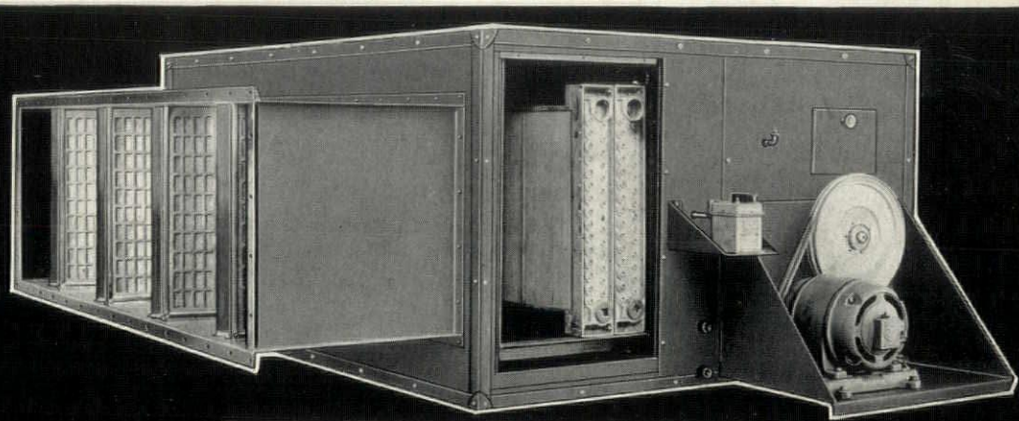
JULY 1935 • FRANCIS LORNE, A.I.A., R.I.B.A. • S.S. NORMANDIE • EXTERIOR ILLUMINATION OF BUILDINGS

AMERICAN ARCHITECT

MANY THINGS ARE HAPPENING . . . .

If signs of the times are to be trusted at all, a general acceleration has taken place in the tempo of economic recovery. True, architects and others in the building industry may find themselves not as busy as they might wish. But this fact should not occasion a fit of doldrums or point to a denial of improving business. Normal building activity develops from a surplus. And a surplus that might constitute any sort of building capital requires time for its accumulation. This is true of any period. It is particularly so now, for we are still engulfed in the wake of history's greatest depression. Building always lags from six to nine months behind other activity; and so there is still a little while to wait. . . . In the meantime many things are happening: The S. S. Normandie is launched; shatters records on her maiden trip; and proves to be a travelling exhibit of French art and industry. "Post Office architecture" breaks from tradition; and one result is the Hartford, Conn., Post Office and Federal Building. The A. I. A. meets in Convention and discusses matters of high professional importance. This issue of American Architect is concerned with all these. And in addition there appears another Reference Data Article by Tyler Stewart Rogers; a commentary on professional practice by Francis Lorne; three small houses; and a keen analysis of professional economics from the typewriter of Charles H. Lench.

CLARAGE MODITHERMS ....Automatic Complete Air Conditioning



DESIGN ONE MODITHERM with access panel removed. Note filter packs in return air inlet.

MAIN STREET is "GOING STRONG"

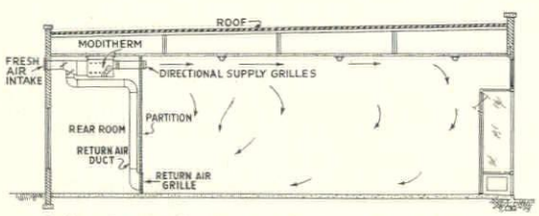
For These Highly Satisfactory, Economical Units

Architects generally have placed their stamp of approval on the Clarage Moditherm. It is specially designed for installation in retail establishments.

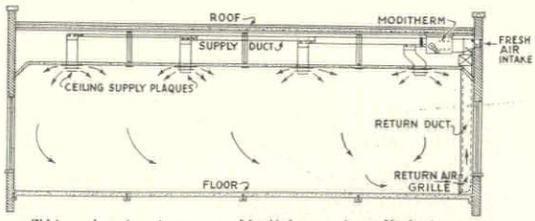
Provision is made for filtering the air, temperature control, humidity control, and for air circulation. Operation is entirely automatic. Aside from replacements of filter packs as necessary, a Clarage Moditherm requires no attention summer or winter.

SUMMER COOLING: To furnish the cooling and dehumidifying effect, the Moditherm uses either a direct expansion refrigerant or cold water from a well or the city mains. If the water temperature is sufficiently low, cold water is usually preferable as it reduces installation cost by eliminating need for refrigeration equipment.

SUGGESTED LAYOUTS



Taking but small space, a Moditherm can be easily installed. Sketch above shows unit located at ceiling line in rear room of average size store. Conditioned air is discharged directly into store space without use of ducts.



This sketch shows a Moditherm installed in attic space above a store (or it might be a restaurant). Discharge of conditioned air is accomplished by means of one supply duct.

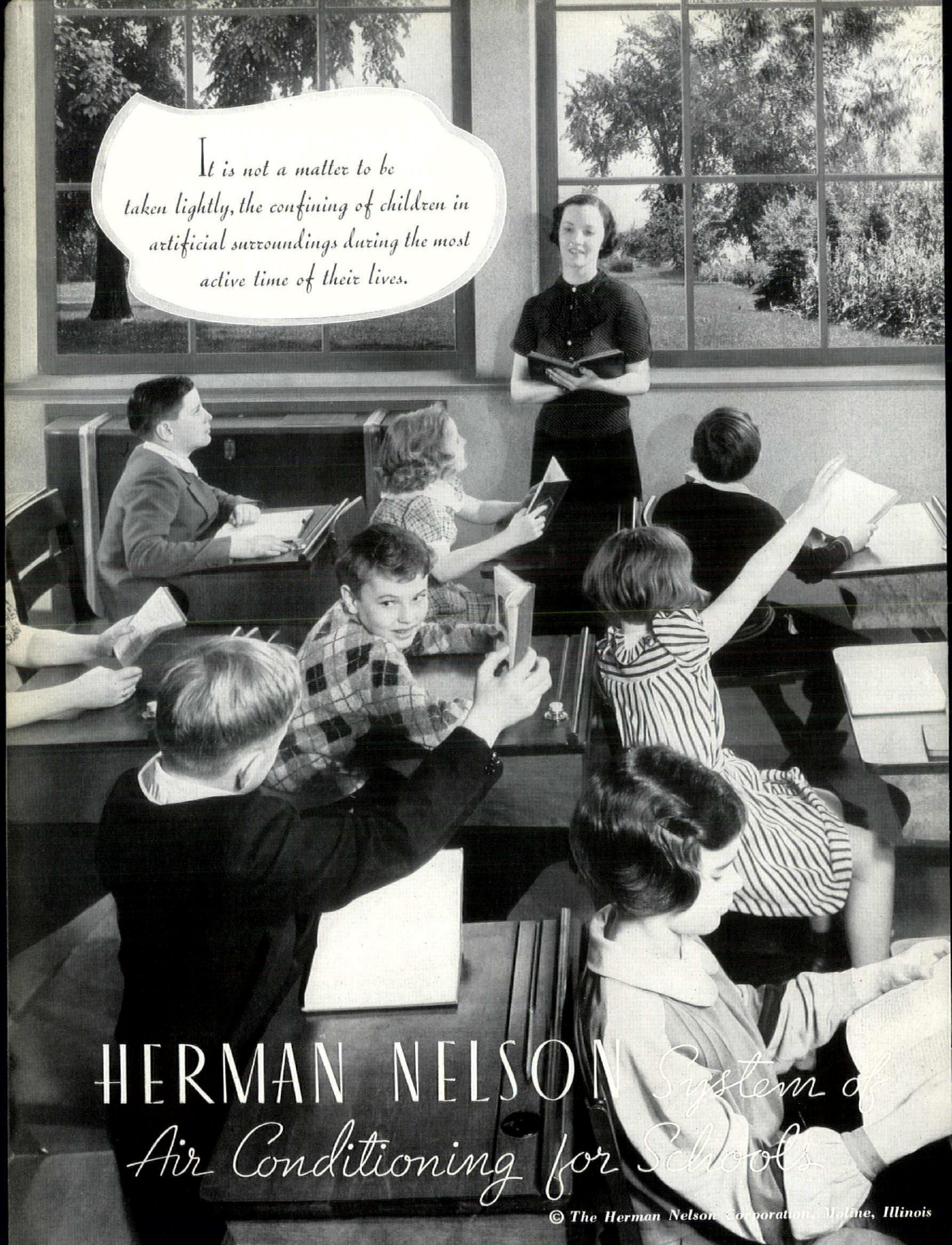
WINTER HEATING: For heating and humidifying steam or hot water is required. Practically any type of boiler now installed can be utilized providing it is adequate.

The Moditherm is designed for efficient, economical operation year after year. It is built with a double casing, and needs no exterior insulation.

Each unit is factory tested, with performance as well as all details of construction guaranteed. One unit of proper size will care for the average store. Multiple units can be recommended for larger buildings of practically any type.

May we cooperate with you by furnishing complete data on this very modern air conditioning equipment? CLARAGE FAN COMPANY, Kalamazoo, Michigan.

CLARAGE AIR HANDLING AND CONDITIONING EQUIPMENT



HERMAN NELSON *System of Air Conditioning for Schools*

Pre-planned telephone convenience pays dividends to owner and architect

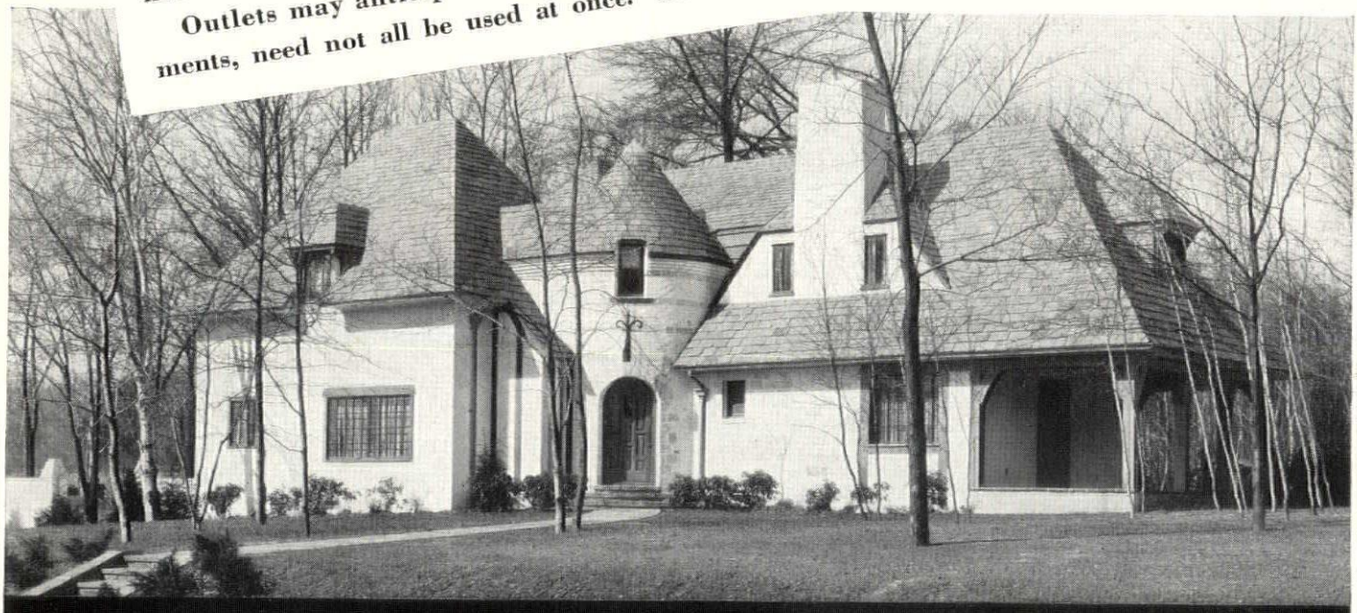
MODERN telephone convenience involves a very modest first investment. And its dividends keep coming back for years.

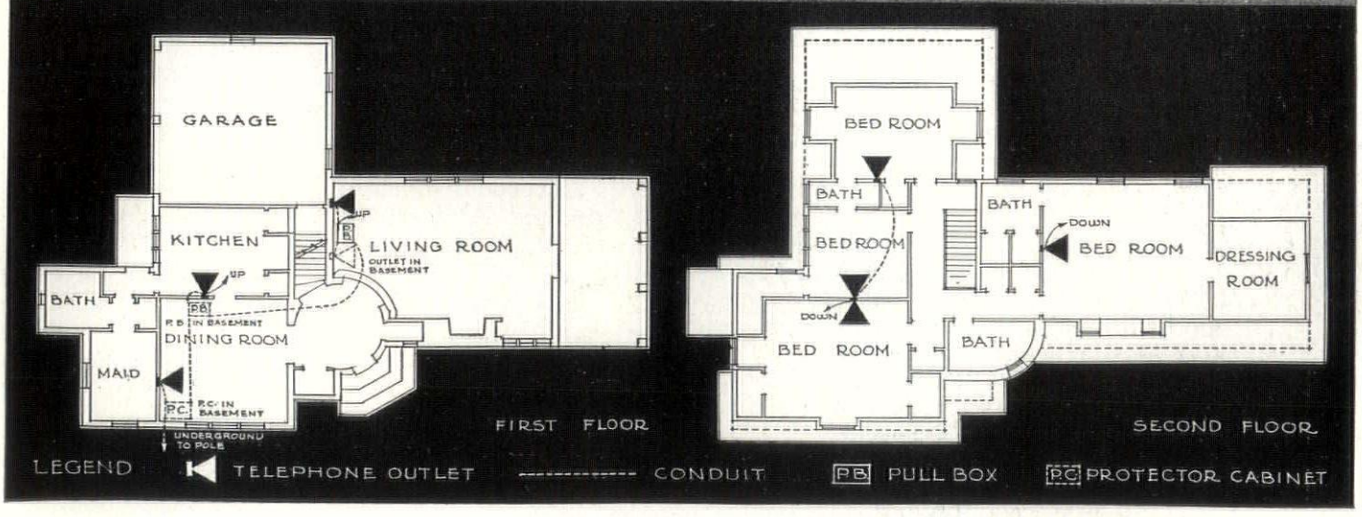
Outlets plotted at strategic points in the blueprints — conduit included in walls and floors during construction — make possible the neatest installation of telephones to save time and steps for family and servants, provide privacy for personal conversations. Every day, every night, they increase the household's respect for your careful planning.

Outlets may anticipate future requirements, need not all be used at once. But they're there, *ready*. Instruments can easily be moved — without exposing wiring — and with assurance of conduit-protection against certain service interruptions.

The local telephone company is always glad to work with you in developing efficient, economical conduit layouts for new or remodeling projects. No charge, of course. Just call the Business Office and ask for "Architects' and Builders' Service."

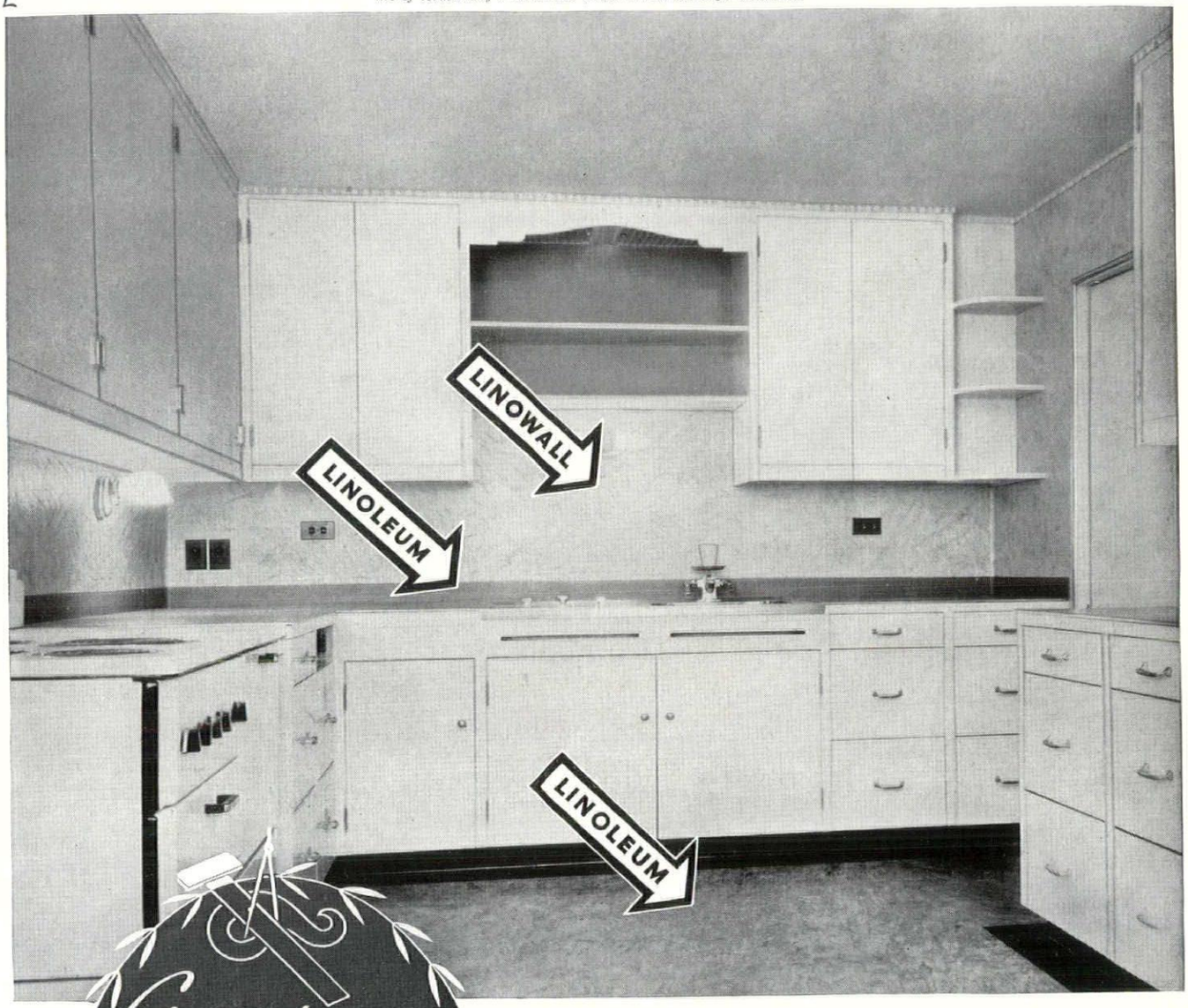
Eight outlets, connected by built-in conduit, provide for telephone convenience in the residence of Mr. Harold W. Cheel, 15 Hollis Drive, Hohokus, N. J. H. E. Mather, Architect, Ridgewood, N. J.





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 2635, dated July, 1935.

Armstrong products play an important part in the kitchen of General Electric's Experimental House at Nela Park, Cleveland. Floors, cabinet tops, and drainboards are of Armstrong's Linoleum. Walls are Armstrong's Linowall.



Armstrong's part IN THIS LABOR-SAVING KITCHEN

GENERAL Electric designed this "woman's workshop" to make kitchen work pleasant and easy. Along with the latest G-E labor-saving devices, you'll find an easy-to-clean Armstrong's Linoleum Floor—and on drainboards and cabinet tops, a decorative, washable covering of Armstrong's Linoleum to cut down kitchen-clatter and dish-breakage. The walls are Armstrong's Linowall—bright, cheerful, washable, and resistant to wear.

Armstrong's Linoleum and Linowall are not expensive to install. And once installed, they remain fresh and beautiful for many years. Write now for samples and full information. Armstrong Cork Products Company, Floor Division, 1201 State Street, Lancaster, Pennsylvania.

Armstrong's LINOLEUM FLOORS *and* LINOWALL

LEAKPROOF *forever*

· OXWELDED PIPING ·

THESE oxwelded coils of panel heating pipe will set directly in the plaster. Complete freedom from the slightest leak which might mar a beautiful room and from future maintenance of any sort have been assured by making the whole system jointless. By oxwelding, the lengths of pipe, as brought from the mill, have been put together in one continuous piece. Each weld is as strong or stronger than the pipe itself and as corrosion-resistant.

Leakproof piping systems for all services can be assembled rapidly from pipe of any size, any commercial metal, by oxwelding. Permanence is so positive that oxwelded piping has been installed in masonry walls fourteen feet thick. Modern skyscrapers, hospitals, and public and private buildings enclose mile upon mile of oxwelded piping.

Specifications for Welded Piping

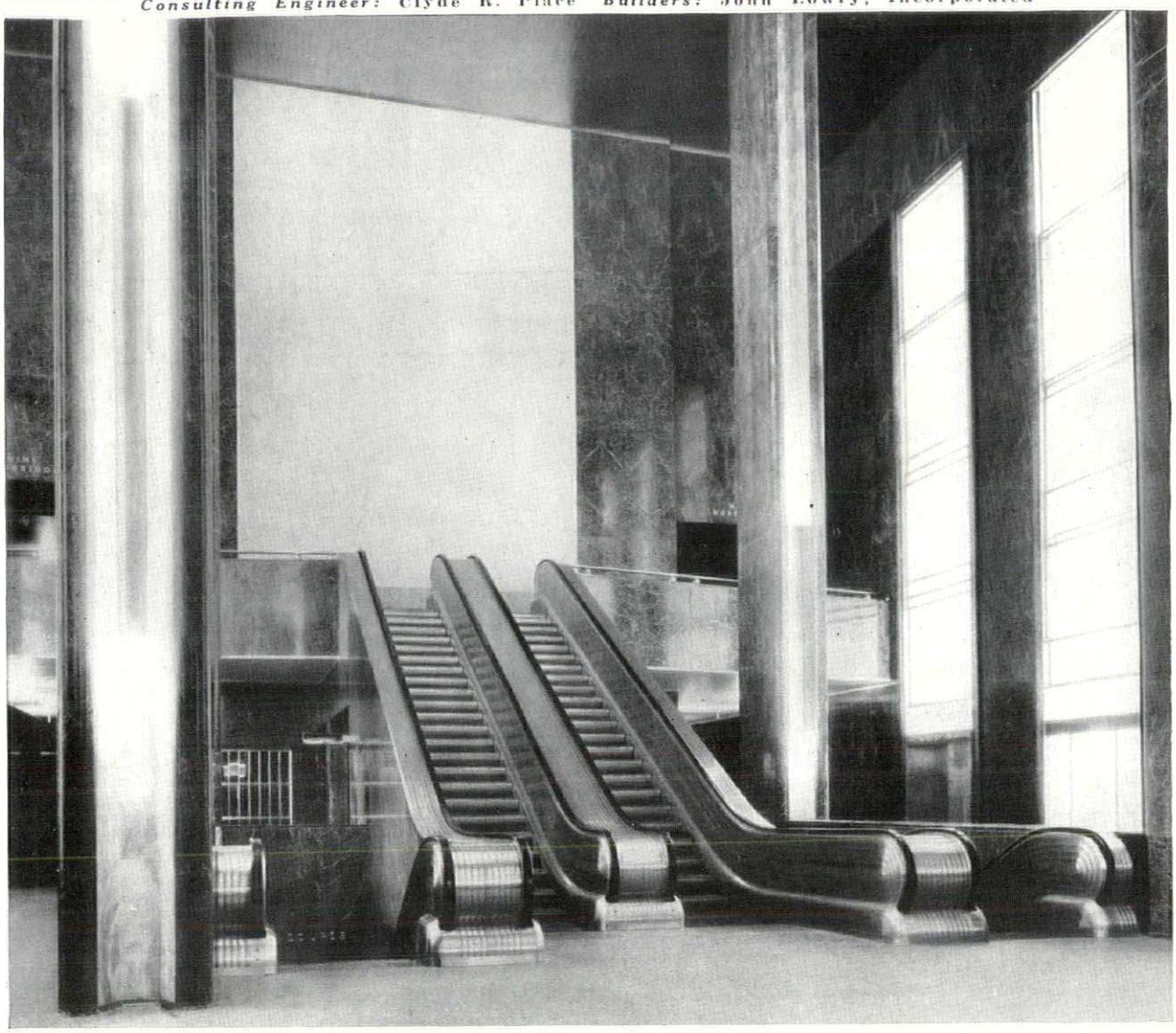
Linde engineers have prepared clear and concise technical data especially for the architect interested in designing and specifying jointless piping systems that will remain leakproof forever. Ask the Linde Office in your city for complete details or write to Department TPD, 30 East 42nd Street, New York,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

Everything for Oxy-Acetylene Welding and Cutting

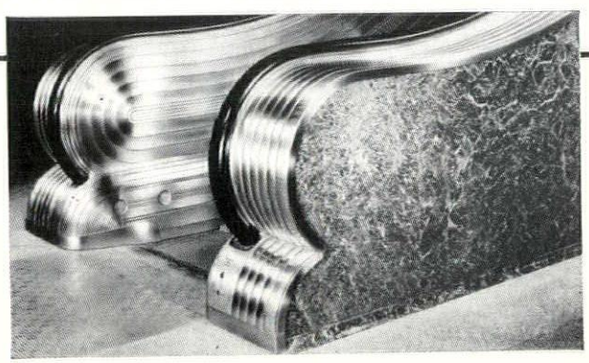
LINDE OXYGEN • PREST-O-LITE ACETYLENE • OXWELD APPARATUS AND SUPPLIES

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

Architects: Reinhard and Hofmeister; Corbett, Harrison and McMurray; Hood and Fouilhoux
Consulting Engineer: Clyde R. Place *Builders:* John Lowry, Incorporated



Offer more than one ground floor in your plans



HERE'S an idea that's taking hold — the converting of second floors or basements into ground floor space by installing Escalators. It is a plan that is particularly appealing for office and mercantile buildings, since it provides twice the space for shops and the good rentals that accrue to owners from long-time leases. It is one that can be worked in existing buildings as readily as in new structures. The cost of amortization, interest, power, and maintenance is so moderate on this type of Escalator installation, it will be found that in many cases the increased rentals make it a splendid investment.

We ask you to note this type of Escalator installation in the two photographs on this page. Here is shown the Otis Escalator installation in the International Building, Rockefeller Center, New York City. These Escalators furnish first-floor convenience to both the second floor and the concourse. Note modern design and finish. And the mechanical features are just as modern as the beautiful balustrading. In fact, these Escalators move so silently, you can hardly hear them.

A new transportation idea — and transportation that is as modern as the idea.

OTIS ELEVATOR COMPANY

AMERICAN ARCHITECT

Trade-Mark Reg. U. S. Patent Office

VOLUME CXLVII NUMBER 2635

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

ROGER WADE SHERMAN, *Managing Editor*

TYLER STEWART ROGERS, *Technical Editor*

R. F. GARDNER, *General Manager*

T. W. TOWLER, *Advertising Manager*

AMERICAN ARCHITECT. Published monthly by International Publications, Inc., 572 Madison Avenue, New York. Other Offices, 919 N. Michigan Avenue, Chicago; General Motors Bldg., Detroit; 132 Newbury Street, Boston. William Randolph Hearst, President; Richard E. Berlin, Vice President; John Randolph Hearst, Vice President; Arthur S. Moore, Secretary.

Single copies, $1.00. Subscription: United States and Possessions, $3.00 per year; Canada, $4.00; Foreign, $5.00. Entered as second-class matter, April 5, 1926, at Post Office, New York, under Act of March 3, 1879.

San Diego After Twenty Years

. . . . a study in contrasts

THE PICTURE on the facing page is more than an excellent air view of the San Diego Exposition. It is a pointed commentary upon the changes that have come upon architecture during the last two decades. Also it suggests, though indirectly, perhaps, some of the causes for these changes. This is food for professional thought, entirely aside from any consideration of esthetics involved.

In the background of the picture are some permanent reminders of a former exposition held in San Diego in 1915. Among them is the Panama-California Building, which, with its bridge approach, was designed by Cram, Goodhue and Ferguson, architects. Dominating the foreground and conceived by the industrial designer, Walter Dorwin Teague, is the structure that houses the Ford exhibit of mass production marvels.

Both buildings were erected primarily for exhibition purposes. But the former has been made into a permanent show place, preserved finally for its picturesque and romantic beauty. The Ford building will, probably, be removed at the close of the present Exposition.

To many this may be significant from an esthetic point of view, for the contrast between the design of the two buildings is glaring. But the contrast itself is important also. For practical exhibition purposes the Ford structure is, probably, vastly more efficient. It appears to have been developed from a well-defined plan for the exhibition which it houses. It contains no windows, thereby providing the maximum amount of wall space. The shape is conducive to almost perfect circulation within the building. Its equipment includes all the mechanical innovations which make possible the execution of such an unorthodox design.

Herein lies the really significant point in this study in contrasts. During the last twenty years, science and industry have wrought miracles which soon will become commonplace. As adoption of the telephone and radio changed our habits of communication so can utilization of present day equipment and materials change our habits of building. And as better methods of transportation altered the pattern of our social structure so also can the widest application of building elements now at hand change the aspect of the buildings we conceive.

No brief is held here for the "modern" design of the Ford building as opposed to the "traditional" characteristics of Goodhue's older structure. Many will stamp the former as hard and too mechanical. Perhaps the same criticism could be levelled at any structure which utilized to the fullest extent all the modern possibilities of structure and equipment. It is a difficult thing to know. It is still too rare an occurrence when such a building is produced.

An Englishman Demands . . .

Higher Professional Standards to

FRANCIS LORNE, A.I.A., R.I.B.A., member of the London firm of Sir John Burnet, Tait and Lorne

says . . .

Architecture has degenerated into the habit of applying ornament to things . . .

We can only advance in architecture as far as we can persuade the public to advance with us . . .

Applied ornament, sculpturesque grouping—the most sinister influence and the major curse of architecture today . . .

Anyone can copy the other fellow, but it takes years to be yourself . . . Great art assumes great people . . .

Art consists more in what we can eliminate than in what we can put on . . .

Science and art must fuse before we can get anything worth while . . .

Art is useless unless it can be translated into terms of pleasurable use . . .

Our real job is to steam-roll ugliness . . .

EVERY once in a while as the years go by it becomes necessary to reshufile our standard of values. Our life is in a continual state of flux and, therefore, in continual need of restatements. As architects we are interested primarily, of course, in the restatement of things architectural. But because architecture is so closely related to living, a statement of architecture is practically a statement of our country; and as foreign relationships extend and we become more international in our way of living, it becomes—with the exception, perhaps, only of climate—a statement of humankind.

The best standard of values or the best code of manners of any time becomes the best manner of expressing the method, way, style and habit of the age. We need, and have needed for some time, a standard of essential values to strive for, a goal, as it were, for our time. But the general public must have it before we shall entirely get it for architecture. We can only advance in architecture as far as we can persuade the public to advance with us.

Revitalize Architectural Practice

It remains with us, therefore, to habituate them to a new viewpoint. I shall tell you what I think will be a good standard of values, after which we can discuss it and probably arrive at some conclusions that can lead us to better mannered action for our time.

I should say the essential things are:

1. Being ourselves and therefore original.
2. Being simple and therefore poised and quiet.
3. Being chic and therefore distinguished.
4. Being co-operative and therefore serviceable.

It is not difficult to realize that to be ourselves is to be original. No human being is the same as another, nor any animal, flower, tree or piece of natural scenery. All of these preserve their individuality and original qualities save man. He alone is prone to the fatal diseases of snobbery and plagiarism; and nearly all of us suffer from these maladies in a greater or lesser degree. We see some individual or race of individuals gain ascendency through original behaviour and our snobbish instincts lead us to copy. We sink thereby as human beings into the morass of mediocrity.

Look at our so-called modern designs which one sees in the magazines. The Renaissance plan, the Renaissance form of windows, doors and fenestration—all are there. But instead of Renaissance detail, there is a triangulated form of detail which is called modern. These buildings are not in any sense really modern. They are only Renaissance buildings with modern dressing; grandmothers in modern gowns. Architecture has degenerated into the habit of applying ornament to things. It is not any more, unless in very isolated cases, the art and science of building. If you doubt this let us for a moment invade an architect's office where we will probably overhear a conversation something like this:

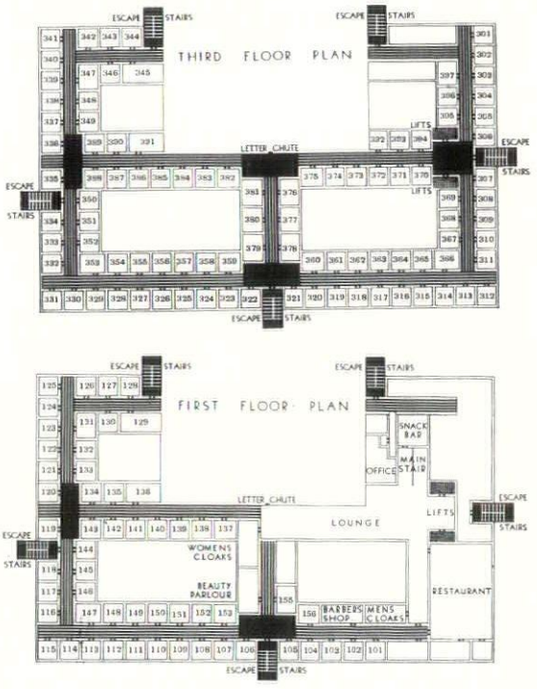
"What about getting out a really attractive composition this time; here's a chance, an island site. What d'you think, shall we have a symmetrical composition or an asymmetrical one? Anyhow, let's build up an interesting mass which has a good sculpturesque quality about it. D'you think we should have a vertical treatment or a horizontal one? Why not combine them—happy thought, horizontal there and just a little vertical here?

"What about style? Let's go modern and show 'em what we can do. You can't put sloping roofs on a modern design. Well then, let's compromise, what about a flat in the centre and butt the sloping roofs of the wings against the central mass, that'll lead the group nicely down to the ground. Don't you think this central mass is much too plain? Let's put in some breaks and change the color and the texture a bit. Let's put in a good strong set-back here. It will mean that we will have to put in some extra steel to carry it, but what's steel for anyway?

"What about putting in a couple of balconies, one here and one there? They'll introduce good light and shade—break it up, give it interest. My goodness, though, what about this big room in here? We've got to get around it on this side, you know. We forgot all about that. Oh well, never mind for the moment, the boys will work it out on the plan somehow, and we'll get the builder to do one of his stunts and carry it."

What drivel! And yet how typical. Applied ornament, sculpturesque grouping—the most sinister influence and major curse of architecture today, and almost 99 per cent of buildings are designed this way. Perhaps it is just as well the man who pays doesn't know it. This is not architecture. It is not building. It is just playing with toy blocks. It is just being little boys again. Meanwhile what becomes of the planning? What becomes of the reasons for the building's very existence, namely the Client's requirements and the usefulness of the building for him and his purposes? What about the building's economic being? Will it be financially worth while to build it?

Suppose for once we tried to make a school look like a school instead of a Georgian country house or a T. B. Hospital in Switzerland. Suppose we make a block of multiple flats look like what it is,



TELLA

"ART FOR MAN INSTEAD OF ART FOR ART'S SAKE". . . . The Mount Royal Apartment Hotel, designed by Mr. Lorne's firm and recently completed in London. Illustrations on these two pages are evidence of its simplicity in plan and design. It was built for that new generation of Londoners who have achieved the freedom of "being simple, restrained, poised, quiet and modern. . . . "

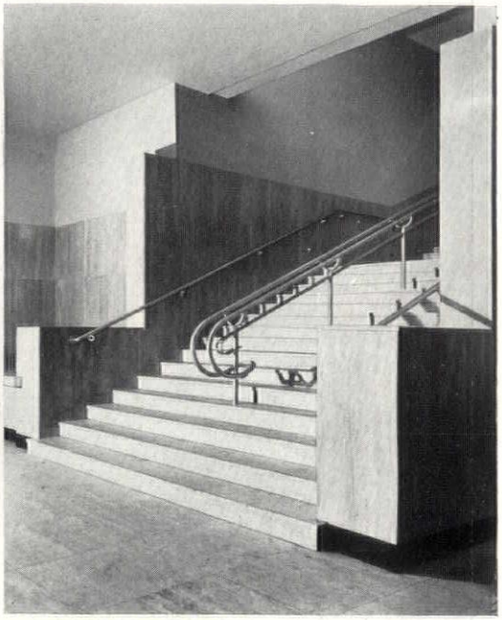
rather than a Florentine palace, or a hotel in the South of France; a library that looks like a library rather than the Pantheon at Rome. Let us create a design out of its fundamental requirements. We have had enough of thinking first about sculpturesque composition, applied detail and copying foreign designs, and second about torturing the conditions and requirements of the Client into what's left.

The *first consideration of a building* is the use to which it is to be put; *second,* the form, and combination of rooms; *third,* the best and most usable materials with which to build it; *fourth,* the most efficient building process for putting these materials together; *fifth,* whether—in this form—it is economic and worth while to build it at all, and *sixth,* its design. And by design I mean treating these conditions in such a way that they will be true to themselves and have a distinction and personality of their own. Naturally it depends on the mental grasp of the men who do it how good the result will be. It depends on what the gods have given them in creative capacity. But only in this way will a building be itself, only in this way will it be original, and only in this way a modern work of art.

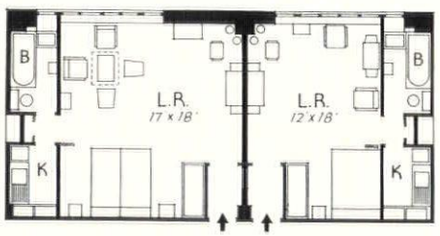
We have for too long been pseudo Greeks, Romans, Goths, Elizabethians, Jacobeans, Tudors, Georgians and lately modern Dutch, Swedes and Germans. Why? Try and find a reason which you can really look at, down a logical nose. You may say that the old stuff is good—as so many do—and that there is nothing new under the sun. But the Greeks did not run around in motor-cars; the Romans did not call their friends to cocktail parties over the telephone, or the Elizabethians fly to Australia in a weekend! And you must be very out of touch with modern living if you do not realize that there are many ways in our modern life quite as original as these.

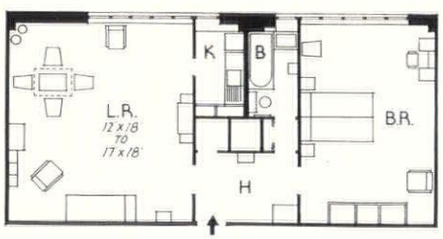
You may say also that I am indicating what is bad and indicating very little what to do to make it better. Perhaps, but only your thoughts and your ways, finding expressions in things can be really "YOU." And if I can change your thinking, you will do the rest. You see what the motor-car manufacturer is doing in modern design with his cars. You see what the aeroplane designer is doing; what the Swedes are doing in glass, what the Paris couturiers are doing for women and London tailors for men; what a few architects are doing to work out buildings for modern living, keeping step with modern transportation and clothes. You see also that these men are building their furniture into the structure as an integral part of it and not just buying it from an antique store.

You see that they are solving the demands of a new generation entirely on its own merits, that they are making things over from their very foundations for a new way of living. They are not simply



NEWBERY PHOTOS





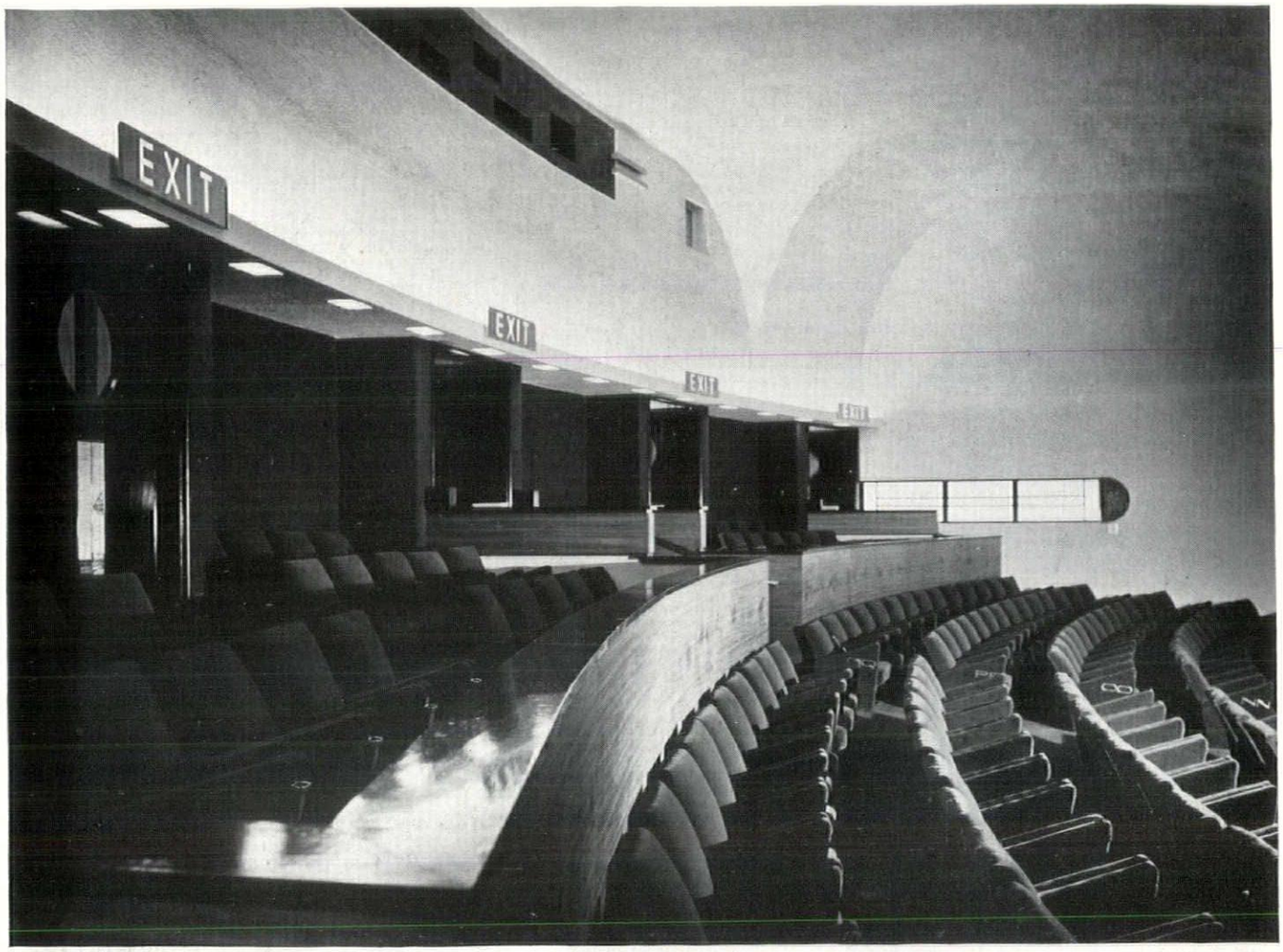
LARKIN BROS.

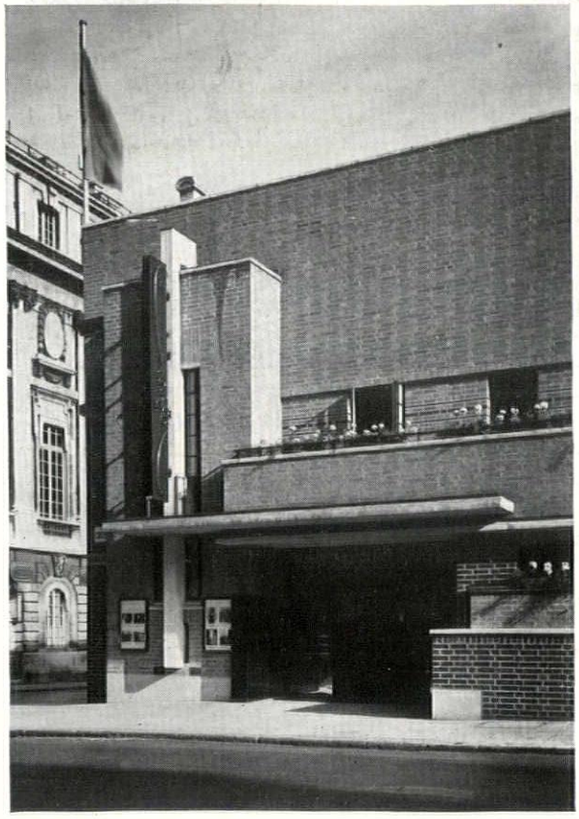
resurfacing the old; they are being themselves and, therefore, being original. They are being 20th-century human beings wherever they are. They are trying to root plagiarism out of their lives. I say—go and do likewise—and don't forget in going that anybody can copy the other fellow, but it takes years to be yourself.

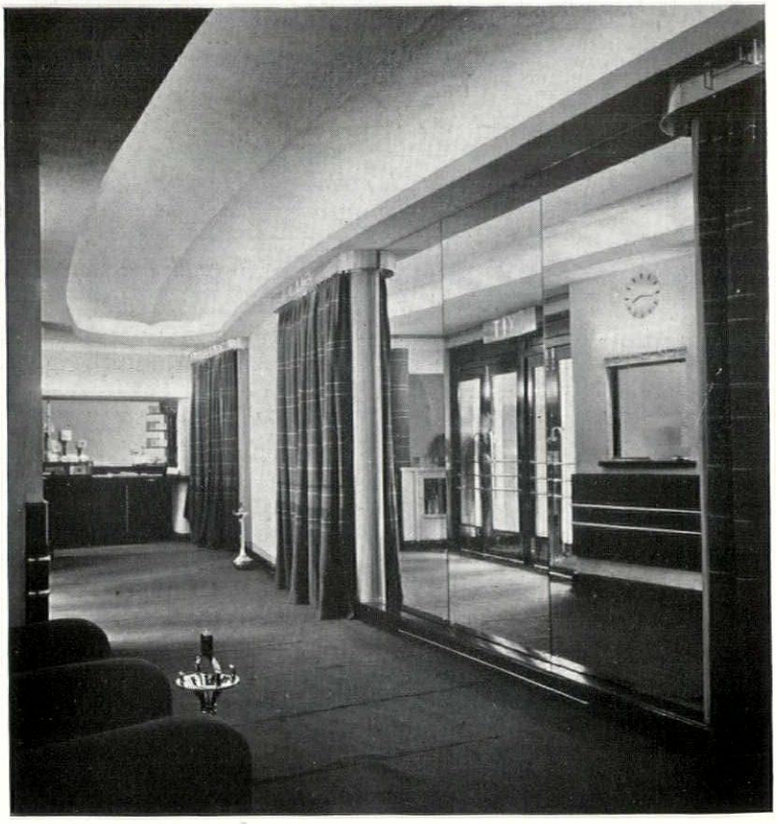
Let us consider now the second quality we want, that of being simple and, therefore, poised and quiet. I mean the simplicity which comes by directness in our ways and use of things. We have lost much of our appreciation of essentials through so many years of not being ourselves. Nothing blunts the essentials like insincerity. Insincerity leads to inferiority; and the inferiority complex develops a million difficulties for us. We see it working in architecture and design in so many ways. There is far too great a tendency to complicate planning, to disturb simple planes by breaking them up unnecessarily, to complicate masses and groups to a point of absurdity, to complicate ornament until there is hardly a place on which to rest one's eyes. Particularly disturbing is the tendency to add features and notions for which there is no use at all—esthetically or functionally.

In most designers there is an insane desire today—which can only arise from an intense feeling of inferiority—to make themselves felt, to make a noise, to be obvious, to develop almost a yellow press manner of exhibitionism and stunting. The result is that our buildings, our furniture, our exhibitions shout like loud speakers and startle like neon signs.

