
• Allen J. Strang and Hamilton Beatty, announce the opening of an office for the practice of architecture and city planning at 610 State Street, Madison, Wisconsin, under the name of Planning Associates. Mr. Strang was formerly in the office of Harry Sternfeld, Philadelphia and Mr. Beatty studied under Le Corbusier in Paris and is a graduate of University College, London.

• Charles A. Favrot, architect, New Orleans, has been awarded the Times-Picayune Loving Cup for 1934, for his activities as Chairman of the City Planning and Zoning Commission, and as Chairman of the Board of Directors of the Bureau of Governmental Research of New Orleans.

• Joseph W. Hart and J. Carl Russell, architects, announce the formation of a partnership for the practice of architecture under the firm name of Hart & Russell, with offices in the Hitchcock Building, Nashville, Tennessee.

• Gorden Bunshaft, Buffalo, New York has been awarded the Rotch Traveling Scholarship. Mr. Bunshaft is the holder of a Degree of Master in Architecture from the Massachusetts Institute of Technology.

• James Edward Agenbroad, architect, announces the opening of an office for the practice of architecture in Oakwood-at-Far-Hills, Dayton, Ohio.



The Mackley low-cost housing project, Philadelphia, Pa.

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SENSATIONAL PAINT TEST

• One of Indiana community homes painted with Eagle Pure White Lead. Two years later, when other paints had cracked and peeled badly, Eagle White Lead showed almost no signs of wear.

Shows architects how to avoid premature paint failures

[Mail coupon for complete picture story.]

● Architects can heave a big sigh of relief and forget about paint troubles. A remarkable paint test made on a whole community settles the question once and for all. It proves what house paint will stand up best under all conditions.

The test was made in a northern Indiana mill town. The 100 homes in the community were divided into 3 sections. Each section was painted with a leading kind of paint. In a short time, two of the paints used had cracked, peeled or discolored badly. They had to be touched up within two years. During the same period, the third paint — 100% Eagle Pure White Lead—showed little sign of wear. The houses in this section did not need repainting until 5 years later!

The initial cost of Eagle Pure White Lead was approximately the same as the other paints, but its final cost was much less. It went on giving good service 3 years after the other two paints had failed.

There is a definite swing to quality paints everywhere. Save yourself the embarrassment of premature paint failures by specifying Eagle Pure White Lead for exterior work on all your houses.

Remarkable paint test was made here

• There are 100 homes in this northern Indiana community. Bothered with costly paint failures, the real estate management determined to find out once and for all what paint was most durable, most economical. Of the 3 paints tested, Eagle Pure White Lead was the only one that gave satisfactory service. Mail coupon for complete story.

EAGLE *pure* WHITE LEAD

Boost the Better Housing Program in your community

MAIL THIS COUPON ● The Eagle-Picher Lead Company, Dept. **AA10**, Cincinnati, Ohio. Please send me a copy of the folder that tells the complete story of the Indiana Community Paint Test.

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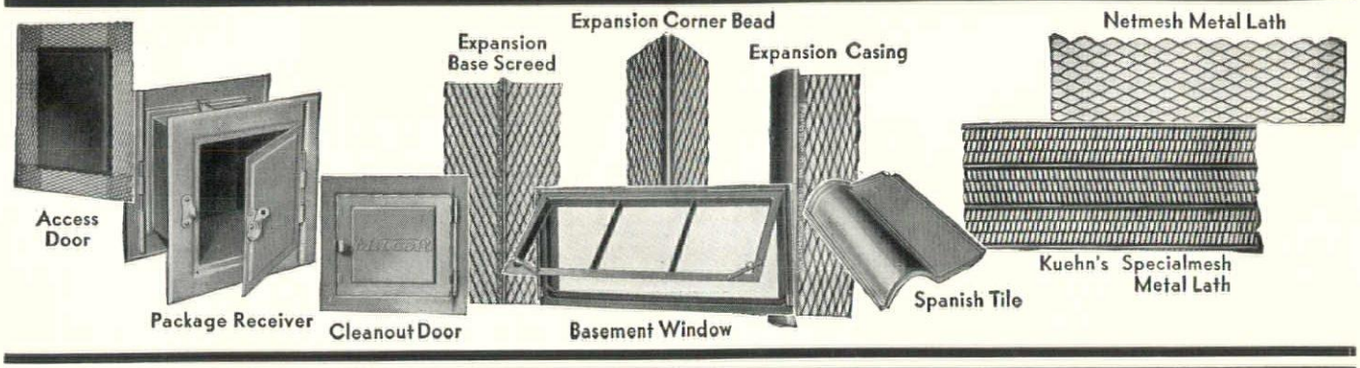