Have we forgotten entirely that one of the fundamentals of good art is simplicity? Have we forgotten that by working out the bare essentials and then


EXIT
EXIT
EXIT
EXIT





PHOTOS BY DELL & WAINWRIGHT

"EFFECTS OBTAINED BY THE SIMPLEST OF ELEMENTS ARRANGED IN THE SIMPLEST OF TERMS."

. . . Another modern building designed for 20th Century Londoners by the firm of Sir John Burnet, Tait and Lorne. It is the Curzon Cinema, a small community theater, primarily for moving pictures

simplifying even these we should have a greater art? Art consists more in what we can eliminate than in what we put on. Yet "putting things on" has grown to the proportions of a major disease in this country. Is it impossible for us to get any lightness and gaiety, restraint and poise into what we do? To have this in art, however, one must assume the person who is sure of himself, the person who is really living in his own generation, the person who IS himself. Great art assumes great people; little noisy, fussy people cannot produce great art.

There is far too much exhibitionism and stunting. Don't mix this up with the real thing. There is the surprise that comes from an entirely new invention, such as the gramophone, the radio or the aeroplane; also the surprise that comes through the development of the multiple building holding thousands of people in a manner and with conveniences undreamed of before. But this is not stunting. This is mental expansion, this is new life. It contains something by which human beings grow into bigger human beings. Exhibitionism to which I refer comes from the man with nothing to say. He merely says it over again and louder than ever before.

Being simple, restrained, poised, quiet and modern is not so much a way of doing things as it is a state of mind. It is, perhaps, hard to get this state of mind. But if we will turn our face instead of our back to our generation we will find a new freedom. Strangely enough our generation is not standardized. Nothing could be more standardized than the orders and Renaissance plans. But we were bound by them for so long we have become numb to their restraining influences. We fail to realize what artificial, complicated human beings they have made of us. But if we will make architectural expression fit our lives instead of trying to fit our lives to it—in other words "Art for man" instead of "Art for Art's sake"—we shall gain a greater freedom and have a chance to be simple, poised and quiet.

CONSIDER now our third essential, that of being chic and, therefore, distinguished. Chic is easy, natural elegance, good style, the stamp of superiority and distinction. In producing an architectural work of art it is not enough to satisfy the functions nor is it enough to produce a design with no regard to function. We have suffered too long from the functional products of manufacturers which are unattractive, and too much from the unfunctional designs of artists; what we badly need is a fusion of the two. Science and Art must fuse before we can get anything worth while.

We have suffered too much also from the sacred and profane conviction of artists that certain things in life are important and other things don't matter. All things in life are important, the only difference being that some things are more important than others. The unfunctional qualities of some of our products and the overdone artistic treatment of others separates them from chic and distinction as widely as races and creeds separate human beings.

Chic is being oneself, being original, being simple, poised and quiet. It is the combination of the conscious and the subconscious in the artist. It is, perhaps, the only thing in life that can't be taught. It is a quality that comes with maturity, it scarcely ever exists in youth. Thus, young women are practically never beautiful and chic, only pretty and vivacious. They have not had time to develop the character which chic demands. So chic in design comes to the man after years, when he has passed the age of prettily and vivaciously putting on all he knows, when he has become restrained and poised, in other words when he is mature. It is the ultimate of one's time. Sweden does it in glass and sculpture, and the Americans do it in advertising. It happens most frequently, strangely enough, when we come across the enigma of the artist who is also an executive. The one alone does not seem to be enough, perhaps because it demands a person of so many parts in one. Conflict seems to be necessary, principally the conflict between function and art expression; all function is mostly dull and all art mostly silly.

Art work in England particularly belongs to the latter of these. Its form results from our not being able to keep hands off things; fingers literally itch to put things on. This kills us. Look at the amazing effects obtained by the simplest of elements arranged in the simplest of terms in some of the foreign work. It could not possibly say more than it does. Yet it has arrived at that stage of completion when one could not take a line away—or add one—without spoiling it.

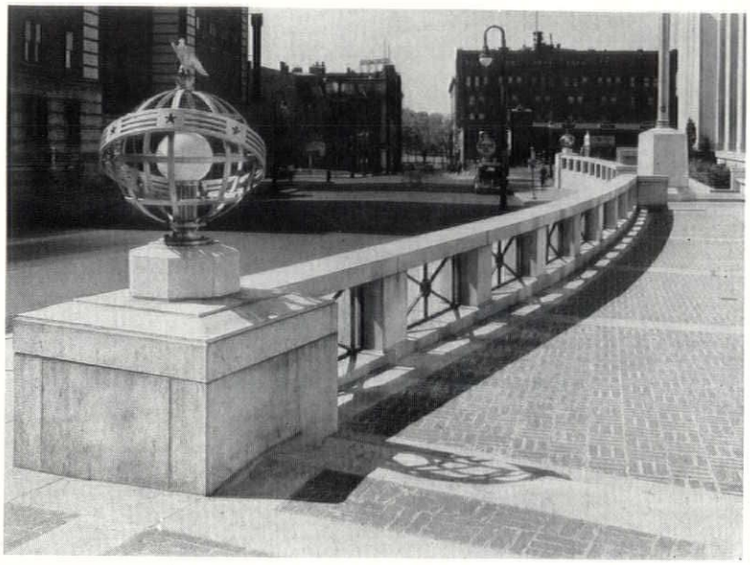
We lack the grand manner today either because we have never had it or because we have, in our strange way, thought it pretentious. Perhaps we are too self-conscious. We lack a civic sense because we have always treated a city as a place in which to make money and from which to get out into the country as quickly as possible. The grand manner is coming, however, in various ways. Some of our nightclubs are smarter than they have been, peopled with more smartly dressed men and women. We have got it in many of our modern shops, in rugs and fabrics, in some furniture and buildings. We have got it in some advertising too. It is by no means entirely lacking, and who knows but some day this smartness, chic and distinction will penetrate more of our streets, our architecture and the homes of the people.

WE have said a good deal about the art of architecture. Let us speak now, in our last essential, about the practice of it. We want to be more co-operative and, therefore, more serviceable to Society. Art is useless unless it can be translated into terms of pleasurable use. The point of our discussion so far has been to arrive at standards which will help us to raise the art of architecture nearer to perfection for our time. Our idea now is how we can distribute these benefits to everybody. Let us consider for a moment (*Continued on page* 110)

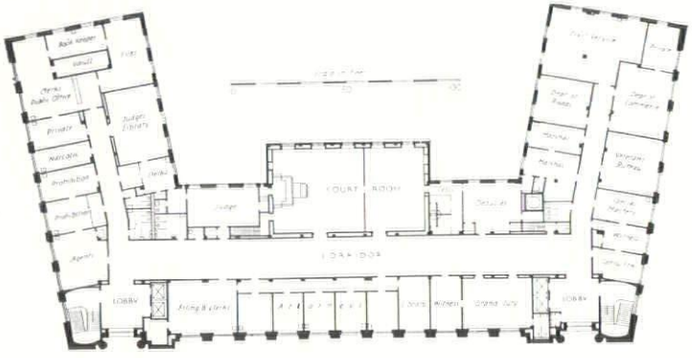
ADAMS AND PRENTICE, ARCHITECTS
CARL J. MALMFELDT, ASSOCIATE ARCHITECT

POST OFFICE AND FEDERAL BUILDING.
HARTFORD, CONNECTICUT

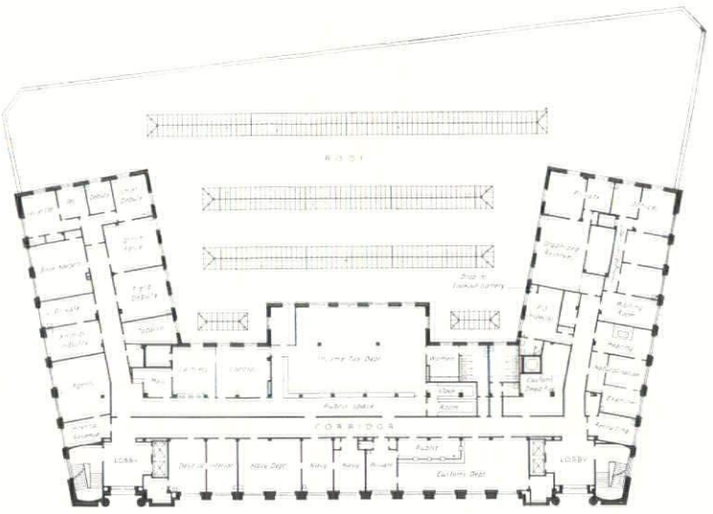
Photographs by Samuel H. Gottscho



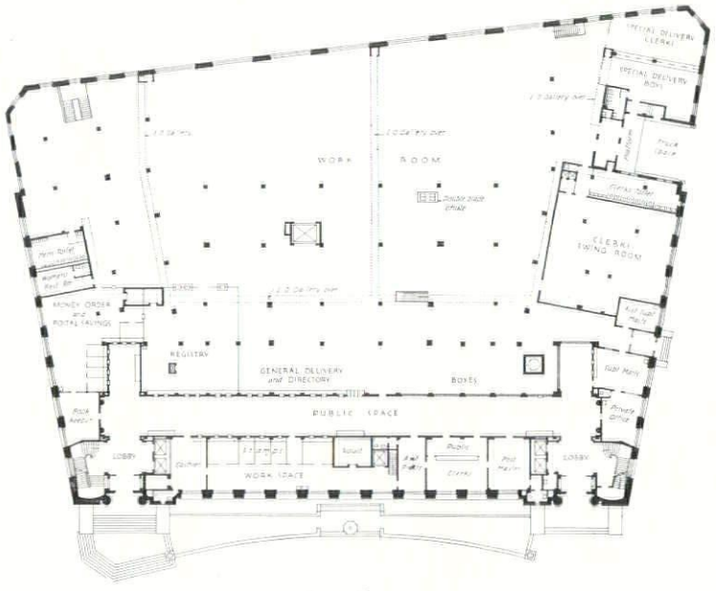

POST·OFFI



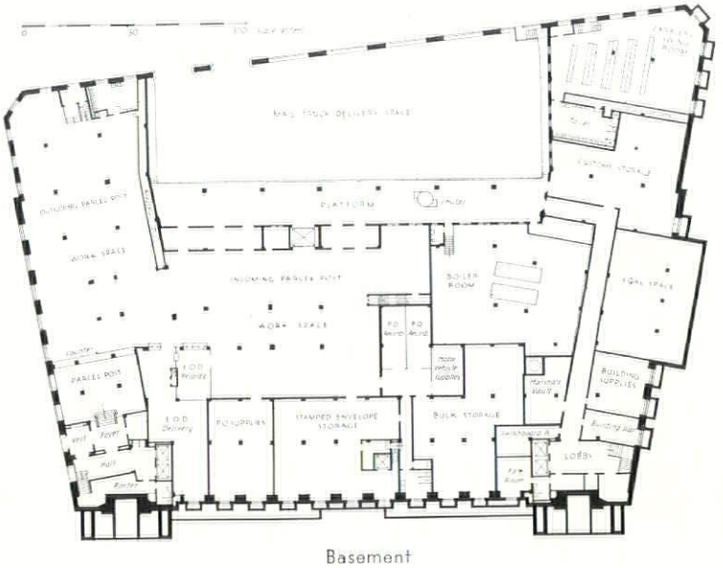
Third Floor



Second Floor



First Floor



Basement

Facing of exterior walls is Indiana limestone. The entrance, shown on two preceding pages, is of Wisconsin black granite. Basecourse is also granite. At the rear and inside the court exterior facing is light colored brick. Spandrels and other metal work of the exterior are aluminum. Post Office and Federal Building, Hartford, Conn., Adams & Prentice, architects; Carl J. Malmfeldt, associate architect

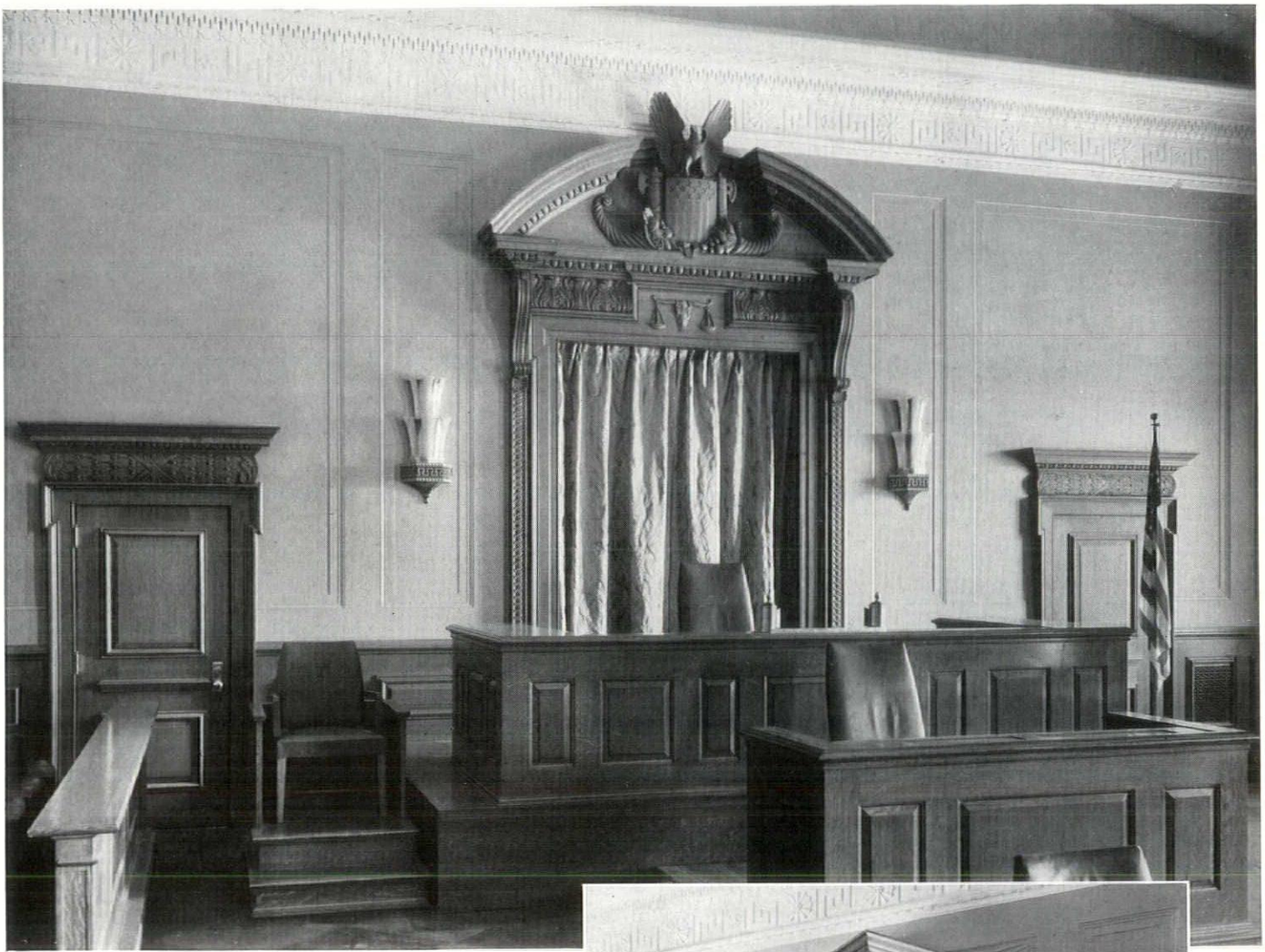

IN TEMPEST AND IN CALM
WE SPEED AT YOUR COM
THE TIDINGS AND THE TREAS
OF THE SKY
LAND
ACKLESS SEA
ND·FEDERAL·BUILDING·OF·THE·UNITED·S

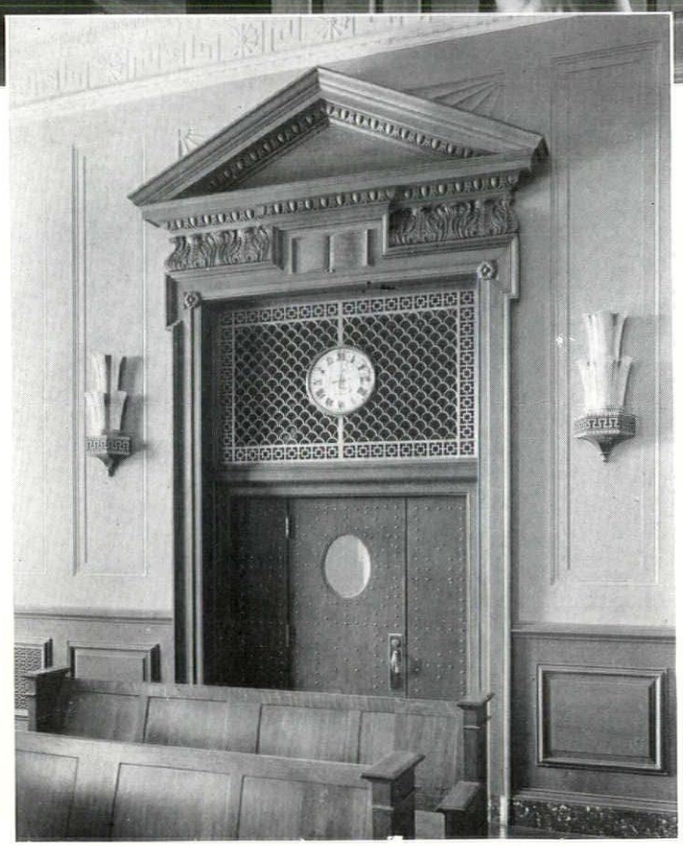
POST OFFICE AND FEDERAL BUILDING, HARTFORD, CONNECTICUT

ADAMS & PRENTICE, ARCHITECTS

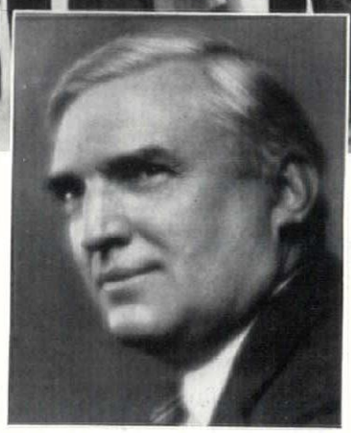
CARL J. MALMFELDT, ASSOCIATE ARCHITECT

First floor public space. Walls are Tennessee Ross Curly marble; floor is light and dark gray terrazzo, the ceiling painted plaster. Exposed metal work, including the stair railings, is aluminum





Third floor Court Room. Floor is surfaced with cork; and the ceiling has been acoustically treated. Paneling and door pediments are of oak. Post Office and Federal Building, Hartford, Conn., Adams & Prentice, architects; Carl J. Malmfeldt, associate architect



Above: retiring officers of the A.I.A. and Producers' Council pose with Walter J. Kohler, Arthur Covey, muralist, and Richard Philipp in front of Kohler Village Community Hall. Left to right, E. J. Russell, Pres., A.I.A.; Charles D. Maginnis, 1st V-Pres., A.I.A.; M. H. Furbringer, 2nd V-Pres., A.I.A.; J. F. Gowen, Exec. Secy., Producers' Council; Walter J. Kohler, Pres., Kohler Co.; J. J. Matson, Treas., Producers' Council; J. C. Bebb, Pres., Producers' Council; Charles T. Ingham, Secy., A.I.A.; F. A. Morse, Board Chairman, Producers' Council; O. A. Kroos, Secy. & Treas., Kohler Co.; Arthur Covey, mural painter; Stanley Works, V.-Pres., Producers' Council; Richard Philipp, Milwaukee architect. Right: Stephen Frank Voorhees, member of the New York firm of Voorhees, Gmelin & Walker, new President of the American Institute of Architects.

PIRIE McDONALD

67th Milestone . . .

HIGHLIGHTS OF THE A.I.A. CONVENTION

"CONVENTIONS give us an opportunity to talk to one another, to gain experience from our contacts and to express approval or disapproval of the action of the Board of Directors. . . ." Thus pointedly spoke President Ernest John Russell in his address to members of the Sixty-seventh Convention of the American Institute of Architects held at Hotel Schroeder in Milwaukee, Wisconsin, May 28th to 31st, inclusive.

President Russell could well have spoken at length on the opportunities of A. I. A. delegates to this Convention. From every region of the country they had assembled to decide an issue—unification—which each man, according to his lights, admitted to be of paramount importance. Coincident with this issue were changes in the Institute's By-laws, through which delegates were given the opportunity of liberalizing the Institute numerically, without relinquishing the present system of administration.

Opportunity existed also for the Convention to pass upon the policies of the Institute's important Committee on Public Works—policies which last year were the cause of much argument, some verbal acidity and at least a few Convention resolutions considered impolitic by many. A number of forewarned delegates knew the Convention was to consider again the Question of the Small House; and since it was closely linked with the result of unification, professional publicity was a subject of inevitable discussion at some Convention meetings.

To say that delegates made the most of their convention opportunities is to indicate a mixed personal conviction regarding matters at stake. From the standpoint of the Institute's isolationists—at least two-thirds of the 210 votes present or represented—the Convention was successful in that unification was

"THE SENSE OF THE MEETING - - -"

DANIEL W. HOAN, Mayor of Milwaukee. . . . "I cannot too strongly urge that your profession spend much time in studying the economic causes and the economic solutions of the various problems involved in the whole nation's rotten housing situation."

LOUIS A. SIMON, Supervising Architect, Treasury Department. . . . "In my opinion the ultimate objective is a properly integrated collaboration of private architects with a Government bureau. To the Government and to the real interests of the architectural profession such an organization should present no obstacles that cannot be overcome by the process of evolution which is certainly now in progress."

BERTHOLF M. PETTIT, Assistant Administrator, PWA Housing Division. . . . "The motive behind our housing program must be to build that which we can rent under a reasonable subsidy at prices which our tenants can afford to pay."

FRANCIS P. SULLIVAN, A.I.A. Committee on Public Works. . . . "We are not dealing with a single thing that is Government. We are dealing with more than twenty different designing bureaus, each organized under specific provisions of law and each administered by different departments. If we go to a government office in an antagonistic spirit we are bolting the door in our own faces."

WILLIAM J. SMITH, on Unification. . . . "It seems too bad that, because of the apparent complexity of this program, we should crystallize one organization about a group of old men who have decided that we will not expand, that we will not do now what the Institute has always done—go forward."

STEPHEN F. VOORHEES, on the Small House Question. . . . "In Baltimore, architects have a small house scheme that is an endeavor to bring the architect's services before the public rather than the architect's plans. The public needs to understand the architect's product. This problem—educating people to a knowledge of what really constitutes architectural service—is one to which we should direct our efforts in every community throughout the country."

defeated decisively. Most of the changes in the By-Laws—formulated by the Board of Directors and presented in a complicated form in an effort to please everyone—were voted down. Thus, generally speaking, the Convention served to affirm the Institute's past policies regarding membership limitations. One notable exception was the fact that requirements for affiliation of State Associations were liberalized and the way opened to repeal By-Laws which might be inconsistent with the present liberty of action enjoyed by existing state organizations.

Beyond this meagre list of actual accomplishment, little occurred at the Convention regarding the prime professional question of the hour. The net result of seemingly endless consideration of the unification problem leaves the Institute with its former self-imposed restrictions as to expansion. Only through a relatively simple federation of state organizations with the Institute can the ideal be realized.

Any interpretation of the Convention's action would be negative at best. Actions of the delegates unquestionably set forth the official mind of the Institute. But unquestionably also there exist sharp differences of opinion in the Institute's rank and file. One section of the body strongly favors the widest possible liberalization of policies and representation in contrast to what it deems the slow, suicidal strangulation of the Institute's power and influence. Opposed to this group are "the old guard" doggedly resisting changes that might substitute "quantity for quality."

Apparently the latter group has retained the upper hand. But repudiation of the present unification plan might have been caused by the extreme complexities involved in the recommended means of accomplishing unification. And the fact that state organizations can now become easily affiliated with the Institute while still retaining individual freedom

of action may, as pointed out by Lancelot Sukert of Detroit, establish a firm basis through which a simple plan of unification can be accomplished. Certainly the subject has not yet been definitely killed so far as any member of the Institute is concerned. Officially it was referred back to the Committee for further consideration. In due time—but at least a year hence—it will probably once more be paraded as a paramount issue of another Convention.

DISCUSSION of unification at this Convention—beset during at least two sessions with tiresome roll-calls and many resolutions as to "the sense of the meeting"—served to obscure somewhat the constructive attitude of the delegates on other matters. Notable among these was the matter of the small house. Last year's gathering killed the Institute's sponsorship of the Arichitects' Small House Service Bureau. But that action in no way disposed of the Institute's concern with the small house as a professional problem or as a growing opportunity for the individual rehabilitation of private practices. Indeed, it merely served to emphasize the fact that architects face the obligation of improving the plan, design and construction of the small house, particularly as it may be built in rural areas which heretofore have not been accorded the benefit of architectural notice.

All this was pointedly brought before the Convention at its last business session. Delegates were unanimous in declaring the small house problem worthy of the highest professional attention and enthusiastically resolved that "The Committee on Small Houses be instructed to study the development of a possible method of offering architectural service in the field of the small house in a manner appropriate to the opportunity and to the demand and be further instructed to report the same to the Board of Directors at the earliest possible moment."

No less important was the question of professional publicity. At some point during every session of the Convention this subject was brought to the attention of delegates. And nearly every speech contained some allusion to the necessity of improving the relations between architects and the public. Not until the tag end of the Convention, however, was the matter considered openly on the Convention floor.

Then Clair W. Ditchy, of Detroit, introduced a resolution emphasizing the desirability of a national public relations program and inviting the Convention's serious consideration of its far-reaching implications of professional advancement. The discussion thus provoked demonstrated conclusively that delegates were entirely sympathetic to the idea. They resolved as the "sense of the meeting" to recognize the "importance of a program of publicity of the architectural functions in the construction industry" and voted that the matter be taken under consideration by the Board of Directors. Elsewhere in this issue Mr. Ditchy's resolution is presented in full. Alluding to it, the Convention resolved that Mr. Grady, the Institute publicist, be requested to prepare a full report on the whole question of publicity to be published in *The Octagon*.

As to other matters, the Sixty-seventh Convention followed in well-worn paths laid out by past meetings. In an opening address, Mayor Daniel W. Hoan of Milwaukee welcomed delegates to the city and touched upon the economic opportunities open to the profession in the important field of housing. Frank C. Baldwin of Washington, formerly Secretary and an A. I. A. member of 27 years standing, presented an excellent paper on the early days of the Institute. And delegates almost cheered after listening to Treasurer Bergstrom's able report indicating that the body was still solvent.

Through the hospitality of Mr. Walter J. Kohler, the Convention was entertained in a body at Mr. Kohler's home after an absorbingly interesting tour of the Kohler Co. plant and an inspection of the remarkable little town of Kohler which houses many of the plant's employees. Later, at a joint luncheon of the A. I. A. and the Producers' Council, Mr. Kohler spoke about the part architects and producers alike will play in future building activities.

"The Architect," said Mr. Kohler, "More and more figures as the conductor of a great orchestra in which engineers and fabricators and tradesmen help to create that 'new world symphony'—the modern building with its functional beauty."

Another speech by Glenn Frank, President of the University of Wisconsin, marked a high point of the Convention banquet on May 31st at which Past-President Robert D. Kohn presided. President Frank spoke for a more modern and open-minded attitude in professional activities and declared: ". . . the assumption that to plan for utility is to prostitute art will hardly stand up under examination."

The banquet was also an occasion for the announcement of Fellowships and the induction of Stephen Frank Voorhees, newly elected President.

THOSE newly elected as Fellows were: Robert Seely De Golyer, Chicago; Alfred Fellheimer, New York; Fred A. Godley, New York; Philip L. Goodwin, New York; Walter R. McCornack, Cleveland; Floyd A. Naramore, Washington State; William Jones Smith, Chicago; Harlan Thomas, Washington State; Henry Stuart Waterbury, New York, and Rudolph Weaver, Florida North.

Officers for the coming year are: President, Stephen F. Voorhees, New York; First Vice President, Louis La Beaume, St. Louis; Second Vice President, Francis P. Sullivan, Washington, D. C.; Secretary, Charles T. Ingham, Pittsburgh; and Treasurer, Edwin Bergstrom, Los Angeles. New directors, elected for a three-year term, are: Walter R. McCornack, Great Lakes Division; William H. Crowell, Portland, Western Mountain Division; and William G. Nolting, Baltimore, Middle Atlantic Division. Honorary memberships in the Institute were awarded Carl Milles, sculptor, of Cranbrook, Michigan, and Harold R. Shurtleff, Boston, Mass.

"The Outlook Again Is Good..."

Particularly significant are the following paragraphs from a speech given by Miles L. Colean, Technical Director of the Federal Housing Administration before delegates to the Sixty-seventh Convention of the A. I. A.

IF the architect is really to count in the home building of the future, and if American housing is to be more healthful and pleasing than at present and American cities something more than the shambles they are today, he must seek a broader field of activity than the one to which he has been accustomed.

Requirements of that broader role are clear. The architect must, in the first place, concern himself more with the whole aspect of housing. He must understand better the economics of housing. This means not only the economics of land and rent, and mortgage lending, which, though vital to him, are largely beyond his control. It means a greater appreciation of the economics of the factors which are well within his control—the economics of the use of materials, of time in building, of planning and of using the neighborhood, rather than the house, as a unit. He must find an esthetic, not only in mass and scale and the rest of what we are schooled in, but also in the efficiency and directness and frugality of his individual plans.

The architect must also gain a more intimate understanding of the ways in which people live, and of the limitations upon their ways of living which their earning power imposes upon them. Any consideration of a great housing program which does not start with a consideration of just what kind of housing people can afford to pay for, is to deal with romance and miss the point of the problem. Preconceptions of what is desirable or necessary in housing cannot be carried over from an acquaintance with the luxury article that has been designed for the upper 5 per cent.

This attitude applies not only to what people can pay for, but to what they want as well. A rich man can usually find means of getting about what he wants in the arrangement of his house. The ordinary man, even though his house is usually built as one of a group, deserves no less consideration. At the present time he is forced to take pretty much what the speculative building can give him; and these dressed down editions of rich men's houses, as they frequently are, are rarely suited to his own needs.

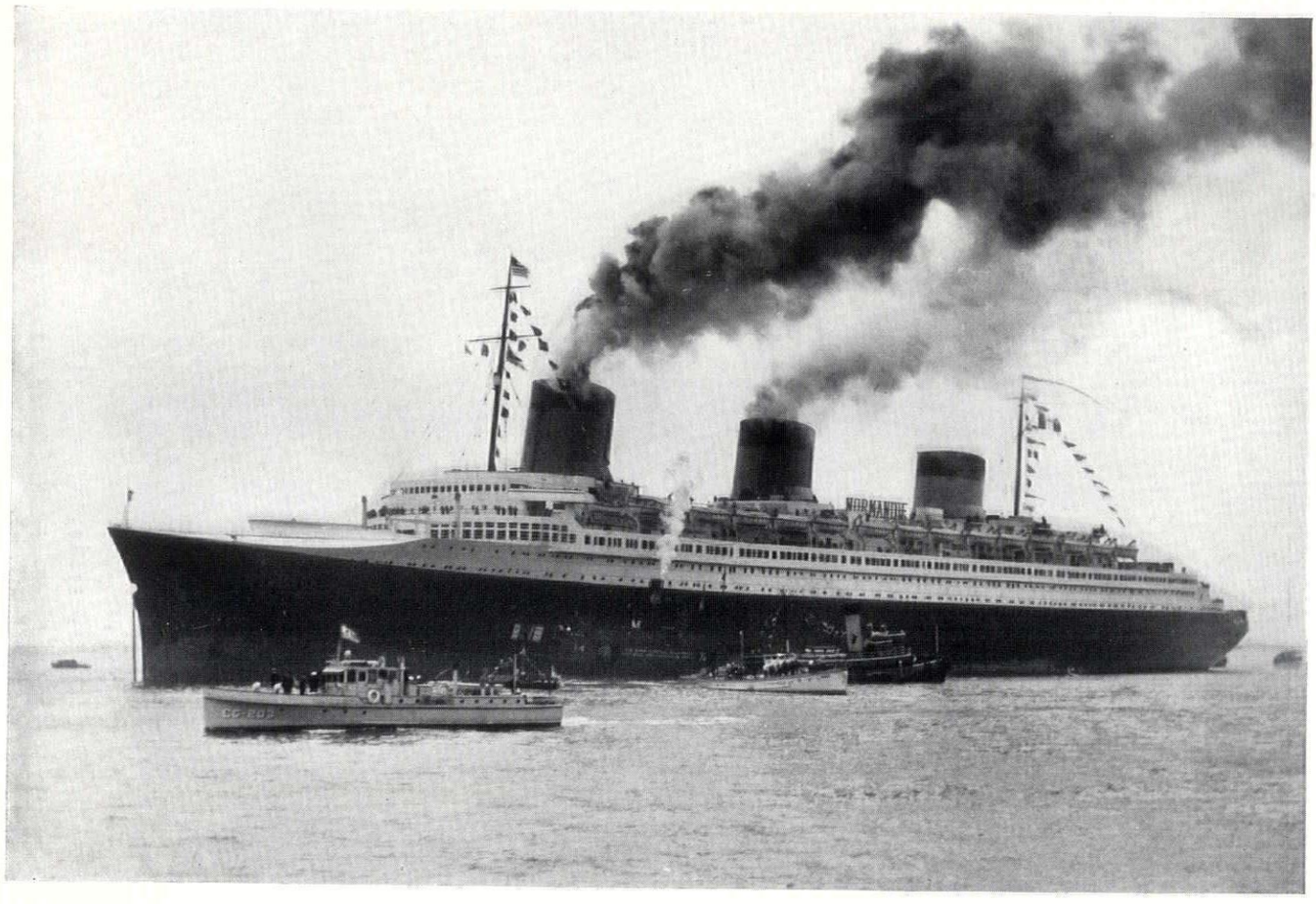
I cannot help mentioning a tendency of architects, when they do enter the field of low-cost housing, to resort to stock plans or to accept uncritically previous solutions almost with the ease of the speculative builder. It cannot be too strongly emphasized that each housing project is a separate problem—that which is appropriate in Brooklyn is not appropriate in Madison, that which is a happy solution for Boston may be a poor one for New Orleans, or what is suitable for government workers in Washington is not what is required by steel workers in Gary. Each project must achieve its individual character. This achievement requires as much imagination and as intense study—perhaps even more—than the problems with which in the past we have been more familiar. The architect is dealing here with the well being of a vast group of people who are in a poor position to express their demands and who must depend upon him for a fitting expression of their needs. It is no light responsibility.

When the architect can meet these requirements, the problem of the relationship between the architect and the design of small houses will be pretty near a solution. For the problem isn't really one of the small house as an abstraction—it is the dwelling for the family of small means. It is the dwelling which represents, probably, as much as eighty or ninety per cent of the residential building market.

No one knows how far private capital can go to meet this market—it has never been tried. An almost limitless market exists. How deeply into it we can penetrate even with our existing facilities has only begun to be explored.

The situation which architects face this year is different from what it was at the last Convention. Then we faced another year of comparative inactivity, and we knew it. During that year conditions have changed. The housing shortage has grown vastly more acute, and machinery has been set up which should make the filling of the need for housing possible. Already there is evidence of a decided increase in the volume of building—permits for new construction reported for the first four months of this year being 118 per cent higher than for the same period last year.

The outlook again is good. What remains is to devise the means, and to accept the adjustments which will insure a fruitful participation.



The S.S. NORMANDIE, largest thing afloat and newest superlative of the French Line

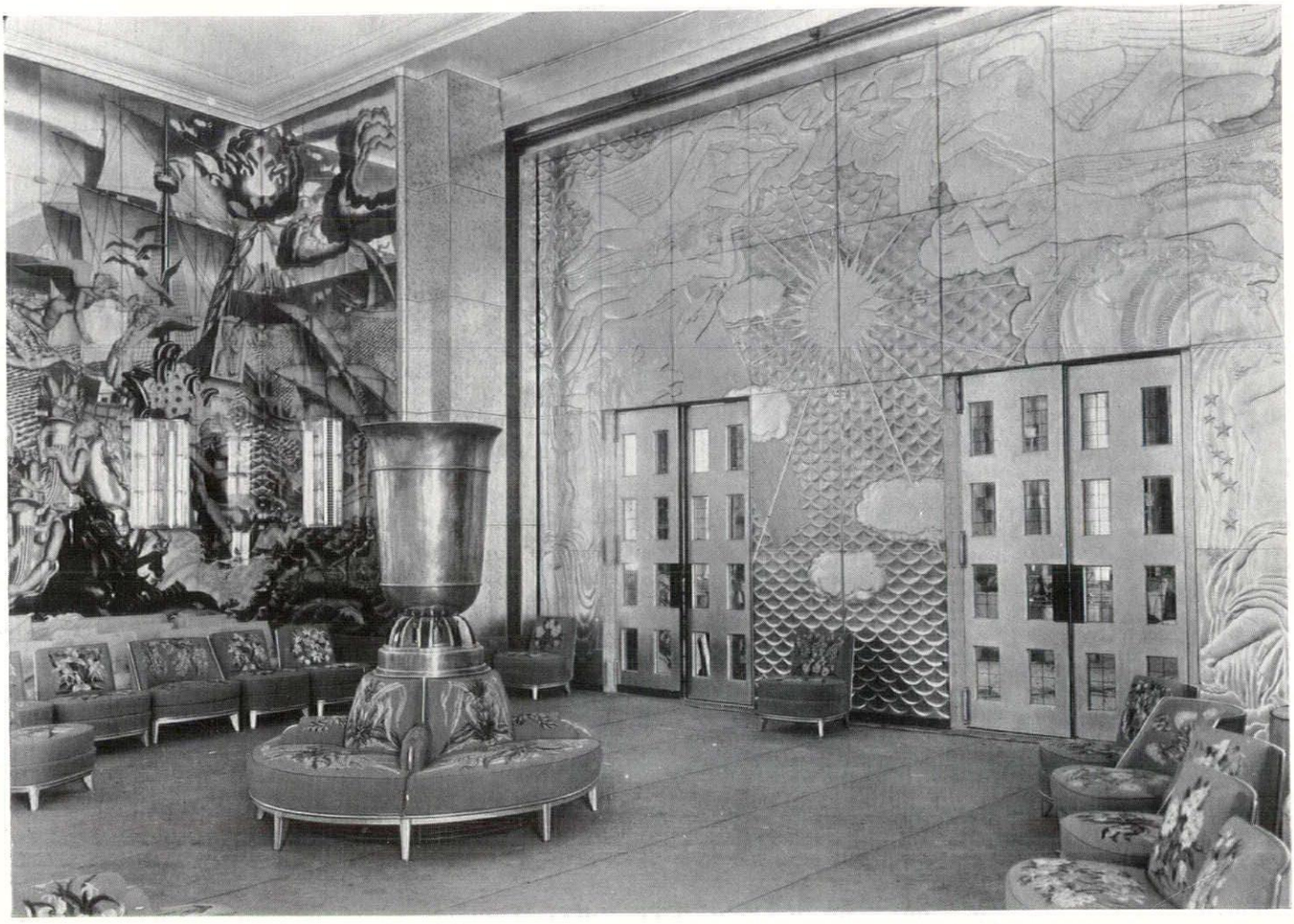
The Floating Palace from France

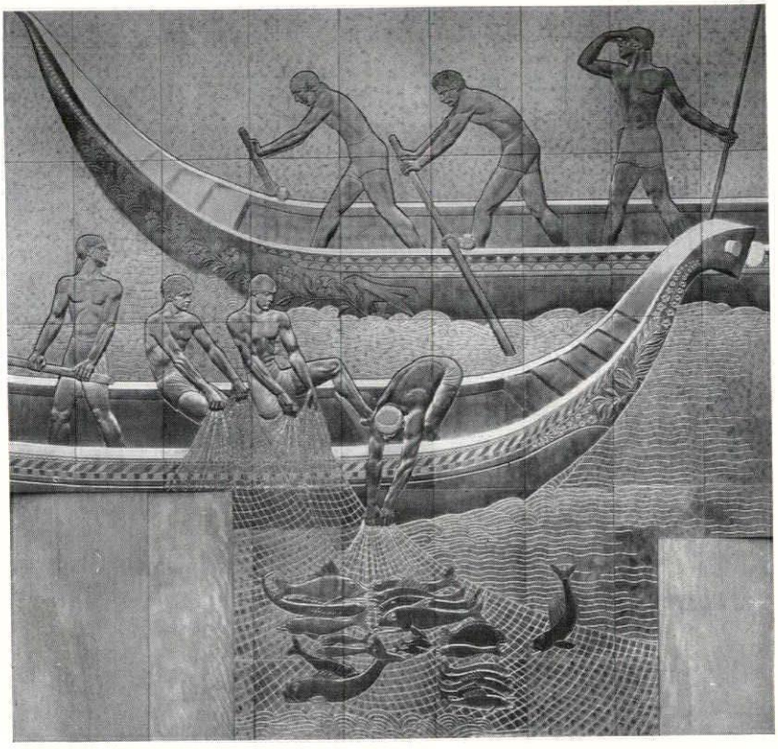
THE S. S. NORMANDIE—which weighs 70,000 tons and is almost as long as the Empire State Building is high—is an uncanny achievement for which the French have become famous. The speed of the ship and all of its mechanical devices constitute in themselves a major miracle even in this age. But aside from these, the Normandie is unique as a travelling exhibit of native art and industrial design. Thus she is as truly noteworthy as any exposition acclaimed in Paris.

To fit this ship the foremost designers in France were given free rein. It is strikingly obvious that no expense, imagination or materials have been spared. And if, to American designers, the results are too florid, too sumptuously grand, let them remember that the labors of the architects—MM. Böuwens de Boijen, Expert, Patout and Pacon—have made them "typically French."

As such, Normandie interiors may have some influence upon subsequent design in this country. In former times the work of French architects has not gone entirely unnoticed by American designers. Hardly an American countryside exists that cannot boast of Normandy cottages or of grand houses designed under the "inspiration" of the chateaux. And on almost every Main Street one can see the floriated façades begotten by the 1925 Paris Exposition.

But even without regard to its embryonic influence on design, the Normandie is notable in at least two practical instances. First, it is the most completely fire-proofed vessel ever launched. Second, in the wide variety of materials that have been em-





Above: corner of the Main Lounge. The color scheme here is silver, black and white. Doors, opening to the Smoking Room are set in a portal of cast glass which slides out of the way when it becomes desirable to combine both spaces. Right: lacquer panel in Smoking Room

Above: Smoking Room side of the huge sliding portal. The carved lacquer decorations are deep brown-red, overlaid with gilt. Left: a corner in the living room of the Commander's private apartment

ployed there exist techniques that could undoubtedly be applied with excellent results to the solution of many American problems of decorative design and construction.

As to the first of these, the Normandie's owners have taken every presently known precaution to prevent that greatest of maritime horrors—fire. Structurally the boat is divided into compartments —321 of them—each separated by partitions that are as fireproof as modern science can make them. These are of several types, all equally efficient. One, for example—called "type A"—is built of studs covered with asbestos, two thicknesses of rock wool and a sheet of ¼-in.-thick steel. Though its total thickness is only about 5 inches, this construction is said to resist for 20 minutes a temperature of 1500° F.

But construction is not alone sufficient to eliminate the fire hazard. Consequently, an equal amount of preventive care has been lavished upon finishes. It would be very nearly accurate to say that all of these are fireproof. In many instances finish materials are inherently non-inflammable. Witness to this is the fact that much glass and metal has been used for wall facings. Wood—used extensively as both finish and furniture—has been treated chemically so that it will not support combustion and the same sort of treatment has been given to other naturally inflammable wall coverings and to decorative fabrics in all rooms, public or private. Strictly speaking, of course, all these have not been rendered completely fireproof. Even "fireproof wood" will burn if subjected to steady and intense heat. But in that the chemicals used in their treatment will not feed flames, the fire hazard has been reduced so that it is now regarded as a factor of minor importance. Even the paint was composed with special ingredients to withstand temperatures up to 750° F. And as an additional safeguard, the entire ship is controlled by the most elaborate and delicate mechanical system for fire detection ever installed.

This insistence upon firesafeness undoubtedly had some influence upon the choice of materials in the Normandie. In the largest public rooms—the Main Hall, Dining Room and Lounge—glass and some marble were chiefly used. Walls of the former are Algerian onyx, copper and glass; and in the Dining Room, embossed cast glass panels cover most of the wall surfaces. In the Main Lounge, also, walls are lined with glass, painted and etched with designs that depict the story of navigation from its earliest beginnings.

This extensive use of glass in various forms and finishes has made possible, in many instances, unusual methods of lighting, some of which are pictured in the accompanying illustrations. But other materials have been used with the same degree of ingenuity if not to the same extent. Thus, in the Smoking Room, wall panels are completely covered in brown-red Coromandel lacquer. They are the work of Jean Dunand and his two sons, specialists in lacquer, an ancient material that changes density with the weather and involves an exhausting technique in its application. It is usually applied over wood or a base built up with layers of resin, canvas, sawdust, wood and earth. Panels in the Normandie's smoking room, however, have a base of a fireproof plastic developed by the Dunands and said to be more susceptible to carving or modeling than any of the more usual mat-lacquer bases. Finishing of such panels required extreme care. It is partly accomplished by polishing with (*Continued on page* 108)

One of the many small lounge rooms, decorative treatments of which are various. In this one, murals in brown, ivory white and black, were executed by Jouve, famous painter of animals

IN THE S. S. NORMANDIE....

Under the direction of the architects MM. Böuwens de Boijen, Expert, Patout and Pacon, French decorators, artists and craftsmen in many materials have made of the huge new liner a veritable exhibition of contemporary French art. In the development of the utmost luxury and to create effects of lavish magnificence, unusual materials have been used to an extent rarely encountered, even on land. In the bedroom of the "Rouen Suite," illustrated above, for example, walls are covered with pigskin. Furniture, mostly built-in, is oak, covered to some extent with pigskin

The Swimming Pool . . . Tile in shades of blue covers walls, floor and ceiling of this room which has a semi-circular bar at one end and which is lighted indirectly from coves in the stepped ceiling. Underwater lighting is provided in the pool itself which measures about 75 x 18 ft. Depths are graduated in 18 in. steps to a maximum of 8 ft. Adjoining the pool are exercise rooms and a gymnasium. . . . On two pages overleaf are shown the grand stair and the Dining Room. Walls of the latter are of marble and moulded glass

The Chapel . . . Upper walls and barrel vault of the ceiling are of plaster surfaced with painted decoration. Stations of the cross, lighted from recesses above, are carved in ebony. The chapel door, shown on the facing page, was designed and executed by F. L. Schmied, heretofore known as a designer of rare books. The door itself and the flanking panels are of steel, enameled in rich colors dominated by blues and greens. The design was first carved entirely upon wood. A mould was then made and the steel cast in this

The Main Hall . . . Walls are of Algerian onyx, the decorative elements are of cast glass and all metal work is handwrought copper, gilded and oxydized. The doors lead to the Dining Room. Medallions on them depict the important towns of Normandy

PURDUE UNIVERSITY INVESTIGATES

"The New Science of Better Living"

BY TYLER STEWART ROGERS

Technical Editor, American Architect

PRACTICAL RESEARCH in housing, embracing community planning, public health and social welfare as well as the improvement of dwellings, was inaugurated June 1, 1935 by Purdue Research Foundation at West Lafayette, Indiana. Broad and farsighted in its fundamental plan and amply financed for immediate operation, the project seeks to establish a national center of housing and building information and promises to become an important source of data for architects.