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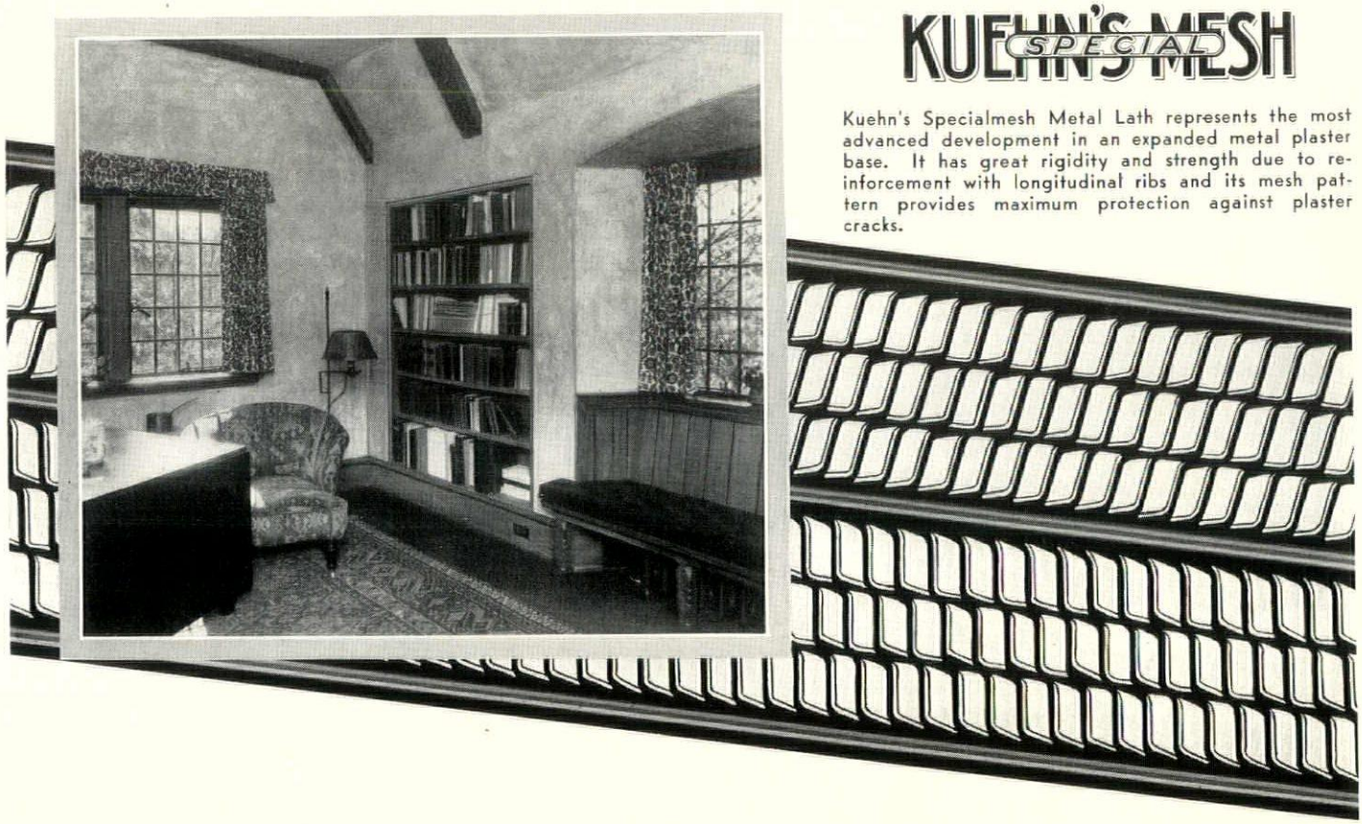
THE USE OF Milcor steel building materials is the greatest assurance that the interior beauty of a home or any structure will be preserved. The reinforcement of steel provided by Milcor metal lath, Expansion Corner Bead and Metal Trim prevents the development of cracks and other plaster blemishes. Permanence and fire-safety are built in. Complete information is given in the Milcor Manual in Sweet's Architectural Catalogs, Section 14-4.



KUEHN'S SPECIAL MESH

Kuehn's Specialmesh Metal Lath represents the most advanced development in an expanded metal plaster base. It has great rigidity and strength due to reinforcement with longitudinal ribs and its mesh pattern provides maximum protection against plaster cracks.

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