President Edward C. Elliott, genial and honored head of both Purdue University and Purdue Research Foundation, described the project at a conference attended by some 75 leading industrialists of the building field. Owen D. Young, chairman of the board of General Electric, first keynoted the scope of the meeting as the beginning of "the new science of better living."

"Through the generosity of Mr. David E. Ross," said Dr. Elliott, "approximately 145 acres of land have been donated to Purdue Research Foundation for a 'home and community research campus' where one stage of our project will be developed. The tract is sufficiently large to contain a complete residential community and is sufficiently isolated so that the development can be given its own community character and environment.

"Upon this site Purdue Research Foundation proposes to develop a new community—a group of homes to be occupied by members of the scientific staff of Purdue University who will pay a minimum rental approximating amortization, taxes, carrying charges and other similar basic costs.

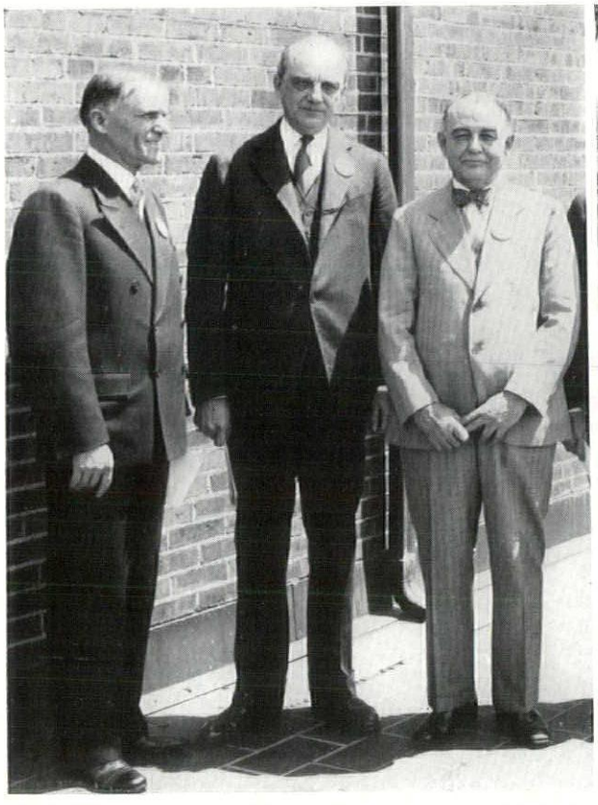
"In planning and building individual residences in this community we intend to work toward a similar ideal of more perfect living accommodations. Beyond this we contemplate the erection of a group of houses which will at once be a study and a practical demonstration of the most modern and efficient materials, equipment and methods of construction available in the building world today. A variety of methods and constructions will be selected to demonstrate modern construction in as broad a manner as possible. Only one restriction would be imposed: any house we build must make some definite contribution to superior housing, whether in plan, materials, construction or equipment, for our object invariably will be how to improve either in economy or value without any loss in living accommodations.

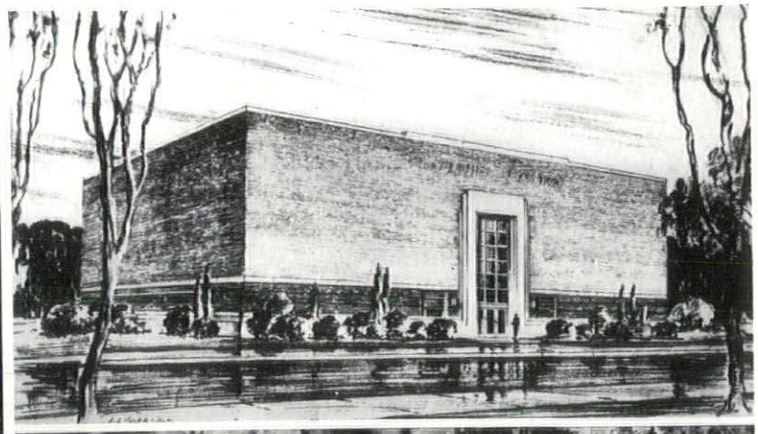
"We think not alone in terms of framework, walls, roof and foundations, but equally of heating, lighting, ventilation, air conditioning, laundry and kitchen facilities and any other similar matters. In searching for improvement we shall seek not only economy in the cost of fabrication, materials, field erection, installation and maintenance, but also economy through reduction in depreciation, repairs, fire hazards, earthquake and storm damage, termite damage, deterioration and other causes of expense and obsolescence.

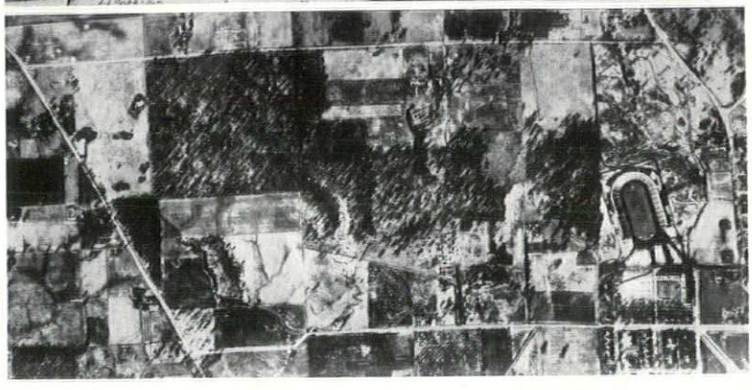
"Through pre-arrangements with the tenants we shall be in a position to gather data of almost every kind, including structural soundness, fuel costs, maintenance costs and the performance of all types of mechanical equipment, insulation and structural materials. Thus we shall have the opportunity to make a fully satisfying test of the practicability of each home as a whole."

This first concept of the use of a housing development as a living testing laboratory, Dr. Elliott added, quickly led to opportunities for the more adequate testing of building materials and methods.

"With the present trend in building construction methods," Dr. Elliott continued, "we may expect to find a growing use of combinations of materials used in definite structural systems and of combinations of mechanical equipment, appliances and fittings designed specifically for use together. We may expect to see buildings in which structure and equipment are designed specifically to be used in combination. Furthermore, there is an increasing tendency toward the development of new materials whose values in construction are predicated on their use as elements in specialized construction methods.







Left: three proponents of "the new science of better living" who recently discussed aspects of practical housing research at Purdue University. Left to right, Edward C. Elliott, President of Purdue, Owen D. Young, chairman of the board, General Electric Co., and David E. Ross, sponsor of the research proposal that includes development of the 145 acre tract, right below, and construction of an "all-weather" testing laboratory, upper right

"Under these circumstances we foresee the necessity for a sweeping change in testing and research facilities and methods. We visualize an entirely new method of attack which will not only bring testing facilities abreast of current industrial developments but, as is proper, will advance technology a step ahead of actual commercial achievement."

The practical outgrowth of these ideals is the proposal to erect an "All Weather Housing Research Laboratory," which will contain extraordinary facilities for testing building materials and equipment as used in practical combinations and under conditions closely simulating actual use. There will be a great center hall large enough to test a complete house unit under every extreme condition of weather and exposure that can be produced by artificial means. Through the use of this unique feature, as well as by means of equipment to be provided for testing smaller combinations of materials, it is proposed to subject structural systems, finishing materials and mechanical equipment to accelerated tests which will show results much sooner than can be obtained through normal use. Even the effects of ultra violet radiation upon exterior surfaces may be reproduced.

Among other purposes Dr. Elliott announced that these research facilities will be open to the government and to commercial organizations for all types of testing relating to housing and building construction. All work would be conducted on a strictly independent basis, functioning always as a non-commercial agency whose findings may be accepted by all as being entirely free from bias. Co-operation will be developed with existing research agencies elsewhere, and through the compilation of the most authoritative and modern scientific test data from all existing sources, the laboratory will seek to act as a medium for the distribution of knowledge to all concerned with building practices.

David E. Ross, long a benefactor of Purdue University and joint donor with George Ade of the Ross-Ade Stadium, is the father of this notable concept. His interest has assured funds for the immediate inauguration of the project as announced by Dr. Elliott. His broad vision of the possibilities extend beyond those immediately announced to embrace collateral study of advances in public health, utilities, sociology, economics and education as they relate to the new science of better living. Frank Watson, brilliant young lawyer, author of the National Housing Act, counsel to PHA and author of "Housing Problems and Possibilities in the U. S." will head the entire project.

The A. I. A. Discusses Publicity . . .

EVIDENCE that a nationally organized public relations program for architects is a matter for serious profession action was made clear at the A. I. A. Convention in Milwaukee recently. The subject was touched upon in some way at most sessions; and at the Convention's last business meeting, Clair W. Ditchy, of Detroit, brought it openly before delegates. Mr. Ditchy emphasized the necessity for adequate recognition of architects by the general public and outlined a plan by which the profession could accomplish this much to be desired result.

"The success of each individual architect's business," said Mr. Ditchy, "Depends upon the widespread, general understanding by the lay public of what an architect does, how he does it, what his services cost and the value of these services as an essential part of building activity for every type of structure.

"As applied to the problems of the architectural profession, a program of public education as outlined implies the conduct of a vigorous program of national publicity—a public relations program, sponsored by the profession and conducted in every detail by an expert public relations counsel of proven experience and ability.

"To be effective, any public relations program must have the individual and unqualified support of the group which it serves. Therefore, any such program for the architectural profession involves every architect in the country, regardless of professional affiliation.

"There exists a plan for this—tentative, but possessing many practical potentialities. Briefly it is this: Each individual architect would co-operate with all others in sponsoring a public relations program by contributing a small weekly sum. Money and control of the program would be vested in a committee of trustees chosen from professional ranks. Actual conduct of the program would be handled in all details by an expert public relations counsel.

"All of us are aware of the excellence of the sporadic local efforts at professional publicity. But some of us do not realize that any effective public relations campaign includes many technicalities with which an architect is not—cannot be expected to be able to cope. Let us recognize this fact. Let us place this vital activity with an expert publicist whose outlook, training and knowledge of the broad field of public relations activities qualify him as competent to pave the way to the profession's objectives."

Mr. Ditchy then offered the following resolution:

WHEREAS: Widespread education of the public regarding the value, extent and costs of architectural services is the most effective means of creating a demand for the services of architects on every type of building: and

WHEREAS: The most generally effective method of educating the public along these lines implies the vigorous conduct of a nationally planned public relations program sponsored by the architectural profession itself, supported by individuals and directed by a professional committee of trustees: and

WHEREAS: There is ample evidence to support the belief that the time is now ripe for instituting such a public relations program: and

WHEREAS: The results of such a program would benefit every architect in the country, regardless of his professional affiliations or the type of his architectural practice: therefore be it

RESOLVED: That the American Institute of Architects, through its delegates to the 67th Annual Convention, here assembled approves in principle the proposal that a nationally planned public relations program be sponsored by and conducted for all the architects in these United States, regardless of professional affiliations of individuals; and be it further

RESOLVED: That this convention approves in principle also the proposal that such a program be directed by a committee of trustees, selected from the architectural profession, but that in all technical details the program be actively conducted by a professional public relations counsel, chosen specifically for his experience, ability and resourcefulness in public relations work.

To a man the delegates seemed sympathetic to the idea. Mr. Ditchy's remarks and the resolution itself were the cause of animated discussion, some applause. But the Convention had shied from any bold commitments on other matters. It did likewise in regard to this one. From William Stanley Parker of Boston came an observation that to him, the resolution suggested "the setting up of a separate organization and methods of procedure apart from the present Institute procedure." He felt this unwise. Other delegates were convinced. And Mr. Parker offered as an amendment *"That it be the sense of the meeting that the Convention recognizes the importance of a program of publicity of the architectural functions in the construction industry and that the . . . resolution . . . be referred to the Board of Directors for further consideration."*

Thus amended, Mr. Ditchy's resolution was passed. With the Board of Directors now lies responsibility for the Institute's further action upon the matter of a Nationally Planned Public Relations Program, "sponsored by and conducted for all the architects in these United States, regardless of professional affiliations of individuals. . ."

As It Looks

THE INDUSTRY CAN PROFIT

IN 1933 a new chapter in the history of the building industry was begun with the preparation of its NRA code. That chapter ended in 1935 when all NRA codes were wiped out by a decision of the Supreme Court. No immediate effect on the construction industry resulting from this action is foreseen. The effect of the construction code, however, can have far reaching future results. If the code accomplished nothing else it served to establish the fact that the building industry is composed of a series of related units that must be co-ordinated and made to work harmoniously. Few industries have been as disorganized as has construction; and the code situation served to emphasize this fact. If the industry will profit from the study thus far given the question, the cost in time, money and personal effort will not have been in vain. If improved bidding practices are continued, as well as its other good features, the short lived construction code, will at least have served a useful purpose in stabilizing an industry which has been sadly in need of such an influence.

FOR PUBLIC CONSUMPTION

A RECENT news release from the Federal Housing Administration contains an account of the remodeling of an old house in Alexandria, Virginia. The owner of the house had, over a period of time, made several plans for reconstructing the house and had obtained several cost estimates. Backed by several Washington agencies the owner obtained a $2,000 FHA modernization credit loan to do the work as a demonstration project. From that point on the owner's own words tell a story which the public should know. "When we obtained the funds under the modernization credit plan we were able to employ an architect. Much to our surprise, his plan for reconstructing the entire house was $700 below any previous estimate. That was a real discovery, as I had considered architects expensive luxuries. Our own experience is that they are quite the opposite."

ON REDESIGNING MAIN STREET

MAKING a town better looking means work for architects. Redesigning Main Street, replacement of eyesores, reorganizing disorganized areas and improving the many other man-made elements of the average town require technical skill. Ernest Elmo Calkins writing in *The Rotarian* offers some good advice on an approach to the subject. He says, "The first step toward making your town better looking is to create a public opinion, a local self-consciousness, a community pride. . . . Enlist the editor of the local paper. Urge him to establish a department of town betterment. Keep it filled with live matter, especially what other towns are doing." Architects in every community know what should be done to make their town better looking. If they will, they can be powerful factors in moulding public opinion and creating local pride. It should result in work that might not otherwise materialize.

NEW BUSINESS POSSIBILITIES

AS forecast in the April issue of AMERICAN ARCHITECT the bill increasing to $50,000 modernization loans insurable under terms of the FHA has passed both houses and has been signed by the President. Title I of the National Housing Act originally limited the insurance of such loans to $2,000 and the time limit for application to December 1, 1935. The new bill extends the time limit to April 1, 1936 in addition to increasing the amount of insurable loans. Thus it should serve as a stimulus to modernize other properties besides those of individual house owners. The new insurance clause will be exclusively applicable to the field of commercial structures and will include a vast number of potential modernization projects. Stores, office buildings, hotels, apartment houses, factories—virtually all buildings formerly barred from benefits of the National Housing Act as originally written can now be looked upon by architects and others as new-business possibilities. These may be visualized in terms of replanning and redesigning with strong emphasis on the modernization of mechanical equipment.

EVIDENCE

A HOUSE owner wanted to build a new fireplace and gave her idea to a mason. He quoted a price of $125. Against her will—because she believed it would cost more—she was persuaded to allow an architect to design the fireplace. The mason reduced his price to $100. His explanation was that from the drawings he now knew exactly what was expected and the amount of material that would be required. He knew from experience that the vagueness of the owner's desires needed some leeway; definite information did not. Here is tangible evidence of the economic value of employing an

to the Editors

A POLICY FOR BANKS

FEW architects, probably, have recognized the banker—the lender of construction funds—as an important agent of professional recovery. To the majority, therefore, the article by Charles H. Lench, "Professional Recovery for Architects," published elsewhere in this issue, will be enlightening. It is certainly timely. Mr. Lench sketches the development of a situation in which architects find themselves unable to serve their clients in a truly professional manner. And without mincing words, he outlines a practical formula for the rehabilitation of architectural practice. This involves a closer cooperation between banker and architect and, on the part of the bank, a policy that regards architectural service as a prerequisite for any construction loan.

It seems obvious that the general adoption of such a policy by banks would at one blow eliminate a countless number of chiselling practices that have characterized the building business for many years. If an architect is permitted to act for his client in a truly professional capacity, he becomes an unbiased arbiter of construction practices. At the same time he is in a position to enforce fair dealing in the best interests of all concerned. No arbitrary code could ever accomplish as much for betterment of building practice as could the unbiased professional guidance of architects backed by the enlightened self-interests of the banking fraternity.

TIME-SAVER STANDARDS

ONE obvious need of the architectural profession is a reliable source of data on materials, equipment and design procedures, which is complete, brief, direct, easy to find and simple to use. To provide such a reference source AMERICAN ARCHITECT inaugurates, with this issue, a series of Time-Saver Standards. The first of these Standards appears in the Reference Data article on "Modern Interior Lighting." Each one takes the form of two pages on which is condensed all information a designer needs on the subject indicated. Eventually these sheets, and many others to follow covering a wide variety of subjects, will be reprinted and made available in a manner subsequently to be announced.

The value of a reference source of standard information which is definitely adapted to the needs of busy architectural offices has appealed to progressive manufacturers who appreciate the difficulty of using ordinary catalogs when seeking design information. The Technical Service staff of AMERICAN ARCHITECT has therefore undertaken to prepare Time-Saver Standards of Advertised Products under an agreement which gives the staff complete control of the product analysis and the form of presentation; to the end that these Advertising Standards shall be as factual and reliable as those published as editorial matter.

PICK A MORAL YOURSELF

APROPOS of our recent article on roofing materials is a story of a restaurant conversation between a typical home owner and another man who might have been an architect or builder.

"This copper roofing," said the owner, "is badly overrated. I put a copper roof on my house because I thought it would last for years and never leak. That was just a little while ago; now the darn thing leaks like a sieve."

"That's odd," replied the architect. "Properly installed, it should last a lifetime. Where does it leak?"

"Through all the nail holes. I didn't like the looks of a plain metal roof so I put wood shingles over it."

The architect grinned.

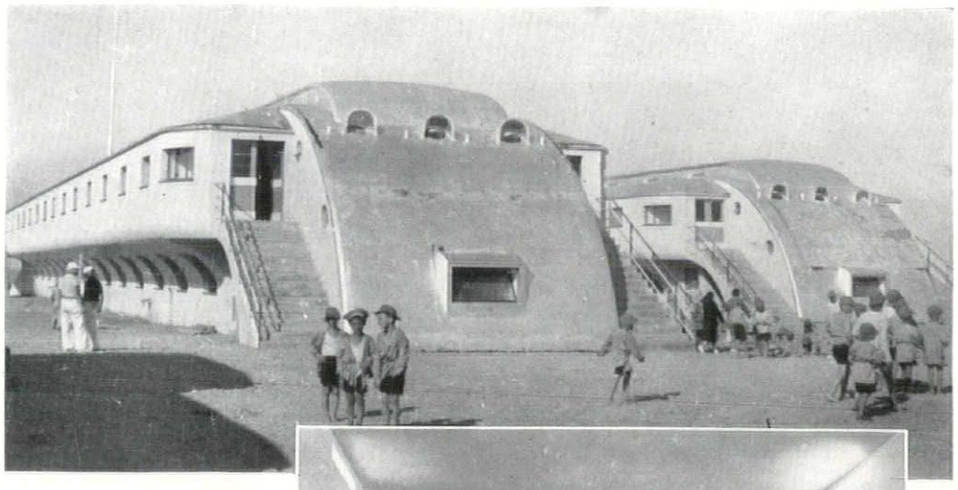
"I know the trouble," he said. "The nails were too small for the holes!"

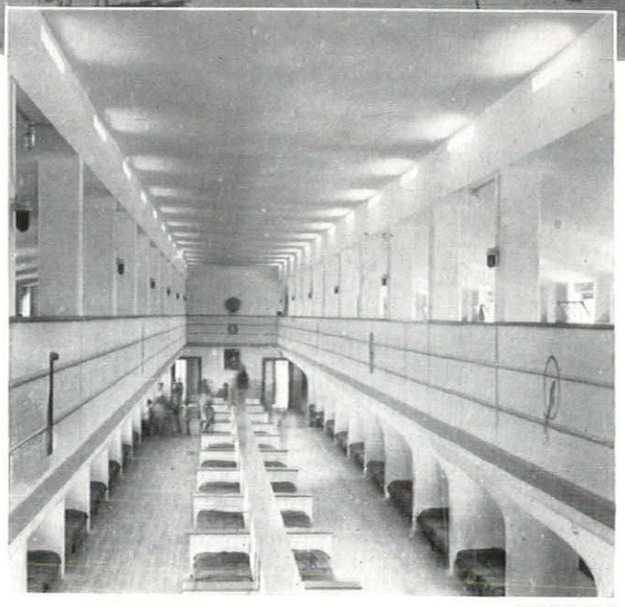
And then, as tactfully as possible, he explained all about the leaks in the owner's copper roof.

ANENT UNIFICATION

DEFEAT of the Unification Plan proposed at the recent A. I. A. Convention does not necessarily close the door completely to the alliance of all architects under a common organizational banner. Action at the Convention liberalized the rules for State organization membership in the A. I. A. It is logical to suppose that all existing state organizations will take steps to join under the new ruling; also that Institute members will organize new architectural bodies in those states which do not now contain them. With all state bodies recognized members of the Institute it would be a simple matter to recognize their members as individual members also.

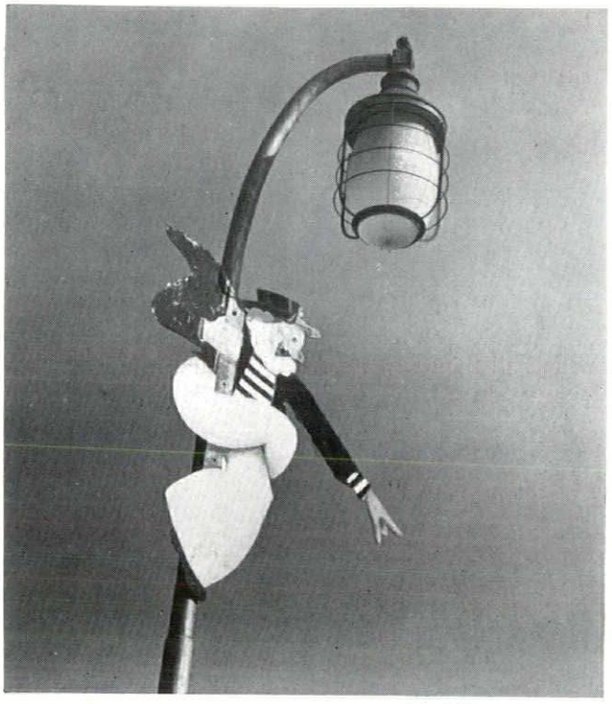
Some plan as simple and direct as this seems necessary if the ideal is to be accomplished. Convention results proved that complicated proposals have little chance of adoption. They also emphasized the fact that desire for a numerically representative body of architects is rapidly assuming the proportions of a vigorous demand. Some sort of unification scheme must become a fact. If the Institute cannot bring this about, some other agency will probably do so.





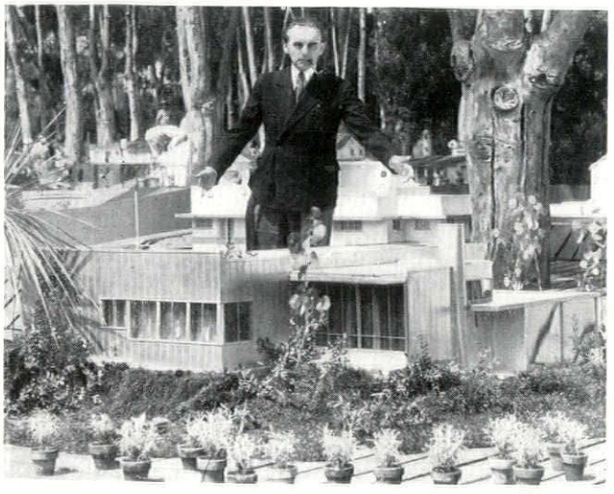
WIDE WORLD

The "streamlined" buildings, right, are barracks at Balilla, Italy, that house boys from 8 to 15 who are enrolled in Mussolini's new, martial "youth organization." Built of steel and aluminum, the barracks are painted white inside and out and are said to be ultra-efficient as concerns good lighting and ventilation. The unusual shape has proved an economical guard against the effects of wind and weather



G. A. DOUGLAS & GEUDREAU

Above: new lamp-post at Jones Beach State Park, Long Island, N. Y. **Below:** Richard Neutra, Los Angeles architect, with a model of his house which won the recent Better Homes contest. Model is part of a miniature village set up at the San Diego Exposition

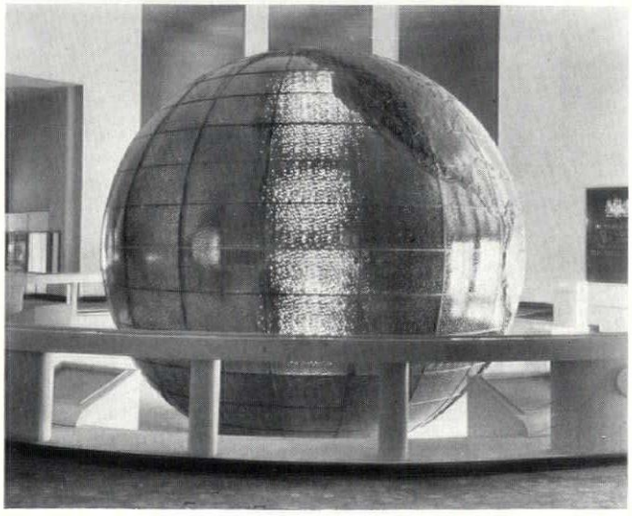


WIDE WORLD

Trends and Topics

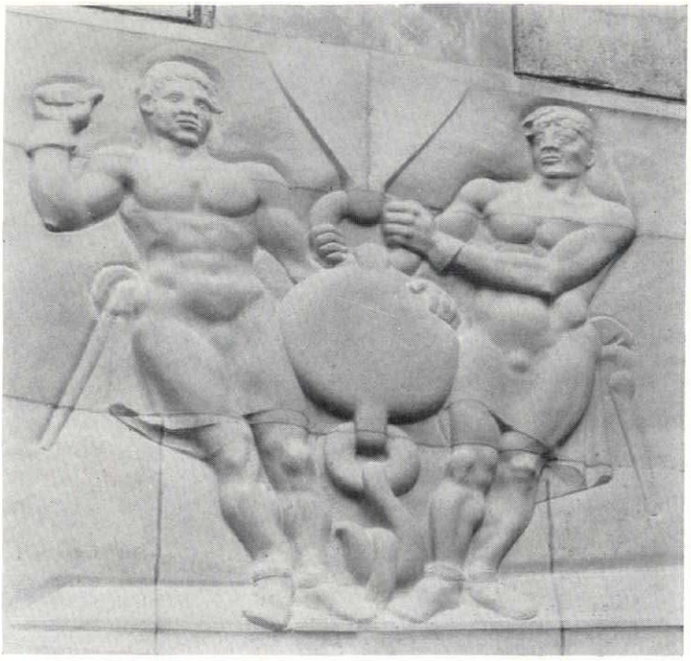
• Dun & Bradstreet's report of building permits issued in 215 cities indicates that the number of permits obtained in May 1935, are but slightly less than in the preceding month. The total reported for April was $51,717,570; for May $49,322,110. The decrease of 4.6 per cent is about 2 per cent less than the normal decline for this period. The May 1935 total is 12.5 per cent above that of last year and continues the improved condition in building noted in previous months. The aggregate estimated cost of permits for the first five months of this year is 44.5 per cent above last year and 88.6 per cent more than that of 1933. The improved building condition is general throughout the United States.

• Dr. A. J. Stamm, chemist of the Forest Products Laboratory has developed a new process for the pro-



ABOVE—ACME

Left: Joseph Freedlander, right, congratulates Paul M. Heffernan of Ames, Iowa, winner of the 28th annual Paris Prize of the Society of Beaux Arts Architects. The prize carries an award of $3,600 for 2½ years of study in Paris. **Left, below:** rotating globe of glass and steel, 20 ft. high, exhibited by Henry Hope & Sons at the International Exhibition at Brussels. A map of the world is modeled on the surface and the globe is illuminated from within. **Below:** panel by Gaston Lachaise for the new International Building at Rockefeller Center, New York. **Bottom:** underground magnificence in Moscow. Vestibule of a new Russian subway station with marble columns and walls, granite steps, a railing in colored relief and a tile mural

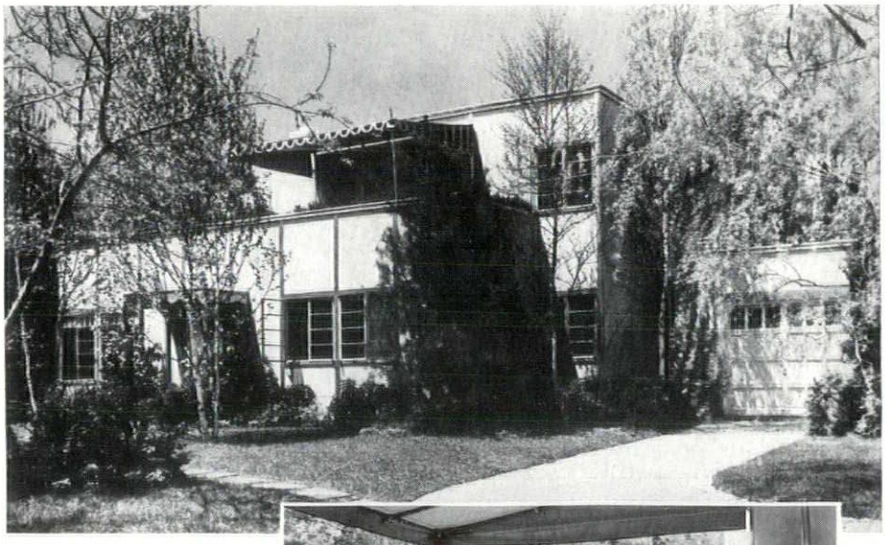


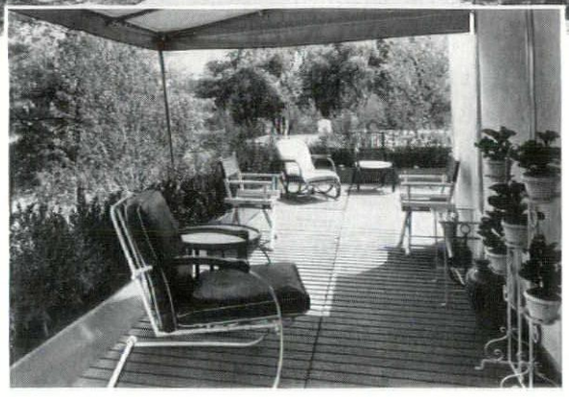
of the Times . . .

tection of wood against the seepage of moisture into the cell walls of wood. Green wood can be used, thus eliminating the necessity of seasoning. "Cellosolve" is injected into the wood by a replacement process which distills the moisture from the wood. The wood is then placed in a melted wax bath and the cellosolve is in turn distilled off. If successfully applied commercially, the process is viewed as a possible answer to the prevention of warping and shrinking of wood.

• What may be the country's narrowest house is located in New York City at 75½ Bedford Street. It is nine and one-half feet wide, three stories high and is squeezed into an alley between two larger buildings. Entrance is from the rear, the door on the street facade being a sham.

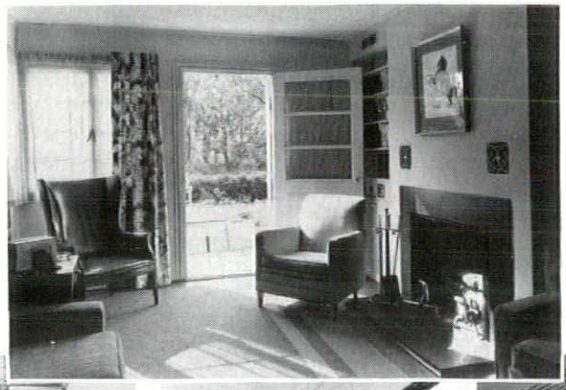
ABOVE—ACME SOVFOTO

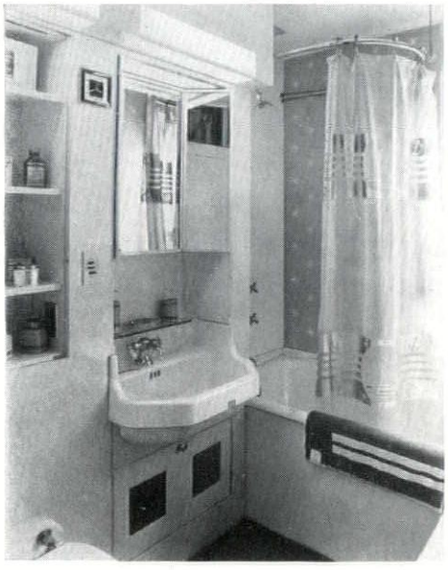


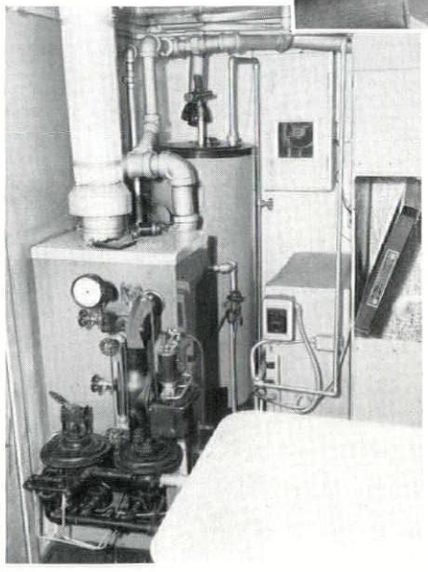


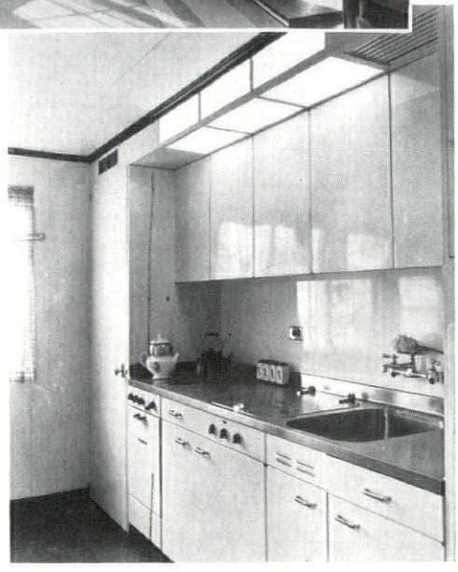
HOUSES FOR MASS PRODUCTION

IN White Plains, N. Y., American Houses, Inc., headed by Robert McLaughlin, architect, has erected three demonstration houses, described as "prefabricated, motorized units, turned out on a mass production basis." Shown here is the largest, which was erected from the foundation in about three weeks time. It is planned about a power unit which provides air conditioning, refrigeration, hot water, heating and lighting, an idea first suggested by Buckminster Fuller in his Dymaxion model. The houses have steel frames, bolted to concrete foundations. Walls are asbestos cement board, laminated on both sides to a core of insulation and attached to the frame in large panels. Joints are covered outside with aluminum mouldings. Floor and roof framing members are bar joists which support metal-edged planks made of a composition similar in appearance to pre-cast gypsum. Costs range from $4,900 to $16,000 erected and complete, land cost extra









HARRIS & EWING

Prize Winners . . . Left: "The Fruit-Jesus," by Edward J. Anthony of Wyandotte, Mich., won the first prize of $200 in the advanced amateur class, in the Eleventh Annual Soap Sculpture Competition, recently judged at New York. Above: the Bourne Bridge over the Cape Cod Canal at Bourne, Mass., was awarded a plaque by the American Institute of Steel Construction as one of the two most beautiful steel bridges built during 1934. This one was built by Army engineers. The other is a grade separation bridge near Omaha, Neb.

• The National Housing Act has been amended to make more feasible the organization of national mortgage associations. Under proscribed conditions the minimum capitalization of an association may now be lowered from $5,000,000 to $2,000,000. Each association is authorized to issue and have outstanding notes, bonds and similar obligations up to twelve times the aggregate par value of its outstanding capital stock. The original legislation limited this to ten times the aggregate. The aggregate amount of outstanding obligations cannot exceed the current face value of insured mortgages held by the institution, plus the amount of cash and bonds or other obligations of the United States.

• The American Society of Draftsmen has been incorporated in the State of California and intends to become national in scope through the establishment of chapters throughout the United States. The Society proposes to elevate drafting to a profession through advertising and a program of constructive activities; protect and improve the ethics of draftsmen; establish a placement bureau for draftsmen seeking employment; and broaden acquaintanceship among members. Information regarding the Society can be obtained from the Secretary, Room 911, 424 South Broadway, Los Angeles, California.

• The week of June 8th, according to FHA surpassed all previous records for insured construction loan applications. The total for that week was $10,272,933. Over seven million dollars of this total was for insurance of mortgage loans on dwellings, about 34 per cent being for new construction. Over three million dollars was for modernization credit loans for 7,770 loans to individual property owners.

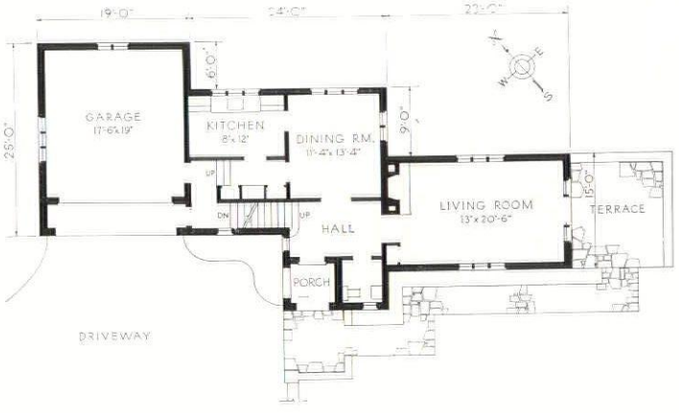
• Pride in the preservation of the Vieux Carré, New Orleans, has resulted in the restoration of many of its early structures. In addition to the several that have been saved in recent years, two more have recently been added to the list. These are the old Bank of Louisiana and the town house of Etienne de Bore. The old Bank of Louisiana was built in 1825 and its design is attributed to Latrobe. The de Bore house was built in 1818 on the site of the original Louisiana State Bank. It also is believed to have been designed by Latrobe.

• Depredations of termites have become so widespread that every winged insect is suspected of belonging to one of the termite colonies that feed on woodwork in buildings. According to R. A. St. George, Bureau of Entomology and Plant Quarantine, anyone can tell a winged termite from a winged ant by the difference in waistlines and in wings. Termites have thick waists and practically no waistline. Their two pairs of transparent wings are long and slender and about twice the length of the insect's body. Winged ants have waists nearly cut in two in the middle. Their wings do not match; the inner pair being much smaller than the outer set. In general the bodies of both termites and winged ants are about 3/16 inch long and black. The winged termites are not the destructive members. The workers are small creamy-white forms. Literature on termites and protection against them can be obtained from the Department of Agriculture. (*Continued on page* 106)

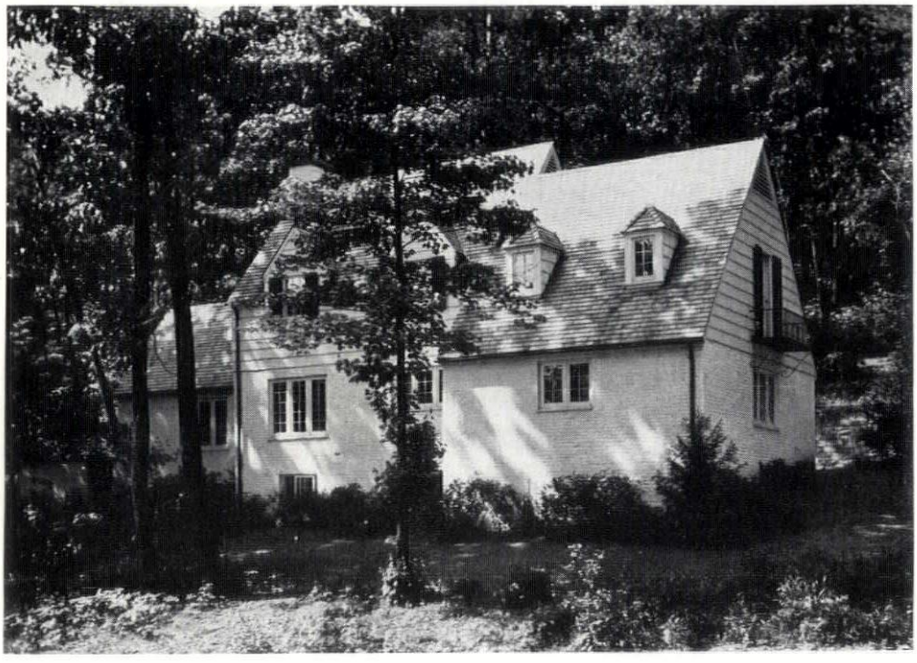
TROY STUDIO


FUTURE BED RM.
12'x14'
BED ROOM
9'-10"x16'-3"
UP
HALL
DN
BED ROOM
12'-3"x13'-6"
UPPER PART OF
LIVING ROOM


12
15
CLG.
7'-9"
FL
GARAGE
9'-6½"
HOUSE
9'-0"
FL
FL
1'-9"


19'-0"
24'-0"
22'-0"
6'-0"
9'-0"
25'-0"
GARAGE
17'-6"x19'
KITCHEN
8'x12'
DINING RM.
11'-4"x 13'-4"
UP
DN
UP
HALL
LIVING ROOM
13'x 20'-6"
TERRACE
5'-0"
PORCH
DRIVEWAY
N
W
E
S

TROY STUDIO

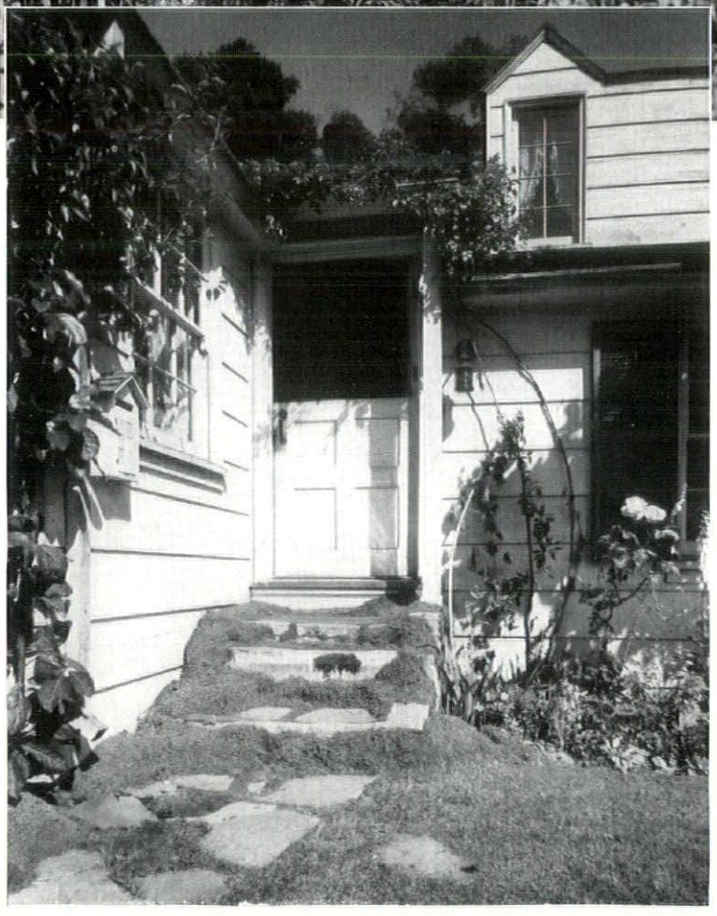


CARL C. TALLMAN, ARCHITECT

HOUSE OF DR. HAROLD L. TONKIN

WILLIAMSPORT, PENNSYLVANIA

STURTEVANT

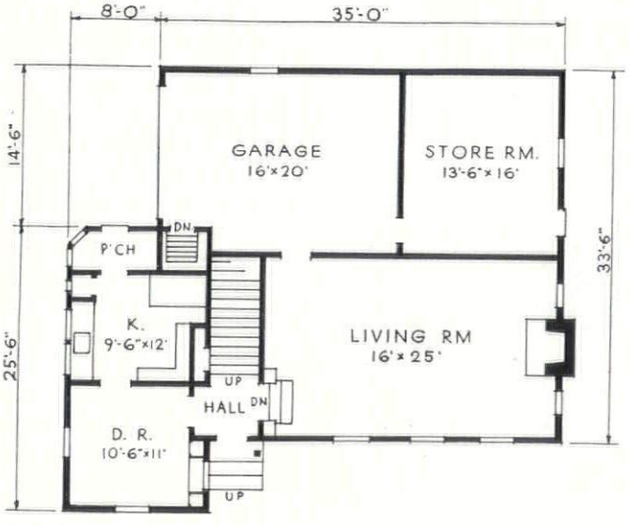


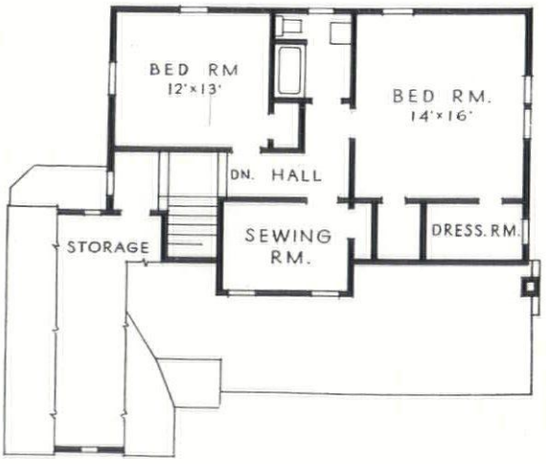
FREDERICK H. REIMERS, ARCHITECT

HOUSE OF FREDERICK H. REIMERS

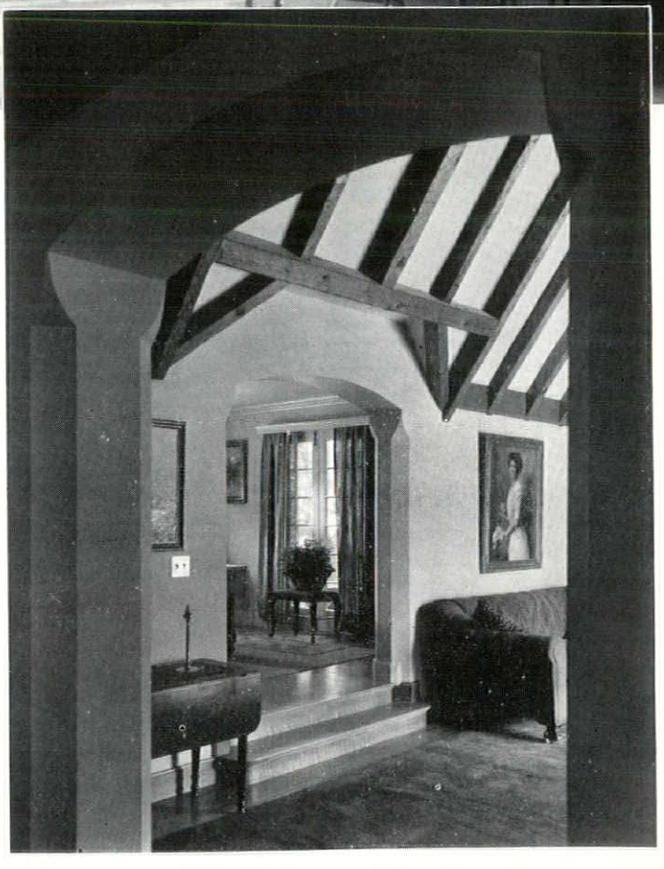
OAKLAND, CALIFORNIA

STURTEVANT

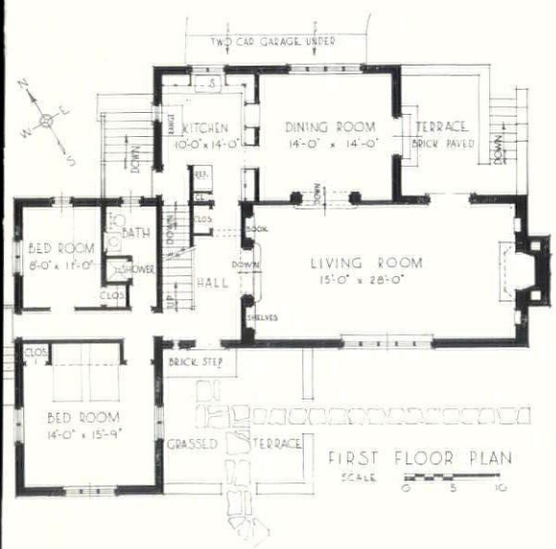

8'-0"
35'-0"
14'-6"
25'-6"
33'-6"
GARAGE
16'×20'
STORE RM.
13'-6"×16'
P'CH
DN
K.
9'-6"×12'
LIVING RM
16'×25'
UP
HALL
DN
D. R.
10'-6"×11'
UP

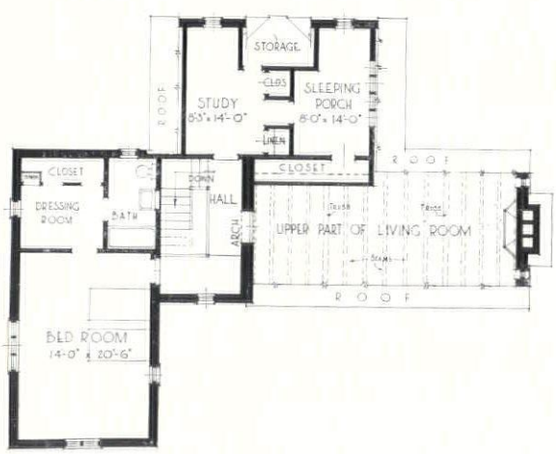

BED RM
12'×13'
BED RM.
14'×16'
DN. HALL
STORAGE
SEWING
RM.
DRESS. RM.

HASKELL



HASKELL

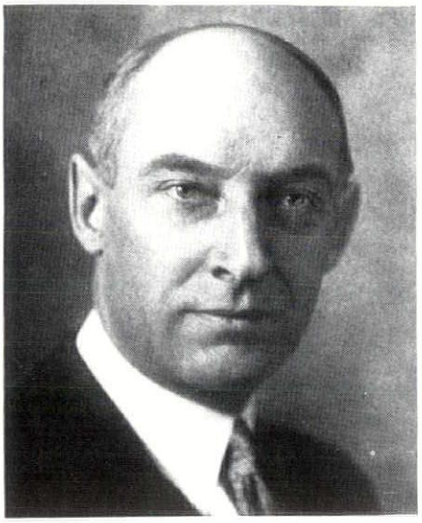




ISIDOR RICHMOND, ARCHITECT

HOUSE OF T. S. MACMECHAN

SHARON, MASSACHUSETTS



BY CHARLES H. LENCH

Author, "The Promotion of Commercial Buildings," and former lecturer on architectural economics at Harvard and Columbia Universities and Massachusetts Institute of Technology

BANKERS HOLD THE KEY TO Professional Recovery for Architects

REHABILITATION of the architectural profession upon a firm, realistic basis is the most important single problem facing the building industry today. In view of the many recent proposals by architects to accomplish this, the statement may seem trite. From a practical point of view, however, it is far from that.

Most of the ideas thus far offered to solve the architects' professional problems have been fanciful. Few of them have contained many elements of clean-cut practicality. All of them—or at least those that have come to my attention—will prove futile because they disregard the economics of the situation. Their proponents fail to recognize these cardinal points: The professional practice of architecture is unavoidably linked with some type of financial set-up. In the majority of cases, the architect's function has been ignored by the lenders of construction money. And until banks and other financial agencies can be brought to see the economic wisdom of employing architects *in their full professional capacity*, the rapid disintegration of the profession can be confidently expected.

These points are vital to architects since they imply a firm foundation upon which the profession can build for its own advancement. Encouraging evidence that they are becoming important also from the banker's point of view has recently come to light. In the New York area has been formed the Group Five Mortgage Information Bureau of Brooklyn and Queens. Organized by officers of prominent savings banks, as an information clearing house and a means for establishing mutual protection of their interests in new construction projects, the Bureau has adopted certain minimum standards of building procedure that recognize the architect's professional functions as essential.

These functions are at present reserved largely to the lending institution so far as mandatory provisions are concerned. But actually the Bureau has approved in principle the professional service rendered by architects. In establishing minimum specifications that will be enforced by all member banks, the Bureau stated, "Where the lending institution has not been able to make inspection during construction, *it may accept a certificate from a recognized architect* that the property has been inspected in the course of construction in accordance with the plans and that the minimum requirements as outlined by it have been fulfilled."

This statement of the Bureau signifies a laudable attempt at bettering conditions in all branches of the building industry. But to the architectural profession it is vitally significant in light of past relationships between architects and lenders of construction money.

Except in very few instances, this relationship has been negative. That is, architects as a profession have overlooked the vast authority that can be wielded by the lender of construction money in their vain efforts to obtain professional control over projects of the borrower. Money lending institutions

have always exercised control over the buildings of their borrowers; and the latter have been merely owners for surveillance from the moment that a conveyance to a piece of property was signed. Thus, with no real power permitted him by his client, the architect was shorn entirely of his professional prerogatives. Obviously, it would do no good for him to attempt enforcement of proper construction procedure in behalf of a client who had no interest in such matters!

This devastating situation has existed in every field of architectural practice to a certain extent. But in the field of income-producing buildings—in the cost of which it is estimated that more than 80 per cent is borrowed money—there has developed a viciousness that has threatened with annihilation not only the architectural profession, but also the other legitimate branches of the building industry. It has encompassed even savings banks which held tremendous portfolios of mortgages. Many of these —long since in default—represented monies lent to speculative owner-builders, a class of individuals comparatively new to the building world that was spawned by the financial frenzies of the speculative twenties.

OPERATIONS of these owner-builders were largely responsible for projecting the element of viciousness into the building situation. For allowing them to start, or to continue, no branch of the building industry or the banking fraternity can be held entirely blameless. On the one hand, the architect hired out to speculative builders merely as a draftsman. On the other hand, the banker, lacking any real knowledge of the complicated construction industry, offered almost unlimited construction funds to owners—self-styled also as builders—whose only knowledge of the industry was associated with the dazzling profits which were so easily available. Thus, without the balance wheel of the architect who should have functioned in a truly professional capacity, construction practices inevitably degenerated.

If the situation seems exaggerated as described, read this quotation from a recent speech by the Vice President of a large savings bank: "Lending institutions have advanced mortgage money on buildings where little or no attention was given to the plans and specifications and practically none to the supervision of their construction. In those hectic years (1924-1929) some vague sketches or incomplete data and a four or five page specification which touched on many items but specified none, were in many cases accepted by lending institutions; depending entirely on the integrity of the builder for the sound construction of buildings. . . . Only a small percentage of investment builders have had any practical experience in the art of construction, only a fraction of a per cent have had any scientific or technical training that would fit them to be called builders. The Banks are now faced with the problem of costly repairs on the buildings they were forced to foreclose. In many cases, repairs are almost impossible, in other cases repairs, though possible, are costly."

From the statement of this bank official it is clear that the problem of the banks—the lenders of construction money—and that of the architectural profession are closely allied. And in propounding a solution for their own problems, lenders are also attempting a solution—even salvation—for architects. The statement of the Group Five Mortgage Information Bureau, already quoted, indicates that a large number of great savings banks of the country have at least taken a stand against a continuation of the impossibly vicious practices that have characterized most building activity for more than two decades.

THE desire for betterment of these practices and recognition of the necessity for architectural service is expressed in the following letter from another savings bank official to his attorney: "In future building loan agreements we would like to have the following clause inserted: That the plans and specifications referred to in the building loan agreement shall be the plans and specifications approved by the lender's architect, a copy of which shall be attached to the building loan agreement and made part thereof.

"In addition to the requirements as stated in the schedule for payments, no payment will be made without a written certificate from the lender's architect, certifying satisfactory completion of the various stages when partial payments are made. The final payment shall not be considered due and payable until the lender's architect shall certify that the building is completed in strict accordance with the plans and specifications. This is in addition to the requirements stated in the building loan agreement."

This letter, however, merely emphasizes the fact that the professional, supervisory service of an architect is necessary in the construction of buildings. Since it confines execution of this service to the *lender's* architect alone, it actually holds out no encouragement for participation of the profession as a whole. Indeed, it implies plainly that the bank is not confident of the abilities of the borrower's architect and will accept no certificates of any nature from him!

OBVIOUSLY, this is very nearly an indictment of the entire profession—exclusive, of course, of the architect retained by the bank. Under this sort of procedure no borrower would retain an architect to duplicate the work of the bank's practitioner. In addition, the letter is a pointed commentary on the fact that lenders of construction money, by dictating procedure on the part of the borrower, effectively control the professional activities of the architect.

By that same token, if the lender insists that the borrower retain an architect recognized as com-

petent in all respects, he insures the safety of his loan from a double point of view. First, he has the assurance of the best possible execution of any building contract through competent supervision of the architect who originally drew the plans and specifications. Second, the lender can be assured of competence through determination of the architect's technical ability and professional standing prior to the consummation of the loan agreement. Only incompetence on the part of the architect can jeopardize the safety of a loan so far as construction is concerned; and when the architect seems guilty of negligence or a lack of business integrity, the lender already has recourse to proper legal action.

These points evidently have been considered in the statement of the Group Five Mortgage Information Bureau. In this, the vitally important clause is, " . . . the Bank *may* accept a certificate from a recognized architect." Unquestionably this is a step in the right direction. But it does not go far enough in making mandatory a situation on the part of lender, borrower and architect that would simultaneously serve the best interests of each.

At one blow this could be accomplished. It could be done by the simple adoption by the Bureau's member banks of this resolution:

"Construction loans for new buildings or alterations to existing buildings will not be approved unless the borrower has retained a recognized architect to render a complete architectural service. No progress payments will be made on account of the loan except on this architect's certificate. On completion of the building this architect will be required to certify, over his signature, that all terms of the building loan agreement relating to the plans and specifications of record have been carried out."

If this resolution were adopted and its clauses enforced by the Bureau's member banks, it would become an action of forceful leadership toward better building conditions. Significance of such an action by the great savings banks of the New York area could hardly be ignored by other powerful money lenders throughout the country. And to the architects of the United States its practical enforcement would be a resolute, necessary step toward the practical rehabilitation of the profession.

The psychological and economic time for banks to take such a step has already arrived. By direct and forceful appeals to the bankers of this country, the architectural profession can and should urge such an action as the immediate means of establishing a realistic, workable partnership for better business between lender, borrower, architect and builder.

THE TIME HAS COME...

"THE brightest spot in the industrial situation is in the building industry . . . Privately financed contracts advanced 27 per cent over those for a year ago and are now higher than at any time since 1931. The advance in residential construction has been particularly impressive; awards for this class of building were 80.8 per cent above those for a year ago. . . ." Thus read a report issued late in June by the National Industrial Conference Board.

. . . The time has come for action. The psychological and economic moment has arrived to form a working partnership for better business between banker, owner, architect and builder. A forceful step toward this end would be the immediate adoption of this resolution by financial institutions throughout the country:

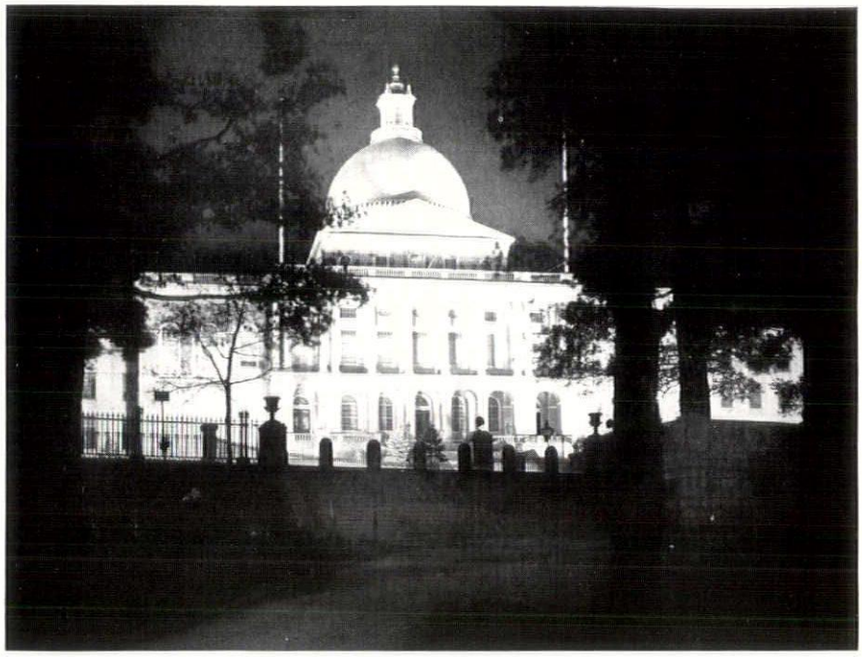
". . . Construction loans for new buildings or alterations to existing buildings will not be approved unless the borrower has retained a recognized architect to render a complete architectural service. No progress payments will be made on account of the loan except on this architect's certificate. On completion of the building, this architect will be required to certify over his signature, that all terms of the building loan agreement relating to the plans and specifications of record have been carried out."

Exterior Illumination of Buildings

AMERICAN ARCHITECT REFERENCE DATA

Number 18 July 1935

GOTTSCHO



Exterior Illumination of Buildings

By TYLER STEWART ROGERS in collaboration with
ALVIN L. POWELL, Pres., Illuminating Engineering Society

NIGHT illumination of building exteriors has become a new architectural problem chiefly for commercial reasons: either to advertise the building or to advertise its tenancy. Less commonly it is employed for purely esthetic purposes; to permit public appreciation of the beauty of a structure by night as by day. Even when the motive is not intentionally commercial, as in the floodlighting of the Capitol Building and Washington Monument, the final result is to produce attraction and attention value that has commercial significance to a whole city.

It is very definitely the architect's function to recognize and satisfy this new trend. If he fails to do so, owners will ultimately solve the problem themselves with the aid of lighting engineers and sign makers. And usually the result is either to impair the appearance of the building by day or to distort and disorganize the composition of the design by night. The disturbingly large number of badly lighted buildings and badly designed luminous signs is glaring testimony of the harm that threatens an architect's finest conception. In contrast, the happy results of consciously designing for both day and night aspects, occasionally found both in this country and abroad, demonstrate the breadth of possibilities open to the architect in this field.

There is little need for proof today that night lighting pays good dividends. Its attention and attraction values are so great it stimulates its own competition. Brighter lights, bigger signs are progressively demanded until "White Ways" are created, and still they pay because of the crowds they attract. Means of restricting competition between buildings and between tenants' signs on single buildings constitute as important a problem as any that architects must seek to solve in the whole field of designing in light.

There are two aspects of exterior illumination of buildings: (1) illumination of the structure itself, and (2) the use of illuminated signs on buildings. Each must be considered for both day and night appearance; often the two problems must be studied in relation to each other.

Methods of Illuminating Buildings

THE principal methods of illuminating buildings for general attention or attraction value are: floodlighting, structural or built-in lighting, outline and decorative lighting—usually of a temporary nature—and special forms of window illumination.

Floodlighting may be used either for the general illumination of entire building facades, for the special illumination of well-defined parts of the structure, such as towers, setbacks, recessed porticos, pediments, etc., or for the non-uniform lighting of architectural features such as cupolas, flagstaffs, statues, finials and the like.

The term floodlighting is somewhat confusing because it generally connotes to the lay mind the uniform illumination of large areas. But in trade parlance any lighting employing projected light from sources called floodlights, projectors, spotlights, or searchlights, is frequently classed as floodlighting. For convenience here the term will embrace all of these applications of projected light inasmuch as design problems and illumination calculations are similar in all cases.

Floodlighting applications have the important merit that they may be added to existing buildings without major structural changes and may utilize a variety of locations for the disposition of the lighting units or projectors. Their limitations are chiefly governed by the color and reflectivity of the surfaces to be illuminated, the occasional difficulty in planning suitable locations for projectors, and the problem of controlling the effect of reversed shadows as will be developed later.

Structural or built-in lighting is a comparatively recent application of light sources for the exterior illumination of buildings. It involves structural changes so frequently as to be primarily of interest in the development of new buildings or major alteration projects. Its possibilities, however, have not yet been fully explored and may transcend those of floodlighting practice. The advent of architectural glass for exterior design purposes, the use of modern plastics, the development of diffusing glasses, and successful experiments with indirectly lighted belt courses, niches and soffits of projecting members, have opened up utterly new and apparently limitless design possibilities.

Festival lighting, embracing outline lighting and several forms of decorative lighting applications, have more limited utility but have been successfully used in this country and abroad for producing special effects of very considerable interest. These methods usually employ bare lamps of relatively small wattage mounted around the perimeters of buildings or their parts, or draped in festoons or decorative patterns of endless types. Because of the specular brilliance of bare lamp lighting these methods are seldom acceptable for permanent lighting decoration. Their primary use has been for special commemorative lighting as at festivals during Christmas and other holiday seasons and commercially to attract attention to stores or theaters during special periods of limited duration. These methods would be more frequently used in this country if architects would provide suitable hangers and outlets to facilitate their application.

In the same category are several methods of window illumination in which, by arrangement with tenants or otherwise, it is possible to light certain windows on a building facade and keep all others dark to produce an attention attracting pattern. An example of this limited use of night illumination was employed by the Providence Biltmore Hotel at Providence, Rhode Island, where a huge Christmas tree pattern was formed on the main facade of this tall structure by the selective lighting of guest room windows.

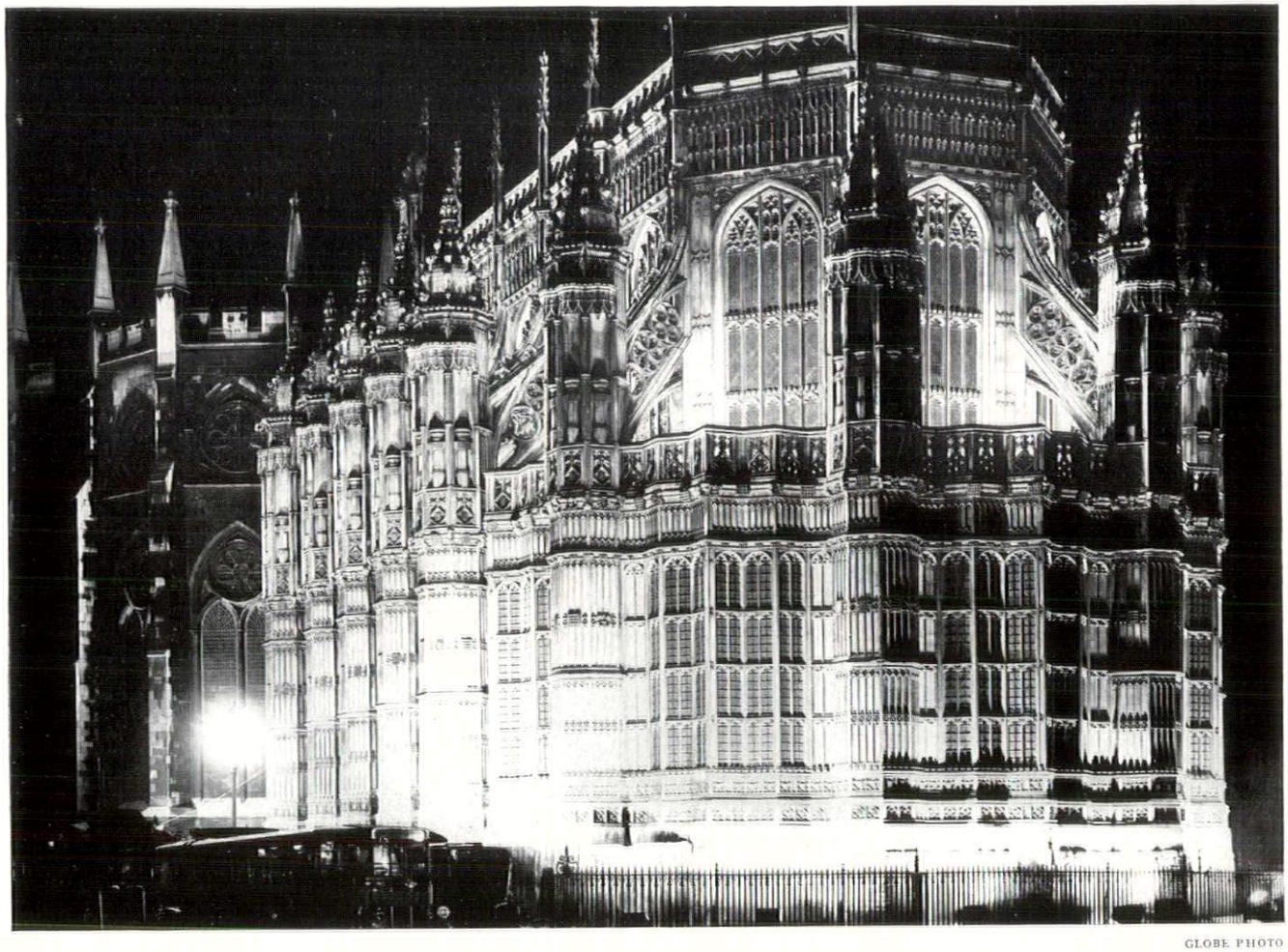
Fundamental Problems of Designing in Light

ARCHITECTS have always designed mouldings, cornices and all ornamental exterior detail to appear well under natural light which in turn has been conceived as light projected downward at an angle of 45° horizontally and vertically from the facade. All traditional orders of architecture appear better under such conditions.

Columns in sunlight cast parallel shadows; projecting courses cast uniform shadows throughout their length; these and other related factors are, in fact, the very basis of their design. But since sunlight comes from a source far larger than the Earth and extremely remote it produces a uniformity of effect that is utterly impractical with artificial illumination.

REVERSED SHADOWS

WEIRD and occasionally displeasing effects may result from lighting architectural details of traditional pattern by sources so located as to reverse normal shadows or eliminate them. Floodlights



GLOBE PHOTO

are point sources at best; they must be located wherever conditions permit. If banked *en masse* they may produce strong shadows utterly different from those cast by the sun and varying in shape on different parts of the structure. Cornice shadows may slope, making the building appear out of plumb. The delicate entasis of classic columns may be lost or exaggerated. Rows of columns may cast shadows progressively spaced apart, or not parallel, disturbing the even march of architectural accent points. And if floodlight sources are scattered in an effort to simulate parallel light, multiple shadows may be produced or all shadows eliminated with resultant flatness. For these reasons architects have often been loath to encourage the floodlighting of buildings, especially those of classic order.

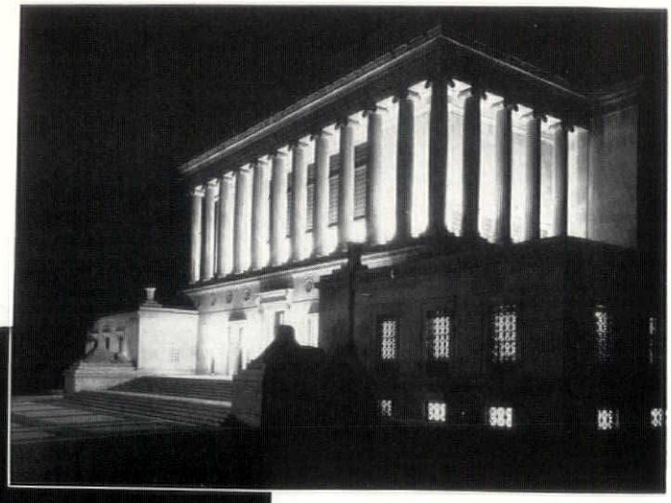
Objection to artificial illumination of this sort is largely based upon the doubtful concept that night illumination is only acceptable if it reveals the building exactly as it appears by day. This idea is predicated on the assumption that the designer has created the most beautiful composition possible for day appearance and that any modification must necessarily produce an inferior result.

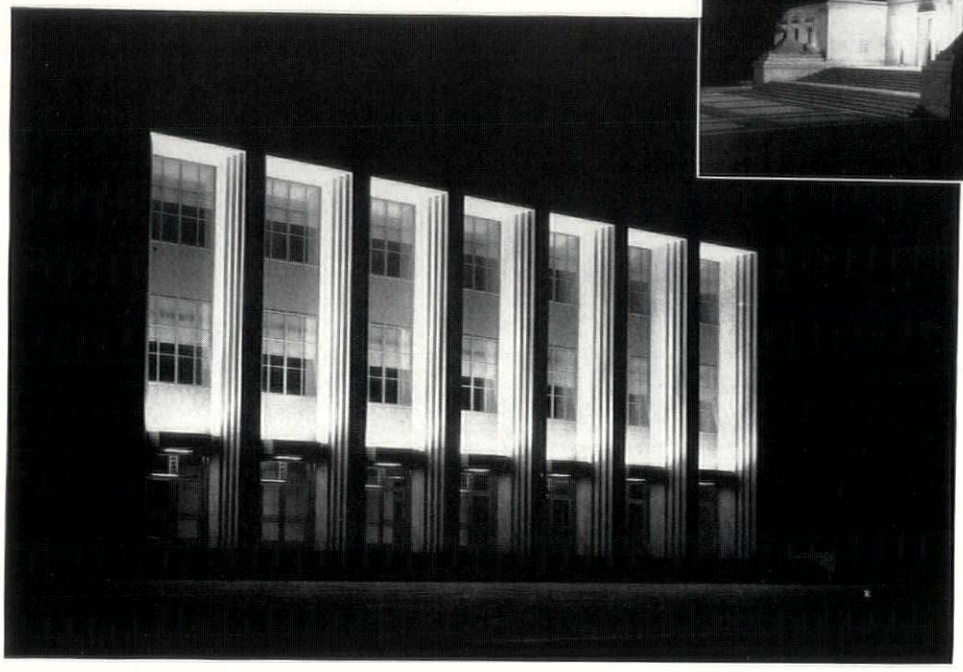
DUAL ASPECTS

FORTUNATELY experience has well supported the opposing school of thought which believes there are limitless possibilities in design and composition consonant with good taste; that as night differs in all its aspects from day and all natural objects utterly change their appearance with the rising and setting of the sun, so may buildings change their aspects. The most successful designers in this field look upon night illumination as an opportunity rather than a difficulty; a chance to utilize dark sky and dim entourage as a setting for beauty of a wholly different type from that which is appropriate in all-enveloping light.

The real task of the designer is so to develop both form and detail that daytime and nighttime appearances are equally good, though possibly entirely different. In this work he is favored by contemporary architectural trends; he is freed of the limitations of classic forms and their dependence on shadows. He may design his decorative detail to be effective when floodlighted from any angle as well as when naturally lighted. He may make his details luminous

Floodlighting may completely change the normal appearance of buildings by reversal of shadows or change of emphasis. On facing page, Henry VII's Chapel, Westminster Abbey, floodlighted for the King's Silver Jubilee, acquires new grace and charm





Above, portico lighting of the Scottish Rite Temple at Kansas City, Mo., though highly effective, causes distortion of the delicate entasis of Ionic columns and reverses shadows on classic details somewhat to their detriment. At left, similar lighting of the W. H. Kellogg Auditorium causes no distortion, modern detail being largely independent of familiar shadow forms and well adapted to artificial lighting

in themselves, or give emphasis to structure and form with built-in or applied light. He can modify texture or composition at will, and even introduce ephemeral qualities by night that solid reality of day can never achieve.

Most commercial buildings of today are well adapted to night illumination because of their subordination of detail to mass. Those being designed under present architectural trends will of necessity utilize the possibilities of modern exterior illumination; for to be functionally satisfactory they must recognize that advertising is a function of modern commerce.

PARTS ILLUMINATED

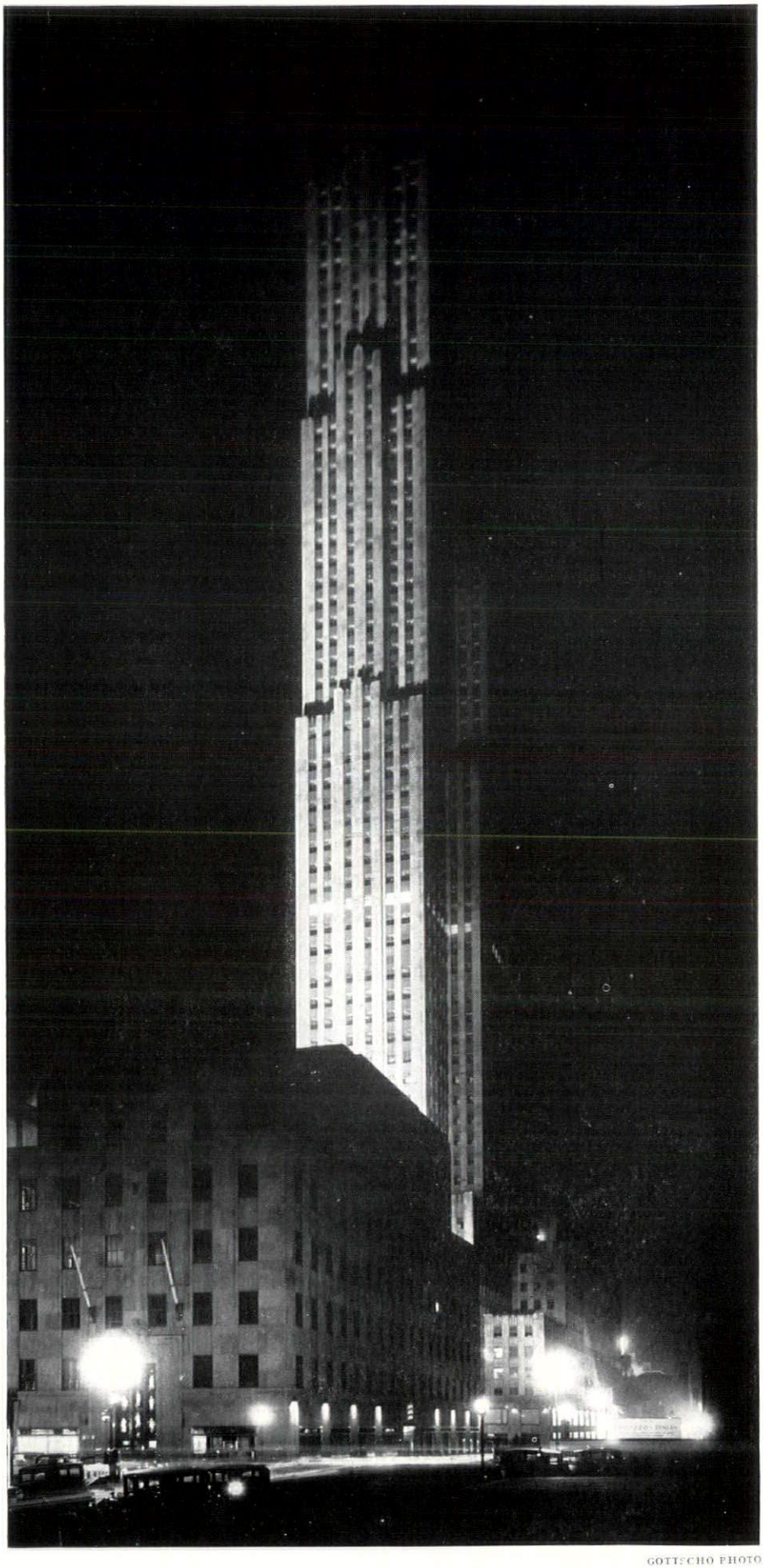
NIGHT composition should have all the qualities of unity, coherence, balance, scale and even texture that govern good design in architecture. Perhaps this is best accomplished on some buildings by all-over floodlighting; often only parts of the building may be illuminated, the composition depending upon balance of lighted and dark masses or the judicious use of accents of enframements. Structural elements may be made luminous in themselves, towers may be lighted above a dark base, porticos may be illuminated to accent columns by silhouette, or spandrels, parapets, wall panels or other areas may be lighted in one of several ways.

A practical method of studying lighting possibilities is to make reverse photostats of a line or wash perspective or elevation of the building, and to work over these with white, gray or color washes to visualize various possible effects.

A still better method is to make scale models and to illuminate them with miniature lamps of proportionately diminished brightness. Flashlights may be employed to study floodlighting and the shadow effects it may produce. Careful architects experiment extensively in this manner.

INFLUENCE OF ENVIRONMENT

FOR a given visual appearance of brightness, far less wattage is required to illumine an isolated building in a dark environment than for a building in a "white way" or central business district of a city. This is evidenced by data given in accompany-



GOTTSCHO PHOTO

A sense of lift and mystery, suggestive of Jack and the Beanstalk climbing to the clouds, is created by the graduated floodlighting of the east facade of the R.C.A. Building, Rockefeller Center, New York City. Another view, recently blocked by the erection of the newest building in this group, is shown on the title page of this article. Reinhard & Hofmeister; Corbett, Harrison & MacMurray; Hood & Fouilhoux, architects

M. L. PHILMON, PHOTO

Texture is emphasized and pattern created by the use of projected and spilled light on this store front in Charlotte, N. C., by M. E. Boyer, Jr., architect. Note the colored terra cotta rosettes on the parapet which form focal points for the vertical light beams. Under each projector there is a cylindrical glass luminaire lighted from within which by day forms a decorative support for the projector bowl

ing Time-Saver Standards sheets which also indicate that "white way" lighting customarily varies in brightness with the size of cities. Comparative studies may serve as a guide to advisable illumination levels in any given locality; often they must be supplemented by trial and error. Panels in the tower of the Empire State Building were originally designed to be lighted with 150 watt lamps on 18-inch centers. Upon trial this proved so brilliant that it produced glare and washed out the contour of the tower itself. Repeated reductions in lamp size were tested, until adapters had to be installed in the original receptacles to take 6 watt intermediate base lamps. The complete isolation of the tower, because of its height, prevailed over the location of the structure in one of the most brightly lighted areas in the world.

More often, however, the original design makes inadequate provision for satisfactory lighting levels. The tendency of good night illumination to invite competition of neighboring structures may require periodic increases in lighting levels to retain dominance. It is advisable, therefore, to provide excess capacity in the original wiring installation.

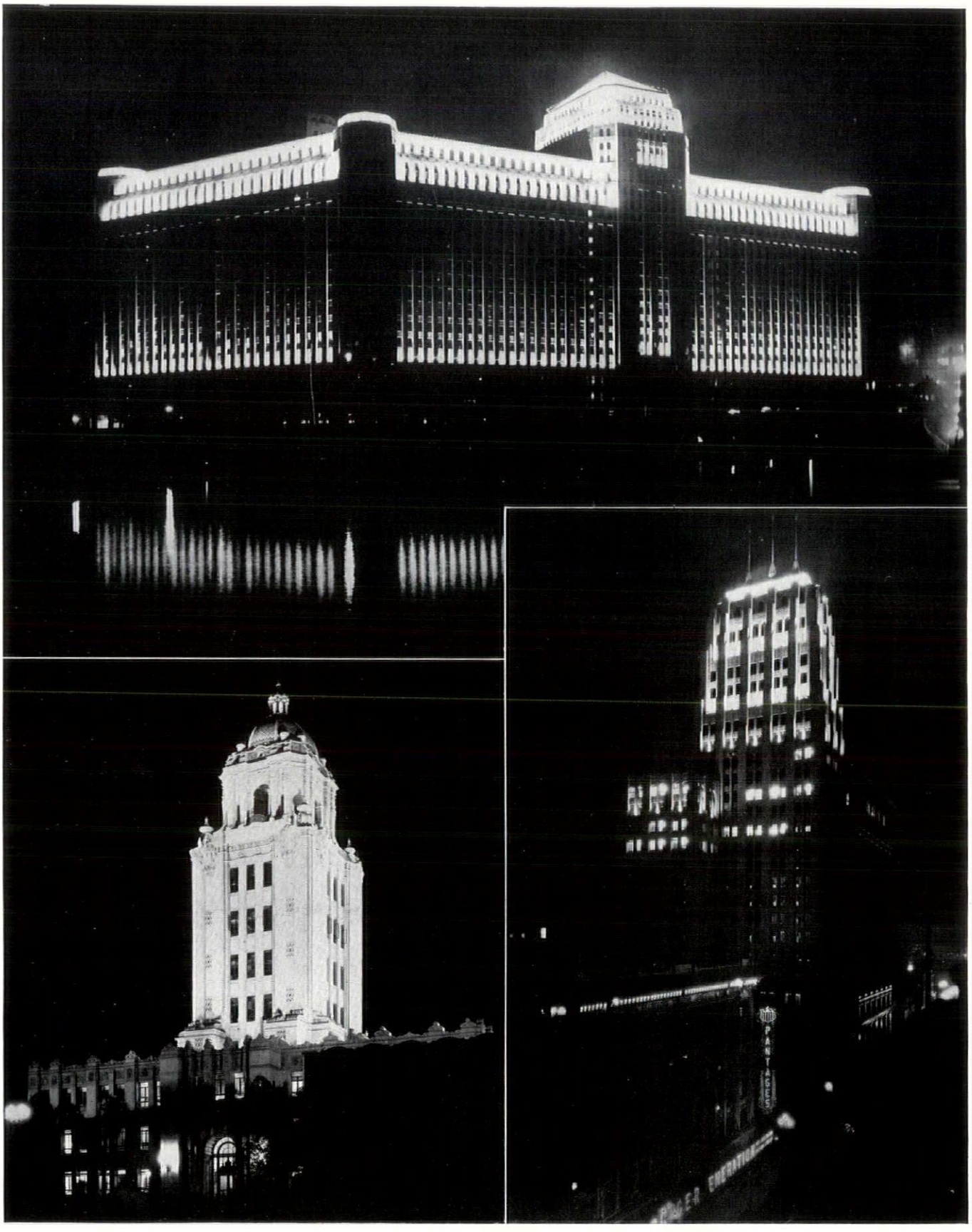
INFLUENCE OF COLOR

COLOR lighting permits a wide range of design treatments and greatly increases attraction and memory value. Hence lower illumination levels may produce as much attention with color as higher levels with white, which helps to offset the greatly increased wattages required by the absorption of color screens on incandescent lamp sources. Hot cathode gaseous conductor light sources, which produce brilliant colors of relatively high intensity at low cost, can be used for built-in color illumination and for short-range floodlighting. High voltage discharge tubes, which produce certain colors of relatively low candlepower, are adaptable to built-in color elements, though not to floodlighting.

Color changes, introducing motion in light, produce the maximum of attention value. Two methods are used. One requires separate sets of light sources for each "mobile" or varying color, with dimmers operated by motor-driven cams or thyratron-operated reactors to vary the brightness of each bank of lights. The other uses white light as the mobile color, leaving the lower intensity color sources in continuous operation. The white light, dimmed and brightened by automatic control equipment periodically "washes out" the color and produces the effect of color change and motion.

GLARE

EXCESSIVE brightness of any luminous area defeats its own end by causing eye-discomfort in the observer. Glare is largely a matter of contrast and proportion rather than brightness measured by an absolute yardstick. Specular reflection is also



Night composition may utterly differ from day appearance without departing from good taste. Above: Merchandise Mart, Chicago, literally redesigned by light, has unity through strong lighting of the set-back stories and tower, supported by lower intensity vertical accents of the window reveals above a dark base. Below: Tower lighting is often effective alone and offers a wide range of interesting treatments

a cause of glare, for it produces concentrations of reflected light that are much more trying to the eyes than diffused light. Values given in floodlighting and structural lighting standards sheets indicate average illumination levels which have proved satisfactory and are not likely to introduce glare of themselves.

ABSORPTION AND DIFFUSION OF LIGHT

THE amount of light required to produce a given brightness of a building surface is governed in large measure by the absorption of the materials. In the case of opaque material made luminous through reflection, color and texture determine absorption. In the case of transparent or translucent materials lighted from behind, brightness is governed first by the transmission characteristics of the material itself and to a lesser extent by surface form or texture.

Obviously the greater the light absorption of any material the greater the amount of light required to make it stand out or be visible. But both reflection and diffusion must be considered. A perfect mirror, having negligible absorption and no diffusion cannot be made to appear uniformly bright itself; only the image of the light source is visible. So also with polished metals, marbles and glazed terra cotta to a greater or lesser extent; they cause specular reflection and glare at certain points and appear poorly lighted at others. But substitute a sheet of white, dull-finished paper, a wall of unglazed buff brick, or a column of unpolished white granite, for these materials under the same lighting conditions and they would appear brilliantly luminous when seen from any angle.

Similarly, transparent materials without diffusion are unsuited to built-in or structural lighting of the sort desired in buildings. They reveal the light sources behind them instead of appearing luminous themselves.

For purposes of building illumination by floodlighting therefore, the most economical results are obtained with materials of low absorption and high reflection power with diffusing surfaces. Materials made luminous through transmission should have the minimum absorption (high transmission) for the color effect desired and maximum diffusion save where certain glint and sparkle effects are desired.

Floodlighting

THE design of floodlighting installations is definitely influenced by the type and capacity of available equipment and by the opportunity for mounting projectors in places where they can function to produce the desired effect.

FLOODLIGHTING EQUIPMENT

FLOODLIGHT projectors are of two basic types: open and enclosed. Open types, which are really no more than lamps partially enclosed by suitable reflectors, are of low cost and are limited in application to positions where the reflector shields the lamp from the weather; that is, where the light can be projected downward or at an angle downward from an elevated position. They are suitable for illumination of signboards, gasoline filling stations, athletic fields and playgrounds, parks, and similar areas where initial low cost and possibly a relatively short useful life transcend considerations of efficiency and ultimate cost.

Enclosed floodlight projects are used for permanent installations of all types, for locations where the projector is tilted so that a cover is necessary to protect the reflector surface and lamp from exposure to rain, dust and snow, and for maximum efficiency and durability. They are usually made of non-corrosive metals and with weather-tight casings and covers. Reflector size is frequently an index to quality, the larger reflectors having higher efficiency as well as higher cost. They are also made for either general service incandescent lamps or for concentrated filament "floodlight" lamps. General service lamps are lower in cost, have longer life and give more light per watt than floodlight lamps and therefore are to be preferred for operating economy where reflector types of suitable performance characteristics can be obtained for use with these sources. Floodlight lamps, however, provide better control of the light beam because of their relatively small concentrated source and therefore are necessary in projectors which produce narrow angle or concentrated beams. Floodlight lamps can be operated in any position except within 45 degrees of the vertical, base up; general service lamps can be used in any position.

Reflector shapes are scientifically designed for the particular light source and the shape of beam which is desired. Contrary to common opinion, the shallow parabolic contour is used for a concentrated, accurately controlled beam. The deeper, non-parabolic contour is used for wide spread beams, and sometimes the reflector surface is stippled, fluted or otherwise treated to prevent streaks and striations in the light. The principal materials used for the most efficient reflectors are mirrored glass, chromium, rhodium, and a special processed aluminum.

Projector covers or lenses are of clear glass for concentrated beams, or stippled or prismatic glass where a smoother and wider beam is wanted. Considerable control over the beam pattern is possible by means of prismatic glass covers; a normally circular spot can be made almost rectangular in shape. Colored glass filters are often mounted behind the cover glass, or in some instances the cover itself is colored where tinted flux is desired.

Roofs of nearby buildings are often leased to provide mounting space for banks of floodlight projectors illuminating the main facades of buildings. The Medical-Dental Building, Seattle

LOCATION AND MOUNTING

COMMON locations for floodlights are: (1) On adjacent buildings where space can be leased if not under the owner's direct control; (2) On street lighting or other standards surrounding the facade to be illuminated; (3) Concealed behind shrubbery, balustrades or walls, or in special pylons located on the grounds around the building to be lighted; in some notable examples the projectors are in a sunken pit which is covered by day and opened at night. (4) Concealed behind parapets at setback levels of the building itself. Occasionally floodlights are mounted on the building on projecting brackets when no other location is possible. This has the disadvantage of poor access and may have a disfiguring effect in day time.

In all cases floodlights should be so mounted as to permit ready and safe access for periodic cleaning and relamping. They should always be elevated above the ground or a roof surface above the line of drifting snow or possible accumulations of ice. Various methods of mounting are offered by all manufacturers ranging from pipe mountings designed to be made a part of the conduit system itself to bolt or clamp type mountings suitable for use on structural steel framework or direct application to masonry.

DESIGN PROCEDURE

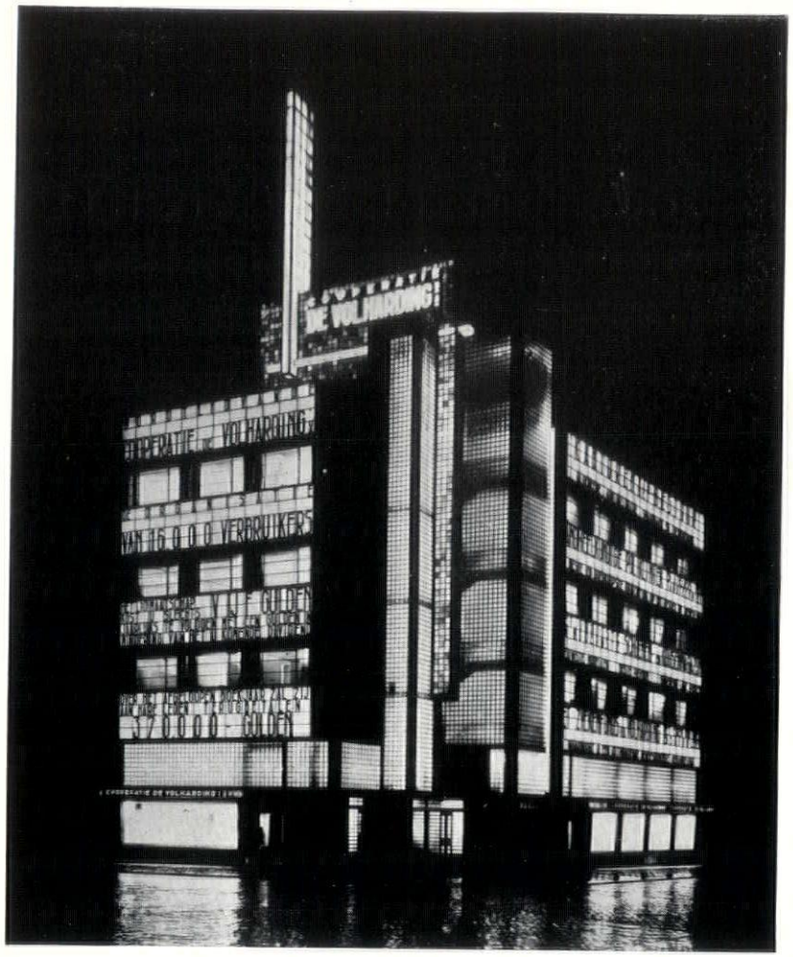
ALL requisite information for estimating the number of floodlight projectors and the types required for any problem is given in the accompanying AMERICAN ARCHITECT Time-Saver Standards, "Design Procedure for Floodlighting."

The following example indicates the use of these data and rules: Given a bank and office structure in the business center of a city of 150,000 population; walls Indiana limestone; frontage 120 feet; height 150 feet above second story, the lower floors receiving ample light from street lighting standards. Projectors may be located on the roof of a four-story building across the street, 100 feet from the bank facade and 20 feet above the lowest part of the area to be floodlighted. How many floodlight projectors and of what type will be required for uniform illumination? The installation is to be permanent.

According to Rule 1, the illumination required is found in Table 1 to be 15 foot-candles. The area to be lighted is $120' \times 150' = 18{,}000$ sq. feet and the projector location is only 100 ft. distant from the lower floors and probably not over 150 feet to the furthest projection point. According to Rule 2 it will be found in Table 2 that a medium to broad beam spread is required inasmuch as medium spread is indicated for areas of this size 150 to 300 feet away. From Table 4, in lieu of manufacturers' data, tentatively select a projector in the medium to broad beam class, probably about 30° beam spread, designed for general service lamps and with a large diameter reflector for long time economy. The high illumination level indicates a 1000-watt unit is probably the smallest desirable size, providing average net beam lumens of 8800.

According to Rule 3, multiply the area to be lighted by the foot-candles: $18000 \times 15 = 270{,}000$. Multiply the net beam lumens of the projector by the factor 0.7 to allow for depreciation in service: $8800 \times 0.7 = 6160$. Divide the first product by the second to find the number of projectors required: $270{,}000 \div 6160 = 44$ projectors.

To check for uniform coverage in accordance with Rule 4 refer to Table 3, under 30° beam spread to find the area "A" of an ellipse of light from a single projector aimed at a point representing average conditions. In this case, since the projectors are mounted 20 feet above the low point to be lighted, select for distance Z one half the height of the lighted area above this level, or 150 feet total height less 20 feet = 130 feet ÷ 2 = 65 feet. Distance D = 100 feet, Z = 65 feet; area A is found by interpolation between 40 and 80 in the Z column to be about 2000 sq. feet. Divide the area of the lighted surface by the area covered by this average projector to find the number of projectors needed for uniform coverage: $18000 \div 2000 = 9$ projectors. It is obvious that many more projectors are needed to produce the desired illumination than are required for uniform coverage, hence the original estimate of 44 projectors stands. The great discrepancy, however, suggests the restudy of the layout using 1500 watt units. This allows 13,000 beam lumens per unit and requires only 29 projectors to produce 15 foot-candles, effecting a marked saving in cost.



Most famous of all luminous buildings, Cooperatie De Volharding, at The Hague, Holland, displays simple white glass spandrels by day which become luminous silhouette signs by night. J. W. E. Buys, architect

Structural or Built-in Lighting

IN contrast to floodlighting practice in which the building surface selected for daytime appearance is merely illuminated in the best way possible by projected light, the design of luminous architectural elements involves a choice of materials which have acceptable surface appearance in daylight and at the same time offer the requisite degree of translucence or reflectivity for effective illumination by concealed sources during the night period.

Visible light sources rarely constitute good design practice. Exceptions are for signs and for special centers of attention, such as theater marquees or building entrances where extremely high intensities and specular brilliance are tolerable. The soffit of a marquee, for example, may be brightly lighted by bare lamps, but because these are placed overhead and glare is experienced only while entering or passing by the structure, they represent acceptable practice. As noted elsewhere, bare lamps may also be used for festival lighting and for outlining as temporary illuminations for special effect.

Architectural glass and a limited range of new translucent plastic compositions represent the designer's chief materials for developing luminous structural elements which have acceptable appearance at all times. In the category of architectural glass there are many forms of pressed and moulded glass which can be given definite architectural form, such as for pilasters, cornice mouldings, friezes, panels and the like. The color of such glass under daytime appearance may be modified by its composition to range from the clear dead-white of opal through the variegated mottling of alabaster to the milky gray-white or flat gray of sandblasted, etched or satin finished cast glass. This range of daytime color permits the incorporation of glass with other building materials such as limestone, terra cotta, granites, marbles and brick, or translucent glass elements may be used for design accent with contrasting surfaces such as are offered by black structural glass, tile work, and enameled metals. When illuminated, these architectural elements may reveal the structure of the building itself, or may form patterns and compositions

AMERICAN ARCHITECT
Time-Saver Standards

JULY 1935 Serial No. 1

Design Procedure for FLOODLIGHTING

TABLE 4 - BEAM LUMENS OF TYPICAL FLOODLIGHTING UNITS

Beam Spread	Projectors Designed for Floodlight Lamps		Projectors Designed for General Service Lamps		
	Lamp Size in Watts	Average Beam Lumens	Lamp Size in Watts	Average Beam Lumens	
				Reflector Dia. 12" to 16"	Reflector Dia. 18" to 24"
Narrow 15° and Less	250	1100	300	1400	-----
			500	2500	-----
	500	2600	750	-----	5500
			1000	-----	7800
			1500	-----	10500
Medium 16°- 29°	250	1150	300	1700	-----
			500	3000	-----
	500	2800	750	4900	6000
			1000	7000	8500
			1500	-----	12500
Broad 30° and Over	250	1200	300	1900	-----
			500	3400	-----
	500	2900	750	5200	6200
			1000	7400	8800
			1500	-----	13000

PURPOSE

This procedure enables the designer to estimate the number of floodlighting units required, their size and type, lamp size and power consumption. From these data the architect may determine space required for installation of units; and, by comparative studies, the best of several optional locations in terms of lighting effect and economy.

PROCEDURE

Rule 1. Lighting Level. Select the proper footcandle value from Table I.

Rule 2. Beam Spread and Type of Projectors. Select proper beam spread of projectors from Table 2 for each projector location under consideration. Consult Table 4 for approximate classification of commercial floodlighting units and then tentatively select from manufacturers' catalogs or Time Saver Standards the type and quality of units appropriate to project requirements. From either source take the actual net beam lumens.

In general, select units having large diameter reflectors for long throws and where installation will be operated for five years or more; they have higher efficiency but cost more than smaller diameter units. Also preference may be given projectors designed for "general service" incandescent lamps rather than for "floodlight" lamps except where narrow beams are required. General service lamps are cheaper, more efficient in lumen output, have longer life and can be burned in any position; but they are not applicable where the beam must be accurately controlled. Floodlight lamps, which permit accurate beam control, can be burned in any position except within 45 degrees of vertical with the base up.

Rule 3. Number of Projectors. To find the number of projectors of given type required to deliver a selected illumination level on a building surface: (a) Multiply the area of the surface to be lighted (in square feet) by the foot-candles desired on that area (from Table 1, Rule 1 above). (b) Multiply the actual net beam lumens delivered by a single projector of the type chosen by the factor 0.7, which represents an allowance of 30% for depreciation in service. Beam lumens may be approximated from Table 4 if manufacturer's data are not available. (c) Divide the product (a) by the product (b); the quotient will be the number of projectors required for adequate light.

Rule 4. Check for Uniformity. Where surface is to be lighted uniformly, find the average area effectively lighted by each projector from Table 3, based on the performance of a single projector aimed at the center of the surface to be lighted. Use the values for D and Z (see diagram) nearest to project conditions and interpolate for value A if necessary. Divide the area of lighted surface by the average area effectively lighted by each projector (column A in Table 3). The quotient is the number of projectors needed for uniform coverage.

If this number is less than the number required for adequate light, as found by Rule 3, no additional projectors will be needed. But if the number needed for uniformity is approximately the same or greater than the number needed for lighting value, redesign the installation, using projectors of wider beam, or increase the number of projectors and adjust the light output where necessary by using smaller lamps.

Rule 5. Spot Lighting. Where special architectural features, statuary, flags or other limited areas are to be lighted by one special projector, the values for L and W in Table 3 may be used to find the length and width of the ellipse of light formed by the projector on a flat surface. The proportions and area of the ellipse, of course, change with the values D and Z. To find the beam lumens required to deliver a given foot-candles intensity on the surface: Multiply the foot-candles by the factor 1.3 (to allow for depreciation in service) and multiply this product by the area (A, Table 3) of the ellipse covered. This result will approximately indicate the capacity required in the projector in net beam lumens.

COLOR LIGHTING

When color is to be used two factors affect the design. First is the absorption of the color screens; second, and offsetting this to some extent, is the higher attention value of color and hence the need for less intensity to maintain interest. Guidance of experienced illumination engineers is particularly important in designing color installations; but for general layout purposes make the following allowances when using incandescent lamps:

(a) Amber: Multiply wattage for white lighting by 1.5.
(b) Red: Multiply wattage for white lighting by 2.
(c) Green: Multiply wattage for white lighting by 3.
(d) Blue: Multiply wattage for white lighting by 5.

These values apply to floodlighting only. They do not produce equal brightness in foot-lamberts, but approximately equal attention value.

Space should be provided for mounting the correspondingly increased number of projectors. Where color changes are desired, provide additional units according to the variations required.

AMERICAN ARCHITECT
Time-Saver Standards

JULY 1935 Serial No. 1

Design Procedure for FLOODLIGHTING

TABLE 1 - RECOMMENDED LIGHTING LEVELS IN FOOT-CANDLES FOR FLOODLIGHTING

Surface Material	Initial Reflection Factors, per cent	Foot-candles for central business districts in cities of population:*		
		50,000 or over	50,000 to 5,000	Under 5,000
White and cream terra cotta Light marble	60-80	10	8	6
Light gray and buff limestone Smooth buff brick	40-60	15	12	8
Briar Hill sandstone Med. gray limestone Smooth gray and common tan brick	20-40	20	15	10
Brownstone Dark gray and common red brick	10-20**	30	20	15

* For buildings out of central districts use intensities recommended for next smaller classification.

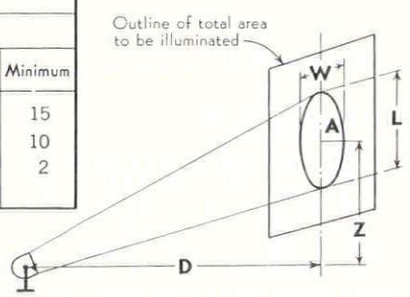
** Buildings with surfaces having a reflection factor below 20% cannot be floodlighted economically unless there is a large amount of light colored trim.

Foot-candles Recommended for Special Applications

	Good practice	Minimum		Good practice	Minimum
Football stadiums	12	6	Flags	25	15
Swimming pools	6	3	Signs	30	10
Gasoline service stations	15	10	Loading platforms, etc.	3	2

TABLE 2 - GUIDE TO SELECTION OF PROPER BEAM SPREAD OF FLOODLIGHTS

	Usual Distance Away in feet	Proper Beam Spread
Buildings 2 or 3 stories high, floodlights on projecting marquees or curb-line standards	10-30	Broad
Buildings lighted from across street or other remote sources		
Areas less than 3,000 sq. ft.	50-100	Medium
" more " " " "	50-100	Broad
Areas less than 3,000 sq. ft.	100-150	Narrow
" more " " " "	100-150	Medium
Areas less than 10,000 sq. ft.	150-300	Narrow
" more " " " "	150-300	Medium
Building towers lighted from set-back levels		
Set-backs 1 or 2 stories high	On building	Broad or Medium
" " 3 or more " "	On building	Medium or Narrow
Columns and ornaments, special areas, etc.	2-10	Narrow
Gasoline service stations, parking spaces, etc.	At edge	Broad
Football stadiums	50-100	Medium



A = Average area effectively lighted by each projector, corrected to allow for overlapping

D = Distance from projector to plane of lighted surface, measured perpendicularly to that surface

Z = Distance from a point directly opposite projector to mid-point of area to be lighted. If this mid-point is approximately opposite the projector, **Z** = half the distance from the perpendicular to the farthest edge of the surface to be lighted

L and **W** = Length and width of ellipse lighted by this projector

TABLE 3 - COVERAGE OF FLOODLIGHTING PROJECTORS

10° Beam Spread Projector					15° Beam Spread Projector					20° Beam Spread Projector					30° Beam Spread Projector					40° Beam Spread Projector					50° Beam Spread Projector				
D	Z	A	L	W	D	Z	A	L	W	D	Z	A	L	W	D	Z	A	L	W	D	Z	A	L	W	D	Z	A	L	W
15	0	5	3	3	15	0	10	4	4	15	0	18	5	5	15	0	45	8	8	15	0	80	11	11	15	0	130	14	14
	10	8	4	3		10	20	6	5		10	33	8	7		10	80	12	10		5	110	13	12		5	175	17	16
	20	21	7	4		20	50	11	7		20	93	16	9		20	240	26	14		10	150	17	14		10	260	22	18
	30	52	14	6		30	130	21	9		30	250	30	13		30	790	56	21		15	310	25	19		15	530	33	25
	40	113	22	8		40	290	37	12		40	620	55	17		40	2900	133	33		20	630	43	23		20	1250	63	30
25	0	11	4	4	25	0	25	7	7	25	0	44	9	9	25	0	100	13	13		25	1150	65	27					
	20	23	7	5		20	50	11	8		20	100	15	12		10	140	16	15	25	0	185	18	18	25	0	305	23	23
	40	71	16	8		40	170	25	13		40	330	34	17		20	220	23	18		10	240	22	20		10	400	28	26
	60	195	31	11		60	490	49	18		60	1030	73	25		30	430	36	21		20	450	33	24		20	800	44	32
	80	450	54	15		80	1200	90	24		80	2920	145	36		40	920	59	28		30	970	55	32		30	2050	83	44
50	0	38	9	9	50	0	90	13	13	50	0	155	18	18		50	1930	94	37		40	2300	98	42		40	6950	187	66
	20	47	11	9		20	110	15	14		20	195	21	19		60	3950	155	46		50	6450	194	60					
	40	81	14	11		40	190	22	17		40	330	30	23	50	0	350	27	27	35	0	320	26	26	35	0	520	33	33
	60	150	22	14		60	340	33	20		60	630	45	28		20	450	33	29		10	380	28	27		10	580	37	32
	80	260	32	17		80	600	49	25		80	1160	68	35		40	800	46	35		20	510	35	32		20	890	47	39
75	0	67	13	13	75	0	170	20	20	75	0	310	26	26		60	1590	73	44		30	850	49	35		30	1550	67	47
	40	110	17	14		40	250	25	22		40	440	34	30		80	3200	117	56		40	1490	71	43		40	3000	105	59
	80	220	28	18		80	540	43	29		80	1010	59	39	75	0	700	40	40		50	2700	106	52					
	120	530	48	25		120	1210	74	38		120	2320	102	52		20	790	43	42	45	0	470	33	33	45	0	780	42	42
	160	1040	76	32		160	2500	119	49		160	5050	171	67		40	1060	53	46		10	520	35	34		10	820	44	42
100	0	120	17	17	100	0	310	26	26	100	0	490	35	35		60	1590	69	53		20	650	40	37		20	1070	52	47
	40	150	20	19		40	390	31	28		40	610	41	38		80	2480	93	61		30	890	49	42		30	1550	67	53
	80	250	29	22		80	580	44	34		80	1050	59	46		100	4000	128	72		40	1320	66	46		40	2460	91	62
	120	470	43	28		120	890	66	41		120	2000	90	56		120	6400	175	84		50	2100	87	55					
	160	830	63	33		160	1950	98	51		160	3700	136	69	100	0	1130	54	54	55	0	640	40	40	55	0	1030	51	51
	200	1300	80	42							200	6650	201	84		40	1430	63	58		20	790	46	44		20	1300	59	56
150	0	270	26	26	150	0	610	39	39	150	0	1100	53	53		80	2550	92	70		40	1320	66	51		40	2330	88	68
	40	300	28	27		40	680	42	41		40	1230	57	55		120	5050	146	89		60	2650	104	65		60	5250	152	88
	80	400	34	30		80	900	51	45		80	1630	69	60		160	10300	234	112		80	5600	172	83					
	120	570	43	34		120	1310	65	51		120	2380	89	68	125	0	1760	67	67	70	0	1020	51	51	70	0	1680	65	65
	160	860	57	39		160	1970	86	58		160	3610	117	79		40	2130	73	71		20	1180	55	54		20	1940	72	69
	200	1280	74	44							200	5550	156	91		80	3090	97	80		40	1680	71	60		40	2860	93	78
200	0	480	35	35	200	0	1090	53	53	200	0	1940	71	71		120	5200	138	96		60	2700	98	70		60	5000	135	94
	40	510	37	36		40	1160	55	54		40	2080	73	72		160	9140	200	116		80	4700	142	84					
	80	600	41	38		80	1360	61	57		80	2470	82	77	150	0	2540	80	80	85	0	1500	62	62	85	0	2460	79	79
	120	770	48	41		120	1730	72	61		120	3160	97	83		40	2880	86	85		20	1680	67	64		20	2750	85	82
	160	1030	58	45		160	2330	87	68		160	4210	118	91		80	3820	105	92		40	2130	78	69		40	3600	102	90
	200	1370	71	50							200	5800	146	102		120	5700	135	107		60	3080	100	78		60	5400	133	103
300	0	1080	52	52	300	0	2460	79	79	300	0	4400	106	106		160	10300	234	112		80	4750	132	92					
	40	1110	53	53		40	2520	80	80		40	4520	108	107	200	0	4500	107	107		100	7500	181	106					
	80	1200	56	54		80	2720	85	82		80	4890	114	110		40	4800	111	109	100	0	2100	73	73	100	0	3400	93	93
	120	1350	61	57		120	3070	92	85		120	5530	123	114		80	5700	125	116		20	2280	78	74		20	3700	98	96
	160	1580	68	60		160	3590	102	90		160	6480	137	120		120	7500	150	127		40	2700	86	79		40	4500	112	102
																160	10200	184	141		60	3500	104	87		60	7800	138	113
																					80	5000	130	98					
																					100	7300	168	110					

AMERICAN ARCHITECT
Time-Saver Standards

JULY 1935 Serial No. 2

Design of LUMINOUS EXTERIOR ELEMENTS

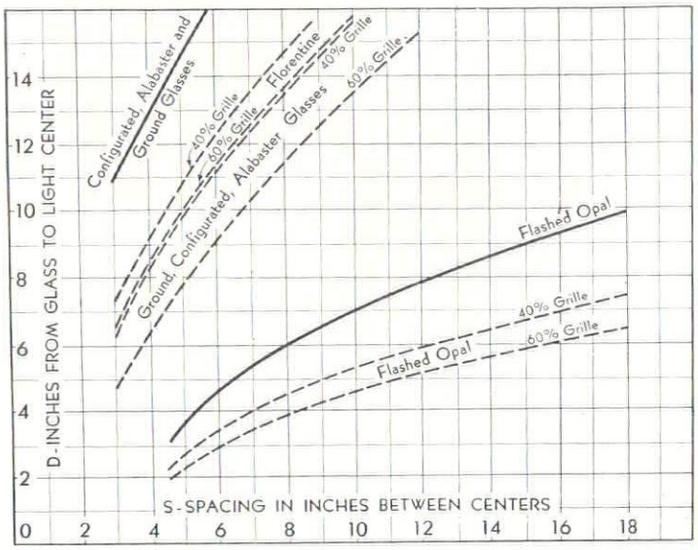


Chart 1

TABLE 4 - COMPARISON OF DIFFUSING PROPERTIES OF TRANSLUCENT MATERIALS

Material	Thickness	Transmission %	Characteristics
Flashed Opal Glass	.08-.11	47-66	Maximum diffusion with minimum absorption
Solid Opal	.07-.10	15-50	Maximum diffusion with greater absorption than flashed opal, whiter appearance
Clear Glass, etched or ground	.08-.12	65-88	Very poor diffusion with high transmission.
-Configurated, obscure	.12-.23	57-90	Poor diffusion, often specular brilliance and high transmission.
Opalescent and Alabaster Glasses	.09-.19	58-80	Poor diffusion, good transmission.
Alabaster (true), veined	.44-.53	17-30	Good to excellent diffusion depending on type chosen, absorption high.
colored	.25	34-50	
Marble, 1 side polished	.29-.39	3-8	
impregnated	.12-.20	12-40	

PURPOSE

Design of luminous exterior elements is based on brightness desired, spacing of lamps, distance of lamps from translucent cover or diffusing surface, shape of reflector and general proportions of the unit. Where unit under consideration is similar to a unit of known characteristics as shown in Table 3, all design factors can be directly estimated from data here given.

STANDARD DESIGN PROCEDURE

To find brightness level, lamp sizes, spacing and number of lamps and approximate wattage required in a unit similar to standards of known characteristics:

1. Determine the desired brightness level of the exterior element in foot-lamberts by reference to Table 1 on reverse side. These values are approximate only and are subject to wide modifications to meet specific conditions.

2. Compute the area in square feet of the luminous element and multiply by the foot-lamberts (which are the lumens emitted per square foot). This gives the total lumens that would be required if the Unit were 100% efficient.

3. Divide the total lumens thus found by the efficiency given in Table 3 for the element nearest in character to the design being developed. Take into consideration the character of translucent material as well as shape of element and reflector. The quotient will be the gross lumen output required of the lamps.

4. Estimate the number of lamps required in the unit by reference to the spacing S and distance D of the standard element in Table 3. These values are given in terms of width W. Divide the gross lumen output (from 3) by the number of lamps needed to maintain the recommended spacing. The quotient will be the lumen output required in individual lamps. In Table 2 find the lamp size emitting the desired luminous flux.

5. Wattage consumed is found by multiplying the number of lamps by the wattage of individual lamps. When figuring wire sizes and circuit layout always allow capacity for one or two lamp sizes larger to provide margin for testing and for future increase in brightness.

MODIFIED STANDARDS

When element under consideration is unlike one of the teste units in Table 3 in character of glass or translucent enclosin material, lamp spacing may be greatly affected if uniformity o brightness is desired. Table 4 compares the diffusing and trans mitting properties of the principal types of materials employed All units in Table 3 are evaluated for either flashed opal glass o 50% transmitting factor, solid opal No. 1 of 32% or solid opa No. 2 of 18%.

Compare lamp spacings for "flashed opal glass" with those fo "configurated, alabaster (opalescent) and ground glass" in Char 1, and estimate changes required in design by comparing spacing indicated in Table 3 for opal glasses with probable spacing needed with glasses of less diffusing power. Use solid curves fo unobstructed glass areas; use dotted curves marked "40% grille or "60% grille" for glass areas obstructed by opaque designs, le tering or glass framework, according to the proportion of th whole area thus obscured and divided into smaller sections.

When a glass of low diffusing power requires a greater dept from lamp centers to glass than project conditions afford, th element should be redesigned to secure diffusion by reflectio from a matte surface (as in Diagram 1 of Table 3) or a sheet o flashed opal glass should be interposed between the ornamenta glass and the lamps. In the latter case lamp spacings may b increased slightly over those permissible with flashed opal alone

The reflection factor of 0.75 for all cavities or reflecting surface used in the tested elements may be retained by using a whit finish of high reflecting and diffusing power.

SPECIAL DESIGNS

Where elements of special character are being designed whic cannot be compared to one of the tested units illustrated in Tabl 3, the only safe recourse is to the construction of scale or full siz models. These models should be tested under conditions simila to those anticipated at the building site. By changing lamp size or reflector shapes, or by substituting different translucent cove materials the most suitable design can be determined at relativel little cost.

AMERICAN ARCHITECT

Time-Saver Standards

JULY 1935 Serial No. 2

Design of LUMINOUS EXTERIOR ELEMENTS

TABLE 1 - SUGGESTED BRIGHTNESS VALUES FOR EXTERIOR LUMINOUS ELEMENTS

In foot-lamberts (one lumen per square foot) and for white light sources

Type of Element	General Brightness of District		
	High	Medium	Low
FLUSH OR RECESSED ELEMENTS			
-of important character, including panels, fascia signs*, parapets, etc.	100-300	50-150	10-70
-of subordinate character, such as spandrels, niches	50-150	30-80	10-50
PROJECTING ELEMENTS			
-of dominant character, including free standing columns, pylons, etc.	100-300	70-150	30-100
SOFFITS			
-of marquees, gasoline filling stations, etc.	200-400	100-250	50-150

*Signs should always be brighter than other portions of a design of which they may be a part.

TABLE 2 - LUMINOUS FLUX EMITTED BY VARIOUS TYPES OF LIGHT SOURCES

STANDARD MAZDA LAMPS

Watts	Lumens	Watts	Lumens	Watts	Lumens
15	140	75	1,030	500	9,800
25	250	100	1,510	750	14,550
40	430	150	2,400	1,000	20,700
50	580	200	3,400	1,500	33,000
60	750	300	5,490		

HIGH VOLTAGE DISCHARGE TUBES

RED LIGHT - Neon - 60 to 70 lumens per foot of tube
5-15 lumens per watt overall *

BLUE-GREEN LIGHT - Mercury 12 to 25 lumens per foot of tube
2-6 lumens per watt overall *

* Long tubes have higher lumen output per watt than short tubes. When substituting high voltage discharge tubes for incandescent lamps, base comparisons on same color effect.

HOT CATHODE GASEOUS CONDUCTOR LAMPS

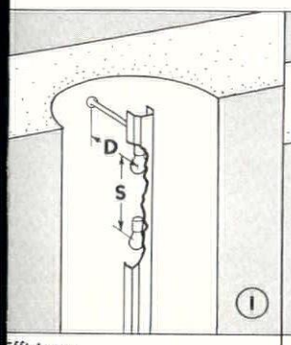
RED-ORANGE LIGHT - Neon - Lamps 18" long. 450 watts, 120 volts. 4500 lumens or 3000 lumens per foot

BLUE-GREEN LIGHT - Mercury, 50" long. 450 watts, 120 volts. 5400 lumens or about 1350 lumens per foot

GREEN LIGHT - Mercury, yellow glass screen, 50" long. 450 watts, 120 volts. 2700 lumens or about 700 lumens per foot

BLUE LIGHT - Mercury, blue glass screen, 50" long. 450 watts, 120 volts. 3100 lumens or about 800 lumens per foot

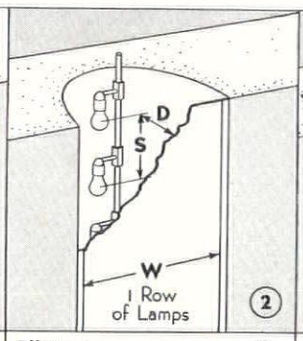
TABLE 3 - EFFICIENCY OF LUMINOUS ARCHITECTURAL ELEMENTS



1

Efficiency
With surface of 0.75 Reflection Factor ... 43%
For other surfaces multiply Reflection Factor by 0.52

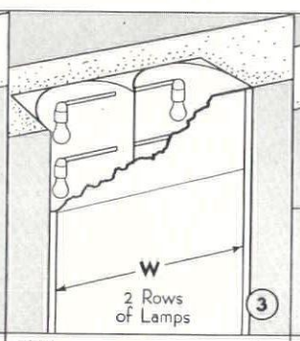
Width tested: 25 inches
S = 1.9D
Basic design for uniformly lighted open recesses with shielded lamps



2

Efficiency	%
Flashed Opal	49
Solid Opal No. 1	34
Solid Opal No. 2	18

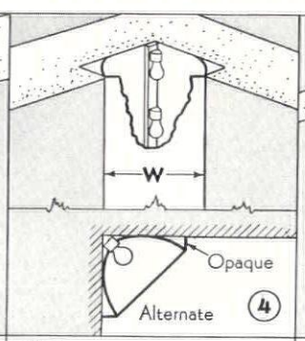
Width tested: 12 inches
S = 1.5 D **D** = 0.67 W
For rectangular back use 0.95 of efficiency values



3

Efficiency	%
Flashed Opal	49
Solid Opal No. 1	34
Solid Opal No. 2	20

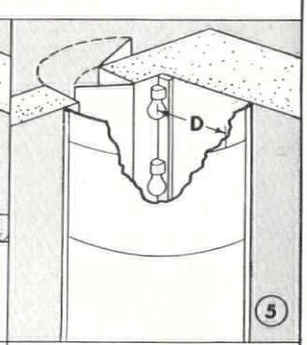
Width tested: 24 inches
S = 1.2 D **D** = 0.27 W
Lamp row spacing ⅔ panel width produces uniformity in shallow cavity



4

Efficiency	%
Flashed Opal	41
Solid Opal No. 1	29
Solid Opal No. 2	17

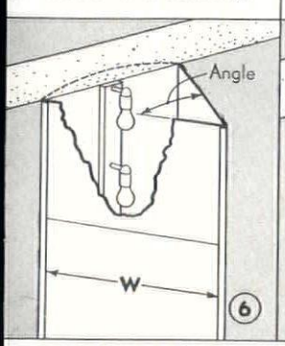
Width tested: 10½ inches
S = 1.5 D **D** = 0.67 W
Transverse uniformity requires reflector as indicated



5

Efficiency	%
Flashed Opal	57
Solid Opal No. 1	41
Solid Opal No. 2	25

Width tested: 9 inches
S = 1.5 D
For half cylinder see No. 7

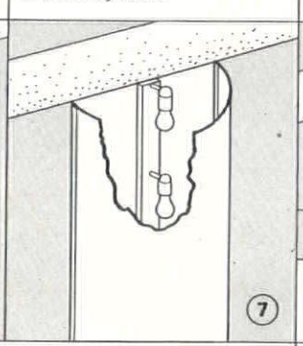


6

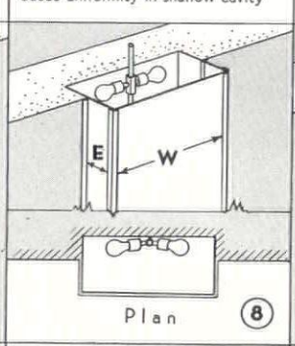
Efficiency	Angle 70°	Angle 90°	Half Cylinder
Flashed Opal	76%	65%	80%
Solid Opal No. 1	57	46	60
Solid Opal No. 2	39	32	41

Width W of model tested: 13 inches — 14 inches — 13 inches
S = 1.5D for angle 70° — **S** = 1.5D **D** = 0.5W — **S** = 1.5D

When 90° angle is used, reflector surface should be curved as per dotted lines and lamps placed equidistant from and centered behind the sides



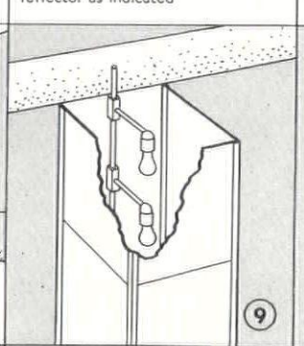
7



8

Efficiency	%
Flashed Opal	63
Solid Opal No. 1	46
Solid Opal No. 2	27

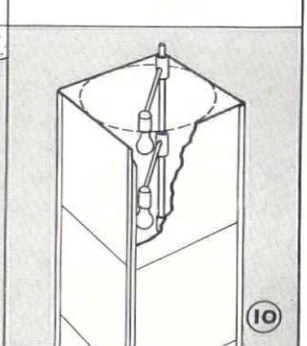
Width tested: 24 inches
S = 1.4D **D** = 0.37W **E** = 0.25W
Lamps located behind plane of wall about ½ **E**



9

Efficiency	%
Flashed Opal	74
Solid Opal No. 1	56
Solid Opal No. 2	40

Width tested: 12 inches (each side)
S = 1.5D
Lamps centered



10

Efficiency	Square	Round
Flashed Opal	83	87
Solid Opal No. 1	67	71
Solid Opal No. 2	45	50

Width tested: 12 inches
S = 1.4D
Framing to conceal wiring, or in case of round column, conduit to be on least conspicuous side

AMERICAN ARCHITECT
Time-Saver Standards

JULY 1935 Serial No. 3

EXPOSED and ENCLOSED LAMP SIGNS

PURPOSE

The simplified design procedure given here is intended for preliminary design purposes only. It provides a basis for determining letter height in signs for good legibility and advertising value, from which overall space requirements may be estimated. It also gives short-cut rules for determining lamp spacing, number of lamps and lamp wattage for signs using incandescent lamps.

VIEWING DISTANCE

The basis for letter height is "maximum viewing distance" which can be determined by a study of the site and its environment to find the maximum distance at which the sign should be clearly legible. Since the objective is to secure attention from the greatest number of people at the least cost, traffic counts may be required to establish the outer limits of the area in which visibility is profitable.

"Effective Reading Distance" is the distance at which letters are so clear to the normal vision that the sign has full advertising value. It is less than maximum viewing distance; its importance depends on the character of the sign and the number of words or letters involved. A familiar symbol, such as the dog and gramophone which has long marked the Victor Talking Machine factory at Camden, N. J., when once seen within the effective reading distance, will be instantly recalled at a glance from the maximum viewing distance. A lettered sign, however, has distinctly greater advertising value at the shorter range.

EXPOSED LAMP SIGNS

All essential design information may be obtained from Tables 1 and 3. Having determined either the maximum viewing distance or the effective reading distance from the site, by means of traffic counts or expert judgment, the height and width of letters, the width of stroke at the narrowest critical point and the spacing between letters can all be read directly in Table 1. With this information the general all-over dimensions of the sign can be developed from scale drawings of the required lettering.

Lamp spacing and lamp wattage can be taken from Table 3. Note the brightness factors measuring the probable illumination level in the surrounding environment with which the sign must compete. In general, these levels are assumed to be measured in the streets of the district and therefore apply to signs intended to be seen from relatively short distances. If the sign is on a rooftop and is not in competition with local "white way" lighting, lower brightness factors should be chosen than for a sign visible from the streets below.

Table 3 should not be used for final design of large signs as it does not take into consideration the effect of minimum viewing distance on lamp spacing. More elaborate engineering procedures are used by illuminating engineers in which letter height is determined by maximum viewing distance; lamp spacing by minimum viewing distance; and wattage by maximum legibility distance and the district brightness factor. The table here given permits wider lamp spacings in large exposed lamp signs than would be desirable in practice.

ENCLOSED LAMP SIGNS

These signs vary widely in character, depending on the type of translucent material used to form the letters, and the permissible depth of the lamp housing. In general, determine letter sizes and proportions from Table 1, up to 500 feet, effective reading distance. Letters may be more gracefully proportioned and more varied in width of stroke than with exposed lamp signs, particularly in the smaller sizes where a stroke width of 2½ inches is the minimum with exposed lamps only because of the size of the lamps themselves.

Lamp spacings are based on a well accepted trade custom of 6 inches on centers, 4 to 6 inches behind opal glass letters. If conditions vary materially from this standard see "Design of Exterior Luminous Elements" for methods of securing uniform lighting of niches, etc., and modify both the spacing and the depth from glass as required by the characteristics of the glass used. Lamp wattage for standard 6-inch spacings can be obtained from Table 4.

COLOR IN SIGNS

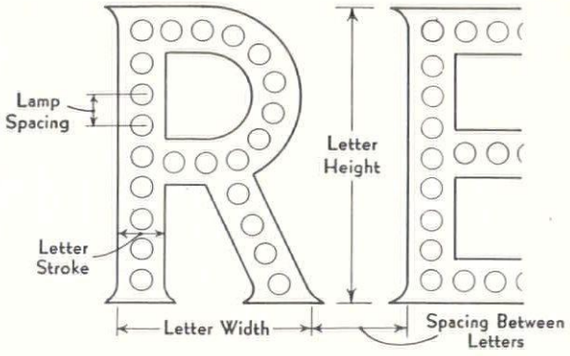
Assuming incandescent lamps are used with colored bulbs or color screens, increase the wattage over that calculated for clear or inside frosted lamps according to the data given in Table 2. If color is to be derived from hot cathode gaseous conductor lamps (adapted to enclosed lamp signs) or from high voltage discharge tubes (frequently used for exposed lamp signs to be viewed from limited distances) consult manufacturers or specialists as the use of these sources has not been reduced to standard practice.

AMERICAN ARCHITECT

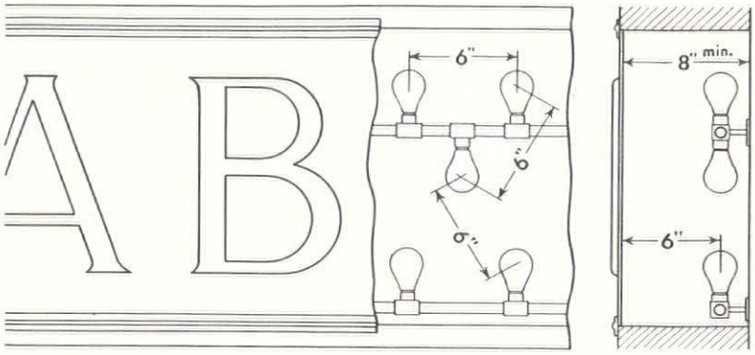
Time-Saver Standards

JULY 1935 Serial No. 3

EXPOSED and ENCLOSED LAMP SIGNS



EXPOSED LAMP SIGNS



ENCLOSED LAMP SIGNS

TABLE 1 - VISIBILITY - DIMENSION RELATIONS FOR EXPOSED LAMP SIGNS

Effective Reading Distance	Maximum Viewing Distance	Letter Height	Letter Width	Letter Stroke	Space Between Letters
200'	400'	10"	6"	2½"	4"
300'	600'	14"	8"	2½"	5½"
400'	800'	19"	11"	3"	7½"
500'	1000'	2'	14"	4"	9½"
750'	1500'	3'	2'2"	5"	1'2½"
1000'	2000'	4'	2'5"	6"	1'7"
1500'	3000'	6'	3'7"	9"	2'5"
2000'	4000'	8'	4'10"	12"	3'2½"
2500'	5000'	10'	6'	15"	4'
3000'	6000'	12'	7'2"	18"	4'9½"
4000'	8000'	16'	9'7"	24"	6'5"
5000'	10000'	20'	12'	30"	8'

TABLE 2 - EFFECT OF COLOR ON WATTAGE

(Equivalent advertising value, not brightness)

Normal "White" or Inside Frosted	10	15	25	40	60	100*
Daylight Blue	15	15	25	50	60	100
Yellow	10	10	25	50	60	100
Amber-Orange	10	10	25	50	60	100
Green	25	25	50	50	100*	150
Red	25	25	50	60	100	150
Blue	50	50	50	60	150	200

*100-watt lamps or larger require color hoods

MOST EFFECTIVE RANGE: Up to 500 feet
LETTER SIZES: Same as for exposed lamp signs, Table 1, for distances up to about 500 feet
LAMP SPACINGS: Preferably not over 6 inches on centers and at least 6 inches behind glass

TABLE 4 - LAMP WATTS FOR ENCLOSED LAMP SIGNS

Based on Uniform Spacing of 6 inches on centers

Brightness Factor (See Table 3)	Greatest Viewing Distance in Feet							
	50	75	100	150	200	300	400	500
1	40	40	50	50	60	60-75*	75*	75*
2	25	25	40	40	40	50	50	60
3	25	25	25	40	40	40	40	50
4	15-25	25	25	25	25	40	40	40
5	15	15	25	25	25	25	40	40
6	15	15	15	25	25	25	25	40
7	15	15	15	15-25	25	25	25	25-40
8	15	15	15	15	25	25	25	25
9	10	15	15	15	15	25	25	25
10	10	10-15	15	15	15	25	25	25

* Preferably use not over 60 watt lamps and space closer than 6 inches on centers.

Values in this table computed from the formula: Lamp Watts $= \frac{10\sqrt{\text{Max. Viewing Distance, Ft.}}}{\sqrt{\text{Brightness Factor}}}$

TABLE 3 - LAMP SPACING AND LAMP WATTAGE FOR EXPOSED LAMP SIGNS

Letter Height	10"		14"		19"		2'		3'		4'		6'		8'		10'		12'		16'		20'	
S = Spacing in inches W = Wattage	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W	S	W
BRIGHTNESS FACTOR																								
1. Brightest (Times Sq. New York)	2½	15	2½	15	3	25	3	25	3	25	3½	25	3½	50	4	50	4	50	8	50	10	60	12	100
2. Other Large City Squares	2½	15	2½	15	3	25	3	25	3	25	3½	25	3½	25	4	50	4	50	9	50	11	50	13	60
3. Most City Squares — Bright	2½	15	2½	15	3	15	3	25	3	25	3½	25	3½	25	4	25	4½	50	10	50	12	50	14	60
4. Most City Squares — Medium	2½	15	2½	15	3	15	3	15	3	15	3½	25	3½	25	5	25	5	25	10	25	12	50	15	50
5. Most City Squares — Dim	2½	15	2½	15	3	15	3	15	3	15	3½	15	4	25	5	25	6	25	11	25	13	25	15	50
6. Business Sections — Bright	2½	10	3	15	3	15	3	15	3	15	4	15	4	15	6	15	7	25	12	25	14	25	18	25
7. Business Sections — Medium	3	10	3	15	3	15	3	15	3	15	4	15	4½	15	7	15	7½	15	12	25	15	25	18	25
8. Business Sections — Dim	3	10	3	10	3½	15	3½	15	3½	15	4	15	5	15	7½	15	8	15	13	15	16	25	20	25
9. Small Cities and Large Towns	3	10	3	10	3½	10	3½	10	3½	15	4½	15	5½	15	8	15	9	15	14	15	17	15	20	25
10. Dark Factory Districts, etc.	3	10	3	10	3½	10	3½	10	3½	10	4½	15	6	15	8	15	10	15	15	15	18	15	24	15

AMERICAN ARCHITECT
Time-Saver Standards

JULY 1935 Serial No. 4

Design of LUMINOUS "SILHOUETTE" SIGNS

PURPOSE

Silhouette signs are those in which opaque letters or symbols are viewed against a luminous background. The effect of these signs is the reverse of enclosed lamp signs. Whereas in the latter, the lighted letter tends to make letter strokes appear larger by irradiation as the brightness of the sign increases, in silhouette signs an increase of brightness in the background tends to make the letter strokes appear thinner. Also the brightness of background practicable with silhouette signs is of a much lower order than is customary with exposed lamp signs, hence a different method of design is required. The procedure indicated below will enable the designer to approximate letter heights and stroke widths for preliminary design purposes. It is based upon "Factors in the Design of Opaque Patterns on Luminous Backgrounds," by G. R. LaWall and W. M. Potter.

EFFECTIVE RANGE

Silhouette signs having letter strokes approximately 15% of the letter height are effective up to about 1000 feet. Their maximum usefulness is at shorter ranges where their relatively low brightness is easy on the eyes and commends them to the observer's attention. The most effective letter proportion is a stroke width 15% of letter height; extremely thin (under 5%) and extremely thick (over 25%) strokes have very short visibility ranges. Under test, a brightness of 120 foot-lamberts appeared most effective, but this level is subject to wide modification according to surrounding conditions.

TYPES OF SILHOUETTE SIGNS

Common types of silhouette signs include: Reflecting cove lighted from lamp trough incorporated in the lettering (Fig. 1); reflecting cove or band course lighted by projectors below free standing letters (Fig. 2); flat signs having letters mounted free of the background with lamps concealed in the letters themselves (Fig. 3) or placed around the perimeter in covered light troughs; and boxed signs with glass covers like enclosed lamp signs except that opaque letters are painted or mounted over the luminous surface. See "Design of Exposed and Enclosed Lamp Signs" (American Architect Time-Saver Standards, Serial No. 3).

DESIGN PROCEDURE

Prepare a scale drawing of the sign and its lettering and determine "letter proportion" by dividing the width of the narrowest stroke in any letter which is critical for legibility by the over-all height of the letter. Express the result as a decimal or percentage. The narrowest critical stroke is that which distinguishes similar letters from each other, as G from C. Example: Letter height 18", width of narrowest stroke 2": Letter proportion $= 2 \div 18 = .11$ or 11%.

Determine from sketch net area in square feet of luminous surface against which the opaque letters will appear in silhouette (gross area less estimated area obstructed by letters). Determine brightness desired in luminous surface in foot-lamberts from "Design of Luminous Exterior Elements," A.A. Time-Saver Standards, Serial No. 2. From this same source also determine method of lighting, number and size of lamps, etc., as required for design purposes. Also determine maximum legibility distance desired; i.e., the greatest distance at which the silhouette sign should be readable to the normal eye.

Rule 1. To find the height of silhouetted letters for ready recognition and desirable publicity value:

1. Find the "relative distance factor" based on the net luminous (unobscured) area in square feet from the curves in Chart 1. Read vertically down from the area scale at the top to the curve representing the intended brightness level in foot-lamberts. From the intersection read horizontally to the "relative distance factor" scale at the left.

2. Divide the desired maximum legibility distance in feet by the "relative distance factor." The quotient is the adjusted legibility distance (the adjustment relating to the effect of brightness on legibility).

3. In Chart 2 apply this adjusted legibility distance to the vertical scale marked "maximum distance for ready recognition" and follow horizontally to the diagonal line which corresponds to the letter proportion percentage (w/h). Read vertically down from this intersection for height of letter on the bottom scale.

4. This height of letter is the minimum height for ready recognition. To find the height having sufficiently greater legibility to possess "desirable publicity value" divide the height thus found by the constant 0.70.

Rule 2. To find the maximum distance for ready recognition and desirable publicity value where height of letter is known.

1. In Chart 2 find the intersection of the vertical line representing height of letter (bottom scale) with the diagonal curve corresponding to the letter proportion percentage (w/h). Read horizontally to the right to obtain the "maximum distance for ready recognition" in feet.

2. In Chart 1 select the point on the curve representing the brightness level in foot-lamberts which corresponds to the net luminous (unobscured) area by reading vertically down from the top scale. From this intersection point read to the left to find the "relative distance factor."

3. Multiply the "maximum distance for ready recognition" found in (1) by the relative distance factor found in (2). The product is the distance at which a letter of the given height is readily recognized.

4. To find the distance for desirable publicity value multiply the ready recognition distance found in (3) by the constant 0.70

AMERICAN ARCHITECT
Time-Saver Standards

JULY 1935 Serial No. 4

Design of LUMINOUS "SILHOUETTE" SIGNS

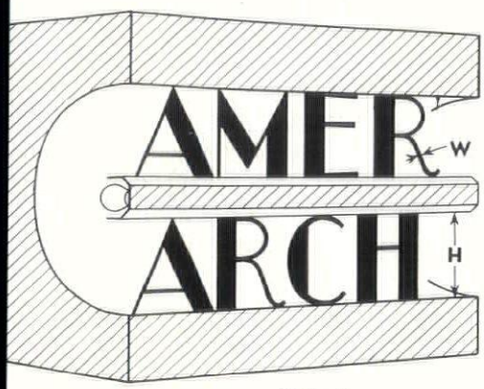


FIG. 1

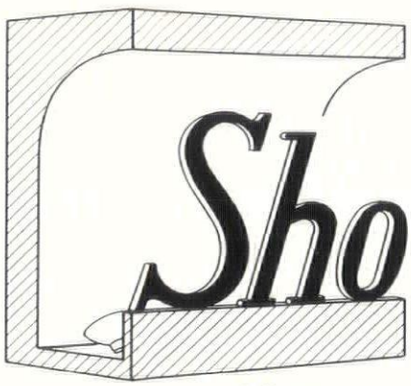


FIG. 2

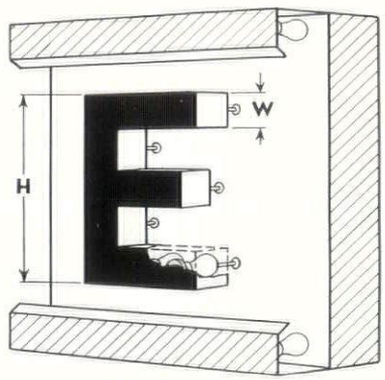


FIG. 3

CHART 1 - EFFECT OF BRIGHTNESS ON LEGIBILITY DISTANCE

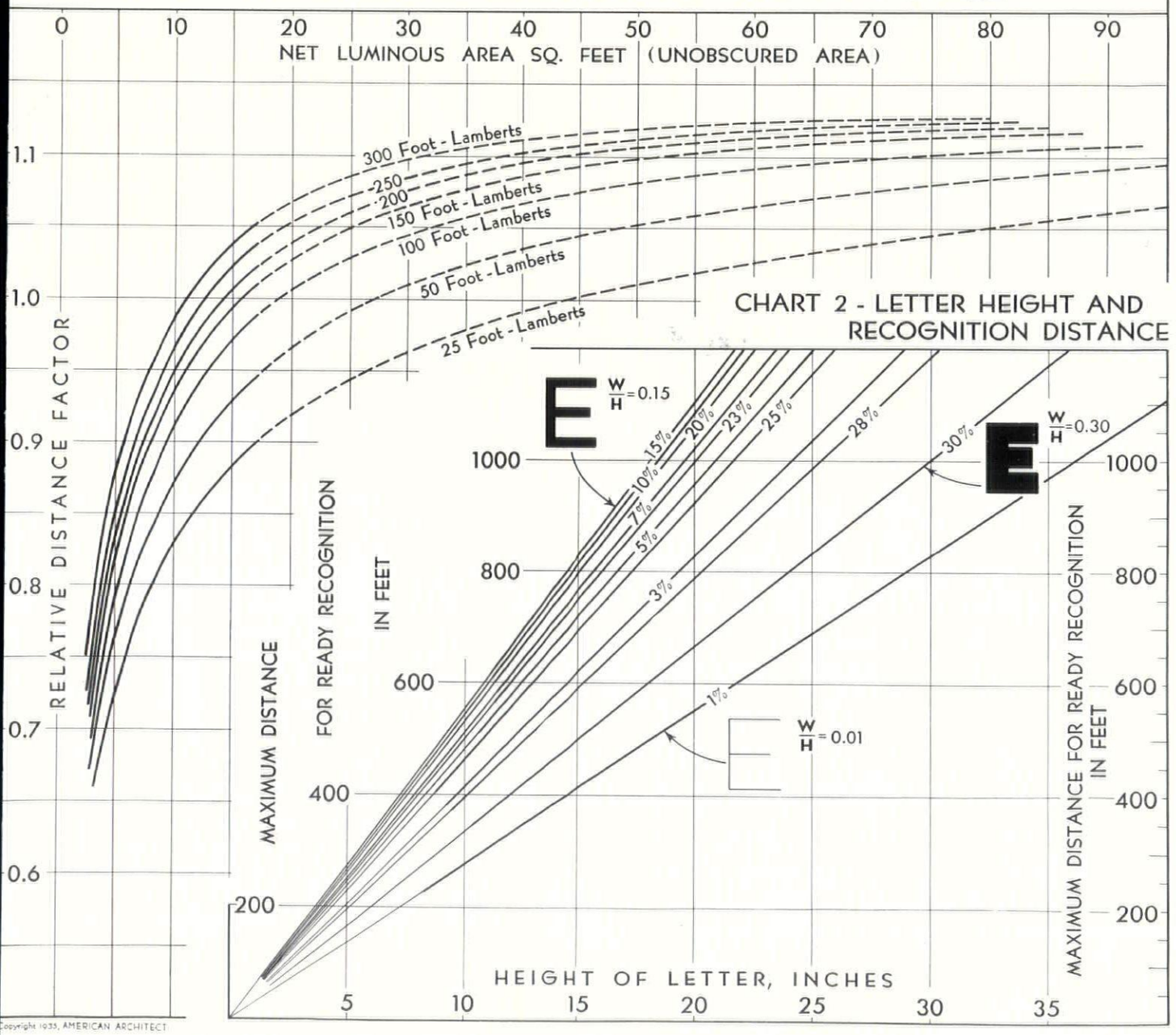
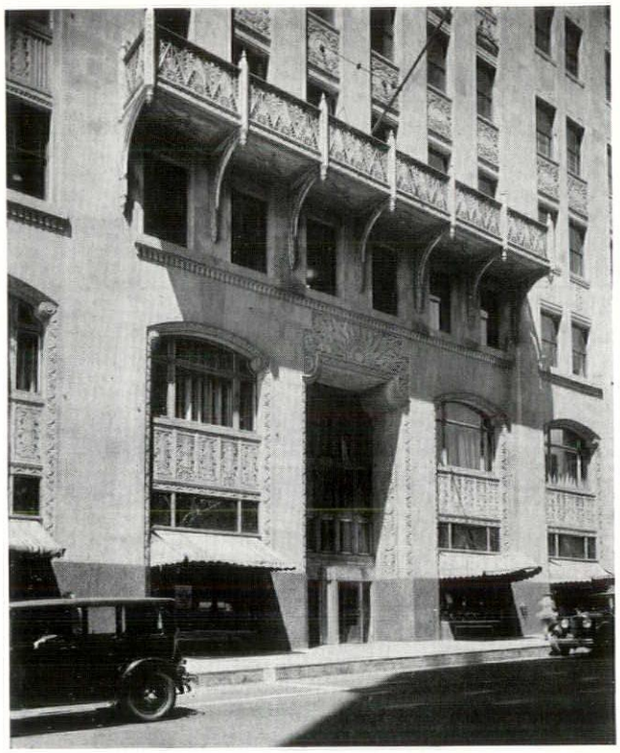


CHART 2 - LETTER HEIGHT AND RECOGNITION DISTANCE

Graduated lighting intensities, culminating in mobile color lighting on the tower, emphasize the mass composition of the Kansas City Power & Light Company Building. The architects, Hoit, Price and Barnes, incorporated decorative balconies over the main entrances in order to provide concealment for the lowest bank of projectors. At right, built-in lighting combined with floodlighting of special elements is used in the Niagara-Hudson-Syracuse Lighting Company Building at Syracuse, N. Y. Mobile color is introduced by the use of high-voltage discharge tubes in some of the structural elements. The mass composition appears somewhat more disturbed to the camera than to the eye because of the variations in actinic value of the changing colors. Melvin L. King, Architect, Bley & Lyman, Consultants



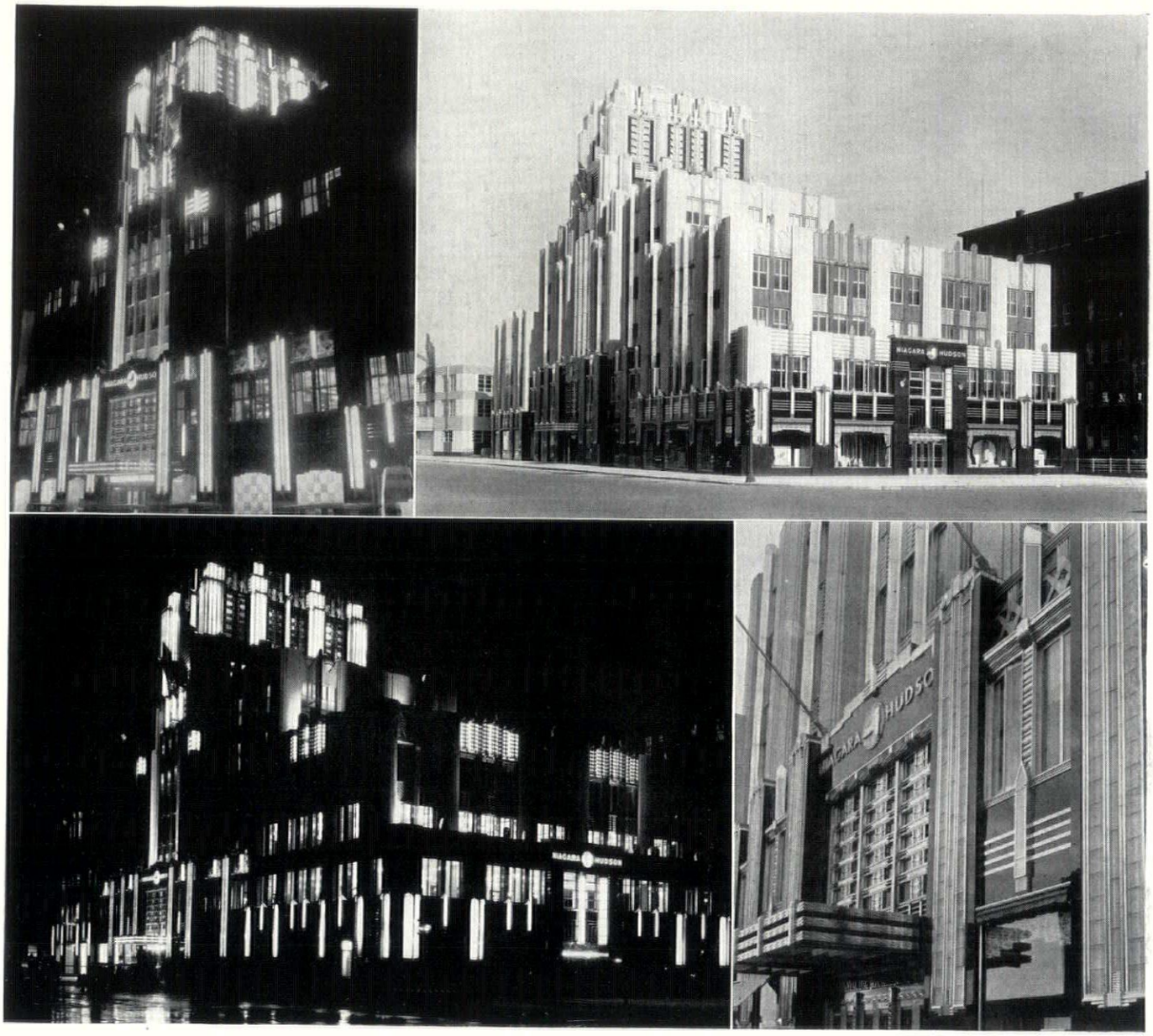
with unlighted areas in any form the designer conceives appropriate to his project.

Concealed sources producing a luminous effect usually consist of lamps covered by opaque reflectors or built into coves or niches in such manner that they directly illuminate adjacent reflecting surfaces. Of this type is the familiar lighting of recessed vestibules or the soffits of porticos where the lamps are concealed overhead and illumine adjacent surfaces.

DESIGN PROCEDURE

INASMUCH as the materials to be employed, the space required for lamps, and provision for access to lamps for maintenance purposes, must all be considered together, the designer's entire concept in this field must be predicated upon a familiarity with illuminating engineering practice. The essential data required for design purposes and simplified estimating procedures for determining lamp spaces, recess sizes, and the choice of transmitting and reflecting materials are condensed in the accompanying AMERICAN ARCHITECT Time-Saver Standards, "Design of Luminous Exterior Elements."

The measure of brightness of luminous sources is expressed in a different term from that commonly applied to floodlighting. In the latter, the term "foot-candles" expresses the illumination received by a given surface. The apparent brightness of that surface is then governed by its ability to reflect rather than absorb the light it receives. If the illumination received by a surface measured in foot-candles is multiplied by the reflection factor of that surface,



the result is a new value, "apparent foot-candles" or technically foot-lamberts. In dealing with translucent elements the term foot-lamberts is used. It is defined as the average brightness of a surface emitting or reflecting light at the rate of one lumen per square foot. Hence it is the same as "apparent foot-candle" or the brightness produced by one foot-candle on a white surface of theoretically perfect reflecting power.

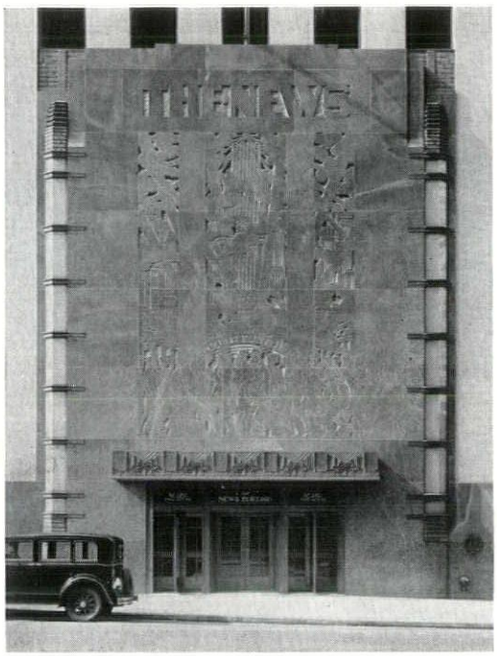
The following example may facilitate the use of data in the Time-Saver Standards sheet "Design of Luminous Exterior Elements." Given a vertical panel on the face of a building in the center of a city of 25,000 population. The intention is to use a satin finished cast glass cover over a niche that must be as shallow as possible, yet the glass has very poor diffusing power and must be uniformly lighted. Lack of space at the sides of the niche for indirect lighting compels the adoption of a recess shape similar to diagram 3 in Table 3. The pilaster is to be 30 inches wide and 20 feet high. How many lamps are required, of what size and spacing?

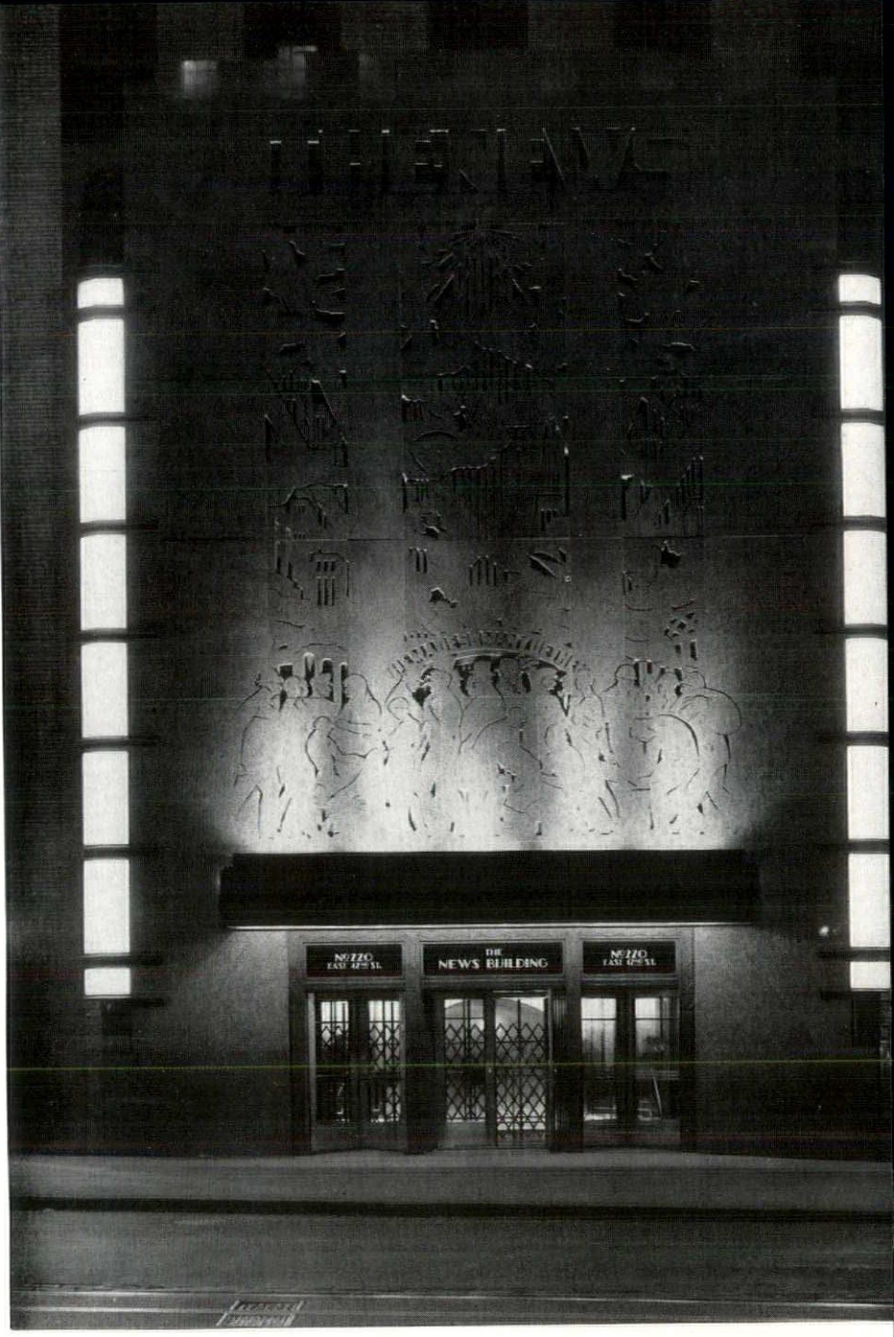
(1) From Table 1 the desirable brightness is found to be from 50-150 foot-lamberts (medium brightness district); assume for preliminary purposes a brightness of 75 foot-lamberts.

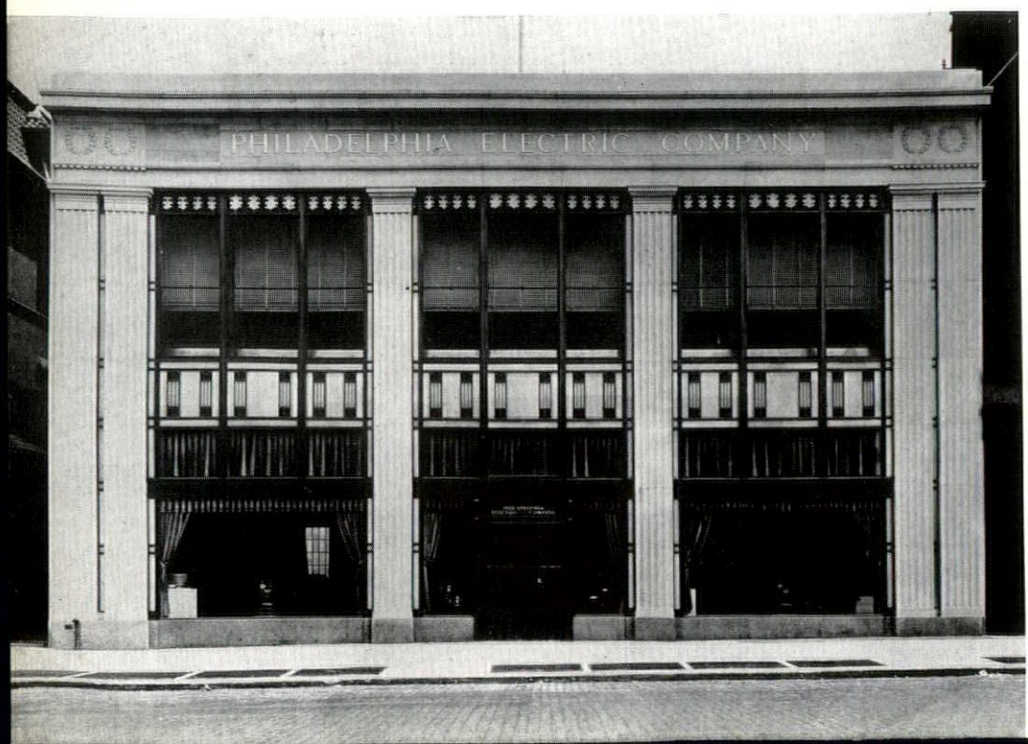
(2) The area of the element is $20' \times 2.5' = 50$ sq. feet, which, multiplied by the foot-lamberts ($50 \times 75 = 3750$) gives the total lumens required before allowing for losses.

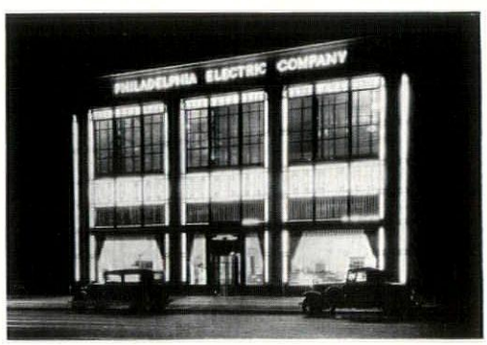
(3) From diagram 3 in Table 3 it is found that with a flashed opal cover the efficiency is 49%.

Luminous architectural glass pylons lighted in color by high voltage discharge tubes and projected floodlighting from the marquee were used by Raymond M. Hood to give night as well as daytime prominence to the entrance of The News Building, New York









Built-in luminous elements which provide desired lighting effects at night, may readily be made an integral part of the daytime composition. Here flashed opal and ground glass spandrels and bandings overlaid with bronze grilles become important decorative features. John T. Windrim, architect

colors as wattage consumption varies widely and some sources are better for certain colors than for others. Also, keep in mind that the brightness (in foot-lamberts) of a color-lighted surface need not be as great for equal attention value as a white-lighted surface.

High voltage discharge tubes have the following general characteristics: They use an auxiliary transformer to step up the voltage; this requires high-voltage insulated conductors from transformer to lamps, making it advisable to mount the transformer close to the lamp. The power factor is about 50 to 55% (the practical effect of which is to require somewhat larger feed wire sizes than are indicated by the wattage consumption). From 5-15% of the total wattage is consumed by the transformer and 10-50% (depending on length) is dissipated at the electrodes; these losses are fixed, hence long tubes have a higher lumen output per watt than short tubes.

The comparative value of these tubes for certain light colors may be indicated thus: To produce 250 lumens of red light by incandescent lamps with color screens, one 150-watt lamp or ten 25-watt lamps would be required (one 25-watt lamp produces 250 lumens of white light; red color screens require about ten times as many lamp lumens for equal brightness). But 250 lumens of red light can be obtained from about four feet of a neon high voltage discharge tube consuming about 25 watts. To produce 250 lumens of blue-green light with incandescent lamps and color screens, one 300-watt lamp or twenty 25-watt lamps would be needed. By employing about 14 feet of a mercury high voltage discharge tube, 250 lumens would be produced with a consumption of about 60 watts.

Hot cathode gaseous conductor lamps are tubular light sources from 18″ to 50″ long and about 1″ in diameter with an enlarged terminal requiring a 4″ space for clearance. A transformer and control unit requiring a space 6″ x 8″ x 22″ or 10″ x 10″ x 10″ is required for each lamp and should be connected thereto by not over 20 feet of low voltage wiring. The light output per foot of tube ranges from around 500 to 3,000 lumens, making these sources too bright to be used exposed. For comparative data, see "Design of Luminous Exterior Elements," AMERICAN ARCHITECT Time-Saver Standards, Serial No. 2.

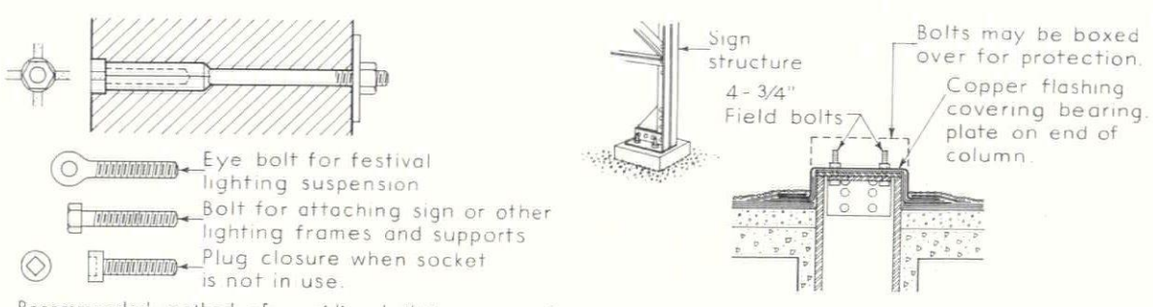
DECORATIVE LIGHTING

IF outline, festoon and other forms of decorative lighting with bare lamps are to be employed as temporary means of festival decoration, the designer's chief concern is the provision of outlets fed by special lighting circuits under suitable switch or automatic control. No specific rules or data can be given as the capacity of outlets depends upon local lighting codes and their location is influenced by the probable position and character of lighting effects subsequently to be applied.

Some provision may also be desirable for the temporary attachment of festival lighting decorations, particularly on department stores and other commercial or public buildings which may be periodically illuminated in this manner. Bronze hooks or eye-bolts may be permanently set under cornices, at window points, or along belt courses to facilitate the temporary installation of the required lighting circuits and lamp frames. A suggested type of hanger is illustrated in the diagram below.

SPECIAL LIGHTING PROBLEMS

SPACE does not permit the detailed consideration of numerous other exterior lighting problems which may come within the scope of architectural practice. The illumination of statues, monuments and gardens is usually accomplished by adapting floodlighting procedures. Fountains and swimming pools may be illuminated both by underwater floodlights in special waterproof housings or, in some cases, by projected floodlighting. The general data on floodlighting technic will suffice as an indication of the methods followed by illuminating engineers in solving these problems. Because of their special nature it is advisable to entrust their development to experienced technicians.



Recommended method of providing built-in supports for temporary festival lighting and signs. These socket bolts and weatherproof outlet receptacles, if installed during construction, greatly reduce subsequent festival lighting costs. . . . Right: Where roof signs may ultimately be added, extend column stubs through roof as shown

Fundamental Problems of Illuminated Signs

THE use of illuminated signs on buildings is invariably dictated by commercial considerations. Frequently these factors are of more concern to the owner than adherence to orthodox architecture. When buildings of commercial character are designed without recognition of the income possibilities of suitable luminous or other signs, the owner is usually willing, at some later period, to sacrifice architectural quality in his structure for the income which the addition of signs will produce. If the designer, however, will approach his task with a full appreciation of the commercial value of signs and will accept them as design requirements rather than as necessary evils to be subdued as effectively as possible, he is likely to produce a more original and satisfying lighting design than would be possible if he adhered to traditional concepts.

COMPETITION FOR ATTENTION

THESE commercial requirements do not always demand great size, nor do they excuse ugliness, excessive brilliance or other characteristics distasteful to the skilled designer. The apparent competition for ugliness in signs is due to the lack of imagination of sign manufacturers and building owners and to the very neglect of this subject by competent architectural minds. One of the first problems the architect should undertake to solve is how best to meet the competition of adjacent buildings and to prevent competition between the signs of individual tenants on a single building. Sometimes the solution is happily found in the illumination of the building as a whole and the subordination of tenant signs to a uniformity of size and character (though with individuality of detail) which will enhance rather than harm the whole composition. Sometimes restraint is the best method of securing dominance in an area where competition is intense. It is a fortunate fact that in spite of the bizarre monstrosities created by sign makers to achieve dominance and attention value, a carefully considered design pleasing to the eye will command the desired attention out of all proportion to its cost.

CONTROL OF TENANTS' SIGNS

IT is within the province of the architect to consult with any client planning a commercial building regarding means of establishing the type and character of signs tenants will subsequently be permitted to use in store fronts and show windows, or upon the facades of the building. While some tenants will object to the idea of being limited in the competition they may impose on neighboring stores, it is relatively easy to convince them that if no restraint is exercised, each effort to dominate an adjacent sign will only lead to heightened competition and constantly increasing expense. Imagine the result if tenants of the Empire State Building were allowed to hang signs on this structure according to the amount of space they occupied! How much better for tenants and owner alike is the rigid restriction of signs even to those employed within the show windows of ground floor stores. Once the architect and owner have established acceptable and logical limits upon individual signs, whether luminous or not, the architect can proceed to co-ordinate them as elements in his whole nighttime composition.

DAYTIME VALUE OF SIGNS

IT is hardly necessary to point out that the daytime appearance of signs is more important than their night appearance whether the signs be luminous or not. The very brilliance of a luminous sign under night conditions may conceal the ugliness of its structure or supporting framework. By proper care in the selection of sign types and in the design of structural elements, it is just as easy to have a sign good looking by day as well as by night as to have one which depends only upon darkness and flashing brilliance to conceal its inherent ugliness. It may be more expensive to build such a sign but the commercial value of good appearance by day makes the investment profitable.

SIGNS ON BUILDINGS

THE most objectionable aspect of illuminated signs on buildings derives from the fact that most of them have been applied to the structure without regard to the daytime appearance of the building itself. This is particularly true of signs on roofs of buildings, where skeleton steel framework, left unclothed for the sake of economy, stands gaunt against the sky awaiting its hours of service. If the location of a building is such that a rooftop sign has commercial value, the architect has only himself to blame for the ultimate impairment of his design concept if he fails to advise his client of this value and so to design the structure that the full income from the site can be realized. Signs embodied in the building pattern itself are usually better, both commercially and architecturally than signs applied to buildings as an afterthought; for this reason buildings that have high income possibilities for advertising purposes should be designed to realize that income.

There are many occasions, however, where owners are misled by rentals or leases offered for advertising space on building facades or roofs. The apparent profit may be high, but ultimate loss of tenants of the better type may soon diminish that profit to the vanishing point. Advertising space, so leased, is often resold from time to time. For one period the space may be used to advertise an automobile; the building becomes identified as the one with the big auto sign. Later it may advertise a cigarette; the identity of the building is changed. Eventually the building loses all individuality. Tenants may even

find their own competitors' advertising dominating their address to the detriment of their business.

In consequence, the development of facade space or roof space for advertising purposes is usually limited to these conditions: (1) buildings such as theaters and auditoriums which advertise their own identity or the changing activities within; (2) department stores and, more rarely, banks and office buildings wholly occupied or largely dominated by a single organization; (3) industrial plants in which the tower, water tank or other elevated part may reproduce the symbol or trade-mark of the products made within; (4) miscellaneous structures in theatrical "White Way" districts such as along the Times Square District of Broadway in New York, where electrical advertising income transcends in importance the relatively low rentals obtainable from upper floors for business purposes; and (5) roofs of buildings which are visible from long distances, as across parks, rivers or valleys or at bends or termini of important boulevards or avenues. Visibility measured in terms of the number of people whose attention can be attracted by luminous signs, is the yardstick of advertising value. It requires nice judgment on the part of owner and his architect as to whether the greater value will result from dignified illumination of the building itself to permanently emphasize its identity or from lettered signs that advertise a particular company or commodity.

The important point is to make provision *in the design of the building itself* for whichever of these methods of capitalizing a prominent site is the more profitable. Eventually the income will be wanted; if illumination or sign work is planned in advance it will prove less costly and the effect can be controlled; if neglected, undesirable results are likely to follow.

Types of Luminous Signs

FUNDAMENTALLY a sign is a message. To be effective the message must be easily read. Usually the message is expressed in letters and words, though pictures frequently serve the same purpose or assist in conveying the desired thought. All other elements of signs, including their color, brightness, decorative or flashing borders and even their shape are primarily designed for attention and impression value. The effective sign combines these elements in such manner that the sign will be seen and then easily read and remembered.

The designer's first problem is to determine from what distance the sign will be seen. The second is to establish the size and character of lettering which will be easily legible within that viewing distance. The third is to establish the brightness which will secure dominance or at least satisfactory attention value in relation to the general illumination level of the environment. And then details of lamp sizes and spacings and structural assembly logically follow. The first three steps must be taken by the architect to enable him to provide requisite space and adequate electrical feeders as part of his general design scheme. The remaining steps may largely be developed in collaboration with experienced sign builders or illuminating engineers and need not be developed in detail here.

The type of sign which should be used is directly related to visibility distance or area of effectiveness as well as to size.

EXPOSED LAMP SIGNS— INCANDESCENT TYPE

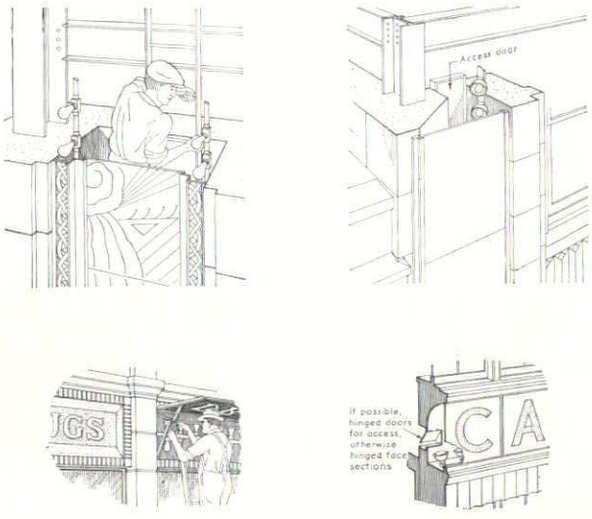
SIGNS in which bare lamps are arranged to form letters and symbols can be seen at a greater distance than any other type, but because of their spottiness and glare at close quarters they should not be used where the maximum reading distance is less than 250 feet. Accurately developed rules are available for designing these signs for maximum legibility but since this work can be largely entrusted to the experienced sign maker the technical procedure followed is of little interest to the architect. An important consideration in the design of lettering and symbols for exposed lamp signs is the minimum separation between letter or pattern strokes to prevent them from appearing run together.

EXPOSED LAMP SIGNS— HIGH VOLTAGE DISCHARGE TUBES

TECHNICALLY those exposed lamp signs which are made of high voltage discharge tubes containing neon, mercury, helium or other gases have few or none of the characteristics of signs employing bare incandescent lamps. The tubular gas filled sources, known to the layman largely as neon tubes, provide controlled light of some apparent brilliance but of actually such low brightness as to be tolerable to the eye when viewed from a relatively short distance. Because of the limited light output of these sources, they are not visible or readable from great distances. Their chief value is therefore for identifying individual stores or for use within store windows where they can be read from distances not exceeding 100 to 200 feet, and occasionally for use in conjunction with exposed lamp signs of incandescent type to introduce color borders and decorative elements including flashing features.

ENCLOSED LAMP SIGNS

WHEN the sign is composed of translucent letters on an opaque ground with the light source concealed behind the lettering the range of effectiveness is limited to about 500 feet. This type of sign is well adapted to store fronts, titles on buildings



Access to lamps for maintenance and relamping is an essential requirement in the design of all types of luminous built-in elements and signs. Glass, lamps and all reflecting surfaces need cleaning at periodic intervals

and signs functioning as "location markers." The letters are usually of shaped opal glass plates mounted in a metal case or of translucent glass with pebbled surface to produce specular brilliance and diffusion. For cheaper work sheet glass is sometimes used with an opaque background produced by painting, silvering or other treatment, leaving the letters and decorations clear for the transmission of light.

Enclosed lamp signs are excellent for easy readability at relatively short distances; they permit the development of letters of distinctive shape; and where the letters are of white opal glass or of other similarly light colored translucent material set in a contrasting background, they have excellent daytime visibility without illumination. In general they are not adapted to the use of motion or changing color, but fixed colors can be introduced either by coloring the glass, the use of colored lamp bulbs, or color light sources such as high voltage discharge lamps, hot cathode gaseous conductor lamps or mercury vapor lamps.

SILHOUETTE SIGNS

WHEN the lettering or advertising design is made of opaque material on a luminous background the sign is classed as a silhouette. These offer a wide range of design possibilities both by day and by night, and are generally to be classed with the better type of enclosed lamp signs as being more conservative and less garish than either of the exposed light source types. They may be made in any size and are adaptable to a wide range of purposes, but they are not as effective as exposed lamp signs for visibility at great distances because it is difficult to make the background sufficiently bright to carry through the smoke and haze of ordinary city atmospheres. The practical limit to their effective range is between 1000 and 1500 feet; the small sizes may be used effectively for very short range work. An outstanding example of this type is De Volharding in The Hague, Holland, illustrated on another page.

ILLUMINATED SIGNBOARDS

IN the category of luminous advertising media which may be applicable to buildings of certain types are signs which are substantially like ordinary billboards floodlighted at night. The chief merit of these signs is that they permit the introduction of pictures in color, which possess considerably greater attention and memory value than mere letters and words. For design practice see the discussion of floodlighting.

DESIGN PROCEDURES

SIMPLIFIED data which will enable the designer to estimate lettering size for legibility and good advertising value are presented in the accompanying AMERICAN ARCHITECT Time-Saver Standards, "Design of Exposed and Enclosed Lamp Signs" and "Design of Luminous Silhouette Signs." Sufficient information is given to permit the architect having little or no experience in sign technic to approximate the space required for a sign of any given character and the approximate power consumption required for adequate illumination under different environments. The final development of all signs, however, should be the result of collaboration between the architect and a sign manufacturer or electrical advertising specialist.

CONTROL EQUIPMENT

MOST exterior illumination projects involve relatively heavy electrical loads, a multiplicity of circuits and special control devices.

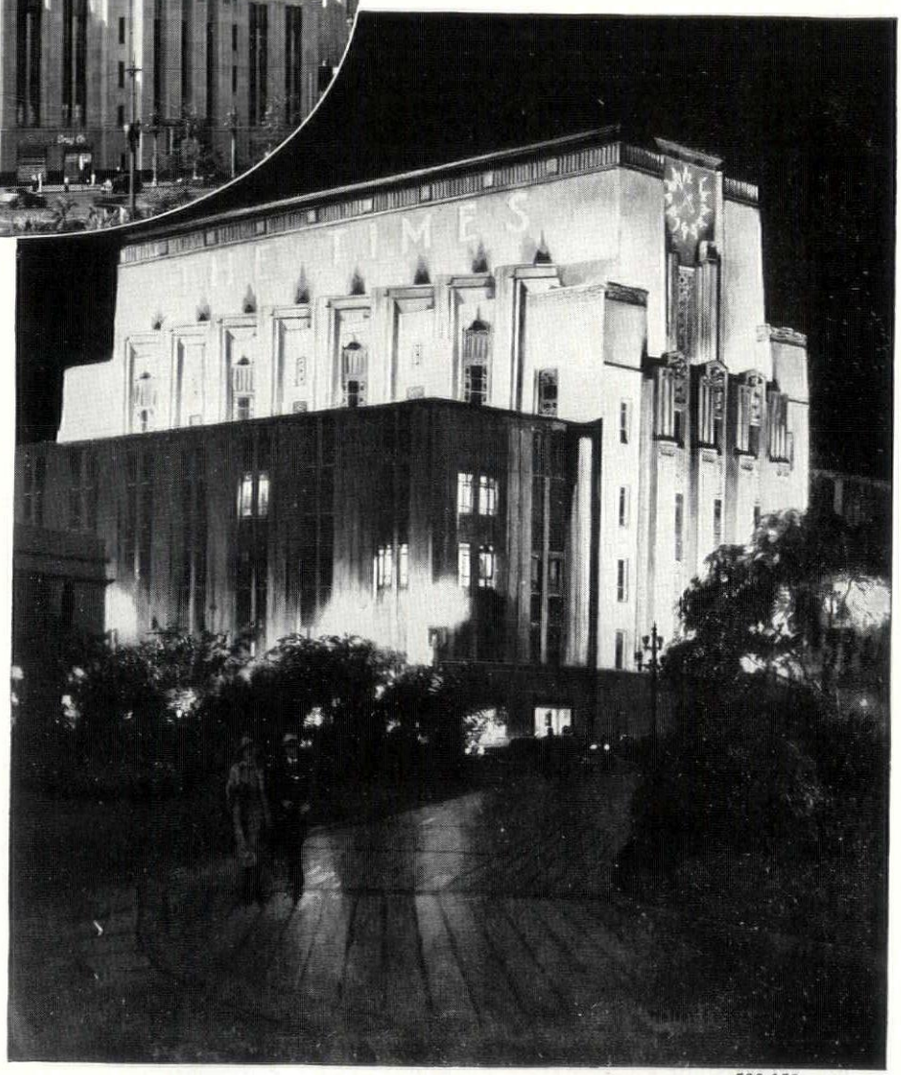
Space should be provided for sign flashers, thyratron operated reactors or multiple circuit devices at points as near as possible to the load itself. Large panel boxes or moderate sized control closets usually provide adequate space.

Remote control of these load centers permits them to be placed at relatively inaccessible points. Momentary contact switches, master time clocks, or photo-electric illumination controls may be located at more convenient points to effect positive control of the isolated automatic devices. Wiring from such remote control mechanisms costs much less than bringing all load-carrying circuits to a central switchboard or control point.

Conduits from these load centers to signs, floodlight banks or luminous elements should be oversized to permit future changes both in total load and number of operating circuits.

Don't let night
hide the beauty of your building

The Los Angeles Times Building
GORDON B. KAUFMAN, *Architect*
E. L. ELLINGWOOD, *Consulting Engineer*



HERE is a suggestion that may help you win an important building contract: next time you submit preliminary plans for a building, prepare, also, a sketch of the building floodlighted at night.

General Electric will be glad to help you with this preparation. Engineers of our Illuminating Laboratory are experts in the selection of proper equipment. G-E Lighting Specialists in the field have an excellent all-round knowledge of floodlighting.

Lighted buildings rent more quickly; they stand as advertisements for their owners. There are other applications, too, which are important: lighting courts in the daytime, where rooms facing these courts would otherwise be gloomy; lighting roof gardens, as has been done on the RCA building; lighting gardens and landscaping around buildings; illuminating fountains.

Please feel free to call on us. Write or call your nearest G-E office, or General Electric, Dept. 6S-201, Schenectady, N. Y.

500-152

GENERAL ELECTRIC

AMERICAN ARCHITECT
Time-Saver Standards
OF ADVERTISED PRODUCTS
JULY 1935, Serial No. A2.1

DIMENSIONS OF SELECTED G-E LAMPHOLDERS

To find overall length of any lamp plus lampholder:

Find the overall length of selected screw base lamp (obtainable from Mazda lamp catalog). Find in adjoining table the lampholder nearest in type to the item to be used, and find dimension given in Column C. Add this dimension to overall lamp length unless the dimension is preceded by minus sign (—) in which case subtract from overall lamp length. The resulting length will be from tip of lamp to base on which lampholder is mounted.

To find clearance required for removing lamp:

Allow a space equal to overall lamp length between lip of lampholder and any obstruction on lamp axis. Distance from mounting base to any such obstruction should be lamp length plus dimension B for pipe or surface mounted, or lamp length plus dimension E for recessed and flush mounted lampholders.

To find whether diameter of lamp exceeds that of lampholder:

All Mazda lamps are identified by a letter designating shape of bulb and a number representing bulb diameter in eighths of an inch. Thus A-19 represents a bulb of Shape A that is 19/8 or 2⅜" in diameter. Compare bulb diameter with dimension A.

To select proper material of lampholder:

Brass shell: For exposed work where metallic color finishes are desired for appearance, as in show cases, fixtures, etc.

Textolite: For exposed work where brown textolite color is desired for appearance; also where dampness or fumes would tarnish metal.

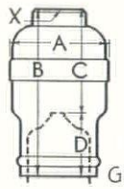
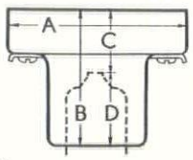
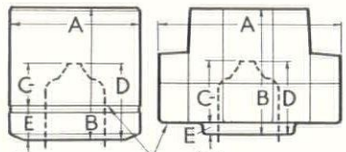
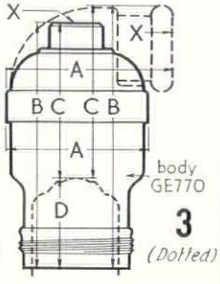
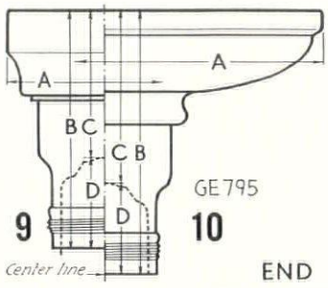
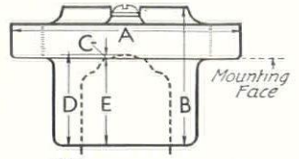
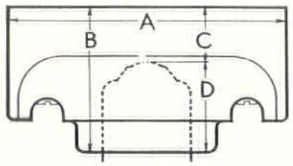
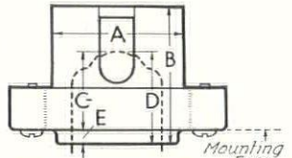
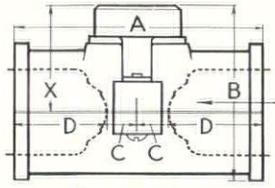
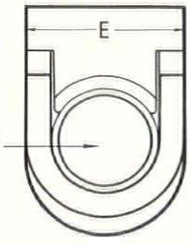
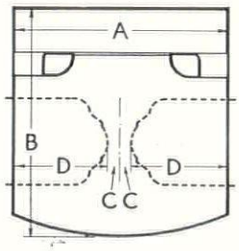
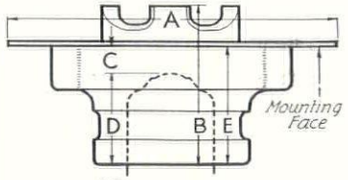
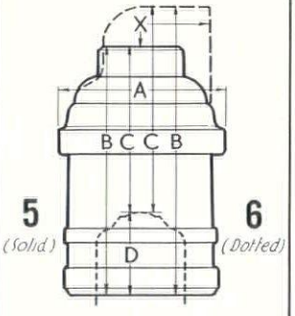
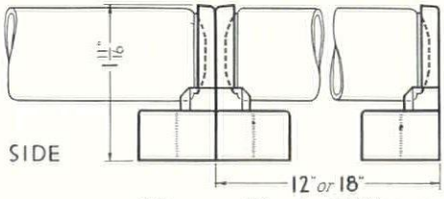
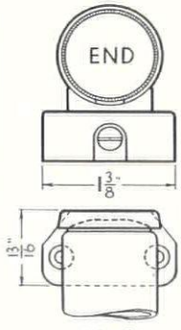
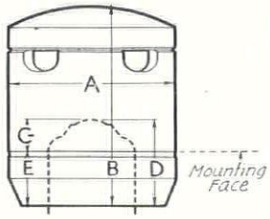
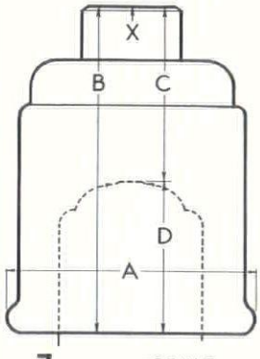
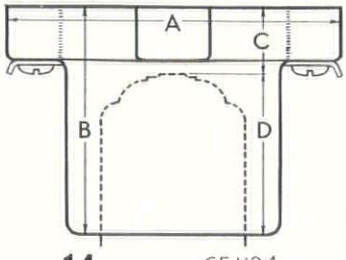
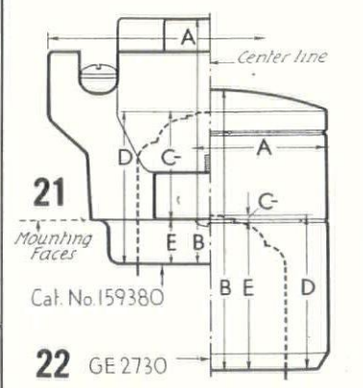
Porcelain: For concealed work and for all heavy duty work under high temperatures or damp conditions.

Other types of lampholders: The selected units here shown are characteristic as to type and dimensions of a complete line of lampholders for every purpose. Keyless lampholders are listed; key, push button, pull switch, and locking bodies may be substituted without material changes in dimensions. For full listing see G-E Wiring Device Catalog, available on request.

SIZE OF LAMP BASE	MATERIAL OF LAMP HOLDER	DESCRIPTION	SEE DRAWING NO.	TYPICAL G-E CATALOG NO. (b) - body (c) - cap	Greatest width or diameter A	Overall Length B	Lamp base to mounting point. (Add to lamp length if +, subtract if −) C	Depth lamp enters holder. Allow over lamp length for removal. D	Exposed length of flush or semi-flush units. E	Notes on variables X
THREADED PIPE OR NIPPLE MOUNTED LAMPHOLDERS										
Candl.	Metal	Multi-catch	1	GE023	⅞"	1 5/8"	1"	5/8"		1/8" cap
Inter.	Metal	Keyless	1	GE2611	1"	1 3/16"	1 1/8"	11/16"		1/8" cap
Med.	Metal	Fluted catch	2	GE301	1 1/2"	2 1/16"	1 1/16"	1"		1/8" (shown), 1/4", 3/8", 1/2"
Med.	Metal	Fluted catch, angle cap	3	GE770(b) GE766(c)	1¾"	2 3/16"	1 3/16"	1"		3/8" 90° (shown), 1/8", 1/2"
Med.	Metal	Threaded catch	2	GE1638(b) GE1630(c)	1 5/8"	2¾"	1¾"	1"		1/8" (shown), 1/4", 3/8", 1/2"
Med.	Textolite	Threaded catch	2	GE2705(b) GE2700(c)	1 5/8"	2 1/16"	1 3/16"	1"		1/8" (shown), 3/8"
Med.	Metal	Threaded catch Electrolier	2	GE1646(b) GE1643(c)	1 7/16"	2 5/8"	1 5/8"	1"		3/8" (shown), 1/8"
Med.	Metal	Heavy duty	2	GE2323	1 5/16"	2 5/8"	1 5/8"	1"		3/8" (shown), 1/2"
Med.	Porcelain	Snap catch	5	GE1214(b) GE1225(c)	1 1/16"	2¾"	1 3/16"	15/16"		3/8" (shown), 1/8" 1/2"
Med.	Porcelain	Snap catch, angle cap	6	GE1214(b) GE1844(c)	1¾"	3 1/8"	2 3/16	15/16"		1/2" 90° (shown) 1/2"
Med.	Porcelain	Cast metal cap	5	GE469	1¾"	3 1/16"	2 1/16"	1"		1/2"
Mogul	Brass shell	Porcelain lining	7	GE901	2 9/16"	3 9/16"	2"	1 9/16"		1/2" (shown), 3/8"
Mogul	Porcelain	Brass cap, one piece body	7	GE1167	2 9/16"	3 9/16"	2"	1 9/16"		1/2" (shown), 3/8"
Mogul	Porcelain	Cast metal cap, two pieces	7	GE069	2 9/16"	4 1/4"	2 11/16"	1 9/16"		1/2" (shown), 3/8"
Mogul 2-filament	Porcelain	For 2-filament lamps	7	GY2D9	2 3/16"	3 3/8"	1¾"	1 5/8"		3/8"
SURFACE MOUNTED ON WALL, SIGN, CLEAT OR BOX										
Min.	Porcelain	For cleat work	8	GE676	1 3/8"	1 1/8"	5/8"	1/2"		
Candl.	Porcelain	For cleat work	8	GE675	1 5/8"	1 7/16"	1 1/16"	5/8"		
Inter.	Porcelain	For cleat work	8	GE2603	1 7/8"	1 1/2"	1 1/16"	13/16"		
Med.	Metal	Porc. lining, 1 pc.	9	60019	2 5/16"	2 1/16"	1 1/4"	1"		
Med.	Metal	Small covered base	9	GE786	2 5/16"	2 1/2"	1 1/2"	1"		With body GE770
Med.	Porcelain	Small concealed base	9	GE784	2 1/16"	2 5/8"	1 5/8"	1"		Similar units made with 2 screw and snap-catch fastenings; box bases in threaded catch brown porcelain
Med.	Porcelain	Cleat base	9	GE793	3 1/8"	2 5/8"	1 5/8"	1"		
Med.	Porcelain	3 1/4" box base	10	GE794	3 1/16"	2 7/8"	1 7/8"	1"		
Med.	Porcelain	4" box base	10	GE795	2 1/4"	1¾"	¾"	1"		
Med.	Porcelain	Cleat work, raised wires	11	59275	2 7/8"	1 5/8"	5/8"	1"		Wires 1" above base
Med.	Porcelain	Moulding work	11	GE020	2 13/16"	1¾"	¾"	1"		
Mogul	Porcelain	Cleat work	14	GE1194	3 1/2"	2 1/2"	7/8"	1 5/8"		
SPECIAL SURFACE TYPES: 2-LIGHT AND LUMILINE										
Med.	Porcelain	Multiple (2 lamps)	12	GE2995	2 1/4"	2 1/2"	1/8" to C.L.	1"	Depth 1¾"	1 1/2" center lamp to base
Med.	Textolite	Multiple (2 lamps)	4	GE2975	2 1/2"	1 7/8"	5/16" to C.L.	15/16"		1 1/8" center lamp to base of 3/8" nozzle
Lumiline	Textolite	2 required for each lamp	13	49X616(b) 49X622(c)	See drawing for dimensions: 3—11¾" or 2—17¾" lumiline lamps in 36"					
FLUSH OR SEMI-FLUSH MOUNTED ON SIGN OR BOX										
Inter.	Porcelain	Removable ring	15	GE2877	1 3/8"	1 7/16"	−7/16"	13/16"	3/8"	
Inter.	Porcelain	Sign lampholder	16	GE2878	1 7/8"	1 5/16"	−1 1/16"	13/16"	1/8"	
Med.	Porcelain	For wooden signs	17	GE170	2 3/8"	1 1/2"	± 1/8"	1"	7/8"	Requires 1 1/2" hole in sign
Med.	Porcelain	Metal signs—heavy lugs	18	GE172	2 3/8"	1 1/2"	−7/8"	1"	1/8"	Requires 1 5/16" hole in sign
Med.	Porcelain	Box cover	19	GE2581	2 1/2"	1¾"	1/4"	1"	1 1/4"	For 3 1/4" cover shown —also 4" cover
Med.	Porcelain	Flush on outlet box	18	60931	2 1/4"	1 1/2"	−7/8"	1"	1/8"	Takes 1 7/16" hole
Med.	Porcelain	Shallow ring	20	GE271	1¾"	2 3/16"	−1/2"	1"	1/2"	Takes 1 7/16" hole
Med.	Porcelain	Deep ring	20	GE2262	1¾"	1 1/2"	−3/8"	1"	5/8"	Takes 1 7/16" hole. No terminal cap
Mogul	Porcelain	Box or sign	21	159380	3 3/8"	2 13/16"	−1"	1 1/2"	1/2"	Takes 2 3/16" hole in sign front
Mogul	Porcelain	Removable ring	22	GE2730	3 1/16"	2 3/8"	−1/16"	1 9/16"	1 5/8"	Takes 2 1/16" hole in sign front

AMERICAN ARCHITECT
Time-Saver Standards
OF ADVERTISED PRODUCTS
JULY 1935, Serial No. A2.1

DIMENSIONS OF SELECTED G-E LAMPHOLDERS

MOUNT'G ⟹ METHOD	THREADED PIPE OR NIPPLE	SURFACE OF WALL, SIGN, CLEAT, OR BOX	FLUSH OR SEMI-FLUSH SIGN OR BOX
INTERMEDIATE, CANDELABRA & MINIATURE BASES	 **1** GE2611	 **8** GE2603	 **15** GE2877 **16** GE2878 Mounting faces
MEDIUM BASE	 **2** (Solid) **3** (Dotted) GE301 90° cap GE751	 GE795 **9** **10** GE784	 **17** GE170
	 **11** Cat No 59275		 **18** Cat No. 60931
	 **4** GE2975	MULTIPLE LAMPHOLDERS (2 Lamps) END  SIDE  **12** GE2995	 **19** GE2581
	 **5** (Solid) **6** (Dotted) GE1214 (body) GE1214 GE1225 (cap) GE1844	 **13** LUMILINE LAMPHOLDERS Base 49X616 Cap 49X622 	 **20** GE 271
	NOTE *All drawings one half full size*		
MOGUL BASE	 **7** GE1167	 **14** GE1194	 **21** Mounting Faces Cat. No. 159380 **22** GE 2730

GENERAL ELECTRIC

AMERICAN ARCHITECT
Time-Saver Standards
OF ADVERTISED PRODUCTS
JULY 1935 Serial No. A1.1

WESTINGHOUSE FLOODLIGHTING PROJECTORS


CAG 12


CAG 14


CAG 16


CAG 20


CAG 24


CAG 10

All Westinghouse floodlighting equipment is designed for the greatest durability, ease of maintenance and efficiency. Focusing the lamp is accomplished by merely adjusting external thumb screws. All floodlights are provided with bows and bases which permit universal adjustment in any direction. Bodies are of cast silicon aluminum alloy, non-corrosive, light in weight and strong in construction. Bases and bows are hot galvanized. Reflectors are of silvered glass; chromium plated reflectors are optional in all units. A wide range of heat-resisting lenses provide any desired diffusion; color inner lenses, louvers, visors and other standard accessories offer further variations in control and application. Types not illustrated include complete lines of submersible, portable and open floodlights and searchlights for all purposes.

For simplified methods of determining the quantity, type and beam spread of floodlighting projectors required on any project, see American Architect Time-Saver Standards, "Design Procedure for Floodlighting" (Serial No.1, July 1935)

SELECTION CHART

LAMP		FLOODLIGHT TYPE	LENS	BEAM LUMENS	BEAM SPREAD°	
Watts	Bulb				Vert.	Hor.
NARROW BEAM					15° or less	
250	G-30	CAG-10	Plain	1420	15	16
250	G-30	CAG-12	Plain	1605	15	16
500	G-40	CAG-14	Plain	4000	15	15
1000	G-40	CAG-16	Plain	7890	12	13
1500	G-48	CAG-20	Plain	11700	11	11
MEDIUM BEAM					16° to 29° incl.	
200	PS-30	CAG-12	Plain	1505	28	31
500	PS-40	CAG-14	Plain	4580	25	27
1000	PS-52	CAG-16	Plain	8200	20	21
1000	G-40	CAG-16	L.S.	8050	28	28
1500	PS-52	CAG-20	Plain	12540	15	19
2000	PS-52	CAG-24	Plain	21000	19	25
ELLIPTICAL BEAM					Various	
200	PS-30	CAG-10	Spread	1780	44	66
200	PS-30	CAG-12	Spread	1710	32	62
250	G-30	CAG-10	Spread	1670	18	46
250	G-30	CAG-12	Spread	1830	15	46
500	G-40	CAG-14	Spread	4200	15	52
500	PS-40	CAG-14	Spread	4530	27	55
1000	G-40	CAG-16	Spread	8100	12	43
1000	PS-52	CAG-16	Spread	8370	22	50
1500	G-48	CAG-20	Spread	12700	11	41
1500	PS-52	CAG-20	Spread	15040	17	47
2000	PS-52	CAG-24	Narr. Spr.	21290	20	39
2000	PS-52	CAG-24	Med. Spr.	22580	20	51
2000	PS-52	CAG-24	Wide Spr.	23660	24	109

LAMP		FLOODLIGHT TYPE	LENS	BEAM LUMENS	BEAM SPREAD°	
Watts	Bulb				Vert.	Hor.
BROAD BEAM					30° or over	
200	PS-30	CAG-10	Plain	1520	31	36
200	PS-30	CAG-10	L.S.	1710	56	58
200	PS-30	CAG-10	H.S.	1890	72	72
200	PS-30	CAG-12	L.S.	1655	43	45
200	PS-30	CAG-12	H.S.	1835	63	65
250	G-30	CAG-10	L.S.	1600	38	38
250	G-30	CAG-10	H.S.	1800	52	52
250	G-30	CAG-12	L.S.	1760	30	30
250	G-30	CAG-12	H.S.	1950	50	50
500	G-40	CAG-14	L.S.	4100	35	35
500	G-40	CAG-14	H.S.	4200	40	40
500	PS-40	CAG-14	L.S.	4500	39	43
500	PS-40	CAG-14	H.S.	4530	46	48
500	PS-40	CAG-14 W.B.*	H.S.	5210	70	73
1000	G-40	CAG-16	H.S.	8050	33	33
1000	PS-52	CAG-16	L.S.	8320	36	36
1000	PS-52	CAG-16	H.S.	8300	39	40
1000	PS-52	CAG-16 W.B.*	H.S.	10790	61	64
1500	G-48	CAG-20	L.S.	12900	30	30
1500	G-48	CAG-20	H.S.	13300	35	35
1500	PS-52	CAG-20	L.S.	15350	35	38
1500	PS-52	CAG-20	H.S.	15800	44	47
2000	PS-52	CAG-24	L.S.	19300	35	35
2000	PS-52	CAG-24	H.S.	21100	45	47

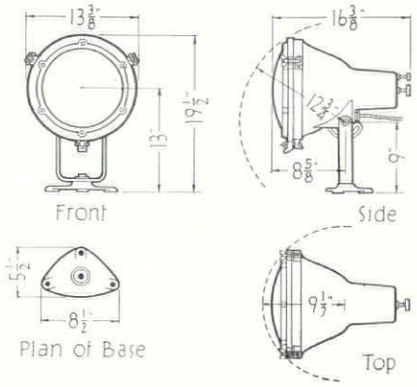
*W.B. = Wide beam reflector; also available with any other type of lens.
L.S. = Lightly stippled H.S. = Heavily stippled

Note: In preliminary estimates of floodlighting requirements, neglect Elliptical Beam Projectors. These may be used in final design for effective coverage and uniformity

Westinghouse ELECTRIC & MANUFACTURING CO.
EAST PITTSBURGH, PENNSYLVANIA

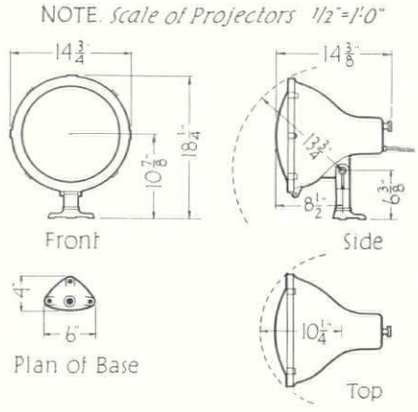
AMERICAN ARCHITECT
Time-Saver Standards
OF ADVERTISED PRODUCTS
JULY 1935 Serial No. A1.1

WESTINGHOUSE FLOODLIGHTING PROJECTORS

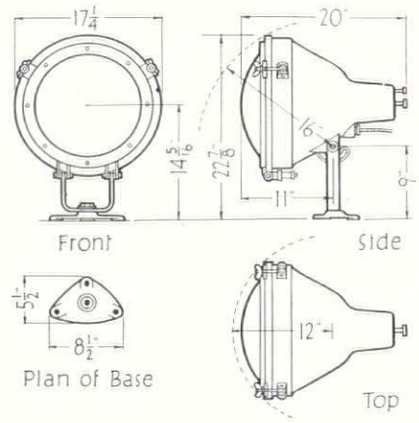


10" PROJECTOR CAG-10

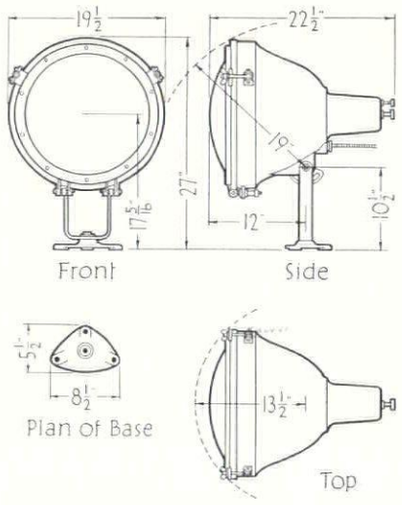
NOTE. *Scale of Projectors 1/2"=1'0"*



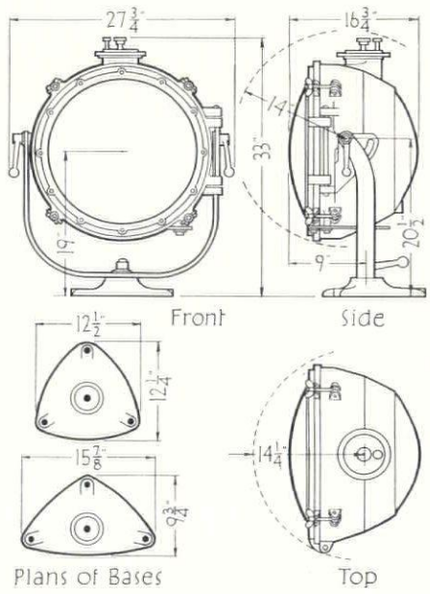
12" PROJECTOR CAG-12



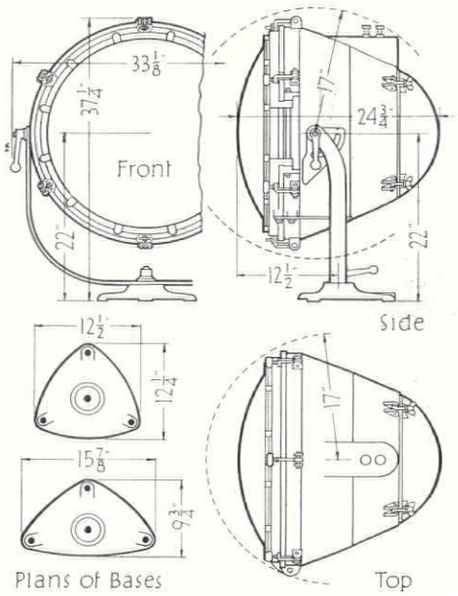
14" PROJECTOR CAG-14



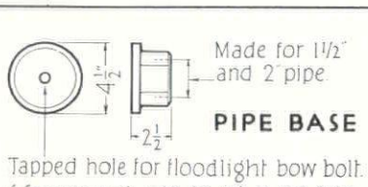
16" PROJECTOR CAG-16

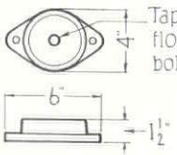


20" PROJECTOR CAG-20

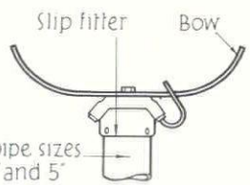


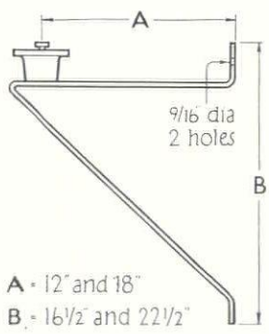
24" PROJECTOR CAG-24





(For use with CAG 10, 14, 16, 20, 24)





(Use with CAG 10, 14, 16)

STANDARD BASE MOUNTINGS (Scale of Mountings 1"=1'0")

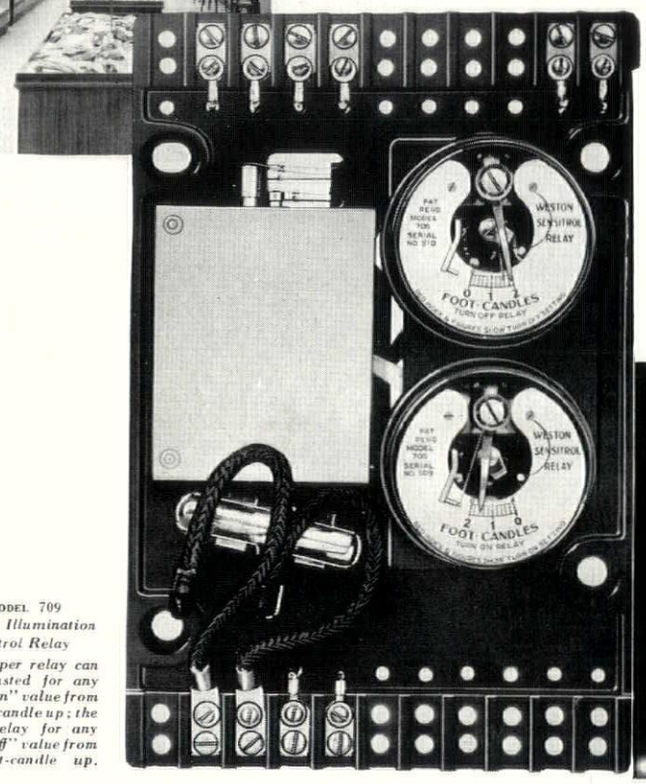
When General Service Lamps (designated PS-) are used, projectors may be operated in any position. When Floodlight Lamps (designated G-) are used, projectors may not be operated in positions that bring lamp within 45° of vertical, base up.

POSITION LIMITS
(Side Views)

Control the illumination

PHOTO-ELECTRICALLY

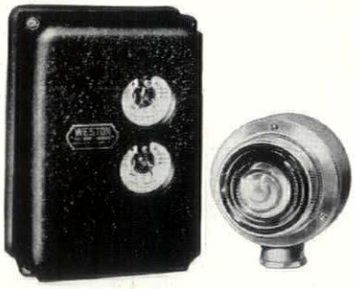
WITH *proved*
*PHOTRONIC
RELAYS



MODEL 709
Weston Illumination Control Relay
The upper relay can be adjusted for any "turn-on" value from ½ foot-candle up; the lower relay for any "turn-off" value from ½ foot-candle up.

FLOOD LIGHTING
DISPLAYS
INTERIORS
ESTATES

This inexpensive relay automatically turns lights on and off at any light levels desired



Relay cabinet and light target ready for interior use. Furnished in weather-proof mountings for outdoor use.

For any illumination control requirement, permanent PHOTRONIC control should be specified. The reasons are obvious:

1. The PHOTRONIC (photo-electric) method controls according to illumination needs . . . eliminating dark periods, and power waste.
2. Easy to install.
3. Easy to adjust operating values; they can be set at any "turn-on" and "turn-off" values desired.
4. Requires no power except the 2 watts at time of operation.
5. May be applied with equal ease to control lighting in stores, offices, classrooms, building exteriors, signs, etc.
6. Permanent, trouble-free operation.

PHOTRONIC Illumination Control is the same method of control now widely used for controlling street lighting, airport illumination, sign lighting and for all interior purposes. Complete information will be sent on request. . . . Weston Electrical Instrument Corporation, 611 Frelinghuysen Avenue, Newark, New Jersey.

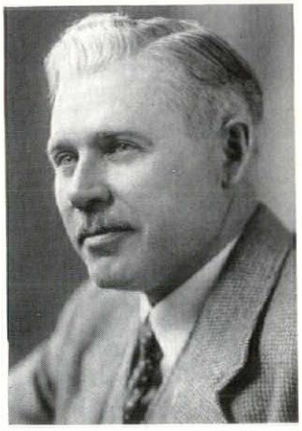
*PHOTRONIC—*a registered trade-mark designating the photo-electric cells and photo-electric devices manufactured exclusively by the Weston Electrical Instrument Corporation.*

WESTON *Instruments*

PERSONALS

• Announcement is made of the formation of the firm of Norman Bel Geddes, George Howe and Company. Offices will be maintained at 128 East 37th Street, New York. The firm will specialize on problems of consumer research, housing surveys, industrial and commercial design, problems of architecture and decoration, and theater and stage design. Mr. Howe was formerly senior partner in the firm of Howe & Lescaze, architects, New York and Philadelphia.

• Another architect becomes a Government executive. This is John England, Jr., new Engineering Consultant of the Works Progress Division of President Roosevelt's new Work Relief Administration that is charged with expenditure of work relief funds totaling nearly five billions of dollars. Mr. England lives on Long Island, N. Y., and has been a registered architect in New York state since 1923.



HARRIS & EWING

• P. M. Heffernan, Ames, Iowa, has been awarded the twenty-eighth Paris prize of the Society of Beaux Arts Architects. The prize has a cash value of $3,600. Mr. Heffernan, who will study architecture at the Ecole des Beaux Arts, Paris, for two and a half years, received the degree of Master of Architecture at Harvard this year. Three hundred forty-nine students from twenty-one states competed for the prize.

• The 1935 award of the Boring Medal, established in 1934 by the Alumni Association School of Architecture, Columbia University, was given to Logan Stanley Chappell of Macon, Georgia. The award of the medal is based upon a student competition.

• Gordon Bunshaft, Buffalo, N. Y., has been awarded the Rotch Traveling Scholarship for 1935. Mr. Bunshaft received his degree of Master of Architecture at Massachusetts Institute of Technology.

• The Syracuse (N. Y.) Society of Architects has elected the following officers for the year 1935-36: President, Fred B. O'Connor; Vice President, Paul Sweeney; Secretary-Treasurer, Charles Ellis.

• Zimmerman, Saxe & MacBride, architects, have moved to new offices at Suite 1003, 43 East Ohio Street, Chicago, Illinois.

• Whitehouse, Stanton and Church, architects, Portland, Ore., have announced the dissolution of their partnership as of May 31, 1935. Glenn Stanton has opened an office for the practice of architecture

at 528 Railway Exchange Building. Morris H. Whitehouse and Walter E. Church continue the practice of architecture under the firm name of Whitehouse and Church at 619 Railway Exchange Building, Portland.

• Hobart B. Upjohn has been elected President of the New York Chapter, American Institute of Architects. Other officers elected are: Gerald A. Holmes, Vice President; Frederick G. Frost, Secretary; Daniel P. Higgins, Treasurer; Harvey Stevenson, Recorder. Ralph Walker and Robert B. O'Connor were elected members of the Executive Committee.

• Geves George Kenny, architect, has opened an office for the general practice of architecture and specialization in dairy plant design at 135 North West Street, Hillsboro, Ohio. Manufacturers' catalogs are desired.

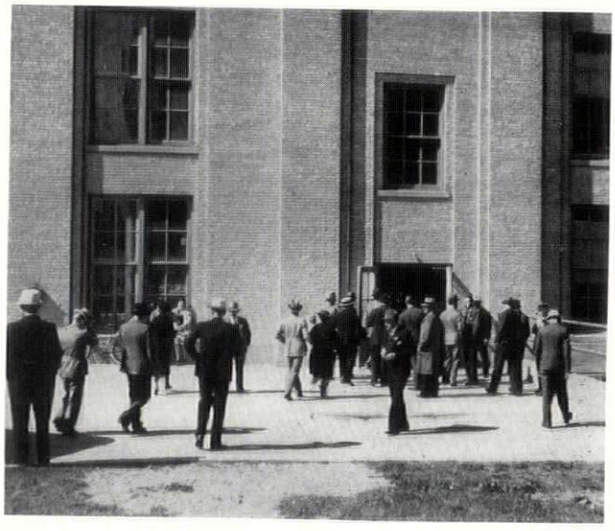
• W. O. Raiguel, architect, has moved his office from Delmonte, Calif. to Old Pacific Building, Monterey, Calif. His mailing address is P. O. Box 549.

• Frank A. Faillace, Brookline, Mass., has been awarded the Massachusetts Institute of Technology Traveling Scholarship.

• Ernest T. Friton, architect, has returned to the private practice of architecture with offices located in the Security Building, St. Louis, Mo. Mr. Friton was for four years Architect and Building Commissioner, Board of Education, St. Louis.

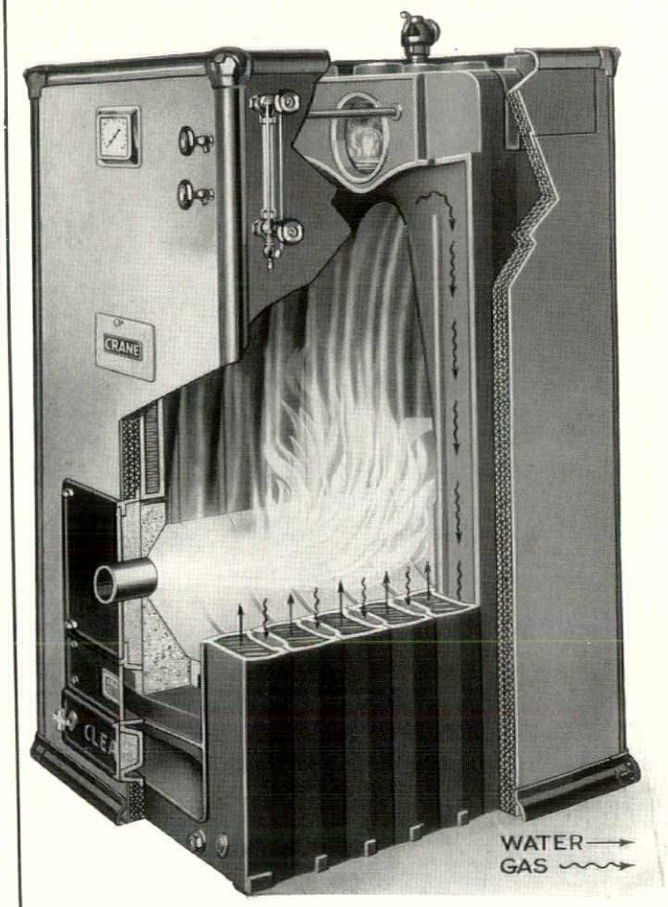
• A. L. Murphy Vhay, whose house in Santa Barbara, Calif., was published on page 27 of the May AMERICAN ARCHITECT, has not yet become resigered as an architect in California and should have been noted only as the designer of the house mentioned.

• Isadore H. Braun, architect, has moved his office to 228 North La Salle Street, Chicago, Illinois.



Members of the A.I.A. Convention at the entrance to the pottery building during a tour of the Kohler Plant of Kohler, Wisconsin

80 YEARS OF KNOWING HOW



SUSTAINED HEAT

Illustrating the principle by which the new Crane Oil-Burning Boiler saves fuel by taking the last possible unit of heat out of it.

Crane Co. carries on the design and manufacture of Crane Heating Systems for the home with 80 years of exacting practice in engineering behind it. Without prejudice and with open mind it applied to boiler and radiator design a set of principles which have resulted in a line of boilers and radiation with outstanding efficiency characteristics, absolute dependability, and long life.

Just as you specify Crane plumbing with confidence of full merit, you may specify a Crane Heating System with absolute assurance of its ability to heat a home adequately and economically. In addition, you will be putting into that home a heating system with a score of improvements and years of life—things you'll be getting credit for from a client who appreciates quality when he sees it.

CRANE

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

Branches and Sales Offices in One Hundred and Sixty Cities

VALVES, FITTINGS, FABRICATED PIPE, PUMPS, HEATING AND PLUMBING MATERIAL

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

AIR CONDITIONING MANUAL

689. . . . "This Thing Called Air Conditioning," published by Minneapolis-Honeywell Regulator Co., Minneapolis, is an attractively printed 32-page non-technical explanation of the purposes, methods and types of equipment embodied in modern air conditioning. It is prepared not only for use by architects who want a clear, accurate interpretation of this field, but also for them to distribute to prospective and actual clients who seek knowledge of this new field. The text plays no favorites among methods or types of equipment beyond a logical stress of the need for automatic control equipment.

HOT WATER HEATING SYSTEM

690. . . . The Ideal Arcola Hot Water Heating System for smaller homes and buildings, which consists of an Arcola heater, Corto radiators, and an expansion tank, is described and illustrated in a four-page catalog issued by American Radiator Company, New York. Ratings and dimensions are also given. Filing size; A. I. A. File 30-C-1.

UPSON "STABILIZED" BOARD

691. . . . The Upson Company, Lockport, New York, has issued a 20-page catalog which illustrates a variety of interiors with Upson Paneled Walls and Upson Relief Ceilings, and describes the characteristics and advantages of Upson "Stabilized" Board, Duplex Mouldings and Relief Ornaments of which these walls and ceilings are composed. A simple explanation of how Upson Relief Ceilings are applied is also given.

GUTHFAN CONDITIONAIRE

692. . . . The Guthfan Conditionaire, a unit which combines lighting and air circulation, is presented in Catalog No. 6 published by The Edwin F. Guth Co., St. Louis. A representative group of models is illustrated and described.

ZOURI STORE FRONTS

693. . . . A large variety of typical store fronts by Zouri of Niles, Mich., are contained in a new 24-page booklet (Catalog No. 22). Illustrations and details of Zouri rolled sash, bars, awning and transom bars, entrance doors, hinged and pivoted windows, grilles and thresholds, ventilators, showcase doors, mouldings, and shower stall doors, are also featured. A suggested form of specifications is included. Filing size; A. I. A. File 26-B-1.

VENETIAN BLINDS

694. . . .A handsomely prepared 36-page consumer brochure published by The Columbia Mills, Inc., New York, gives a wealth of interesting facts about Venetian blinds and shows, by means of a large group of illustrations, their adaptability to any period style and to any room in a house from attic to recreation room in the basement. Brief text is devoted to instructions on the care of these units, and a chart showing the standard colors available is also included.

P & S WIRING DEVICES

695. . . . Pass & Seymour, Inc., Syracuse, N. Y., has issued an 18-page reprint from 1935 Sweet's Catalog File which contains complete data on its P. & S. and P. & S.-Despard wiring devices, including illustrations, descriptions, ratings, specifications, etc. An ingenious pictorial chart shows the P. & S.-Despard wiring device which should be used in each room of a dwelling. Brief data on Alabax lighting fixtures are also given.

INSULITE HARDBOARD

710. . . . Nineteen actual photographs of representative remodeling work in homes, schools, churches, theaters, etc., in which Insulite hardboard products were used, are reproduced in an illustrated folder just published by The Insulite Company, Minneapolis.

THE MILCOR MANUAL

697. . . . Milcor Steel Company, Milwaukee, Wis., has published a 60-page spiral-bound data book (Catalog 20-F) on Milcor materials and methods, including detail illustrations, specifications and general information on metal lath and accessories, steel channels, solid partitions, steel roof decks and domes, access doors, basement windows and fireproof accessories. Standard metal lath specifications as approved by the Metal Lath Manufacturers Association, are also included. Filing size; A. I. A. File 20-B-1.

WESTINGHOUSE ALL ELECTRIC KITCHEN

698. . . . "You'll Sing at Your Work" says a new consumer booklet issued by Westinghouse Electric & Mfg. Co., Mansfield, Ohio, which introduces the Westinghouse all-electric kitchen. This 24-page booklet, beautifully illustrated in four colors, contrasts the all-electric kitchen with the kitchen found in average homes today, and shows how this modern convenience can be financed through the Federal Housing Administration.

HOFFMAN VALVES

699. . . . Hoffman Specialty Company, Inc., Waterbury, Conn., has issued Catalog No. V. V. 235, a 12-page booklet which illustrates and describes its line of valves for one and two-pipe steam systems, and one-pipe vacuum and air line systems. Installation data, specifications, etc., are included. Filing size; A. I. A. file 30-C-2.

NO POSTAGE REQUIRED ON THIS CARD

AMERICAN ARCHITECT — July, 1935
New York City

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

Numbers .....

.....

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

Numbers .....

• I would like to have catalogs and information concerning the following products advertised in this issue. (Write page number or name.)

.....

Name .....

Firm name .....

Address .....

City .....

Occupation .....

These NEW Catalogs may be obtained through AMERICAN ARCHITECT

Concrete Construction

Recent publications of the Portland Cement Association, Chicago, include:

700. . . . "Beauty in Walls of Architectural Concrete"—a handsomely illustrated 24-page brochure which describes 26 buildings constructed of architectural concrete. Stress is given to the variety of surface textures used on these structures.

701. . . . "Architectural Concrete Information Series"—a series of data sheets, four to six pages each, illustrated with photographs and detailed drawings. Describes architectural and construction details of monolithic concrete buildings.

Night Sports Lighting

702. . . .A comprehensive manual of design and equipment data for the lighting of night sports, including softball, tennis, football, baseball, swimming, trap and skeet shooting, etc., has been issued by Benjamin Electric Mfg. Company, Des Plaines, Ill. Lighting plans, wiring diagrams, and schedules of materials required, together with illustrations and descriptions of the Benjamin products available for each type of project, are given for each of the various night sports contained in this manual.

Bryant Heating and Air Conditioning

703. . . . The Bryant Heater Company, Cleveland, Ohio, has issued a 12-page, filing-sized catalog which presents its line of heating and air conditioning equipment designed for residences. Written in non-technical language, this booklet seeks to explain various phases of the subject of air conditioning and to interpret advanced principles of heating and air conditioning construction and design.

Safety Starting Switches

704. . . . The safety switches, service equipment, manual and magnetic motor controllers, master devices and circuit breakers for motor and lighting circuits, manufactured by Arrow-Hart & Hegeman Electric Co., Hartford, Conn., are cataloged in a 48-page loose-leaf portfolio recently issued. Charts giving dimensions and knockouts are included.

Fans and Blowers

705. . . . The various types of fans and blowers for air conditioning applications manufactured by Buffalo Forge Company, Buffalo, N. Y., are presented in Bulletin 2966 recently issued. Operating data, dimensions, ratings, descriptive text and illustrations give all necessary information about these units. Filing size; A. I. A. File 30-D-1.

Weston Photronic Controls

706. . . .Weston Electrical Instrument Corp., Newark, N. J., has issued two new four-page catalogs. Circular B-1005-A illustrates and describes the Weston Model 709 Illumination Control Relay for both interior and exterior lighting control. Data on Weston Model 708 Photronic Smoke Alarm Relay, used to obtain instantaneous indications of stack conditions, is given in Circular B-1002-B.

Premier Steel Boilers

707. . . . National Radiator Corporation, Johnstown, Pa., has issued a 28-page general catalog on its line of National Premier Steel Boilers for residential and commercial heating systems. The booklet is profusely illustrated with photographs and sectional drawings, and gives engineering data on each type of unit.

Electrical Thermometers

708. . . . The application of electrical thermometers to the efficient regulation of commercial and industrial air conditioning systems is discussed in an illustrated 24-page booklet (Bulletin 4001) issued by Leeds & Northrup Company, Philadelphia, Pa. A group of diagrams giving mounting dimensions of various instruments in the line is included.

Chamberlin Screens and Weatherstrips

Chamberlin Metal Weatherstrip Co., Inc., Detroit, offers the following booklets:

709. . . . A 12-page reprint from Sweet's Catalogs (1935), which contains complete information and details on its steel, bronze and aluminum flat type and rolling type screens.

710. . . "Chamberlin Weatherstrip Details," Fourth Edition, gives complete information on standard methods of equipping windows and doors with Chamberlin metal weatherstrips. A general specification is given for each type of equipment. 32 pages; filing size; A. I. A. File 35-P-6.

Electric Residence Elevator

711. . . . Typical specifications for the Warner direct-acting plunger-type electric residence elevator, together with description and illustrations, are contained in a four-page catalog issued by The Warner Elevator Mfg. Company, Cincinnati, Ohio. Filing size; A. I. A. File 33.

Switch Boxes

712. . . . National switch boxes are described and cataloged in a 12-page booklet just released by National Electric Products Corporation, Pittsburgh. This booklet lists and illustrates each type of switch box that may be used with each wiring system and the connectors or fittings that are necessary to complete an installation.

Trane Comfort Coolers

713. . . A four-page filing-sized catalog issued by The Trane Company, La Crosse, Wis., illustrates and describes the Trane Propeller Type Suspended Coolers for small stores, shops, offices, and similar installations. Roughing-in dimensions, mechanical features, and rating tables are given.

Oil Economy Boiler

714. . . . Specifications and general data on the physical characteristics and operating features of the Oil-Economy Boiler, designed exclusively for fluid fuel firing, are given in a four-page filing-sized catalog issued by International Heater Company, Utica, N. Y. Dimension and rating tables are also included.

Formica Doors

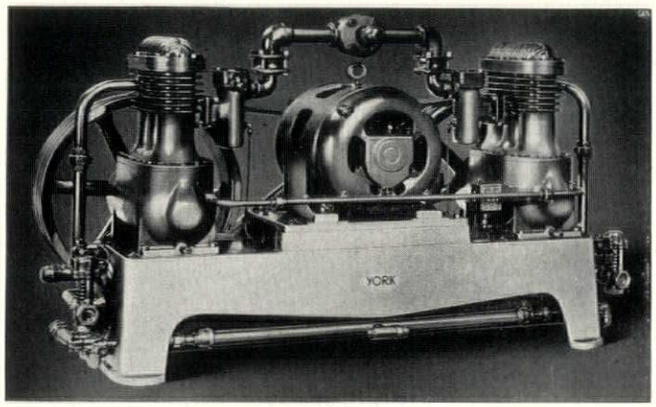
715. . . . Profusely illustrated with pictures of actual installations of Formica Doors, a new four-page catalog issued by The Formica Insulation Co., Cincinnati, Ohio, briefly discusses the beauty and wide applicability of this product. A one-page supplement gives detail drawings of elevations and list prices.

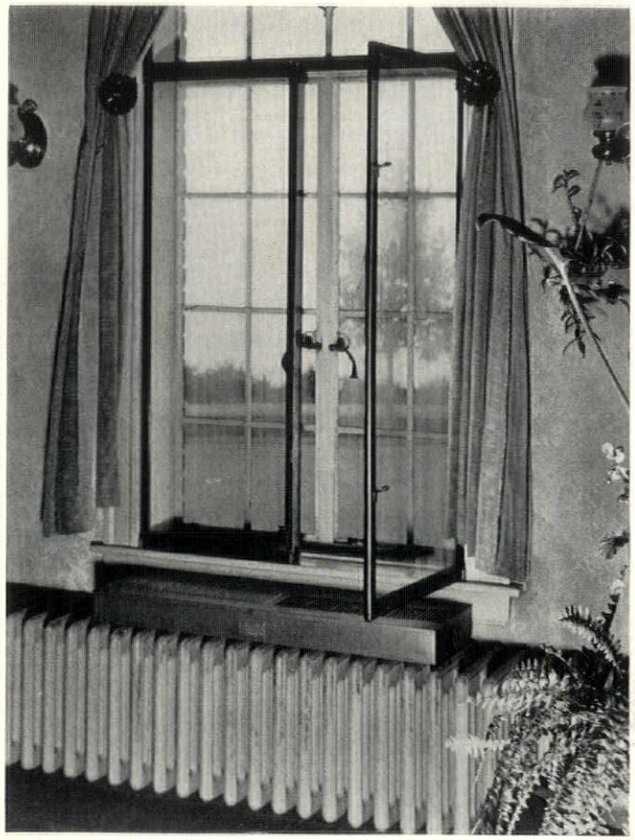
BRIEF REVIEWS OF MANUFACTURERS' ANNOUNCEMENTS TO KEEP THE ARCHITECT INFORMED OF NEW PRODUCTS

New Materials and Equipment

Inside Storm Windows

473M The Burrowes Corp., Portland, Maine, has introduced a new type of metal storm window equipped with a felt lining to seal cracks. This window is applied to the inside of the sash, creating a dead air space which eliminates infiltration of cold or heat. Installation is simplified by the use of pivots instead of hinges. To remove the window all that is necessary is to unscrew the bolts and lift off the window. The bracket into which the bolt extends is fitted with a metal cup on which a washer rests unobtrusively. Both stationary and movable type windows are available. The movable type is sealed by the use of keepers which automatically exert pressure forcing the felt lining tightly to the rabbet. Welded inside frame members are used.





York Condensing Units

474M York Ice Machinery Corporation, York Pa., has just introduced four new Freon self-contained condensing units of the "Balanseal" design ranging in size up to 25 h.p. The 10 h.p. unit, Model 44T6FW, is a three cylinder single compressor. The other new models are duplex units with a motor mounted at the center of the base and belted to identical compressors at each end. Several new design refinements have been incorporated: A new shell and spiral finned tube condenser which is claimed to have greater capacity, and a "vortex eliminator" in the liquid refrigerant outlet which comes from the condenser. This latter device prevents the formation of a vortex at the refrigerant outlet and eliminates the possibility of gas passing to the expansion valve.

Hi-Test Cast Iron Pipe

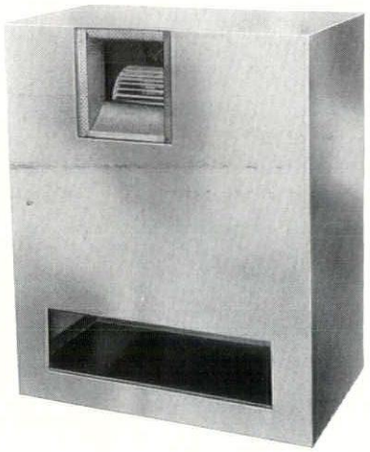
475M A new "Hi-Test" cast iron pipe, developed for water and gas distribution systems, sewage treatment and filtration plants, and lines in general where service conditions preclude the use of other materials, has been introduced by Walworth Co., New York. The new pipe is suitable for water working pressures of 175 lbs. per sq. inch, and comes in sizes 1¼" to 6" inclusive, in 20-ft. lengths, with threaded joints for rapid assembly above ground, and can also be supplied in 5, 10 and 15-ft. lengths. Expansion joints provide for axial and to some extent for lateral movement.

New Type Pipe Coupling

476M Several improvements are incorporated in a new, self-contained pipe joint recently announced by S. R. Dresser Mfg. Company, Bradford, Pa. Making a connection with this joint, called the Dresser Style 65 Compression Coupling, simply involves inserting the pipe ends into the coupling (which comes assembled) and then tightening two threaded octagonal nuts with a wrench. As the nuts are tightened, two resilient armored gaskets are compressed tightly around the pipe, giving a positive seal. The resulting joint also absorbs normal vibration, expansion and contraction movement, and permits deflections of the pipe in the joint.

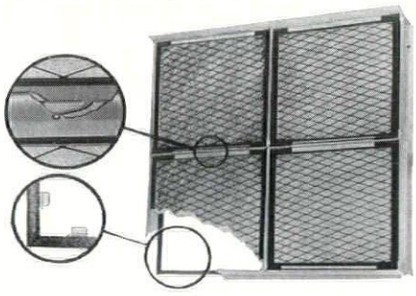
National Boiler-Burner Units

477M A new line of steel oil-burning boilers, complete with Williams-Oil-O-Matic burner and all necessary controls enclosed within the jacket, which was designed by Lurelle Guild, has been introduced by National Radiator Corp., Johnstown, Pa. The boilers are small (approximately waist high) and compact and are particularly adaptable for use in basement recreation rooms and for service stations, small stores and similar applications. Mechanical features include: cylindrical, water-backed, refractory-lined combustion chamber; three-pass flue gas travel; and built-in indirect water heaters. These units are available in five sizes, offering a range of outputs from 200 sq. ft. to approximately 1,000 sq. ft. of steam radiation. They are shipped completely assembled.



Frigidaire Unit Air Conditioners

478M Four new "low side" units for air conditioning in hotels, club quarters and other similar applications are announced by Frigidaire Corp., Dayton, Ohio. These units are said to provide practically all the advantages of concealed duct systems for places in which duct work would not be practicable. They are intended primarily for installation inside of closets, bathrooms or other small spaces adjoining guest sleeping or living rooms. Grilled openings to the room admit the conditioned air and return air is taken to the unit directly through other grilled openings in walls or through grilles in closet doors. These air conditioners are produced in two types of one ton and one-half ton capacities.

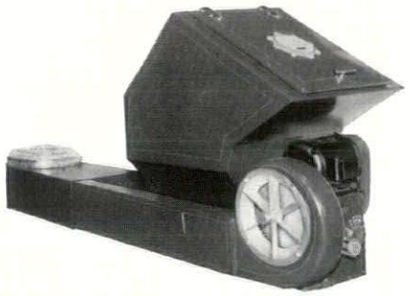


"Dustop" Filter Frame

479M The new air filter frame, recently developed by Owens-Illinois Glass Company, Toledo, Ohio, for use with its Dustop replacement type air filter, employs a felt strip between filter and frame against which the filter is tightly held by a wedge lock. The felt strip, which is inserted when the frame is constructed, is held in place by bending metal tabs over the frame flanges. The wedge lock is applied on the intake side of the frame to force the filter firmly against the felt gasket. This device is easily put on or removed and is self-adjusting to different filter thicknesses.

Curtis Luminaire "Trump"

480M Curtis Lighting, Inc., Chicago, has announced the new Eye Comfort Luminaire "Trump." Made of Lunax aluminum, this luminaire is said to retain its brightness and original reflecting efficiency. The etched aluminum is processed to provide a clear, hard protective coating. The self-aligning fitting in the canopy of the stem hanger insures it hanging true even if the outlet box or stud is crooked. The stem may be shortened without rethreading.



Automatic Stoker

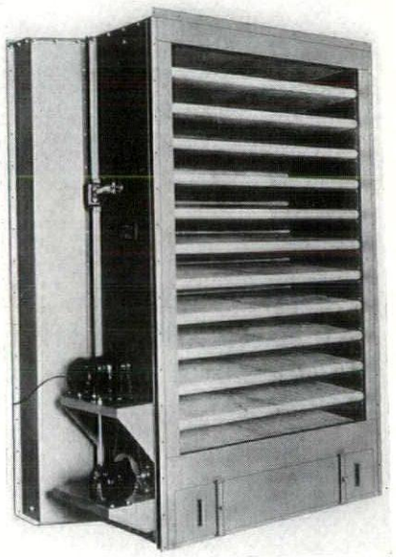
481M A new model automatic coal burner for household use has been developed by the Stoker Division of the Link-Belt Company, Chicago. This stoker has a high-gloss maroon finish with special striping; a sectional rectangular retort similar to those on large stokers, with both inside and outside air ports; statically and dynamically balanced cast aluminum fan with "air stream" inlet control; and other features. Its controls include a time clock thermostat, a stack switch which keeps the fire from going out at night, and a limit control which prevents overheating.

Cel-O-Glass

482M For many years, Cel-O-Glass, a transparent plastic-coated material which admits the ultra-violet rays of the sun and filters out the infra-red rays, has been used for poultry houses, hot beds, cold frames, solariums and similar projects. Recently, however, E. I. Du Pont de Nemours & Co., Inc., Wilmington, Del. have explored the decorative possibilities of this material, and have found that its light diffusing quality makes it ideal for lamp shades, for use on columns in public buildings and theaters, and for window and sign display. In this latter case certain sections are made opaque with paint and the others are left semi-transparent by coating them with clear lacquer, contrast between sections being further emphasized by the use of artificial illumination behind the sign boards.

Open-Type Floodlight

483M An inexpensive open-type floodlight especially designed for lighting service stations, has been announced by General Electric Company, Schenectady, N. Y. Designated as Type AL-46, this floodlight is built of sheet steel and cast aluminum, with a double fire enamel finish, and the shape of its reflector is such as to give the most efficient distribution of light possible for this service with this type of unit. An auxiliary parabolic reflector is available with which a more or less concentrated beam can be superimposed upon the general distribution of light from the unit.



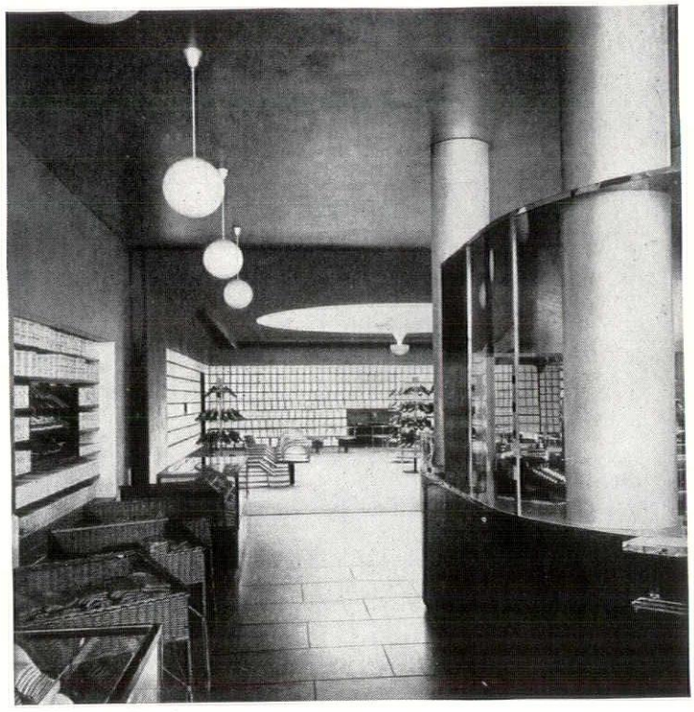
Coppus Dry-Matic Air Filter

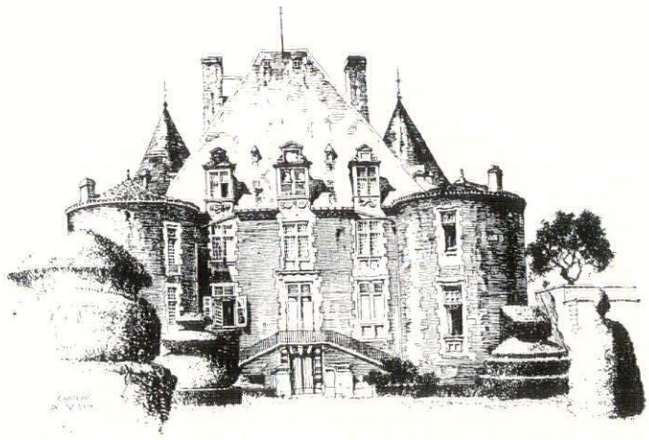
484M A new fully automatic, self-cleaning, dry-type air filter, which uses a specially woven cotton textile as the filter medium, has been introduced by Coppus Engineering Corp., Worcester, Mass. When air passes through this filter material the dust particles are sifted out and deposited on the filter curtain. Once a day to once a week, according to conditions, the filter curtain, operated manually or automatically, starts to move slowly over a dust drawer at the bottom of the filter housing and at the same time a rotary beater is set in operation. Soft leather fringes beat the curtain on the clean air side, shaking off all dust into the dust drawer.

ARCHITECTURE
ALLIED ARTS

BOOKS

ENGINEERING
BUSINESS





Drawing by Samuel Chamberlain from "The Use of Brick in French Architecture"

Left: interior of a co-operative store designed by Swedish architects. Below: plan illustrations from "Modernizing Buildings for Profit"

SWEDISH CO-OPERATIVE WHOLESALE SOCIETY'S OFFICE

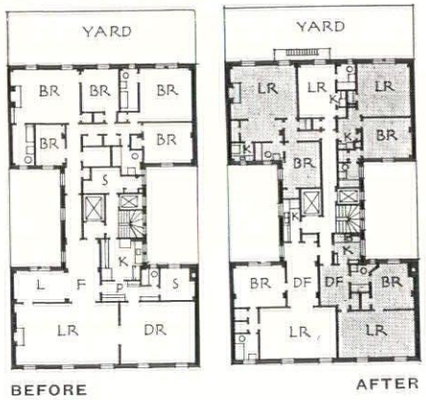
Published by Kooperative Forbundet, Stockholm, Sweden. Illustrated; 148 pages; size 8¼ x 11½; price $2.50.

THROUGHOUT Sweden there has developed a movement of co-operative economy through the agency of which members can obtain the necessities of life at low cost. The Co-operative Wholesale Society is the central organization which buys certain commodities and operates various industrial enterprises whose products are sold to the retail societies. Required building operations of the society—industrial plants, offices, warehouses, retail stores and apartments—are usually handled by the Architects' Office of the Wholesale Society. This office is composed of a chief architect, several architects, an engineer and a controller. The book describes how work is handled in the Architects' Office and illustrates various projects.

MODERNIZING BUILDINGS FOR PROFIT

By Kenneth Kingsley Stowell, M. Arch., A.I.A. Published by Prentice-Hall, Inc., New York, N. Y. Illustrated; indexed; 248 pages; size 8¾ x 11¾; price $6.50.

AS former editor of the *Architectural Forum*, Mr. Stowell has had a valuable opportunity to observe a wide range of modernization projects and to become familiar with many phases of the subject. To give his volume as wide and practical a value as possible, the author has assembled his material to encompass the interests of owners, lending institutions, real estate agents, managers, architects and builders.



BEFORE AFTER

As suggested by the title, the book deals primarily with the profit possibilities of reclaiming or restoring buildings. It points out that modernization is not a panacea for all unprofitable properties and suggests methods of determining when modernization is worth the cost. The statement of the approach to the problem should be helpful to those faced with the necessity of making an old building pay. An outline procedure is given and the important part played by the architect in successful remodeling is ably set forth.

In addition to a general discussion of modernization, several chapters are devoted to case histories of various types of buildings, illustrations of remodeling profits and check lists that indicate ways of making obsolete buildings more useful. Ten chapters are concerned with possibilities in the residential field. Others deal with apartments, hotels, restaurants, shops and stores, office buildings and theaters. Each chapter is illustrated. This volume should help to clarify some of the perplexing questions which arise in the minds of owners. It should also stimulate the imagination as to what may be accomplished in the profitable modernization of any type of building.

THE USE OF BRICK IN FRENCH ARCHITECTURE

By William Emerson, F.A.I.A., and Georges Gromort, D.P.L.G. Drawings by Samuel Chamberlain. Published by Architectural Book Publishing Co., Inc., New York, N. Y. Paper covers; 94 pages; size 9½ x 12½; price $6.50.

FRANCE is wealthy in its heritage of fine examples of the use of brick in architecture. While much has been written on the subject, it still remains a fertile field for research and study. The present volume, one of a series, adds much to our knowledge of the

use of brick in France from the point of view of the architect. Its authors need no introduction to members of the architectural profession. The text contains much of historical interest as well as critical comments on the use of brick in many of the buildings illustrated. The book is profusely illustrated with pencil drawings by Samuel Chamberlain, with maps, measured drawings of plans and details and photographs. The present volume deals with brickwork in the Midi region and is Part 1 of a series dealing with the brickwork of France. Other volumes which will follow will include: The Centre; Normandie; Ile-de-France; Flanders and Modern French brickwork.

MODERNIZING THE KANSAS HOME

By H. E. Wichers. Published by Kansas State College, Manhattan, Kansas. Illustrated; 133 pages; size 6 x 9.

BULLETIN No. 32 of the Kansas State College, Engineering Experiment Station, was prepared to supply the average family with information on the remodeling of existing small houses. The home modernizing problem is discussed in terms the layman can understand as well as in terms of trends of house design. Illustrated are various types of houses and plans that show simple examples of how the average house can be improved and made more livable. It is sent free to Kansas citizens and to others at the discretion of the director.

ARCHITECTURAL, STRUCTURAL AND MONUMENTAL STONES

By George A. Thiel and Carl E. Dutton. Published by The University of Minnesota Press, Minneapolis, Minn. Illustrated; indexed; 160 pages; size 6¼ x 9¼; price $2.50.

IN an effort to acquaint architects and others with the merits of various stones quarried and fabricated in Minnesota, this attractive little book has been published. Readers interested in the classification, physical properties and preparation of these stones will doubtless find the text interesting and instructive. On the other hand, those whose chief interest lies in colors and textures will find the illustrations, many of which are color plates, extremely useful.

SLUMS AND BLIGHTED AREAS IN THE UNITED STATES

By Edith Elmer Wood. Published by U. S. Government Printing Office, Washington, D. C.. Illustrated; 137 pages; size 6 x 9.

THIS booklet, published as Bulletin No. 1, Housing Division, Federal Emergency Administration of Public Works, discusses the extent of the slum clearance problem and the effect of bad housing on its inhabitants. Housing conditions in various large cities of the United States are fully covered by surveys and statistics. One chapter lays stress on the impossibility of solving the need for better housing through private enterprise. The bulletin also cites the beneficial results of slum clearance abroad. A bibliography of housing surveys and reports is included.

HOUSING OFFICIALS YEAR BOOK, 1935

Edited by Coleman Woodbury. Published by Public Administration Service, 850 East 58th St., Chicago, Ill. 76 pages; sizes 6 x 9; price $1.00.

THIS first annual yearbook comprises a report on the proceedings of all agencies in the public housing field during the past year and a half. It reviews the problems and policies of the Housing Division of P. W. A., the history of F. H. A., the activities of the Federal Home Loan Board, and similar agencies. It includes, in addition, the reports of state and local agencies and is designed to promote understanding of the problems and duties of all bodies connected with the housing movement and to serve as a usable reference work.

"Build Now! Consult

THE TENNESSEE CHAPTER
OF THE AMERICAN INSTITUTE OF ARCHITECTS, INC.
MEMPHIS, TENN.

February 14, 1935

Mr. Benjamin F. Betts, Editor,
American Architect,
572 Madison Avenue,
New York City, N.Y.

Dear Mr. Betts:

At the last meeting of the Tennessee Chapter of the American Institute of Architects, much favorable comment was made on the advertising appearing in Town & Country and House Beautiful.

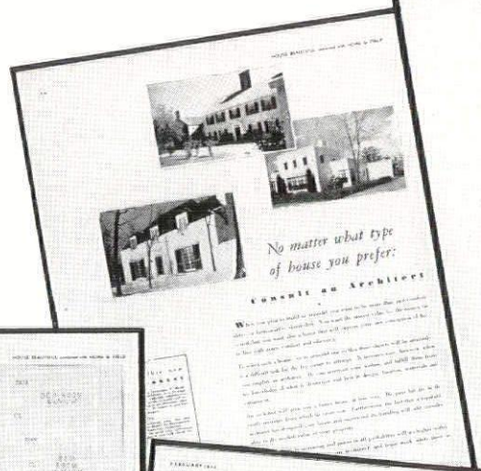
I wish you could have been present to hear some of the remarks in favor of these publications and expressing the individual appreciation of each member for the service done the profession as a whole.

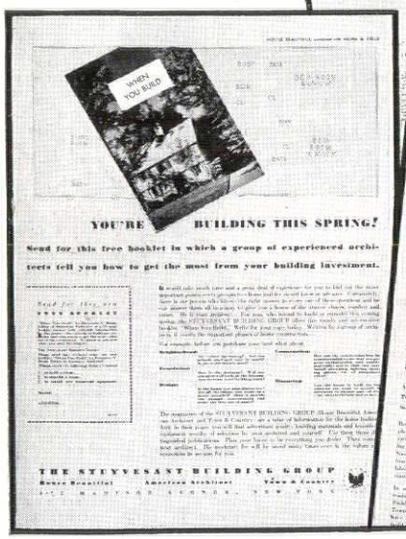
While there was no official resolution offered expressing this appreciation, I am taking it upon myself as President of the Chapter to thank your publishing company. It seems to fit in with the timely subject of selling the Architect to the real building public, which is the house owner.

With our best wishes for the success of the American Architect and associate publications, and with kindest personal regards to you, I am

Sincerely yours,
TENNESSEE CHAPTER, A.I.A.
President.

JFS:M





We're Saying that to Tho

Just a year ago—working in conjunction with the other magazines of the Stuyvesant Building Group—AMERICAN ARCHITECT launched the biggest promotion and publicity campaign in the architect's behalf that has ever been undertaken.

As the keynote of the campaign, full page advertisements—like those illustrated above—have been appearing every month since last August in both TOWN AND COUNTRY and HOUSE BEAUTIFUL. Concentrated in quality groups, both of those powerful magazines reach thousands of potential home-owners. And to those prospective clients of yo we have been saying again and again:

"Build NOW . . . and when you build, CONSULT YOUR ARCHITECT—for his moderate fee will be saved many times over in the values and economies he secures for you

Another magazine with which AMERIC ARCHITECT is associated—GOOD HOUSEKE ING, reaching nearly two million better fami every month—is consistently urging its readers retain an architect before building or remodel

AMERICA

THE LEADING JOURNAL OF ARCHITECTURA

ands of People Every Month

Even closer contact with potential home-owners been secured through the 24-page booklet, HEN YOU BUILD, a copy of which has been ered free in each of the TOWN AND COUNTRY HOUSE BEAUTIFUL advertisements. Written the architect, *to* the architect's future client, this klet has been acclaimed as the most effective ce of professional promotion ever prepared.

Over 30,000 copies (four editions) have either n distributed direct to potential home owners or ced in the hands of prospective clients by archi- tects themselves. If you have not seen this booklet, we will gladly send you a sample copy without charge.

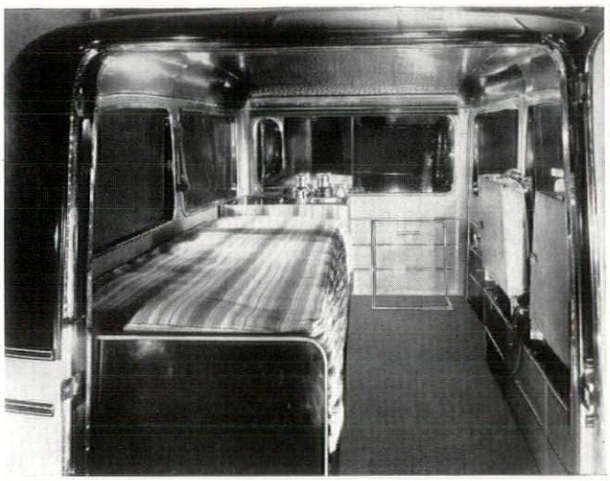
Reproduced above is a letter from the President of the Tennessee Chapter of the A.I.A. His expres- sion of appreciation "for the service done the pro- fession as a whole" is but one of hundreds of indi- cations of the growing enthusiasm with which this campaign — a natural outgrowth of AMERICAN ARCHITECT's policy of aggressively supporting the profession's interests—has been received everywhere.

A R C H I T E C T

RACTICE - 572 MADISON AVENUE - NEW YORK

Trends and Topics of the Times

(*Continued from page* 49)



A "hospital room on wheels" recently placed in service in New York, was designed by Irvin L. Scott of Joseph Urban Associates. This latest word in ambulances has controlled heat and ventilation, hot and cold running water, one-way-vision windows, sound-proof walls and floors of rubber in addition to adjustable beds and three armchairs for attendants. The color scheme is terra cotta, light green and chromium

• Student enrollment in engineering and architecture has dropped materially in the past five years. According to figures from the bulletin of the American Association of College Registrars, 49,280 students were enrolled in engineering and 3,384 in architecture in 1929-30. In 1931-32 enrollments were 47,860 and 3,093 respectively. The figures for 1933-34 are 39,435 and 1,719. All schools show the effects of the depression, but the reduction in number of students in the large universities is not spectacular. In architecture the drop in registration between 1929-30 and 1933-34 at Cornell was 11, Harvard 7, Michigan 96, Columbia 33. Figures indicate a trend toward a larger enrollment of students in medical courses.

• The American Artists Group has been incorporated in the State of New York. Membership includes many distinguished artists, among them, John Taylor Arms, Rockwell Kent, Jose Orozco and Diego Rivera. The objective of the association is to "democratize American art by making it available to a much larger public than ever before; to help in spreading, through educational, cultural and commercial channels, the appreciation of fine art; and to give impetus to the unmistakable trend toward esthetic enjoyment of leisure and the enhancement of public good taste in all lines of endeavor." Offices have been established at 106 Seventh Avenue, New York.

• Take your choice from these two official pronouncements regarding the part of Governmental agencies in the field of housing! Harold F. Ickes, Secretary of the Interior and Public Works Administrator: "The Federal Government, as part of its Public Works Program, is pinch-hitting until local communities and private enterprise undertake to go ahead with a program that must go forward in the interests of humanity and for the common good." Colonel Horatio B. Hackett, formerly Director of the PWA Housing Division and now a member of Mr. Ickes PWA staff: "The Government is undertaking the job which private capital has never been able to handle."

• According to a study issued by the National Industrial Conference Board the total cost of administering the NRA and its 578 codes during the two year period which ended in June was more than ninety-three million dollars. This total does not include the expenses of code formulation, individuals attending hearings, litigation expenditures in connection with code enforcement and other costs imposed by the codes. In the construction industry annual code administration costs are said to have amounted to about $8,400,000.

• The Division of Motion Pictures, Extension Service, U. S. Department of Agriculture has released a two-reel motion picture showing how an 80-year old farmhouse in Wisconsin was modernized. The film is available to schools, social organizations and others. A short film strip, used by the Federal Housing Administration in illustrating its house-remodeling program also is available. The films may be borrowed from the Extension Service by paying transportation costs.

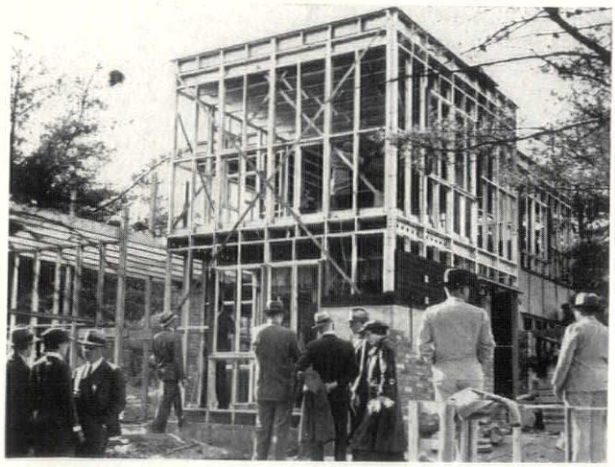
• A few years ago the photo-electric cell or "electric eye" was hailed as a by-product of the electrical research laboratory—a bit of magic which controlled electric circuits by means of light. More recently the idea has been applied to announce the approach of anyone to the safe deposit department in a New York City bank. A person passing through the beam of light at the entrance to this department causes a buzzer to operate. The photo-electric cell, no longer a laboratory trick, is today susceptible to many varied practical applications.

• What is apparently the first instance of loan insurance by FHA on prefabricated construction was recently made in Chicago. The house, designed and constructed by General Houses, Inc., of Chicago, has prefabricated steel panel construction, and a non-traditional design. Approval of the FHA technical staff has also been gained for the type of prefabricated construction employed in the housing product of American Houses, Inc., of New York.

• Automobile body manufacturing methods bid fair to revolutionize the plumbing fixture industry through the production of pressed metal enameled

ware on a large scale, low cost basis. Kitchen sinks, bathtubs, lavatories and other types of kitchen furniture are to be produced at Detroit on a scale that may make that city one of the largest plumbing goods manufacturing centers in the United States.

• Possibilities of prefabrication in the residential field are being explored from every angle. One of the most recent efforts of this kind has been announced by the Republic Steel Co. This organization has developed a method of prefabricating steel for houses that has resulted in a construction similar to that of a skyscraper. The picture (at right) shows the framing for an experimental house at Bethesda, Md., for which Kastner and Stonorov, designers of a large Philadelphia housing project, were architects. Framing for this house was said to have been erected by five men fifteen hours after the first steel had been bolted in place. Steel will be used in the walls, partitions, floors and roof.



HARRIS & EWING

Experts from the Federal Housing Administration view a partially completed prefabricated house in Maryland.

ANNOUNCEMENTS

• An architectural competition for a Memorial Civic Auditorium and City Building to be built at Marietta, Ohio, opened July 1st. The competition is limited to members of the American Institute of Architects and will be conducted in two stages, each of thirty days duration. Prizes will be awarded. The structure will cost approximately $250,000 and will be erected as a feature of the program celebrating the 150th anniversary of the "Ordinance of 1787" and the establishment of the Northwest Territory to be held in 1937-38. Howard Dwight Smith, Architectural School, Ohio State University, Columbus, Ohio, is the Architectural Advisor. Competition specifications may be obtained from him.

• The thirteenth International Congress of Architects will be held at the Institute of Architecture, Rome, Italy, September 22-28, 1935. The Congress will discuss new building materials, public buildings and town planning, architectural competitions, the relation of architects to governmental buildings, and other topics of professional interest. Trips and excursions in Rome and to several Italian towns are planned as part of the program. Architects planning to attend the Congress can obtain complete information from George Oakley Totten, Jr., Secretary, American Section, C. P. I. A., Washington, D. C.

• A competition in designs for American Type Faces is being conducted by the National Board on Printing Type Faces. Two prizes of $300 and $150 will be awarded for the best type face suitable for general use; $100 for the best type face suitable for advertising use; and $100 for the best type face suitable for book printing. The competition will close on October 1, 1935. Information and entry blanks may be obtained from E. M. Diamant, Chairman, National Board on Printing Type Faces, 461 Eighth Avenue, New York.

• Advanced photographs of work proposed for exhibition at the fiftieth annual exhibition of the Architectural League of New York must be received by the Committee by August 1, 1935. Entry slips are due September 3rd. The exhibition will be opened to the public from October 10 to 19, 1935. The 1935 exhibition is projected by the Architectural League, the American Institute of Architects, and the American Institute of Decorators. Prizes and medals of honor will be awarded in the various classes of exhibits. Information relative to the requirements of exhibitors' work may be obtained from the Exhibition Committee, The Architectural League of New York, 115 East 40th Street, New York.

• Architects, draftsmen and students residing in the sixteen middle western states, in the area from Ohio to Nebraska and Minnesota to Arkansas are eligible to participate in the "Terra Cotta Wall Block Competition" being held under the auspices of the Chicago Architectural Club. The American Terra Cotta Company and the Northwestern Terra Cotta Corporation have made available funds for prizes totaling $500. Programs will be issued July 15, 1935, and may be obtained from the "Terra Cotta Wall Block Competition Committee," Chicago Architectural Club, 1801 South Prairie Avenue, Chicago, Ill. Applicants must state their classification. The competition will close September 16, 1935.

• A course in Interior Architecture beginning in the academic year 1935-36 will be given at the Cambridge School of Architecture and Landscape Architecture. The course will require three and one-half years and a summer semester of eight weeks. The course leads to a certificate and will include training in architectural design, construction and history. Information relative to this new course can be obtained by addressing the school at 53 Church Street, Cambridge, Mass.

The Floating Palace from France

(*Continued from page 32*)

pumice and charcoal, but final touches are given by rubbing with only the palm of the hand.

In other public rooms, and in some staterooms, pigskin and parchment have been used for wall surfacing. And the walls of many staterooms are covered with stainless steel and aluminum. These materials are regarded as experiments. So far as is known, this is the first time such materials have been used for wall finishes of the living quarters aboard a passenger liner. The installations on the Normandie, therefore, should serve the double purpuse of giving to French Line technicians information as to corrosion-resisting qualities of the metals thus used and also inform them of the reactions of passengers to metal-lined rooms.

ON the average passenger's reaction, to most of the first class rooms, officials need speculate but little. Those who buy first class pay their premium for magnificence; and on the Normandie there is certainly no dearth of this. In most of the public spaces size alone is one contribution to a lavish, formal splendor. The Main Lounge, for example, is 105 x 75 ft.; and the DiningRoom, 300 ft. in length, extends three decks in height, as does the Main Hall, which measures 70 x 66 ft. Such a use of space can be compared only to the spatial grandeur of a public building.

Pointedly in contrast to first class public rooms are those of the second and tourist classes. These are, for the most part, simply done, so far as decorative effects are concerned. They reflect little effort toward innovation as compared with others, although the same general tendency toward "modernism" is evident in their design and in the use of various materials with which they have been executed.

Modernity, in fact, characterizes the design of most spaces throughout the ship, though a few private rooms are done in traditional styles. To many an architect in this country, the results may be personally distasteful. There are those who will consider them too bizarre, too lacking in the functional simplicity of another school of French design headed by Le Corbusier, Lurçat and Mallet-Stevens. On the other hand, even more, probably, will condemn the Normandie's interiors because they conform to no accepted precedent of architecture or decoration.

It is precisely this unorthodox quality about the boat—from her turbo-electric power plant to her mahogany-inlaid decks—that makes the work of her designers worthy of interest on the part of American architects. Within her the most vaunted of French craftsmen have paraded the superlatives of their several abilities. Illustrations show a few of the seemingly innumerable details in this huge floating palace—France's $59,000,000 bid to maritime leadership and a seagoing exhibition of her contemporary art.

The Readers Have a Word to Say

About a Nationally Planned Public Relations Campaign

The following letters are on file in American Architect's office. In deference to the confidence of individuals, names have been deleted here.

• DENVER, COLORADO

OF course, my answer is yes to your two questions.

It is my opinion that you have an idea that will prove of great benefit to the architectural profession and to the general public.

• BOSTON, MASS.

IN response to the question which you raise on page 63 of your June issue, I should like to be recorded as answering Yes, with special emphasis on the "Direction of Acceptable Trustees" because I believe that you have expressed in those words a vital necessity if such a campaign as you propose is to benefit rather than injure the profession.

• BOSTON, MASS.

SOMEONE remarked that a good deal of this material was like "warmed over cornbeef hash." Well, if it is merely that, all I can say is that it will support life which is more than can be said of a good deal of what is going on now. Please don't give up your idea.

• SUNBURY, PA.

OUR answer to both questions is emphatically "YES," and here's hoping that every architect in the U. S. will line up with you.

The cause is certainly worth more than the trifling sum of $.25 per week.

You may count upon us to put forth every effort to assist in any way possible.

• CLIFFSIDE PARK, N. J.

I HAVE just returned from attendance at a court where an architect sued a doctor for the cost of preliminary sketches and studies prepared to his order, basing his fee at 20 per cent of the full fee of 10 per cent all as agreed on a $3,000 alteration, amounting to a mere $60 for sketches showing some three different solutions in plan and elevation for the problem.

The jury, after considerable deliberation, brought in a verdict of $10 and costs for the architect—$7.50 less than his legal expenses.

Upon inquiry among the jurymen later, it developed that they were upstate farmers, builders, real estate agents and other businessmen. The builders argued that the architect should not get anything, for they themselves had to submit sketches for which they were never paid, so why should an architect get a "fancy" fee. The real estate men felt similarly and the farmers "figgered" $10 was plenty. Some storekeeper merchants said the architect should be paid.

Now all this simply served to bring home to me the great need of some national campaign of educational publicity to enlighten the public as to the worth and necessity of architects' services. For, as this incident proved, the public has a glaring misconception of the value of an architect.

Hence architects should support the plan outlined on pages 62 and 63 of the June AMERICAN ARCHITECT and as per resolution offered at the A. I. A. Convention and referred to its Board of Directors as published on page 32 of the June issue of The Octagon.

If the degree of effort given to Small House Bureaus can be put into these ideas, the result will be far more beneficial to the public and the profession. And in my opinion now is the time to do it—now or never!

• WICHITA, KANSAS

I HAVE just finished reading the June issue of your magazine and find it very interesting. I immediately looked up the April issue and read questions one and two you are asking all architects.

To a man who is just opening an office to commence practicing for himself, your campaign has come at a very opportune time. My answer to these questions is YES emphatically, wholeheartedly and enthusiastically for their support. I definitely pledge myself to contribute twenty-five cents a week for this campaign and wish you every success. I will be glad and willing to further your campaign in organizing or helping to organize a local body to put over your ideas. You may call on me for help at any time.

• "BEST PIECE OF WORK"

I HAVE just received your little folder descriptive of your publicity campaign as regards architects and architecture, and am moved to tell you that I believe you are following the best method of publicizing our profession.

A good many years ago, a group from the Pittsburgh Chapter discussed this problem for many months, to the conclusion that while the public should be adequately and forcefully informed as to "architecture" the advertising of "architects" was a dangerous venture. There are so many degrees of experience, ability and, might it be hinted, integrity, that it would be impossible to strike a common denominator for public presentation.

"When You Build," we find to be the best piece of work yet done along this line, and it is being extensively used in the District. Only today, an opportunity presented itself for the use by one of the local newspapers of a series of articles covering much of the same ground. During the past week, the Local Chapter has instituted an "Architect's Information Service," designed to help the movement along.—*Harvey A. Schwab, Pittsburgh, Pa.*

• CORRECTION

Editor, AMERICAN ARCHITECT:

I WAS very much interested in the illustrations appearing on pages 18 and 19 of your April issue. These illustrations showed the remodeling of a store building for J. W. Robinson Company, Los Angeles, California. The caption reads as follows:

"Modernization of this building consisted in removing original glazed brick, encasing the structure with pneumatically applied concrete and resurfacing with tan and buff terra cotta."

While it is true that the columns up to the second floor are terra cotta, the majority of this building is covered with tile.—*H. R. Cole, Executive Secretary, Tile and Mantel Contractors' Association of America, Washington.*

Higher Standards to Revitalize Architectural Practice

(*Continued from page* 16)

some of the vital changes in the attitude of our countrymen towards society in general which is bound to have an effect upon the practice of our architecture.

We are becoming more civilized to the extent that we are now realizing that civilization means something wider than ever before, it means extending the amenities of life to everybody. In other words, we are growing to be more co-operative. Through this we realize that not for much longer can humankind be divided into two classes, one which works and the other which plays upon it. It is possible that gone forever are the days of unlimited piracy and selfish grasping in business. We can see at last a faint ray of the beginnings of co-operative working for the service of the whole of Society. It is a much greater and deeper understanding of civilization, much more liberal and humane, much more intelligent. With it must come the removal of squalor, dire poverty, disease and perverted living. Through such results of co-operation the lives of all will be much more comfortable and pleasant. Perhaps nothing has contributed so much to make this possible as the development of the machine and the mass production which followed it.

Strangely enough, the development of the machine will bring with it for us a very different form of Client. Heretofore we have dealt with the individual—our mainstay for as many years as architecture has existed. But it is probable that very soon we shall change from the consideration of the individual client to the consideration of the whole of Society. Machines have grown from the means which provided man with power for transportation, to striking his stamps and his coinage, to making shoes and clothes for him and even for turning out a new type of furniture.

AS machines grew in intricacy and capacity, markets had to be extended to keep them busy. People found that it paid to reduce very materially the cost of the article so as to broaden the market. This meant that many more individuals could enjoy what only the few enjoyed before. We are only at the beginning of this development. But I shall be very surprised if most of us don't see it well advanced in our day. We have already seen the astonishing growth of quality and conveniences in the standardization of the motor car. The Rolls Royce and the Ford of 1915 and those of 1935 are very different things. Today these two cars represent only a difference in price level and a difference in standard. Each furnishes much the same benefits to man. Some of us have seen the standardized buildings at extremes of price range in Germany, Holland, Austria and America, whereby man can have many more conveniences for less money than on the old, entirely individualistic basis. At the present time we pick among the standardized cars until we get what we want. Some day soon we shall pick among the standardized buildings in much the same way.

Some architects are afraid that standardization will cut into their profession. It will, but only into its narrowness, to open it up to dimensions and possibilities far beyond their wildest dreams—just as it did over thirty years ago to the hesitant motor car manufacturers. Through this means the amenities and conveniences of all kinds of buildings will be available to the smallest pocket as well as the largest. The only thing we have to concern ourselves with is the raising of the standard of what is produced. But this standard raising will be quite automatic just as it has been with cars. The law of supply and demand and the competition between men or groups will take care of that. Don't be afraid—it does not spoil your joy at seeing a beautiful Rolls Royce car pass by to know that another is coming in a minute. It does not spoil a chic thing to have a lot of it. It has not spoiled Bach to have him reproduced on the gramophone.

WE have always had plenty of standardization, but unfortunately of the wrong kind. Consider the rows of workers' houses and small suburban villas of Victorian times, and the ribbon developments of jerry-built houses along the great roads of our own day. Why are these so bad? Largely because architects took no interest in them. They were like the original model "T" Ford, utilitarian and ugly. But look at the Ford car now. Wherein does the difference lie? Mostly in this—that someone set to work on the design. The same will naturally happen to our housing.

But let us be clear about this. The design must be fundamental. We must achieve a mastery of essentials, a mastery of materials, a mastery of building method, a mastery of processing and mass production, a mastery of improved amenities. When we have done this—or at least have gone some way in the doing of it—everyone will be better housed, better washed, better heated. The health of everyone will be better and the whole national standard raised. Let us not be afraid to carry standardization to the limit. Only thus can the national living standards be raised and the standards of building improved. Human beings will never become more standardized than now. Certainly they are not standardized now because they drive in a standard car, wear a standard pair of shoes or pay a standard coin over the counter to buy a standard stamp to post a letter to a friend!

Some of us have grown up in Architecture and have had also the advantages of working abroad. We have kept our eyes and our minds open for ideas and influences that come in from every quarter of the world today, artistic, business and social. Such of us realize that we must work henceforth more for the service of Society and not so much for ourselves and our individual client. It is no longer enough that we have a few distinguished buildings—for the others which line our streets and make up our cities are depressing. It is not enough that we have a few

people with charm, money and taste—for the great mass lives on a level that is sub-normal. We must grow to realize that it is our job to fulfill whatever Society needs and demands for the expression of any part of its life. Whatever that thing is, no matter how simple, our job is to treat it in the best, most efficient, most economical and attractive manner. We must realize that all requirements of Society are important, for they have a bearing in some way upon its life and happiness.

The practice of our profession is beset with stupendous difficulties. It is perhaps the most difficult and exacting profession in the world. Our responsibilities are enormous. They are toward Art and toward functional things too, design, plan, conveniences, money and time, not to speak of the ever-present Public Authority. But over and above all of them our real job is to steam-roll ugliness, to search for order and beauty in every department of life, and having found them to spread them as far over and as far into Society as it is possible for us to do in our day.

DEATHS

•John A. Petrina, head of the Department of Graphic Arts, Pratt Institute, Brooklyn, N. Y. died on June 14, 1935, at Evanston, Wyo., as the result of an automobile accident. He was forty-two years old. He was born in Venice and received his art education in France and the United States. Mr. Petrina's paintings, drawings and prints are well known in the art field. He illustrated several books and was the author of a recent volume, "Art Work. How Produced, How Reproduced." Many of his drawings were of architectural subjects and have been reproduced from time to time in AMERICAN ARCHITECT. Readers of AMERICAN ARCHITECT will no doubt recall Mr. Petrina's articles, "Making a Lithograph" and "Easy Ways to Make an Etching" which appeared in this magazine in 1932 and 1934.

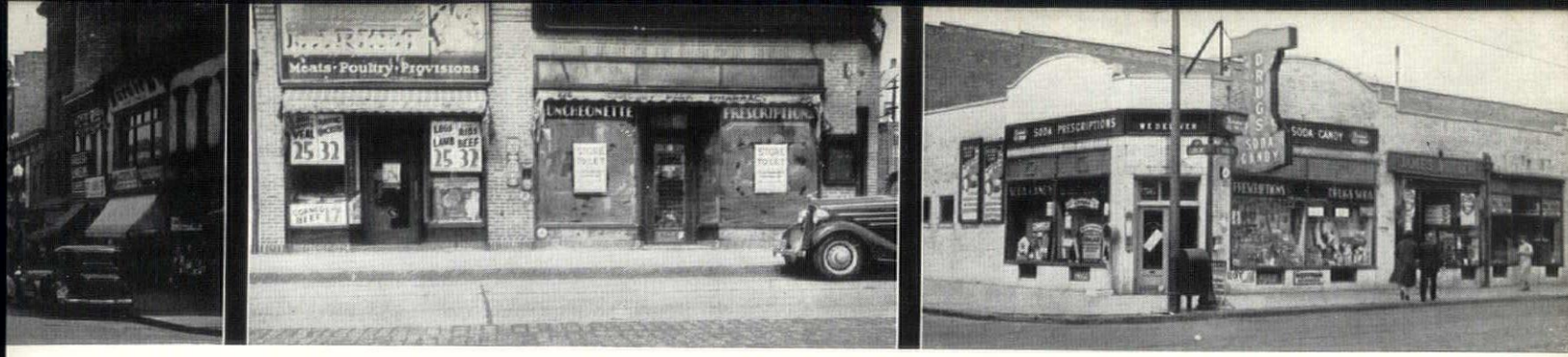
• Francis Scott Lehmann, architect, died at Mount Vernon, N. Y. on May 23, 1935. He was forty-eight years old. Mr. Lehmann was a graduate of Cornell, class of 1910. During the past five years he had been associated with Todd & Brown, construction engineers for Radio City, New York. He had also been in charge of estimates and purchases for the restoration of Williamsburg, Virginia.

. . .

• Scientific advances have taken the guesswork out of good interior design as applied to churches, according to Dean Milo Gates who has been architectural adviser on 863 churches built in various parts of the country. Dean Gates said, recently, that there was "no reason why you shouldn't build a church you can hear in without artificial respiration. The day of the high altar, the organ with glorious gilded pipes and the awful looking choir back of the minister is gone."

INDEX TO ADVERTISERS

This index is an editorial feature, maintained for the convenience of readers. It is not a part of the Advertisers' contract and American Architect assumes no responsibility for its correctness.



LEST YOU FORGET

★ ★ ★ ★

"Modernize Main Street" Competition

★

Sponsored by

LIBBEY · OWENS · FORD GLASS COMPANY

$11,000 in Cash Prizes

52 PRIZES—$11,000 TOTAL

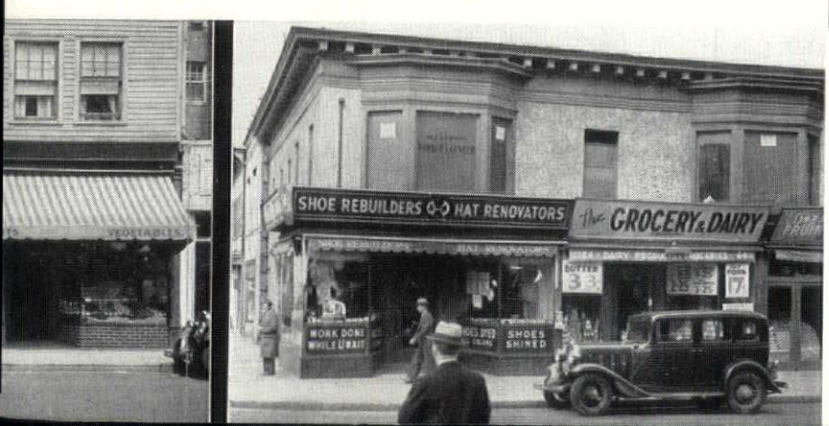
4 FIRST PRIZES—(one in each classification)—$1,000 each—$4,000
4 SECOND PRIZES—(one in each classification)—$750 each—$3,000
4 THIRD PRIZES—(one in each classification)—$500 each—$2,000

In addition, there will be 40 Honorable Mentions of $50 each. These will be awarded for meritorious designs, the number of awards in each class depending on the number of worthy designs in each class as determined by the Jury.

★ ★ ★ ★ ★

(Competition closes 5 P. M. August 12, 1935)

● On June 15, the Program for the "Modernize Main Street" Competition was distributed to architects throughout the country. This Competition, sponsored by the Libbey-Owens-Ford Glass Company and conducted by the Architectural Record, with Kenneth K. Stowell, A. I. A., as Professional Advisor, is in reality four simultaneous competitions, each calling for the modernization of a particular type of shop or store—(1) A Food Store; (2) A Drug Store; (3) An Apparel Shop; (4) An Automotive Sales and Service Station. A photograph of each shop to be modernized, together with all necessary data, is published in the Program. If you have mislaid your copy of the Program or if, for any reason, you failed to receive one, the entry blank below will bring you the Program, the printed title to be pasted on each design and all necessary data and instructions. The competition closes August 12; the Jury meets August 26, 1935.



USE THIS ENTRY BLANK

KENNETH K. STOWELL, A. I. A., Professional Advisor,
"Modernize Main Street" Competition
The Architectural Record, 119 West 40th Street, New York, N. Y.

Gentlemen: I desire to enter the "Modernize Main Street" Competition sponsored by the Libbey•Owens•Ford Glass Company. Please send me the Program of the Competition, the title-paster and all necessary data and information.

Name_____
(Print)

Profession or occupation_____

Street_____

City_____ State_____

Radio Station **KSD** *broadcasts a modern note in* **flooring design**

In keeping with current decorative trends, the floors of Sealex Plain Linoleum in these modern broadcasting units completely harmonize in color and design with the interiors photographed.

Sealex Linoleum offers the architect the utmost freedom in designing floors which perfectly suit the character of any room. Practically any design that can be put down on paper can be "put over" in Sealex Linoleum.

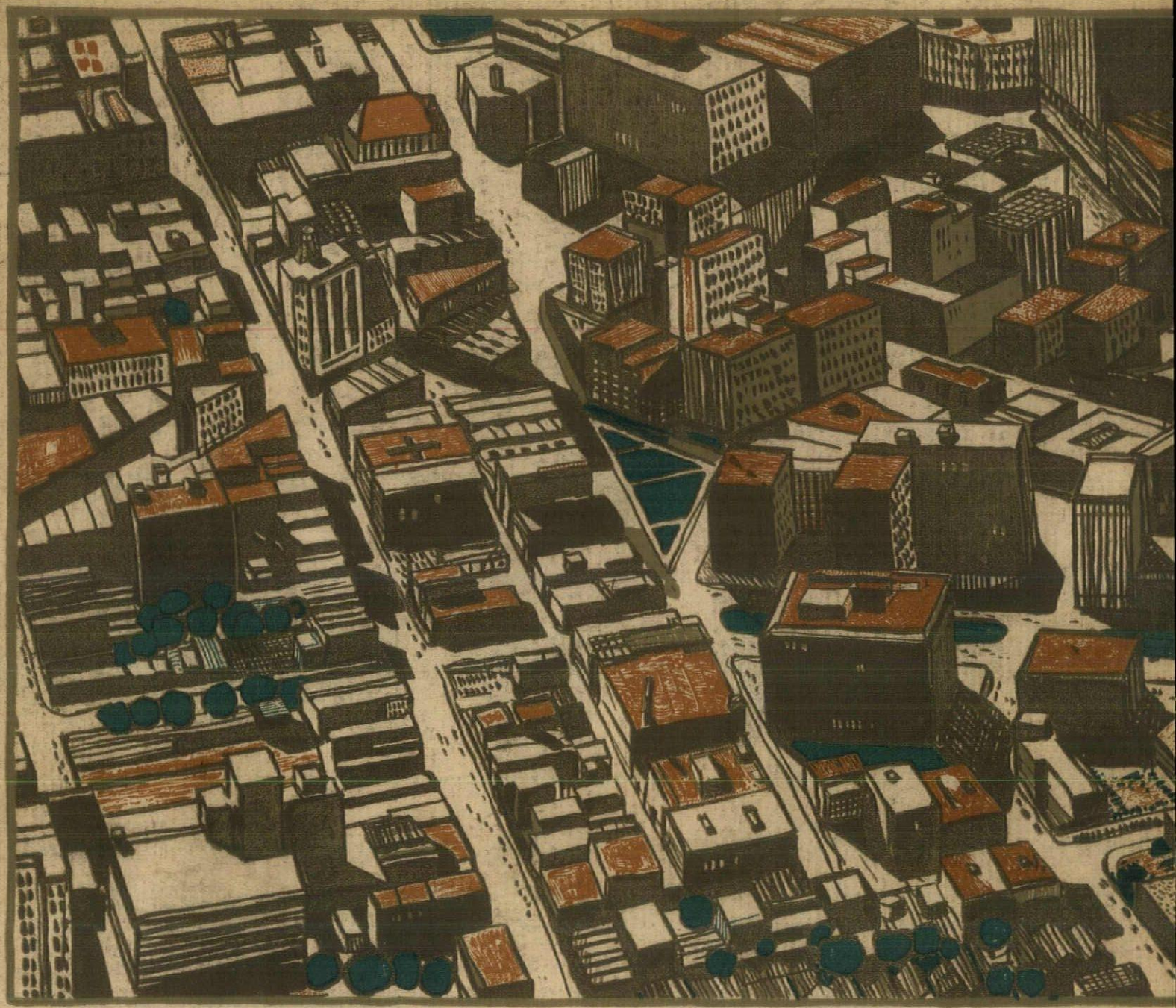
Expert installations are completed quickly and economically by authorized contractors of Bonded Floors, located in principal cities. Such installations are backed by a Guaranty Bond covering the full value of workmanship and materials.

Sealex Floors, in all types of buildings, have proved their ability to remain colorfully handsome, quiet and comfortable underfoot, and inexpensive to maintain despite the heaviest traffic. Write us for any further information and for the names of expert flooring contractors in your community.

Whether your plans call for specially-designed floors like these photographed in Station KSD, St. Louis, Mo., or for distinctive ready-made effects, Sealex Linoleum will fulfill every decorative and every practical requirement. Ask for details about our complete line which may be adapted to new buildings or to remodeling projects.

CONGOLEUM-NAIRN INC., KEARNY, NEW JERSEY

SEALEX REG. U. S. PAT. OFF. *Linoleum Floors and Wall-Covering*



FOUNDED 1876

AMERICAN ARCHITEC